







Facilitator Guide







Sector

Automotive

Sub-Sector

Automotive Vehicle Service

Occupation

Technical Service Repair

Reference ID: ASC/Q1411, Version 1.0

NSQF Level: 4

Automotive
Service
Technician
(2 & 3
wheelers)

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Skilling is building a better India.
If we have to move India towards development then Skill Development should be our mission.

Shri Narendra Modi Prime Minister of India



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The content of this Faculty guide is aligned to the curriculum of QP/NOS for Automotive Service Technician (2-3 Wheeler).

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About this Guide —————

Indian Auto Industry is one of the largest in the world. The industry is expected to contribute 10% to India's GDP as per Automotive Mission Plan 2016-26 and create 65 million additional jobs. The sector offers big potential for jobs across the length and breadth of the country. In line with the rapid technological advancement in this field, there are exciting prospects for a fulfilling career in this industry.

This guide is designed to enable a candidate to acquire knowledge and skills that are required for employment. The content of this guide is completely aligned to the National Occupation Standards QP/NOS and conform to the National Skills Qualification Framework (NSQF).

The Qualification pack of an Automotive Service Technician (2 & 3 Wheelers), Level-4 includes the following NOS's which have all been covered across the units:

- 1. ASC/ N 1420: Carry out routine servicing and minor repairs of aggregates of two and three wheelers
- 2. ASC/ N 0001: Plan and organise work to meet expected outcomes
- 3. ASC/ N 0002: Work effectively in a team
- 4. ASC/ N 0003: Maintain a healthy, safe and secure working environment

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. The symbols used in this guide are described below.

Happy learning!!

Symbols Used



Steps



Resources













Explain





Field Visit



Practical



Activity





Summary







Facilitation Notes Learning Outcomes



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1. Introduction

Unit 1.1 – Introduction to Automobiles

Unit 1.2 – History of Two and Three Wheelers

Unit 1.3 – Classification of Automobiles

Unit 1.4 – Job role of Auto Service Technician



Key Learning Outcomes 👸



At the end of this module, students will be able to:

- 1. Acquire knowledge of automobile history
- 2. Describe different types of automobile
- 3. Classify automobile industry
- 4. Explain role of auto service technician in automobile service to meet required responsibilities

UNIT 1.1: Introduction to Automobile

Unit Objectives



At the end of this unit, learners will be able to:

- Acquire required knowledge of automobile industry
- Describe type of automobile

Resources to be Used



Facilitator can use the available objects such as a white board, marker, duster, pen, notebook, computer and LCD projector etc.



- Take a parcel, mention some details such as student name, hobbies, likes, dislikes etc.
- Make the students stand in a circle, close enough to the person each side of them that they can pass the parcel quickly.
- Say 'Stop' when the students least expect it. The person who has the parcel at that time should get out from the class.
- Those who get out should introduce themselves by providing the details mentioned in the parcel.
- The winner of the game should stand and introduce himself/herself at the end of the game.
- At last, say thanks to the students for their participation.
- Ask for feedback on the exercise of participation and what they derived out of it.



- Ask the students about the expectations from the course.
- Invite students to participate. List the expectations on the whiteboard.
- Give the students a brief overview of what all will be covered in the program.
- Start with a positive and happy note.



- What they understand by the word Automobile.
- We all are familiar with the word Automobile. Auto means Self & Mobile means movement/propelled) Self Movement.
- We do also understand the meaning of automobile, it could be a car, two wheeler, bus etc. having its own engine and move using wheels for goods transport or carry passengers.
- The automobile word has been taken from ancient Greek word which combine auto means self and mobile means movable thus we can define automobile as a vehicle which can move by itself.
- Car is a name of automobile also seems to be taken from Latin word carrum which means wheeled vehicle or from French word cart.
- Automobiles are of different types i.e.
 - o AutoRikshaw
 - o Auto car
 - o Car
 - o Motor car
 - o Motor coach
 - o Horseless carriage
 - o Moped
 - o Scooter
 - o Truck
 - o Earth Moving Equipment
 - o Automobile
 - o Auto buggy
 - o Motor
 - o Motor vehicle
 - o Motor wagon
 - o Quadri Cycle
 - o Motor Cycle
 - o Bus
 - o Tractor

Ask



- Ask them about their understanding for automobile industry.
- Ask about classification criteria of automobiles
- Ask about different parameters considered for vehicle classification



- You could ask the students who get out during the game to be the music keepers. They can start and stop the music as the game progresses.
- Encourage shy students to provide information about themselves by prompting them with questions such as 'what do you enjoy doing the most', 'what is your favorite movie or book' etc.
- List of different type of automobiles

UNIT 1.2: History of Two and Three Wheelers

Unit Objectives



At the end of this unit, students will be able to:

• Explain the history of two and three wheelers

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual

Do



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.



- Two wheelers history in India was started in the year 1955.
- In India, Royal Enfield from United Kingdom introduced 350 cc "Bullet" as first batch of motorcycle.
- During the period 50s to 70s India has observed the appearance of two wheeler industry. Few
 companies like Bajaj Auto, Royal Enfield, Escort started their operation but with limited production
 capacity. Two wheelers Industry started with small establishment by early 50's.
- The first two heelers manufactured by Indian automobile industry was scoter.
- Two wheeler productions were under a lakh during the 70's and iconic brands like Royal Enfield's bullet and Bajaj Auto's Chetak, Escort's Rajdoot won the hearts of Indian consumers. After almost decades of a monopoly for Bajaj Auto, things began to change.
- During 70's and 80's new played was introduced in two wheelers manufacturing like Kinetic and LML scooters.
- But the 80's proved to be the transformational decade. As during this period Indian company Hero

tied up with Honda as Hero Honda, TVS from India with Suzuki and Escorts from India with Yamaha.

- Post liberalization the focus was on technology, pollution control, emission norms, increased competition and segmentation.
- Two wheelers production grew to almost 38 lakh units. Major revolution in 2 wheelers history has been observed in this period as Indian companies decided to be separated from their foreign alliance such as TVS Suzuki, Yamaha Escorts, Kinetic Honda.
- Presently in two wheelers segment India is tagged as the second largest producer and also in other segment of automobile we contributes largest volume with an annual growth of 30%.
- Three wheelers vehicle has three wheels "human or people-powered vehicles" or power driven vehicle in the form of motorcycle or all-terrain vehicle. Three wheelers vehicles are also called by some other names like trikes, tri-cars and cycle cars.
- Three-wheelers are motorcycle-based machines having single wheel in front and using engine similar to motorcycle and having rear axle similar to car axel.
- Three wheelers is a transport vehicle and also called as Auto Rickshaw. In many countries it is used for public transportation.
- In 1886 during great exhibition John Henry Knight presented a tri car. But in the year 1897 Butler petrol cycle was invented by Edward Butler in this segment.
- Auto rickshaw was introduced in India during 1959 by Bajaj auto. It was motivated from piaggio's apec model which was itself based on the design of vespa two wheeler.
- Auto rickshaw in India is manufactured by various automotive companies like Mahindra & Mahindra, Bajaj Auto, TV Motors, Force Motors, Kerala Automobile, Kumar Motors etc.



- Ask about history of two and three wheelers
- Ask about manufacturers of two and three wheelers in India



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

UNIT 1.3: Classification of Automobiles

Unit Objectives



At the end of this unit, students will be able to:

- Classify automobiles based on industry and other parameters
- Describe recent development in automobile industry

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual

Do



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.



- Automobiles are classified in two categories: passenger vehicles and cargo vehicals.
- There are different parameters on which automobiles can classify i.e.:
 - o Purpose of transportation
 - o Capacity
 - o Fuel used
 - o Number of wheels
 - o Drive of the vehicles
- Normally Automobile are Specified as:
 - o Type: Car, truck, scooter, motorcycle, bus
 - o Capacity: 5 ton, 3 ton, 1 ton, 4-seater, 6- seater, 30-seater, 45-seater

- Manufacturer or Make of the Vehicle: Tata, Maruti, Suzuki, Ashok Leyland, Mahindra, Honda, Hyundai, Toyota, Ford, Fiat, Chevrolet, Audi, Mercedes, Isuzu, Skoda, Volkswagen
- o Drive: LHD: Left hand drive, RHD: Right and drive, Single wheel drive, Two wheel drive, Four wheel drive. Six wheel drive
- o Model: Year of manufacturing or chassis code number. The vehicle identification number is the identification code (VIN) marked on each and every automobile.
- The VIN number is unique in nature and two vehicles cannot have same VIN as it is used as unique identification mark for the vehicle.

Explain



- How to classify the automobiles
- Classification of vehicle on different parameters
- What is VIN number



- Ask about classification criteria of automobiles
- Ask about different parameters consider or vehicle classification



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

UNIT 1.4: Job Role of Auto Service Technician

Unit Objectives



At the end of this unit, students will be able to:

- Explain role of auto service technician at automobile service centre
- Describe Key responsibilities of service technician

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual

Do



- Greet and welcome the participants to the next session of the program.
- On the basis of experience, ask 1-2 students to explain the job role of a car washer.
- If someone is experienced in the field, ask him/her to explain what has been their role so far.



- The role of the companies does not end with selling the product only. In fact, with the ever growing competitive market, it is completely important for every company to equally work hard in after sales.
- This includes product quality and sustains performance which leads to customer satisfaction
- After sales service should ensure that customers are happy and satisfied not with the product only but also the service the organization offers.
- Role of After Sales in Auto Industry Ensures:
 - o Product and service meet or exceed the customer's expectation;
 - o Customer believes and trust in the brand;
 - o A strong bond between the organization and the customer;
 - o Earn more customers through reference from old ones;

- o Earn more revenues and profits in the market.
- The Technicians Play an Important Role for the Workshop Profitably:
 - o A productive Workforce of technically sound people will ensure / customer satisfaction and retention.
 - o A proper workshop has room for different work activities.
 - o An organization chart defines the reporting structure of the workshop.
 - o A well-defined service process ensures a smooth running of the workshop.

Service process

- o **Vehicle Booking:** In this process the appointment is taken by the service advisor from the customer for the service job. When the customer calls for an appointment to service his vehicle the SA will allot time and date for him to bring his vehicle to the workshop as per the work schedule.
- o **Vehicle Receiving and job card opening:** the SA will receive booked vehicle and open a job order. The customer has to ensure that his vehicle details are correctly entered and the jobs and his vehicles problems are correctly recorded on the job card before signing the JC.
- o **Job Allotment:** The workshop Supervisor allots the jobs to the technicians as per the schedule and priority and delivery commitments.
- o **Work progress:** The technician's carries out the work as prescribed in the job order. On completion of the job the vehicle is sent for final inspection.
- o **Final Inspection:** The quality tester will perform the final inspection of the vehicle. He ensures that the job requested by the customer is carried out and the reported problems in the vehicle are solved. He sent the vehicle to washing after his inspection.

Explain



- The roles and responsibilities of a service technician.
- The career path of a service technician
- Servicing process

Ask



- What are the role and responsibilities of a service technician
- What are the skills required for a service technician



- Summarize the main points.
- You could ask the students what they know about the need for service technician work.
- Give students some tips for how to become a successful service technician.
- Give the students a brief overview of what all will be covered in the program.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.









2. Carry out Routine Servicing and Minor Repairs of Aggregates of Two and Three Wheelers

Unit 2.1 – Scope of Work & Job description

Unit 2.2 - Performance Criteria for Auto Service Technician

Unit 2.3 – Technical Knowledge

Unit 2.4 – Skills: Automotive Technician



Key Learning Outcomes 👸



At the end of this module, students will be able to:

- Explain the organizational context for the automobile service station
- 2. Operate various tools and equipment required for vehicle diagnostic
- 3. Operate various tools and equipment required for vehicle repair
- 4. Diagnose the defect and performance issues in various component / sub-assemblies of the vehicle
- 5. Analyze root cause of the fault and prepare repair requirements of the vehicle
- 6. Carryout repair job of major aggregates and sub assemblies of the vehicle
- Carryout routine servicing and maintenance requirements of the vehicles
- Analyze customer complains / requirements
- Prepare job card having information of the customer, vehicle and repair requirement
- 10. Prepare document based on the action taken for the complaint registered in the job card

UNIT 2.1: Scope of Work and Job Description

Unit Objectives



At the end of this unit, learners will be able to:

- Explain the scope of work for an auto service technician
- Perform the responsibility of auto service technician

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual

Do



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.



- Auto Service Technician (Two & Three Wheelers) is also known as Mechanic, Technician, 2 Wheeler Technician, Repair & Maintenance Technician.
- Brief Job Description: An Auto Service Technician (two and three wheelers) is responsible for the
 repairing and routine servicing & maintenance (including electrical and mechanical aggregates) of
 two / three wheeler vehicles.
- Personal Qualities: An individual on this job must have good communication and interpersonal skills
 in addition to being a team player, as the job requires coordination with other technicians as well. The
 individual must have a technical bend of mind to understand the technical aspects of a two/ three
 wheeler which may be different from a four-wheeler
- His Role:
 - o Carry out routine servicing and minor repairs of aggregates of two and three wheelers.

o Assist in troubleshooting problems and fault diagnosis of the vehicle (including both mechanical and electrical aggregates).

• His work involves:

- o Perform routine servicing of two/ three wheeler including various aggregates (scheduling, either free or paid maintenance).
- o Perform maintenance activities of the two/ three wheeler vehicle (oil, lubricant, coolant change and greasing etc are included).
- o Perform minor service and repair of two/ three wheeler vehicle (including mechanical and electrical aggregates).
- o Assisting the senior technician in identifying & diagnosis of the operational fault responsible for the root cause of the vehicle trouble.
- o Assisting in taking necessary action post the root cause analysis to repair the vehicle.

UNIT 2.2: Performance Criteria for Auto Service Technician

Unit Objectives



At the end of this unit, learners will be able to:

- Prepare vehicle check list as per organization SOPs
- Resolve customer queries for the repair requirements of the vehicle
- Assist in service process based on job card

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- Participant Manual

Do



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.



- A job card is a sheet that contains details about the customer, vehicle, customer repairs requests, and instructions by service advisors, time and cost estimate, vehicle inventory and vehicle handover.
- On the Job Performance Criterion
 - o Courteously greet the customer with a warm welcome
 - o Receive the vehicle
 - o Collect and safely handover the customer's personal belongings of customer like phone, pen, documents, water bottles etc, to the customer.
 - o Fill in the job card after carefully listening to the customer's problems in the vehicle
 - o Carefully note down on the job card, damages like dent marks, already present on the vehicle at the time of receiving the vehicle.

Tips



- Note the functioning of all the electric bulbs and see if some are already fused.
- Note down the fuel level in the fuel tank.
- Note down the odometer kms reading.
- Strictly follow the SOP: Standard Operating Procedure Securely park the vehicle at the proper designated place.
- Place the vehicle on a suitable platform, before the repair / painting work actually begins.
- Study &understand the auto component manufacturer specifications related to the various components/aggregates in the two/ three wheeler vehicle.
- Study &follow standard operating procedures for using workshop tools and equipment for service and minor aggregate repairs in the two/ three wheeler vehicle.
- Conduct test drives to assess need for repairs, calibration or any other adjustments in the electrical / mechanical aggregates in the two / three wheeler vehicle.
- Review the job card and understand work to be carried out
- Ensure OEM recommended procedure and checklist is followed for routine servicing in case of non-routine service or repair, confirm tasks to be carried out with superior
- Calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to:
 - o Engine and aggregates
 - o Transmission system
 - o Chassis
 - o Electrical and electronic components
 - o Chassis
 - o Electrical and electronic components
 - o Scooter (two stroke engine)
 - o Scooter (four stroke engine)
 - o Motor cycle (two stroke engine)
 - o Motor cycle (four stroke engine)
 - o Disc & drum brakes system
 - o Other components (including to valves, ignition, fuel and emissions, transmission, lights, tyres, steering and body fittings)
- Ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and grease required have been obtained.
- Ensure all dismantled components (including mechanical and electrical aggregates) are cleaned and conditioned prior to reassembly.
- Identify and change components requiring change due to continuous wear and tear including:
 - o Oil and air filters
 - o Belts

- o Wiper blades
- o Brake linings and pads
- Ensure disposal of materials (including waste oil, scrap of failed parts/aggregates) in accordance with the organisation's policies.
- Understand the various precautions to be taken to avoid damage to the vehicle and its components while working on other aggregates.
- Record all service and repairs carried out and ensure completeness of tasks assigned before releasing vehicle for the next procedure.
- Ensure all workshop tools, equipment and workstations are adequately maintained by carrying out scheduled checks, calibration and timely repairs where necessary.
- Ensure any malfunctions observed in tools and equipment are reported to the concerned persons.
- Ensure any other repair requirements observed in the other components/aggregates systems (like engine, gear box etc.) while repairing/ overhauling of braking systems are reported to supervisor/ service advisor for further inspection by other specialists.
- Be able to measure/ inspect the machining or any other repair done from an outside source/ local machining garages.
- Utilise any computer-based applications relevant to service and repairs.
- Ensure that trainings organized by the OEM from time-to-time are attended and knowledge levels are upgraded (esp. in case of newly launched products, product refreshes).



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

UNIT 2.3: Technical Knowledge

Unit Objectives



At the end of this unit, students will be able to:

- Explain the organizational context for the automobile service station
- Explain various automobile terminologies
- Identify and learn automobile aggregates
- Identify and learn the function of various components in automobile
- Operate various tools and equipment required for vehicle diagnostic
- Operate various tools and equipment required for vehicle repair
- Diagnose the defect and performance related issues in various component / sub-assemblies of the vehicle
- Analyze root cause of the fault and prepare repair requirements of the vehicle
- Carryout routine servicing and maintenance requirements of the vehicles
- Carryout repair job of major aggregates and sub assemblies of the vehicle
- Interact with customer and prepare documents like job card, action report

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.

2.3.1: Organisational Context

Resources to be Used



• Available objects like demo automobile, pen, duster, marker etc.



- Standard schedules and checklists recommended by the OEM/ auto component manufacturer for servicing of two and three wheeler vehicles.
- Identification codes, nomenclature and grades of lubricants, components and aggregates.
- Standard Operating Procedures recommended by the dealership / auto components suppliers / OEM for using tools and equipment to be followed related to aggregates / components (including electrical and mechanical aggregates) as per the manufacturer instructions.
- Standard Operating Procedures for rectification of errors in information (e.g. rectification of job card, reissue of correct tools and equipment etc.).
- Safety requirements for equipment and components prescribed by the OEM (e.g. preventing / dealing with oil spillage and inflammable materials)
- Documentation requirements for each procedure carried out as part of roles and responsibilities as specified by OEM/ auto component manufacturer
- Organisational and professional code of ethics and standards of practice
- Safety, health and environmental policies and regulations for the workplace as well as for automotive trade in general (e.g. safe working practices inside pits/under vehicles)

2.3.2: Anatomy (Aggregates) of an Automobile

Resources to be Used



• Available objects like demo automobile, pen, duster, marker, PC, LCD projector etc



- Automobiles are made up of several components, assemblies and systems.
- The growing auto industry has given rise to a growing auto component manufacturing industry also. India has now become outsourcing hub for manufacturing of various automobile components.
- The auto components industry is predominantly divided into five segments
 - o Engine parts
 - o Drive Transmission & Steering Parts
 - Suspension & Brake Parts
 - **Electrical Parts**
 - Body and chassis
- India is now being seen as manufacturing hub by global manufacturers of automobiles due to
 - Raw material availability and labour force at low cost thus it is cost competitive.
 - Very good setup of manufacturing base.
 - o Several internationally know auto components manufacturers like Bosch, Visteon, Meritor just to name a few have already did their operational setup in India.
 - Automobile manufacturers and auto component manufacturers have set up International Purchasing Offices (IPOs) in India.
 - Fine-quality components are manufactured in India.
 - India is a global hub for R&D: GM, Daimler Chrysler, Bosch, Suzuki, Johnson Controls etc. All have their research centre in India.

Flaborate



Parts of an automobile

The chassis: The word chassis is basically taken from French language and is basically used as main structure of the vehicle. It consists of all the major units required for the vehicle for motion guidance, smooth running, on any type of surface etc. Body of vehicle and all required components are mounted on the chassis.

Chassis basically includes two major components

- 1. Steel frame forms the major part of chassis.
- 2. In car segment the whole body of car is considered as chassis integral part whereas in most of the commercial vehicle body of the vehicle is not a part of chassis.

The main job of chassis is:

- 1. Carries the vehicle weight along with passenger or goods.
- 2. Should survive with engine and transmission torque also the torque generated during vehicle acceleration and breaking.
- 3. While cornering the vehicle it should also manage centrifugal torque.
- 4. To withstand the bending loads and twisting due to the rise and fall of the front and rear axles.

Frame: Components like gearbox and engine are mounted on frame. It also serves for maintaining motorcycle handling so that the wheel should be in line. Frame also acts as suspension system support.

Seats and accessories: Seat of motorcycle is designed such a way that rider and one more person can seat comfortably. It can be removed very easily from the body and located at the back of fuel tank. In few motorcycles it also provides a small compartment underside used a cargo compartment.

Engine: Engine is heart of an automobile. It converts the Chemical Energy (heat energy) to Mechanical Energy. Engines are divided into Internal Combustion (IC) OR external combustion engines. In internal-combustion (IC) engines, fuel is getting burned internally, or inside the engines. IC engine can be classified n two categories: reciprocating engine and rotary engine. Reciprocating engines may further be classified as two stroke and four stroke engines.

Transmission system: Transmission system is one of the important systems in motor vehicle. The job of a transmission system is to supply output of engine to the drive wheels. Transmission is helping to reduce the higher engine speed to give slower speed to wheel thus the torque is getting increased in this process.

Clutch assembly: The devices having two rotating shaft generally need a clutch for either locking both the shafts or decouple the shafts. Job of a clutch is to connect both the shafts either for locking together so that they can spin at the same speed or decoupled to spin at different speed.

Gear box (Transmission case) assembly: We need different gear ratios in the gear box or transmission system to enable the vehicle move in different speed. At the time of starting the vehicle, maximum amount of torque is required as compared to the available on the fly wheel, for which low gear has to be selected for the movement of the vehicle. As the vehicle speed increases the amount of torque required is reduced and it is required to select higher gear.

Front and rear axle: Front axle is usually a drop forging of steel. Job of an axel is to manage bending load as well as torque load which come when we apply brakes on wheel. Due to this cause front axle is placed in the central position as I-section.

The functions of rear axle are as follows:

- 1. It bears the weight of vehicle body and load due to occupants through springs.
- 2. It enables to transmit driving and breaking torque to the chassis frame and body of the vehicle.
- 3. It also experience the side thrust or pull due to any side load on the wheel.
- 4. It supports the bevel pinion, bevel gear, cage of sun gear and star pinions, axle shafts and different support bearings.
- 5. Rear road wheels are mounted on the axle shaft.
- 6. The differential mechanism enables to move outer wheel faster than the inner wheel while taking a turn.
- 7. It helps in achieving the self-straightening effect.
- 8. It converts steering wheel circular movement into an angular turn of the front wheel.
- 9. It multiplies the effort of the driver by leverage in order to make it fairly easy to turn the wheels.
- 10. It prevents the road shocks to pass on driver hands by absorbing the road shocks.

Steering system

Steering is used to rotate the front wheels of vehicle by using hand operated steering handle. It is positioned in front side of the rider. It contains steering column and universal joint which helps in turning vehicle from a straight line.

Functions of steering system

- 1. Helps in moving front wheel left to right or vice versa.
- 2. Turn the vehicle as per driver will.
- 3. Provides directional consistency.
- 4. Maintaining tyres wear and tear
- 5. It helps in achieving the self-straightening effect.
- 6. It converts steering wheel circular movement into an angular turn of the front wheel.
- 7. Multiples driver effort for a fairly easy turning of wheels
- 8. Prevent transmitting major part of the road shocks on driver's hand

Suspension system

Suspension is basically a terminology refers to springs, shock absorbers and linkage of these used to connect the vehicle with its wheels.

Functions of a suspension system

1. Provides comfort

- 2. Offer cushion effect to rider
- 3. Strain on the frame which comes due to road shock is reduced
- 4. Body level is maintained and prevents it from progressing
- 5. Maintain the tyres contact with road by providing good road holding
- 6. Driving torque transfer to the wheel and also breaking forces to chassis

Wheel and tyre

Wheels form an important component of any vehicle. Wheel is assembly hub, disc or spokes, rim, tyre and tube. It supports the vehicle weight and also protects the vehicle from the shocks.

Functions of the wheel

- 1. Strong enough to hold the vehicle weight
- 2. Flexible enough so that it can absorb road shocks
- 3. Able to grip the road surface.
- 4. Perfectly balanced dynamically and statically.
- 5. Light and easily removable.

Rim

RIM is a metallic component of the vehicle which is used to hold the tyre and tube. On the wheels outer circular design inside edge of the tyre is mounted on vehicle.

Different types of wheel rims

- Disc wheel rim
- Wheel rim (used in motor cycle, bicycle)
- Split wheel rim (used in scooter)
- Heavy vehicle wheel rim (available in three piece and four piece including locking ring.
- Wire spoke

Function of tyre

- 1. Carry the load of the vehicle
- 2. Absorb the small road shocks
- 3. Reduce the vibration to some extent.
- 4. Transmit the engine power through gearbox propeller shaft and rear axle to the ground with which the vehicle moves.
- 5. The treads made on the tyres grip the road for better traction.

Brake

Both the front and rear wheel of a motorcycle have a brake. Front brake is activated using a hand lever on the right grip where as the rear brake is applied with the right foot pedal. Disc brakes contain a disc made up of steel and connected to the wheel and sandwiched between brake pads. Disc brakes are operated through hydraulic pressure. When the rider apply brake, pads grasps against the disc on both side due to hydraulic pressure which result in friction between the disc and attached wheel to slow down or stop the bike.

Brakes are also known as control system of vehicle. It is one of the most import components of vehicle. It is used to stop or slow down the vehicle as and when required in a smaller distance.

Functions of brakes

- 1. Stopping or slowing down the vehicle in shortest distance during emergency
- 2. To control the vehicle speed while moving on plain roads and hills.

Explain



General automotive terminologies

- Top Dead Centre (T.D.C): Extreme position of the piston at the top of the cylinder is referred as TDC.
- Bottom Dead Centre (B.D.C): During the piston's lowest position further most position from the cylinder head, position of crankshaft is referred as BDC.
- Bore: Engine cylinder diameter is called as bore.
- Stroke: When the piston moves from TDC to BDC, the distance travelled by piston is referred to stroke
- Clearance Volume: Volume available above the piston, with the piston in top most position is referred as 'clearance volume' (Vc).
- Piston Displacement: The volume covered by piston while moving from TDC to BDC is called piston displacement; It is also referred as swept volume.
- Engine Capacity: It is the total displacement of piston of all the cylinders Swept volume
- Compression Ratio: The degree to which the charge in the engine is compressed is indicated by compression ratio. The calculation of compression ratio is based on volume above the pistons at BDC to the volume.
- Above the piston at T.D.C. If 'y' is the compression ratio, then Y = Vs is swept volume of one cylinder, Vc is clearance volume
- For petrol engines, compression ratios are about 8 to 9.5:1, whereas for diesel engines, these vary from 16 to 22.
- Power: It is the work done in a given period of time. Doing the same amount of work in a lesser time would require more power.

- Horse Power (H.P.): This is the amount of energy required to do 4500kgm. of work in one minute.
- Indicated Horse Power (I.H.P): The power developed within the engine cylinders is called indicated horse power. This is calculated from the area of the engine indicator diagram.
- Brake Horse Power (B.H.P): This is the actual power delivered at the crankshaft. It is obtained by deducting various power losses in the engine from the indicated horse power.
- Friction Horse Power (F.H.P.): This is the power lost due to friction present between different matching components.

F.H.P = I.H.P - B.H.P

Important terms related to an engine

- Torque- Is the turning force required to turn or twist any object. Torque is measured in Nm (Newton meter).
- Torque = Force x Radial Distance
- Engine Torque- It is the turning or twisting force developed by engine at the crankshaft.
- It is expressed in Newton meter (Nm).

Ask



- Ask about various components of an automobile
- Ask about their understanding for the functioning of all components

Do



- Show them all the components of automobile in workshop.
- Give them some brief about the working of all components of automobile with a demo.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.3: Components of an Automobile

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, demo automobile components etc.



- Ask about various components of an automobile
- Ask about basic functioning of components

Flaborate



Engine:

- Function of the engine is to produce power
- The entire process of burning the fuel and generating power in the engine is completed in 4 steps or 4 strokes which gives it a name of 4-stroke engine
- Travel of piston from TDC to BDC or from BDC to TDC is called stroke.

Transmission (Gear box):

- It exchanges engine power with higher torque and thus provides a mechanical advantage to drive the vehicle under different conditions.
- It exchanges forward motion for reverse motion.
- It provides a neutral position to prevent flow of power to the rest of power train.

Clutch: The mechanism through which rotary motion of one shaft is transmitted to another device as and when desired to transfer the torque.

Steering system:

- · Steering system is an important mechanism in vehicle and is used by driver to have direction control on the vehicle.
- This is achieved by turning the front wheels in desired direction by the driver.

Brake system:

· To reduce vehicle speed quickly while driving

- To stop vehicle when needed
- To hold the wheels on slopes
- Brake system consists of various components like mechanical, hydraulic and electronic

Suspension system:

- Suspension system includes various components such as combination of springs, shock absorbers and linkages, which connects a vehicle body to its wheels.
- Suspension system improves vehicle stability by providing better vehicle weight distribution and traction of wheels with road surface.

Air cooling system: For the propulsion of vehicle, engines produce controlled explosions as the fuel is ignited by spark plugs. Enormous amount of heat is produced by these explosions, if these explosions are not under control, the engine may get damaged within a matter of minutes. Hence these high temperatures and explosions are controlled by a cooling system.

Do



- Show them chart of automobile components.
- Ask them to identify the component you called and give some brief about its functioning.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.4: Tool and Equipment

Resources to be Used



 Available objects like marker, duster, whiteboard, participant manual, demo automobile components etc.

Say



- During servicing and inspection of material various types of tools and equipments required. In this session we learn about those of tools and equipments.
- Proper handling and operation of tool is very important, otherwise this can be dangerous for you and others also.

Elaborate



Hand tools

- **Ball-Peen hammers:** The ball peen hammer is a type of peening hammer having 2 ends. Shape of the first end is like an ordinary hammer head while the other is ball shaped. It has a handle that is like that of a regular hammer and the material can vary, which includes wood, metal or fibreglass. It is the tool that is utilized to form the general shape of the material in metal fabrication. It is also used for hitting chisels and punches.
- Chisels: This tool is having a typical shaped cutting of blade at one end used for carving or hard
 material cutting like wood, stone or even metal using hand and further struck with a mallet or
 mechanical power.
- Punches: There are two distinct types of punches either hollow or solid one. Hollow punches
 are manly used puncturing surface to create a hole of metal sheet or leather. Shape and size of
 working edge can vary and depends on the hole required and the material being pierced.
- Drill: It is a tool which is getting attached with cutting tool or driving tool. It is basically used for boring holes in various types of materials or also in fastening various materials by the use of fasteners using a drill bit or drive bit.
- For safe drilling of such material bench drill is bolted down. There are also some larger versions of drill called pillar drill having longer column which help them to stand on the floor. It functions the same as the bench drill but can drill larger pieces of material.

- Drill-Bits: Drill bits are cutting tools used to remove material to create holes, almost always
 of circular cross-section. Drill bits are available in various shapes which can be used to create
 different types of hole in various types of materials. For making a hole, drill bits has to be
 attached with drill machine.
- **Hand-Sledge:** In this type of tool a large flat metal head is attached to a handle which is also called lever. The advantage of sledge hammer is that its head size applies more force compare to other hammer of same size.
- Hacksaw: A hacksaw is a metal-framed saw used primarily for cutting plastic and metal pipes and other small household materials. It is basically a U shaped bended frame which can hold a thin wide metallic blade between its clip having a handle at one end made up of plastic or wood. As per the requirement of cut the metallic blades will have varied number of teeth per inches like 14, 18, 24 or 32. For cutting smaller objects dense teeth will be required. There are two types of hacksaw blades namely high carbon steel blades and high speed steel blades used for various types of cutting job.
- Impact-Wrench: Impact wrench is also called by various names such as impact gun, air gun, rattle gun, torque gun etc. Impact wrench is a socket wrench power tool used to deliver high output torque with minimum effort by user as it stores the energy in rotating mass and deliver it suddenly to the output shaft.
- Threader-Kit: Threader-kit has a number of threading tools. It is use to threading the bolt. This may realign the threads so that the bolt can be threaded in place. A thread chaser is essentially a slightly undersized tap that will clean threads without removing any metal. When thread damage is too severe to be saved with a thread chaser, you can completely restore the threads with new coil-type thread inserts.
- **Pliers:** The primary purpose of the tool known as pliers is to grip objects firmly. The objects can then be turned, bent, or otherwise manipulated. Pliers have parallel handles, a pivot where the handles join, and parallel jaws that grasp the object. Special-use pliers may have additional components and purposes, such as cutting pliers.
- Wrenches: The objective of a wrench is to tighten or loosen bolt or nut. Based on fastener's design and size, appropriate wrench needs to be selected. It can also depend on how difficult the fastener is to reach. Different types of wrenches are available: Box end, Open end, Combination, Adjustable, Socket and Allen.
- **Screwdriver:** Screwdriver is manly used for tightening or losing screws by inserting it into the screw head. It helps in amplifying user's hand motion to its tip. There are various types of screwdriver tips based on specific requirement out which two most common head of screwdriver are straight or minus one and x shaped which is also called start tip. Handle of screwdriver made up of either plastic or wooden.
- **Socket-Set:** Socket set is having a number of different size detachable sockets used with socket wrench. It is basically a type of wrench having facility to attach a required size of socket at the

- end to turn a fastener. The most common type of socket wrench is ratcheting socket wrench which is also called ratchet.
- **Soldering-Iron:** Soldering iron is a handheld tool used for soldering purpose. It melts the solder by applying heat so that solder can flow in-between joints of two work piece so that it can be joined. A soldering iron consists of metal tip having heating facility and insulated handle. Metal tip heating is done by the use of electric current which is supplied using and electric cable through the heating element.
- **Torque-Wrench:** It is a tool which is used to exactly apply specific torque to a fastener like nut or bolts. Basically it is a socket wrench having special internal mechanism.
- **Rubber-Mallet:** Rubber mallets are much lighter and cheaper than metal mallets and are much safer to use. A rubber mallet is the basically used to produce the effect of hitting on another object.
- Reamers: It is a type of rotating cutting tool used in metal work. It is designed to enlarge preexisting hole dimension or further deepening by a small amount but with very high level of
 accuracy. Various types of reamers are available based on material used, style of flute styles
 and size.
- **Soldering gun:** Soldering gun is tool which work on electricity. It is used for metal soldering by using tin-based material so that strong mechanical bond with good electrical contact can be achieved.
- **Vise:** A vise or vice is a apparatus used to hold an object so that required work can be carried out on object. Vice consists of parallel jaws. One of the jaws is fixed on the structure whereas another one is movable having a liver to move the jaws.
- Extension bar-set: It has number of bars in sets. Use extension bars to prevent over-tightening of lug nuts, distortion of wheels, drums and rotors. It helps to reach the bolt that are out of reach, so it make easier for mechanic to take off the part deep in engine bay.

Measuring Tools

- **Micrometers:** Micrometer is used to measure block thickness, depth of slot, inner and outer diameter of shaft with high level of accuracy.
- Calipers: Caliper is used to measure the distance between two opposite sides of an object. It is
 as simple as compass with inward and outward facing points.
- **Dividers:** Divider is used to measure distance particularly in maps. It is very similar to drawing compass except that compass is having one metallic point and one pencils where as divider is having two metallic points.
- **Dial indicator:** Dial indicator is mainly used in monitoring the readings as it helps in displaying small measurement changes in amplified form. The gradations measured with a dial indicator are small, typically 0.001 inch to 0.100 inch (0.01 mm).

Dial indicator helps in checking the difference in tolerance thus very helpful in the process of inspection of mechanical part, measuring beam deflection or also in various other situations where a small measurement needs to be recorded. It can measure ranges from 0.25mm to 300mm with graduations of 0.001mm to 0.01mm or 0.0005 inch to 0.001 inch.

- **Dial calipers:** Dial calipers can be used for four different types of measurement namely outside, inside, depth and step measurement. It is having large black numbers which is easy to read and can be adjusted from zero or immediate settings with thumb screw to lock the precise settings.
- Exhaust-Gas-analyzer: Vehicle's exhaust is having various chemicals and to measure the amount of chemical exhaust gas analyzer is use. To measure the fuel-air ratio of the fuel mixture of an engine a carbon dioxide sensitive element device is placed in the exhaust manifold.
- **Scan-Tool:** Scan tool used in automotive is often called as scanner. This is basically an electronic tool which can be interfaced with vehicle for diagnostic purpose. It also helps to reprogram control module of vehicle.
- Oscilloscope: The oscilloscope helps us find the problem quicker and easier. It shows the electrical activity in the vehicles ignition system and other electrical systems.
- Feeler-gauge: A feeler gauge is a tool used to measure gap widths. Feeler gauges are mostly
 used to measure the clearance between two parts. They consist of a number of small lengths
 of steel of different thicknesses with measurements marked on each piece.
- **Gauge:** Gauge is a measuring tool used for measurement to display certain information like time. Based on the use of gauge it can be generally defined as a physical quantity measuring device for like thickness, space gap, material diameter or flow pressure.
- **Test light:** Test light is electronic test equipment also known as test lamp, voltage tester. It is used to check the alternating current in a piece of equipment under test condition.
- Voltmeter: Voltmeter is used to measure potential difference or voltage between two points
 in either electrical or electronic circuit. It is often called voltage meter. There are two types of
 voltmeter i.e. analog and digital. A voltmeter in a circuit diagram is represented by the letter V
 in a circle.
- Multimeter: Multimeter is also called as multi tester. It is equipped with the facility of
 measuring several functions within one unit. It is used to measure current, voltage both type
 AC and DC and resistance with high degree of accuracy and mainly used for fault finding during
 maintenance and service process.
- **Tachometer:** Tachometer is a measuring tool used to measure rotation speed of instrument shaft or disk in a motor or other such machine.



- Show the tools and measuring instruments to the students.
- Demonstrate the use of tools and measuring instruments.
- Explain the use of tools and measuring instruments.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Using had tools and measuring instrument	2 hour	All hand tools and measuring instruments



- Ask them to get into pairs for practice.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5: Engine Basic

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, demo engine etc.



- An engine is a most important mechanical device used in automobiles.
- All automobile engines are internal combustion engines. These are classified mainly according to:
 - o Arrangement of Cylinders
 - o Type of fuel used
 - o Number of Strokes per cycle (Two Stroke & Four stroke)
 - o Number of Cylinders
 - Method of Ignition (Spark Ignition (SI) & Compression Ignition (CI)

Elaborate



Checking battery voltage using multi-meter:

A multimeter is a measuring instrument used to measure AC and DC current, Voltage, Resistance in a single unit. It is also called as volt meter. There are two types of multimeter digital multimeter and analog multimeter. The beauty of multimeter is providing several measurement functions.

Initial multi meter adjustment: Rotate the knob in the multi-meter to voltage position this indicates that we are going to measure voltage

Connecting terminals: Connect positive terminal of voltmeter i.e. colored red to positive side of battery and negative terminal i.e. colored black to negative side of battery

Readings: Note down the readings from the multi-meter

Checking battery charge level using hydrometer: A hydrometer is basically a device used for measuring liquid specific gravity. It is basically the ratio of the density of the liquid to the density of water.

Demonstrate



Checking Battery Charge Level



- STEP 1. Wear safety glasses
- STEP 2. Remove vents caps of all the battery cells

Checking electrolyte specific gravity

- STEP 1. Once the vents caps are removed squeeze the hydrometer bulb
- STEP 2. Insert the tube into cell then slowly release the bulb to allow the
- STEP 3. Do not remove the hydrometer from the cell and ensure that float is electrolyte flow in to hydrometer and float to move up free without touching the side walls.

Readings

- STEP 1. Take the reading of electrolyte specific gravity on the float.
- STEP 2. Repeat this for remaining cells

Battery Charging Process



Initial setup

- STEP 1. Remove the battery from the vehicle before charging.
- STEP 2. Clean dirt and corrosion from the terminals
- STEP 3. Check electrolyte level and add distilled water if needed
- STEP 4. Charge the batteries in a ventilated area

Safety Precautions

- STEP 1. Wear safety glasses, shoes, rubber gloves and apron
- STEP 2. Do not smoke and keep sparks or flames away from the battery
- STEP 3. Do not mix batteries

Charging

- STEP 1. Remove the vent caps, connect the batteries and switch ON the charger
- STEP 2. Preferably charge the battery at slow rate
- STEP 3. Intermittently check specific gravity during charging, stop charging when specific gravity reaches full charge state
- STEP 4. Intermittently check battery temperature by touching the battery during charging.
- STEP 5. If battery becomes hot, stop charging and let it cool before resuming charging

Ask



- Ask about battery and its function
- Ask about process of charging a battery

- Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Charging a battery	1 hour	Battery and battery charger

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.1: Function of Engine

Say



- The entire process of burning the fuel and generating power in the engine is completed in 4 steps or 4 strokes which gives it a name of 4-stroke engine.
- Piston travel from top dead centre to bottom dead centre or bottom dead centre to top dead centre is called stroke.
- Four stroke petrol engine is an example of internal combustion engine in which the piston completes four separate strokes namely
 - o Suction/Intake stroke
 - o Compression stroke
 - o Power/Expansion stroke
 - o Exhaust stroke

Elaborate



Suction/Intake stroke:

- Air and fuel mixture enters the cylinder.
- The intake valve is open and exhaust valve is closed.

Compression stroke:

- In this stroke the air and fuel mixture in the cylinder is compressed.
- During this stroke both inlet and outlet valves are closed.

Power/Expansion stroke:

- Sparkplug generates a spark which causes the air-fuel mixture to combust.
- During this stroke both the inlet and outlet valve are closed.

Exhaust stroke:

- Burnt gases are then pushed out from the cylinder.
- During this stroke inlet valve is closed and outlet valve is open.

Four stroke diesel engine is an example of internal combustion engine in which the piston completes:

- Suction/Intake stroke
- Compression stroke

- Power/Expansion stroke
- Exhaust stroke

Suction/Intake stroke:

- Only air enters the cylinder.
- The intake valve is open and exhaust valve is closed.

Compression stroke:

- Air is compressed in compression stroke resulting of increased temperature and pressure.
- During this stroke both the inlet and outlet valves are closed.

Power/Expansion stroke:

- Diesel is injected which ignites due to high pressure and high temperature.
- During this stroke both the inlet and outlet valves are closed.

Exhaust stroke:

- Burnt gases are then pushed out from the cylinder.
- During this stroke inlet valve is closed and outlet valve is open.

Ask



- Ask about 4 stroke engine
- Ask about 4 strokes of 4 stroke engine



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5: Engine Basic

Resources to be Used



Available objects such as a duster, pen, notebook, engine, engine accessories and tools etc.

Demonstrate



Engine dismantling



- STEP 1. Drain the oil
- STEP 2. Remove Subassemblies like generator, starter motor, oil filter and engine flywheel.
- STEP 3. Remove Cylinder head cover, rocker-shaft assembly and push rods.
- **STEP 4**. Remove manifolds.
- STEP 5. Pull off high pressure fuel lines (In diesel engines).
- STEP 6. Remove all studs in the cylinder block cylinder head.
- STEP 7. Place the engine in upside down position
- **STEP 8.** Remove oil sump
- STEP 9. Remove oil strainer and oil pump.
- STEP 10. Remove connecting rod caps and take is out from their place.
- STEP 11. Remove pistons and connecting rods from topside of cylinder bore.

Engine assembly

- STEP 1. Clean all the mating faces and reusable parts thoroughly and check them for damage.
- STEP 2. Fit the crankshaft
- STEP 3. Install the pistons and lubricate
- STEP 4. Fit the bearing caps
- STEP 5. Install the crankshaft pilot bearing
- STEP 6. Install the rear oil seal housing
- STEP 7. Align the oil seal housing
- STEP 8. Fit the crankshaft rear oil seal

STEP 9. Fit the crankshaft oil seal housing **STEP 10**. Fit the oil baffle STEP 11. Fit the oil strainer **STEP 12**. Apply sealing compound to the cylinder block on the flywheel side. STEP 13. Fit the sump using a new gasket STEP 14. Align the sump STEP 15. Fit the flywheel STEP 16. Centre the clutch disc on the pressure plate **STEP 17**. Fit the clutch assembly STEP 18. Clean and reassemble the oil pump STEP 19. Fit the oil pump using a new gasket STEP 20. Fit the cylinder head STEP 21. Tighten the cylinder head bolts STEP 22. Tighten the auxiliary cylinder head bolts STEP 23. Install the camshafts **STEP 24**. Fit the timing chain STEP 25. Install the oil pump assembly STEP 26. Fit the lower timing chain cover STEP 27. Fit the crankshaft vibration damper STEP 28. Fit the cylinder head cover with a new gasket STEP 29. Attach the engine mounting bracket STEP 30. Fit the oil filter STEP 31. Fit the alternator and bracket STEP 32. Fit the inlet manifold bracket STEP 33. Fit the EGR system (if available) STEP 34. Install the brackets for the air conditioning compressor and the exhaust (If applicable) STEP 35. Detach the engine from the assembly stand

STEP 36. Attach the engine mounting bracket with the engine mounting.

STEP 37. Finally fill up with engine oil



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Assembly of vehicle engine	3 hour	Engine, accessories and tools



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.3: Engine and Air Induction System

Say



- Atmospheric air contains oxygen content in it and since oxygen facilitates burning it needs to be supplied to the engine cylinder. The channel through air or air/fuel mixture enters the engine cylinder is called the air induction system.
- It consists of various components mechanical/electrical to measure and control the quantity and quality of the air entering the engine cylinder, each component has it unique way of operation.

Elaborate



Intake system fundamentals:

Engine is contaminated by these two sources:

- Contaminants generated internally
- · Entry of dirt through air intake system

Generally following types of filters are used

- Dry paper filter It is manufactured from pleated paper
- Oil wetted polyurethane

Air filters are rated for - Efficiency, flow, and capacity

Mainfolds:

Engine breathing system is suing two types of manifolds

- Intake manifold
- Exhaust manifold

It is designed to provide consistent air and fuel mixture to cylinders and must have proper size and design.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- · Answer their queries satisfactorily.

2.3.5.4: Engine Compression Pressure Checking

Say



A compression gauge or compression tester is a tool inserted into the spark plug hole on an engine
while the flywheel is rotated. This will result in a pressure reading that can be used to judge the condition of a cylinder, piston, and rings.











- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.5: Compression Test

Resources to be Used



Available objects such as a duster, pen, notebook, engine, engine oil, pressure gauge etc.

Demonstrate



Compression test



- **STEP 1**. Switch on ignition key & start the engine.
- STEP 2. Ensure the engine temperature should be 60° C & then switch off the ignition key.
- STEP 3. Disconnect the left hand side 'spark plug cap' & remove the spark plug. Also disconnect spark plug cap from right hand side spark plug. Confirm ignition switch is in 'OFF' condition.
- STEP 4. Thread in adaptor and fix compression pressure gauge in cylinder head plug hole for left hand side spark plug.
- STEP 5. Give full throttle & apply 5 to 6 sharp kicks.
- STEP 6. In case of vehicle is without kick, press self start button 5 to 6 times.
- **STEP 7**. Note the engine compression pressure reading on the pressure gauge.
- STEP 8. To compare the compression pressure refer vehicle specification chart.
- STEP 9. If engine compression pressure reading in dry compression test is less than specified, carry-out 'wet compression test'.
- STEP 10. In wet compression test, pour few drops of engine oil through plug hole in cylinder head.
- STEP 11. Give full throttle & apply 5 to 6 sharp kicks. In case of vehicle without kick, press self start button 5 to 6 times.
- STEP 12. Note the engine compression pressure reading on the pressure gauge.
- STEP 13. If wet compression pressure reading is considerably greater than dry compression pressure reading, this means the problem area is block piston.
- STEP 14. If wet compression pressure reading is same as dry compression pressure reading, this means the problem area is cylinder head.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Compression test	2 hour	Engine, engine oil, pressure gauge



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.6: Engine Evaporative Emission Control System

Resources to be Used



Available objects such as a duster, pen, notebook etc.

Say



- The Evaporative Emission Control System (EVAP) is basically designed such a way that from fuel tank or fuel system gasoline vapours can be prevented from escaping into atmosphere.
- The EVAP helps in preventing fuel vapour production in sealed tank.
- There are four types of Evaporative Emission (EVAP) systems:
 - o The Evaporative Emission (EVAP) Purge Flow system.
 - o The Vapour Management Flow system.
 - o The Evaporative Emission (EVAP) Running Loss system.
 - o The On-Board Refuelling Vapour Recovery (ORVR)

Elaborate



How the evaporative emission control system works?

Sealing a fuel tank is never been a good solution as it does not sound to be applicable. Fuel tank should have venting facility to fill the gap of oil by air as fuel pump suck the fuel and send it to engine for combustion. If we seal the tank tightly negative suction pressure inside the tank will be created by fuel pump which may lead collapse of tank. Some EVAP systems are using spring-loaded valve inside the gas cap to vent the tank.

Components of evaporative emission control system are:

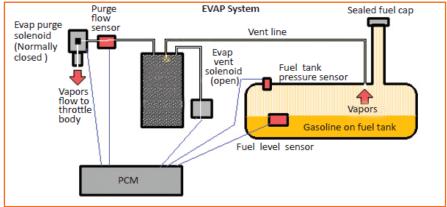


Fig: 2.3.1: Components of the EVAP System



- Show Evaporative Emission Control System
- Show components of Evaporative Emission Control System
- Explain functioning of components of Evaporative Emission Control System



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.7: Engine Oil & Oil Filter Replacement

Resources to be Used



• Available objects such as a duster, pen, notebook, engine etc.

Elaborate



To operate the vehicle in proper and safe condition oil must be periodically replaced at regular intervals.

Periodic maintenance results in following benefits:

- Safe operation of the vehicle with minimum breakdowns.
- Better performance vehicle such as power and fuel efficiency.
- Longer life of vehicle parts.
- Overall lesser maintenance and ownership cost.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.8: Engine Oil Replacement Process

Resources to be Used



Available objects such as a duster, pen, notebook, engine, engine oil etc.

Demonstrate



Engine oil replacement



- STEP 1. Ensure vehicle is thoroughly clean
- STEP 2. Ensure the engine is in warm condition before opening engine oil drain bolt
- STEP 3. Drain engine oil in a clean container
- STEP 4. Measure the quantity of drained oil.
- STEP 5. It is important to measure oil quantity after draining. This is important to understand the oil consumption pattern
- STEP 6. Inspect oil quality.
- STEP 7. Clean ferrous burr accumulated on the tip of magnetic drain plug and then refit
- **STEP 8**. Tighten drain plug to recommended torque by torque wrench.
- STEP 9. During the interval- from one oil change to the next oil change, engine oil consumption quantity should not be more than 50 ml. per 1000 Kms. If oil drop is more check for external oil leakage, smoky exhaust & piston ring wear.
- **STEP 10**. Clean oil strainer as per SOP before filling new engine oil.
- STEP 11. Replace paper oil filter(if applicable) by new one before filling new engine oil.
- STEP 12. Clean centrifugal oil filter wherever applicable
- STEP 13. Use genuine oil only as recommended by OEM
- STEP 14. Ensure oil filler cap 'O' ring is in good condition
- STEP 15. Ensure oil filler cap is fully tight.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Engine oil replacement	2 hour	Engine, engine oil, tools



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.9: Fuel Supply Components

Resources to be Used



• Available objects such as a duster, pen, notebook, demo fuel system etc.

Say



- Atmospheric air contains oxygen content in it and since oxygen facilitates burning it needs to be supplied to the engine cylinder. The channel through air or air/fuel mixture enters the engine cylinder is called the air induction system.
- It consists of various components mechanical/electrical to measure and control the quantity and quality of the air entering the engine cylinder.
- There are different types of fuel systems utilized i.e. gravity system, pressure system, vacuum system, pump system, fuel injection system etc.

Elaborate



Types of Fuel Supply System:

- **Gravity System:** In this system fuel flow into carburettor float chamber due to gravity because fuel tank is usually mounted at the highest position. This most simple and cost effective system.
- Pressure System: In the pressure system, a hermitically sealed fuel tank is used. Pressure is
 created in the tank by means of engine exhaust or a separate air pump. For starting, the pump
 is primed by hand. There are chances of pressure leak, but, the advantage lies in the fact the
 fuel tank can be placed at any suitable location
- Vacuum System: This system is based upon the simple fact that the engine suction can be used
 for sucking fuel from the main tank to the auxiliary fuel tank from where it flows by gravity to
 the carburettor float chamber.
- Pump System: This system is using steel pipe to carry petrol to the fuel pump. It pumps the fuel
 into the float chamber of the carburettor through a flexible pipe. There are two types of fuel
 pump mechanically operated and electrically operated.
- **Fuel Injection System:** Latest petrol engine (MPFI engines) vehicle is using petrol injection system. In this system carburettor is out of picture as we do not use it. The fuel delivered into an air stream using nozzle. Each cylinder is using separate fuel injection system which controls the mixture under different load and speed conditions.

Engine Valve Timing & Valve Clearance:

In all four stroke engine and few two stroke engine timing of valve is controlled by the camshaft. Modifying the camshaft usually modify the timing. During engine operation due to variable valve timing it also get varied. It is also like to be affected by the valve mechanism adjustment, and particularly by the tappet clearance.

To measure the gap width we need a tool called feeler gauge. To measure the clearance between two parts we usually use feeler gauge.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.10: Valve Clearance & Timing

Resources to be Used



• Available objects such as a duster, pen, notebook, feeler gauge etc.

Demonstrate 🔄



Valve Clearance



- **STEP 1**. Do Valve Clearance setting at engine cold condition.
- STEP 2. Open the generator cover & cylinder head cover.
 - a. Ensure piston is at TDC position by aligning marking of rotor & crankcase.
 - b. Ensure cam sprocket horizontal line marks should align with cylinder head surface
- STEP 3. Caution: Timing chain sprocket should be rotated in clockwise direction only.
- STEP 4. With help of filler gauge check valve clearance inlet / exhaust & adjust as per recommended specification
- STEP 5. Filler gauge should have a mild resistance when being slide out after setting the valve clearance.
- STEP 6. With help of special tool ensure proper locking of check nut of rocker arm screw.
- **STEP 7**. Complete two rotation of engine & recheck the valve clearance.
- STEP 8. Refit generator cover & cylinder head cover.

Valve timing



- **STEP 1.** Rotate the crank shaft.
- **STEP 2.** Bring the piston no one to TDC.
- **STEP 3**. Rotate the cam shaft with the sprocket.
- STEP 4. Install the chain on the crank shaft sprocket.
- STEP 5. Fix the camshaft sprocket, along with the chain on the camshaft, align the bolt holes or dowel.
- **STEP 6.** Check and align the timing marks on the sprocket.
- **STEP 7.** Recheck the alignment of the timing marks by rotation.
- **STEP 8**. Carry out a valve timing check, if necessary.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Checking valve clearance and valve timing	2 hour	Feeler gauge, vehicle, tools



- Divide them into pairs
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.11: Engine Lubrication System

Resources to be Used



Available objects such as a duster, pen, notebook etc.

Say



- An Automobile engine operates at very high speed and hence generated high heat. Also metal to metal contact generates friction.
- In order to reduce friction and temperature, a lubrication system is used in automobiles.
- A lubrication has following components i.e. oil pump, oil pan, oil filter, oil pressure switch etc.

Elaborate



Purpose of lubrication system

- Lubricate- friction is reduced as it creates a thin film in-between moving parts.
- Seals- A gastight seal in-between piston rings and cylinder walls is formed by the oil. In case the
 oil is leaked inside, we will observe a blue smoke at the exhaust pipe.
- Cleans- As the oil get circulated throughout inside the engine it pickup tiny metal substances and carbon particle and bring them back to the oil pan.
- Cools While moving inside the engine it also picks up the heat and further drop it into the cooler oil pan thus helping in reducing heat.
- Absorbs shock- During the heavy load which is imposed on the bearing it helps in cushioning the load also.
- Absorbs Contaminants Oil additive feature help in contaminants absorption which might enter in the lubrication system.

Components of lubrication system

- **Oil pumps** It is basically driven by engine camshaft and crankshaft.
- Oil pan- It is used for storing oil in the vehicle and also helps in oil cooling process.
- Oil filter cutaway

- Positive crankcase ventilation valve- It prevents pollution and sludge in the engine.
- **Oil pressure switch** It sends the signal electrically to light indicator or gauge mounted on the dashboard of vehicle.

Do



- Show the vehicle lubrication system.
- Show the components of lubrication system.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.12: Air Filter Element Cleaning

Resources to be Used



Available objects such as a duster, pen, notebook, air filter element, cleaning equipments etc.

Demonstrate



Air Filter Element Cleaning (Foam)



- **STEP 1**. Dip the foam in kerosene available in the first pot of the 'Air Filter Stand'. Then squeeze the foam to remove excess kerosene/Diesel & dirt.
- STEP 2. Further clean the foam by dipping it into clean kerosene/Diesel available in the second pot of the 'Air Filter Stand'. Again squeeze it. Apply low pressure (less than 2 bar) air on foam to dry it.
- **STEP 1.** Never use petrol for cleaning air filter foam.
- STEP 1. Dip the foam completely in the third pot of the air filter stand that contains engine oil. Allow the oil to soak into the foam and then take out the foam.
- STEP 1. Squeeze foam completely to take out excess oil.
- STEP 1. Use dry lint free cotton cloth to remove excess oil. Do not twist the air filter foam as this may lead to tear or bulge.
- STEP 1. Replace Diesel / Kerosene / Engine oil of air filter stand after 25 filter cleaning.

Air Filter Element Cleaning (Paper Type)



- STEP 1. Use filtered compressed air of pressure less than 2 bar. Position air gun straight at 90 Deg. angle & 50 mm away from paper filter. Move the air gun along the fold line.
- STEP 2. Positions air gun at 45 Deg. angle & 50 mm away from paper filter. Slightly twist the paper filter. Move the air gun along the fold line.
- STEP 3. Keep air gun straight at 90 Deg. angle & 50 mm away from paper filter. Blow off remaining dust by moving air gun along the fold line.

Engine Air Breather Tube Replacement



- STEP 1. Press the clamp & disconnect the 'engine breather tube' from crankcase & 'Air Filter Box'.
- STEP 2. Check the breather tube for any cracks & damage, if found replace. Refit the breather tube & its clamps properly.



- Cracked or damaged 'engine breather tube' would cause dust entry inside engine leading to failure of vital engine components such as 'Cylinder Piston Assembly' & Crankshaft.
- Ensure proper routing of Engine Breather Tube. Twisted or folded breather tube would cause oil leakage, smoky exhaust & engine oil high consumption.
- Inspect the engine breather tube at every 5000 Km. If the breather tube is damaged or cracked replace with a new breather tube.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Cleaning of air filter element	2 hour	Kerosene, foam, breather tube, air filter element



- Divide them into four equal groups
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.13: Engine Cooling System

Resources to be Used



• Available objects such as a duster, pen, notebook, demo engine cooling system etc.



- As our body requires air and water for cooling our system similarly engine also requires cooling.
- The cooling system has following functions:
 - 1. Remove excess heat from the engine.
 - 2. Maintain a consistent operating temperature of engine

Elaborate



Air cooled cooling system

- It is having metal fins on the outer edge of the engine.
- These fins help in transferring heat from engine into atmosphere.

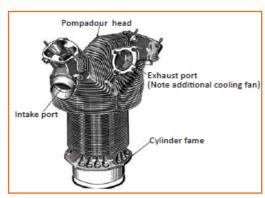


Fig: 2.3.2: Air Cooled Engine



- Show air cooling system to trainees
- Show components of air cooling system to trainees



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.14: Engine Fuel Filter

Resources to be Used



• Available objects such as a duster, pen, notebook, air filter etc.



- It is basically a filter connected in fuel supply line.
- Job of this filter is basically protection from dirt and rust so that it should not enter into the combustion chamber. It is a bundled pack having filter paper inside.
- It plays a vital role because unfiltered fuel may leads to contamination and may create several types of problems. This contamination may be due to paint particle or dirt accumulated into the tank or may be rust due to moister in the steel tank etc.
- As the contamination particle may also get absorbed and lead to failure of precise components of injection system.
- Fuel filters also improve performance, as the fewer contaminants present in the fuel, the more efficiently it can be burnt



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.15: Fuel Cock Process

Resources to be Used



• Available objects such as a duster, pen, notebook, filter paper, fuel system etc.

Demonstrate



Fuel Cock Sediment Bowl Cleaning



- **STEP 1**. Put the petrol cock knob to 'off' position.
- STEP 2. Remove the petrol cock sediment bowl by using a ring spanner.
- STEP 3. Pour out the petrol to remove sludge and sediment from "Petrol cock sediment bowl".
- STEP 4. Remove strainer from petrol cock body.
- STEP 5. Clean the bowl and the strainer with the help of petrol and nylon brush.
- STEP 6. Refit the strainer and the bowl.
- STEP 7. Put fuel cock knob in ON / Res. position & confirm no leakage.

Fuel Cock-paper Filter Element Replacement



- **STEP 1**. Put fuel cock knob in off position
- STEP 2. Remove fuel cock sediment bowl by open end spanner.
- STEP 3. Take out fuel cock sediment bowl.
- STEP 4. Pull out paper filter element with seal from fuel cock body
- STEP 5. Clean sediment bowl thoroughly with low pressure compressed air.
- STEP 6. Replace paper filter element with seal at every 15000 kms.
- **STEP 7**. To avoid cross thread fitment of sediment bowl do pre fitment of sediment bowl by hand & there after tightening by ring spanner.
- STEP 8. Put fuel cock knob in ON / Res. position & confirm no fuel leakage.



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Fuel Cock-paper Filter	I / nour I	Fuel system, paper filter, low pressure
Element Replacement		compressed air.



- Divide them into pairs
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.16: Engine Exhaust System

Resources to be Used



Available objects such as a duster, pen, notebook, demo engine exhaust system etc.



- Functions of Exhaust system
- From the engine burned exhaust gases are carried away
 - Maintain engine noise
 - All modern cars now have one or multiple catalytic converter
- Extreme backpressure Better fuel economy but the performance is reduced
- Exhaust system flow Not severely affected by bends in the pipe
- Mounted to cylinder head's exhaust ports Mainly consist of cast iron or steel
- Exhaust temperature It is basically associated with load factor on engine
- Headers Aftermarket manifolds made of tube steel
 - Sometimes require modification to install

Elaborate



Exhaust pipes

- Usually three steel exhaust pipes Header, exhaust, and intermediate pipe
- Muffler Tubes and chambers smooth vibrations of air
- Resonator Second muffler in line with primary muffler
- Catalytic converters Contain catalysts to reduce engine emissions
- Muffler hangers Support the muffler and pipes



- Show engine exhaust system
- Show components of engine exhaust system



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.17: Carburetor

Resources to be Used



• Available objects such as a duster, pen, notebook, carburetor etc.

Elaborate



In petrol engines, the air and fuel is mixed outside the engine and partly evaporated mixture is supplied to the engine. The fuels such as petrol, benzol and alcohol used in S.I. engine, vaporizes easily if injected in the flow of air, therefore, the engine suction is sufficient to draw the mixture easily in to the cylinder In engine operating conditions, the carburettor must: Measure the airflow of the engine. Deliver the correct amount of fuel to keep the fuel/air mixture in the proper range (adjusting for factors such as temperature).



Fig: 2.3.3: Carburetor



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.5.18: Carburetor Cleaning Process

Resources to be Used



• Available objects such as a duster, pen, notebook, carburetor etc.

Demonstrate



Carburetor Float Chamber Cleaning



- STEP 1. Loosen drain screw and flush out petrol from the "Carburetor bowl".
- STEP 2. Then re-tighten the drain screw.
- STEP 3. Loosen clamps, of rubber duct.
- STEP 4. Remove intake manifold bolts and take out carburetor along with manifold and duct.
- STEP 5. Remove Philips screws securing the "Carburetor bowl" to the Carburetor body.
- STEP 6. Take out "Carburetor bowl"
- STEP 7. Pour out sludge and sediment from "Carburetor bowl"
- STEP 8. Clean the "Carburetor bowl" by petrol & soft nylon brush.
- STEP 9. Refit the "Carburetor bowl"
- STEP 10. Tighten the screws of "Carburetor bowl"
- STEP 11. Refit carburetor on vehicle & confirm no fuel leakage.

Auto Choke Checking |



- STEP 1. Check for auto choke click sound when ignition switch is switched ON. If click sound. is not heard then - remove Choke Unit from Carburetor assembly.
- STEP 2. Switch 'ON' Ignition Key. Solenoid operated choke plunger must get lifted for a second & then again plunger must fall down in engine OFF condition. Connect solenoid operated choke connection to external supply of 12volt DC & check / confirm the working of choke
- STEP 3. Set multimeter on 200 ohm range. Connect multimeter probes to auto choke coupler.
- **STEP 4.** Note the resistance value & compare with specs.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Cleaning of carburetor	2 hour	Carburetor, petrol, soft nylon brush, tools



- Divide them into pairs
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.6: Basic of Electricity & System

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual etc.



- Basic terminologies used in an electrical system are:
 - o Ampere: The Amp is the unit of electron flow, or how many electrons are passing along a conductor in a second.
 - Amps (A) = I or 'Intensity' of the current flow.
 - Volt: It is the measurement of electric potential or the attracting / repelling force causing electrons to flow through the circuit.
 - Volts (V) = E or 'EMF' (Electromotive Force).
 - o Resistance (Ohms or Ω): An ohm is the unit of resistance or how hard a conductor resists the flow of electrical current.
 - Ohms (Ω) = R or 'Resistance' to electron flow.
 - Ohm's Law: The flow of current in a circuit is directly proportional to the applied voltage and inversely proportional to the resistance.
 - E = I x R or Voltage = Amps x Resistance
 - o **Power:** Rate of doing work is called power. Mathematically represented as:

Power = Work Done / Time

As per Ohm's Law $V = I \times R$ and W = V2/R ($W = V \times I$)

Elaborate



Functions of Major Components of Auto Electrical:

Battery

- It operates the starting motor, ignition system, electronic fuel injection, and other electrical devices for the engine during cranking and starting.
- It supplies all the electrical power for the vehicle accessories whenever the engine is not running or when the vehicle's charging system is not working.

- It acts as a stabilizer of voltage for the entire automotive electrical system.
- It stores energy for extended periods of time.

Starting Motor (Cranking Motor):

The function of starting motor is to start the engine by drawing direct current (dc) from the battery. While cranking the engine with the help of the starting motor, it draws around 250 Amps of current from the battery for few seconds (4-5 sec.) (Lesser amount of current is required by smaller engines of two and three wheelers).

The functions of alternator are as follows:

- It produces alternating current when the engine is running (the alternator is run by a V-belt connected with engine crank shaft pulley).
- It also converts the alternating current into direct current with the help of rectifier fitted along with it.
- It is the source of electricity in automobile when the engine is running.
- When the engine is running the alternator charges the battery by supplying the current to the battery through the charging circuit.

Cut Out Unit: This is fitted into the charging circuit. It is a safety device for the battery in automobile. When the alternator / dynamo voltage is more than the battery voltage it helps to flow the current from alternator / dynamo to battery. But when the alternator / dynamo voltage is less than the battery voltage it avoids to flow the current from battery to the alternator / dynamo by cutting out the contact breaker points.

Voltage and Current Regulator: The function of voltage regulator is to regulate the voltage (12 volts to 14.2 volts) in the circuit. The function of current regulator is to regulate the current flow in the circuit as per the demand of various electrical and electronic components.

Ignition Coil: It is fitted in the ignition system of engine. The function of ignition coil is to convert 12volt dc to around 22000 volts dc (low tension current in to high tension current) and supply to the spark plugs.

Distributor: The function of distributor is to distribute the high tension current to the spark plug according to the firing order.

Spark Plug: According to the firing order it creates spark in the combustion chamber so that air and fuel mixture can be ignited.

Lighting System: Head Light helps the driver to drive the vehicle at night. The functions of head lights are:

- 1. It increases visibility at night
- 2. It helps to overtake the other vehicle
- 3. By using dipper switch it helps the opposite drivers to drive safely.

Brake Light: It operates when the driver applies the brake which indicates the other road users behind it.

Reverse Light: This light glows when drivers engage the reverse gear of the vehicle, which, warns other road users behind the vehicle.

Fog Lamps: The colour of fog lamp is amber (yellow). The amber colour light rays have the quality to penetrate into fog.

Interior Lights: There are two types of interior lights:

- 1. Dash board panel lights which helps the driver to read all the meters such as Speedo meter, oil pressure gauge, etc.
- 2. A cabin light helps the occupants' of the vehicle.

Other Important Accessories:

- Horns: For the safe movement of vehicle it helps to warn other road user to clear the road.
- Wind Screen wiper: For a clear front view of the vehicle specially during rain it helps in cleaning the wind screen.
- **Electric fuel pump:** It supplies fuel from the fuel tank to the carburettor or injector.
- Fuel gauge: Shows fuel level in the fuel tank.
- Sensors and actuators: In the modern vehicles sensors and actuators are fitted in various system of engine along with computer control system. The function of all those sensors and actuators shall be discussed in the next level.

Ask



- Ask about basic fundamentals of electricity
- Ask about components of vehicle electrical system
- Ask about functions of components of vehicle electrical system



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.7: Battery

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, battery etc.



- The battery is the main power source for the entire vehicle. It supplies electrical energy when starting the vehicle and when accessories are operating with the engine off or at low idle.
- The storage battery is an electrochemical device that converts electrical energy into chemical energy and stores this energy until electrical energy is once again needed.
- The amount of electrical energy a battery can produce depends upon the size, weight and active area of the materials in the plates and the quantity of sulphuric acid in the electrolyte.
- The battery must be in good usable condition for the rest of the electrical system to function correctly.

Elaborate



Checking battery voltage using multi-meter:

A miltimeter is a measuring instrument used to measure AC and DC current, Voltage, Resistance in a single unit. It is also called as volt meter. There are two types of multimeter digital multimeter and analog multimeter. The beauty of multimeter is providing several measurement functions.

Initial multi meter adjustment: Rotate the knob in the multi-meter to voltage position this indicates that we are going to measure voltage



Fig: 2.3.4: Battery Attached to Multi Meter

Connecting terminals: Connect positive terminal of voltmeter i.e. Colored red to positive side of battery and negative terminal i.e. colored black to negative side of battery

Readings: Note down the readings from the multi-meter

Checking battery charge level using hydrometer: A hydrometer is basically a device used for measuring liquid specific gravity. It is basically the ratio of the density of the liquid to the density of water

Demonstrate



Checking Battery Charge Level



- STEP 1. Wear safety glasses
- STEP 2. Remove vents caps of all the battery cells

Checking electrolyte level

- STEP 1. Once the vents caps are removed squeeze the hydrometer bulb
- STEP 2. Insert the tube into cell then slowly release the bulb to allow the
- STEP 3. Do not remove the hydrometer from the cell and ensure that float is electrolyte flow in to hydrometer and float to move up free without touching the side walls.

Readings

- **STEP 1**. Take the reading of electrolyte level on the float.
- STEP 2. Repeat this for remaining cells

Battery Charging Process



Initial setup

- STEP 1. Remove the battery from the vehicle before charging.
- STEP 2. Clean dirt and corrosion from the terminals
- STEP 3. Check electrolyte level and add distilled water if needed
- STEP 4. Charge the batteries in a ventilated area

Safety Precautions

- STEP 1. Wear safety glasses, shoes, rubber gloves and apron
- STEP 2. Do not smoke and keep sparks or flames away from the battery
- STEP 3. Do not mix batteries

Charging

- STEP 1. Remove the vent caps, connect the batteries and switch ON the charger
- **STEP 2**. Preferably charge the battery at slow rate
- STEP 3. Intermittently check specific gravity during charging, stop charging when specific gravity reaches full charge state
- STEP 4. Intermittently check battery temperature by touching the battery during charging.
- STEP 5. If battery becomes hot, stop charging and let it cool before resuming charging

Ask



- Ask about battery and its function
- Ask about process of charging a battery

- Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Charging a battery	1 hour	Battery

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.8: Power Flow System

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual etc.

Say



- Transmission system is one of the important integral part of motor vehicle. Job of transmission system is to supply internal combustion output to the drive wheels.
- The transmission system consists of following components.
 - 1. Clutch assembly
 - 2. Gear box assembly (transmission case assembly)
 - 3. Propeller shaft
- Clutch Assembly: Job of a clutch is to transmit rotary motion of one shaft to another shaft as and when required.

Elaborate



Function of a Clutch:

- 1. To disconnect the engine power from the gear box as required under following circumstances.
 - o To start the engine.
 - o To facilitate to engage 1st and 2nd gear to start the vehicle from rest.
 - o To facilitate to change the gear as required.
 - o Disconnecting drive from the engine to stop the vehicle after application of brakes.
- 2. Allow the engine to take up load gradually without shock or jerk.

Requirements of a Clutch:

- 1. Torque transmission: The clutch system should be capable of transmitting engine torque.
- 2. Gradual engagement: To avoid sudden jerks clutch should be engaged gradually.
- 3. Heat dissipation: During clutch operation a large amount of heat is generated due to friction. The clutch should be capable to dissipate this heat.

- 4. Dynamic balancing: The clutch should have capability of dynamic balancing specially in high speed engine.
- 5. Vibration damping: During power transmission huge noise is produced due to vibration. Clutch should be capable to damp the vibration.
- 6. Size: The clutch size should be small so that it should require minimum space.
- 7. Free pedal play: The clutch should have free pedal play in order to reduce effective load on the carbon thrust bearing and its wear.
- 8. Easy in operation: It should be operated by little effort by the driver and should be easy to operate.
- 9. Lightness: Clutch driven member should be light weighted so that after the disengagement of the clutch it will not continue to rotate for any length of time.

Gear Box (Transmission Case) Assembly: Different gear ration in the gear box or transmission system is required so that vehicle can move at different speed. When we start the vehicle, on the flywheel maximum amount of torque is not available.

Function:

- 1. The main purpose of the gear box is to provide a means to vary the leverage or torque ratio between the engine and the road wheels as required.
- 2. The transmission also provides a neutral position mechanism thus engine and the road wheels can be disconnected in the engaged position of clutch.
- 3. A means to reverse the car by selecting the reverse gear.

Exhaust Tail Pipe Functions:

- 1. Burned exhaust gases are carried away from engine section
- 2. Reduce engine noise
- 3. Most new cars have one or more catalytic converters

Demonstrate 🗔



Silencer Tail Pipe Cleaning Process



- STEP 1. Park the vehicle on center stand in neutral gear position & with engine in 'off' condition.
- STEP 2. Insert 'Wire Bristle Brush' into the tail pipe of silencer assembly and scrub inside walls of the

tail pipe. While scrubbing, ensure that pressure is applied to the tail pipe inner surface so that holes on the tail pipe can get cleared off from carbon black / soot.

- STEP 3. Start the engine and give throttle to flush out all the soot that has been scrubbed off the surface.

 The scrubbing and flushing activity is to be carried out till no more soot is seen coming out of the tail pipe after starting the engine.
- STEP 4. Switch Off the engine, direct the compressed air inside the tail pipe so that holes on the tail pipe get cleared. Ensure that the compressed air hose nose is directed towards the wall / holes on wall around till the end of tail pipe. Once again start the engine and give throttle to clear any carbon particles left inside the silencer.

- Ask



- Ask about power flow system
- Ask about components of power flow system
- Ask about cleaning process of silencer tail pipe

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Cleaning of silencer tail pipe	1 hour	Cleaning material

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.9: Drive Shaft / Propeller Shaft

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual etc.

Say



- Propeller shaft consists of three parts:
 - 1. Shaft
 - 2. Rear axle
 - 3. Slip joint
- Front axle is made up of steel forging. Due to load of the vehicle bending load is managed by front
 axle and also during breaking of wheels it also manage torque load. Due to these grounds central
 portion of the front axle is made of I-section where as end is circular.

Elaborate



The functions of rear axle are as follows:

- It bears the weight of vehicle body and load due to occupants through springs.
- It enables to transmit driving and breaking torque to the chassis frame and body of the vehicle.
- It also experience the side thrust or pull due to any side load on the wheel.
- It supports the bevel pinion (drive from propeller shaft transmit to the pinion), bevel gear, cage of sun gear and star pinions, axle shafts and different support bearings.
- Rear road wheels are mounted on the axle shaft.
- The differential mechanism enables to move outer wheel faster than the inner wheel while taking a turn.

Demonstrate



Battery inspection Process



STEP 1. Inspect battery body for cracks or damage which may result in electrolyte leakage.

- **STEP 2**. Inspect battery terminals and connectors for looseness, dirt and corrosion.
- STEP 3. Clean dirty and corroded battery terminals and connectors with a mixture of hot water and baking soda.
- STEP 3. Use wire brush to remove corrosion
- **STEP 4**. Tighten the loose connectors



- Ask about function of propeller shaft
- Ask about components of propeller shaft



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.10: Suspension System

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, demo suspension system etc.



- The main purposes of suspension system are:
- 1. Provide riding comfort and safeguard the rider against road shocks
 - 2. Effect of stress raised due to road shocks on the motor mechanism is minimized to provide spongy effect.
 - 3. During travelling rough and bumpy ground it maintain the body perfectly in level.
 - 4. Shock loading and vibration due to irregular road surface is isolated from the vehicle.
 - 5. Bear torque and breaking exertion and also provide mandatory height to body structure.
- Functions of a suspension system:
 - 1. It provides comfort.
 - 2. It gives cushioning effect.
 - 3. Strain on frame and other components which is produced to road shocks are reduced.
 - 4. Prevent the vehicle from rolling and maintain body level
 - 5. It provides a good contact for road holding
 - 6. Transfer force generated due to breaking on chassis and driving torque to the wheels



Show various components of suspension system in vehicle:

Mechanical suspension

- **Leaf Springs**
- **Coil Springs**
- **Rubber Springs**
- **Torsion bars**

Hydraulic suspension

- Hydraulic Shock Absorber
- Telescopic fork

Air suspension

• Compressed air is used for air suspension system

- Elaborate



Strut/shock absorbers:

Job of a shock absorber is to damp the shock and dissipate energy. It helps in reducing the shock transfer to the body of vehicle as well as rider during travelling over a rough ground, help in handling vehicle to provide a pleasant riding experience.

Life of shock absorber is affected due to following reasons:

- Leaf Springs
- Coil Springs
- Rubber Springs
- Torsion bars
- Telescopic fork
- Overloading
- Road conditions
- Worn-out Linkage/bushes
- Leakage of fluid/gas
- Broken casing
- Deterioration of Bump stopper



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.11: Servicing of Suspension System

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual, hand tools etc.

Demonstrate



Inspection of suspension system



- **STEP 1**. Place the vehicle on a hoist or jack.
- **STEP 2**. Lift the vehicle with jack stand to a certain height and bloc the wheel so it should not move forward.
- STEP 3. Slowly rotate the front tyre, looking at the tread wear if so toe setting, or camber setting is to be done.
- STEP 4. Place your hands on the tyre at the 3-and-9 o'clock positions of the tyre and try to shake it firmly back and front if excessive ply use tie rod ends could be loose/worn out.
- STEP 5. Place the hand on the tyre at 6-and 12 o'clock positions of the tyre and shake it back and front if excessive ply use tie rod ends could be loose/worn out
- **STEP 6.** Any joint/pivot point that has ply or a clicking sound needs to be fully inspected and replaced in each suspension system.
- STEP 7. Lubricate all the replaced components by grease to avoid wear and tear.

Servicing of suspension system



- STEP 1. Park the vehicle on the level ground and loose the nuts on both sides of the front & back end places and then place the vehicle with ramps or jack stands.
- **STEP 2**. Remove shock bolts from shock tower by using ratchet and socket.
- **STEP 3**. Disconnect the shock absorber from the suspension by removing bolt and nut using socket set or a nut splitter.
- STEP 4. By using locking pliers remove the shock absorber from the bottom and top bolts mounted on studs with retaining brackets.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Inspection and servicing of suspension system	2 hour	Hand tools



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.12: Struts and Shock Absorber

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, hand tools etc.



- Suspension system is consists of various parts namely shock absorbers, springs, and linkages, which connects a vehicle body to its wheels.
- Suspension system improves vehicle stability by providing better vehicle weight distribution and traction of wheels with road surface, in conditions such as:
 - o Sudden brakes operation
 - o Sudden acceleration
 - o Driving on rough surfaces, i.e. bumps and potholes
- Suspension system also makes vehicle stable while turning at high speeds.
- Suspension system enhances the comfort of occupants by reducing road noise, bumps and vibra-
- Suspension system protects vehicle components and luggage from damage or wear when vehicle runs on rough surface.

Demonstrate



Checking Shock Absorbers



- STEP 1. Inspect struts and shock absorbers for any oil leakage
- STEP 2. Inspect struts and shock absorber for wear, bending or mechanical damage
- STEP 3. Inspect rubber parts for damage or deterioration
- **STEP 4.** Check suspension working condition
 - a. Inflate all tyres to correct pressure
 - b. Bounce the vehicle by pushing down the front left and right side 3 to 4 times. Apply similar pressure on both the sides



- Ask about suspension system functions
- Ask about process of checking shock absorbers

- Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Checking shock absorbers	2 hour	Hand tools



- Divide the class into pairs.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.13: Dismantling & Assembling of Wheels

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, hand tools etc.

Demonstrate



Dismantling & Assembling of Wheels



Removing Hub cap

- **STEP 1**. Use a flat screwdriver or the flat end of the lug wrench to remove the hubcap.
- STEP 2. Place the hubcap in trunk so it doesn't get scratched up

Loosen wheel nuts

- STEP 1. Fit one end of the lug-nut wrench on to the lug nut
- STEP 2. Turn it counter clockwise.
- STEP 3. Loosen each nut.
- **STEP 4**. Continue until you've loosened each lug nut.

Jack the vehicle

- STEP 1. Place the jack in place and raise the vehicle slowly. Make sure the vehicle doesn't try to roll away as the wheel comes off the ground.
 - Jack the vehicle up until it is high enough to remove the old wheel and put the new wheel on.
- **STEP 2**. The new wheel may be bigger in diameter than the old flat wheel.
- STEP 3. You need enough room for the new Tyre to fit.

Repairing Punctured Tyre



- STEP 1. Check the rubber for pierced and examine whether the cut or puncture has happened. If you failed to check the puncture on tyre, check the tube such that tube itself has developed wear and tear/cuts.
- STEP 2. Jack up the vehicle using jacks and ensure the vehicle is lifted in a balanced position
- STEP 3. Using the lug-nut spanner, unscrew the bolts and remove the wheel
- **STEP 4**. Separate the tyre from the rim. Use the tyre iron to remove the tyre from the rim. Slot the tool at the intersection of the rim and the rubber and gently push the lever and allow the tyre to

gradually side out along the circumference of the rim.

- STEP 5. Unbolt the valve and separate the tube from the tyre. Inflate the tube and immerse the tube in water.
- **STEP 6.** The air bubbles in the water indicate the punctured area in the tube.
- **STEP 7**. Rub the punctured area with the file to ensure that the adhesive allows the rubber patch to stick properly.
- **STEP 8**. Use the adhesive to stick the rubber patch over the punctured area.
- STEP 9. Check if the puncture is sealed by submerging in water. Put the tube back into the tyre. Push the air valve through the hole of the rim and gently push the tube into the tyre. Put the wheel back and tighten the nut.

Ask



- · Ask about function of wheel
- Ask about repairing puncture wheel

Activity



- · Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Dismantling wheel and repairing puncture	2 hour	Hand tools, wheel

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.14: Steering System

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual etc.

Say



- Hand operated steering wheels which are placed in the front of driver, when operated by the driver steering system turns the front wheels as per the movement on steering wheel.
- Steering system have following components: steering column, universal joints.

Elaborate



Functions of a steering system:

- 1. Swinging wheels left to right or vice versa.
- 2. Turn the vehicle as per driver requirement
- 3. Offer stability to the direction vehicle is moving
- 4. It helps in controlling wear and tear of tyres.
- 5. It helps in achieving the self-straightening effect.
- 6. Rotation of the steering wheel is converted into an angular turn of the front wheels.
- 7. It multiplies the effort of the driver by leverage in order to make it fairly easy to turn the wheels.
- 8. Major portion of the road shock is absorbed by it so that it should not transmit to driver hands.

Do



Show various components of steering system to trainees:

- · Steering wheel
- Steering column
- Steering linkage with universal joint

- Steering gear box
- Drop arm
- Tie rod
- Steering arm
- Track rod with adjuster
- Ball joints
- Stub axle arm



- Ask about steering system functions
- Ask about various components of steering system



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.15: Brake System

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, hand tools, break oil etc.



- Brakes are a control mechanism of vehicle and thus form an import system for the vehicle. Job of brake is to slow down or stop the vehicle within a smallest possible distance.
- There are two distinct functions of the brakes:
- During emergencies it stops or slows down the vehicle in minimum possible distance.
- To control the vehicle speed while moving on plain roads and hills.

Elaborate



Principle of braking:

The brake is a friction creating device which reduces the vehicle speed at a faster rate. The rate of speed reduction by brake is higher than the process of obtaining it through gear change or removing pressure.

Functions of a good braking system:

- The brakes should stop the vehicle in shortest possible distance and without skidding the vehicle.
- The brakes should work equally on types of roads.
- This should be smooth so that driver does not need to apply extra pressure on pedal.
- Should work uniformly irrespective of weather condition.
- It should have very few wearing parts.
- It should require little maintenance.
- Brakes, when applied should not disturb the steering geometry.
- There should be minimum sound when brakes are applied.

Different types of brakes:

Mechanical brakes: Brakes which operates mechanically by using cam, rod and linkage with

drum brake.

- Hydraulic brakes: Brakes which are operated by the pressure on hydraulic fluid are called hydraulic brakes. This braking system consists of master cylinder, fluid line, wheel cylinder and drum brake
- Vacuum servo brakes: Application of brake is assisted by engine vacuum for suction and is
 called vacuum servo brake. This system consists of vacuum reservoir, master cylinder, vehicle
 control unit, server with diaphragm.
- Pneumatic brakes: Brakes which are assisted to work on compressed air are called pneumatic brakes. Braking system consists of following components; air compressor, air tank, safety valve, brake valve, brake chamber, diaphragm/ chamber with drum brake.
- **Disc brakes:** Disc is mounted on the wheel, instead of brake drum, which rotates between caliper assembly. Caliper pads/friction pads are operated hydraulically by means of piston which comes in contact with rotating disk. Due to friction it reduces the speed of the disc as well as wheel.

Demonstrate



Repairing mechanical brakes |



- STEP 1. Remove/unthread the wheel nuts with spanner and separate the wheel from brake drum.
- STEP 2. Straighten and pull out the spilt pin, fitted in castle nut, using combination plier.
- STEP 3. Lock the axle shaft by putting the vehicle and open the castle nut using socket and handle.
- STEP 4. Hammer the axle shaft lightly by using brass drift, this may contract brake drum loose and remove brake drum.
- STEP 5. Remove brake shoe lock, mount on anchor pin, with the help of nose plier.
- **STEP 6.** Serrate the brake shoes from brake lever cam and the steady post.
- STEP 7. Clean the brake shoes and the brakes drum with the help of emery paper.
- **STEP 8**. Fit both the shoes on the cam and anchor pin and lock them.
- STEP 9. Fit the brake drum over the axle shaft and tighten the castle nut with the help of socket and handle.
- **STEP 10**. Tighten the brake shoe adjusting nut with the help of spanner, this makes the shoes to expand and grip the drum firmly.
- STEP 11. Loosen the adjusting nut by a little amount and turn the wheel, it must roll free. Do the shoe adjustment this way.

- **STEP 12**. Tighten the main nut locked it properly.
- STEP 13. Fit the wheel over brake drum and tighten wheel nuts.
- STEP 14. Take a road test of the vehicle.

Tips during repairing mechanical brake



- 1. Shoe's lock must be placed properly.
- 2. Shoe's adjustment should be done properly.
- 3. If there is any lubricant etc. on brake lining, it must be cleaned by washing the brake shoe with petrol and further cleaned using emery paper.
- 4. Brake cable should be checked for its tension and fitted straight.
- 5. Free play should always be kept in brake pedal.
- 6. Shoe return spring should be checked for its tension and fitted straight.
- 7. Replace the brake drum, if it is worn out beyond specifications never get the sleeve fitted in it.
- 8. Spilt pin should be placed in castle nut and bended.
- 9. Spring washer should be placed below each wheel nut and these nuts must be tightened in the right manner and with the right torque. Over- tightening may damage the stud/-threads.
- 10. Brake's testing should be done at nominal speed of 20 35 km/hr only.

Maintenance of brake liner



- STEP 1. Jack up the vehicle using floor jack and remove the wheel
- STEP 2. Release the parking brake
- STEP 3. Detach the drum
- STEP 4. Remove the screw attaching drum from bearing hub
- STEP 5. Clean the back plate with a stiff brush to remove the accumulated brake dust
- STEP 6. Remove the grease on shoes using waste or emery paper
- STEP 7. Inspect brake shoes for wear either by checking thickness of shoe is lining with a base metal or to check thickness of brake lining. Replace the brake shoes if thickness of lining is above service limit.

Maintenance of brake pads



- STEP 1. Jack up the vehicle using floor jack and remove the wheel
- STEP 2. Remove the brake caliper by removing the bolt

- STEP 3. Remove the brake pads and clean using emery paper
- STEP 4. Check the brake pads thickness if it exceeds wear limit then replace it with new brake pads
- STEP 5. Apply grease to caliper bolts before refitting

Servicing of the disc Brakes



- **STEP 1**. Keep the vehicle on hard surface
- STEP 2. Loosen the wheel nuts
- STEP 3. Raise the front portion of a car support the chassis with stand.
- STEP 4. Remove the wheel nuts and remove the wheel
- **STEP 5.** Loosen the castle nut and remove hub from splined shaft.
- STEP 6. Unscrew the bleeder valve and drain the brake fluid from fluid line
- STEP 7. Now loosen the bolts of caliper holder from caliper assembly and remove the friction pads and dust caps
- **STEP 8.** Slowly remove the scaling ring from assembly
- STEP 9. Unload the caliper assembly
- STEP 10. Remove the piston, dust cover, return spring and keep it aside
- STEP 11. Thoroughly clean all components and inspect for wear
- STEP 12. Inspect the disc surface for scratches
- STEP 13. Measure for the defection disc and if more, replace the disc or it will create shaking steering or brake judder
- STEP 14. Inspect the thickness of disc (std-11mm, limit 9.5mm)
- STEP 15. Inspect the piston for wear or replace the kit
- STEP 16. Assembly the disc on the hub
- **STEP 17**. Fix the piston in caliper assembly with rubber seals
- STEP 18. Also, replace the brake pads and assemble the wheel Add the brake fluid in reserve tank
- STEP 19. Carry out brake bleeding operation after adjusting friction pads
- **STEP 20**. Test the working of brakes.

Brake Fluid Level top Up



- STEP 1. Wash the vehicle
- STEP 2. Check the brake fluid level in the master cylinder through inspection window.

- STEP 3. If the brake fluid level is below the minimum mark, remove 2 nos. Phillips head screws and remove master cylinder reservoir cover.
- STEP 4. Take out plastic cover and diaphragm.
- **STEP 5.** Check rubber diaphragm for damages
- STEP 6. Top up the oil level by pouring the DOT 3 / DOT 4 brake fluid in the master cylinder reservoir till the level is above the minimum mark
- STEP 7. Refit the diaphragm, plastic cover and master cylinder cover. Tighten the screw securely.
- **STEP 8**. Check the condition & routing of the brake hose pipe.

Brake fluid replacement



- STEP 1. Clean the surface area of master cylinder
- STEP 2. Drain the brake fluid from caliper air bleeder bolt.
- **STEP 3**. Tight the air bleeder bolt on caliper assembly.
- STEP 4. Remove reservoir cover by removing 2 nos. phillips head screws.
- STEP 5. Remove PVC Cap & rubber diaphragm.
- STEP 6. Fill the master cylinder reservoir by using or DOT-3/DOT4 brake fluid.
- STEP 7. Conduct the brake bleeding procedure & maintain the brake fluid level above MIN. mark.
- STEP 8. Fit the master cylinder cover.
- **STEP 9.** Press the front brake lever and check the operation of disc brake.
- STEP 10. Perform air bleeding of disc brake system if the brake operation is spongy.
- **STEP 11**. For drum brake vehicles, check and adjust front brake lever free play. It should be 4 to 5 millimeters for all motorcycles.
- **STEP 12**. Ensure front wheel is rotating freely.

Brake bleeding process



- STEP 1. Fill the master cylinder's reservoir with brake fluid up to top as level marked on it.
- STEP 2. Ask the companion to sit on driver's seat and create fluid pressure by pressing and releasing the brake pedal several times. You will feel that the pedal became hard.
- **STEP 3**. Asked the companion to keep up foot pressure on brake pedal. Insert one end of the pipe's over the bleeding nipple and let the other end in a glass bottle / jar.
- STEP 4. Release the fluid pressure by opening the bleeding nipple and farther most wheel cylinder from master cylinder. There will be bubbles with brake fluid coming out in the bottle/jar.

- **STEP 5**. Tighten the nipple
- STEP 6. Again ask your companion to repeat the procedure and release the pressure through the same nipple. This time there should be no bubbles and only the brake fluid should be coming out of it.
- STEP 7. Check the fluid level, it will be bit down, then top-up the level.
- STEP 8. Apply the same steps to other wheel cylinders also, turn by turn.
- STEP 9. Checked the free play of brake pedal.
- STEP 10. Adjust the free play by unthreading the push rod.
- **STEP 11**. Test the vehicle for road worthiness. All the wheels should have the same grip as this ensures a good brake.

Ask



- Ask about brake system of vehicle
- Ask about maintenance steps of brake system
- Ask about overhauling of brake oil and bleeding process

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Maintenance of brake system – Break servicing and maintenance, Break oil filling and replacement, Bleeding process	4 hour	Hand tools, break oil



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.16: Wheel and Tyre

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, wheel and tyre etc.



- Wheel is assembly of hub, disc or spokes, rim, tyre and tube. The job of wheels is to support vehicle weight and also protect the vehicle from road shocks.
- The tyre is mounted on the wheel rim. It has to carry the vehicle load and provide a cushioning effect.

Elaborate



Types of tyre:

- 1. Tube tyre: Tube tyre is the traditional tyre. It encloses a tube in which air is forced to high pressure as cushioning medium. The outer section of the tyre is made of synthetic rubber and is called tread rolls. This section of the tyre is basically rolling on the road. In the inner section of tyre with the reinforcement of steel wires beads are formed.
- 2. Tubeless tyre: Tubeless tyre does not enclose the tube. The air under pressure is filled in the tyre itself. The inner construction of this tyre is almost the same as that of the tube tyre. A nonreturn valve is fitted to the rim through which the air is forced inside the tyre.

Advantages of tubeless tyre:

- The tubeless tyres are lighter and run cooler than tube tyre.
- Advantage of using a tubeless tyre is after getting punctured by nail or any thin sharp object it maintain fairly good air in tyre so that vehicle can be driven to repair shop.
- Puncture in the tubeless tyre can be repaired by using rubber plugging.
- Ordinary punctures can be repaired with out removing the tyre from the wheel.
- It can be retreated in the same manner as the tube tyre.

Types of wheels:

Disc wheels: These type of wheels consist of two parts, steel rim which is generally well-based to receive the tyre and pressed steel disc. Steel disc is welded to the rim. It is light in weight. It is used in heavy vehicle like trucks, buses etc.

• **Light alloy cast or forged wheel:** These type of wheels are used for the cars. Wheels are made of aluminium alloy which is a better conductor of heat, which disperses heat in application during rolling. wider rim improves stability on cornering.

— Ask



- Ask about function of wheel and tyre
- Ask about types of wheel and tyre



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.17: Servicing Drive Chain of Motor Cycle

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, hand tools etc.



- The drive chain life depends on proper adjustment and required lubrication. Thus it becomes very important to mind a proper maintenance as failure to that can lead to drive chain and sprockets damage.
- The drive chain needs to be periodically lubricated.
- If the vehicle is in high use or ridden in very dusty area it needs more frequent maintenance.

Demonstrate



Servicing Drive Chain



- **STEP 1**. Put vehicle on center stand.
- STEP 2. Remove rubber cap from chain inspection window.
- STEP 3. Rotate rear wheel to find out the position at which chain is getting tight.
- STEP 4. Measure chain slackness by steel rule by pulling up and pushing down the chain to find out maximum slackness.
- STEP 5. To set chain slackness, first loosen the rear brake rod nut by using a flat or ring spanner.
- STEP 6. Remove the lock pin by using combination plier and loosen the tie rod nut by using ring spanner.
- **STEP 7.** Loosen the bearing carrier nut by using ring spanner.
- STEP 8. Check & confirm that the marks on left hand & right hand chain adjusters are equally placed.
- STEP 9. To keep the chain & rear wheel properly aligned, the arrow mark on the left and right adjusters must be equidistant from their respective rear edge of 'swing arm notch'.
- STEP 10. Hold the left chain adjuster nut in flat spanner and tighten the lock nut.
- STEP 11. Repeat the same procedure for right chain adjuster lock nut.
- **STEP 12**. Rotate the rear wheel and apply rear brake so that the brake panel takes its own position.
- **STEP 13**. Tighten the bearing carrier nut to the specified torque.

STEP 14. Tighten the rear axle nut to the specified torque.

STEP 15. Tighten tie rod bolt to specified torque & refit the lock pin.

STEP 16. Adjust rear brake pedal free play. Recommended rear brake pedal free play is 25 to 30 mm.

STEP 17. Check and ensure that rear wheel is rotating freely.



- Ask about vehicle drive chain
- Ask about drive chain servicing process

- Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources	
Drive chain service	2 hour	Hand tools	



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.18: Two and Three Wheeler Maintenance

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual etc.



- Every new vehicle comes with a vehicle maintenance manual. This manual helps user for vehicle maintenance tips during driving. People after getting a car or vehicle often care little about regular car maintenance.
- The process of vehicle maintenance and servicing is based on the guidelines given by vehicle manufacturer. These guidelines mainly follow Kilometer principle or a certain time frame.
- Regular and periodic checkup is the sole responsibility of the vehicle owner to maintain the vehicle in good running condition.
- For protecting exterior of the vehicle from dirt, oil and debris damage and better maintenance, vehicle washing and cleaning is very important.

Elaborate



Daily Inspection (DI):

- Visual inspection to all tyres to check the pressure and also observing the sound of tyre while hitting it with stone piece.
- Check coolant level in radiator (If applicable).
- Check intactness of fan belts (if applicable).
- Check engine oil level.
- Check the wind screen, rear view mirror and rear window glass for their cleanliness.

Maintenance Checkup:

- 1. Oil level topping
- 2. Intactness of Belt
- 3. Cleanliness of battery for and electrolyte level

- 4. Functioning of brakes
- 5. Level of coolant in the coolant reservoir
- 6. Cooling system hoses intactness
- 7. Tyre pressure

Tips during maintenance checkup

- Do not put sharp objects, such as screw drivers, in your pocket. You could cut yourself or get stabbed, you could damage the seat.
- Make sure that technician should use proper shoes and their dress should be as per job requirement.
- If oil, grease, or any liquid spill on the floor, cleans it up so that no one will slip and fall.
- When using a grinding wheel wearing eye protection is must or welding equipment or working with chemicals-such as solvents.
- While using jack, place it properly to avoid slip.
- Never run an engine in a closed garage that does not have proper ventilation system.
- The exhaust gases contain carbon monoxide. Carbon monoxide is a colorless, odorless, tasteless poisonous gas that can kill you.



- Ask about vehicle maintenance need
- Ask about maintenance checkup process



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.19: Oil Pressure

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, oil and pressure gauge etc.



- For better life of engine oil pressure plays an important role.
- Lubrication system pick the oil using oil pump and forced through oil galleries main bearings, big ends and balance shaft or camshaft bearings.
- During cold stage of engine, pressure of oil is higher because viscosity of the oil is increased and engine speed is also increased till the relief valve in the oil pump opens to divert excess flow. During hot idling stage, oil pressure is lowest and at this point applied pressure is based on manufacturer's tolerances.
- If the oil pressure is high it reflects either blockage in filter or oil gallery is blocked or incorrect oil. If the pressure of oil is low it reflects bearings are worn out or might be oil pump is worn out or broken.

Demonstrate



Oil pressure test



- **STEP 1**. Read the service manual of the engine that the gauge will be testing.
- STEP 2. During engine testing process vehicle should be parked on a level surface, it should be in neutral gear with front brake applied and chocked wheels.
- STEP 3. The oil pressure / temperature sensor is usually located on or near the oil pan at the lower part of the engine. Clean the area thoroughly before proceeding.
- STEP 4. Only connect the gauge when the engine is off and cool
- STEP 5. Place a pan below the sensor to store oil, remove the sensor, and thread the gauge into the opening
- **STEP 6.** Attach the appropriate fitting to the gauge
- STEP 7. Check the oil level and fill as needed
- **STEP 8**. Start the vehicle and allow it to come to normal running temperature.

STEP 9. Compare the reading on the gauge to the numbers on the chart. If the actual reading is lower or higher than the numbers indicated on the chart have the engine needs to be serviced.

STEP 10. Turn the vehicle off and allow it to cool before removing the gauge

STEP 11. Replace the oil pressure/temperature sensor, refill oil as necessary

STEP 12. Clean, and then store the tool properly

Ask



- Ask about lubrication process
- Ask about oil pressure test

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	ce Time Resources		
Oil pressure test	2 hour	Oil and pressure gauge	

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.
- Wrap the unit up after summarizing the key points and answering questions.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.20: Dismantling Wheel Baring

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual, tools and equipments etc.

Demonstrate



Dismantling the wheel baring



- **STEP 1**. Secure the vehicle on a flat rigid floor.
- STEP 2. Loosen the break by loosening the brake lock nut
- STEP 3. Remove the wheel using DE spanner
- STEP 4. Remove the break shoe, remove the wheel and pull out the bearing shield.
- STEP 5. Remove the ball bearing using suitable plier/puller.
- STEP 6. Clean the bearing thoroughly with kerosene and allow it to dry (care should be taken not to dry the bearing with s to compressed air as the air may contain moisture which is harmful to the bearing.
- **STEP 7**. Test the bearing manually by rolling and check for any noise, pay.
- STEP 8. Lubricate the bearing with recommended grease and once again check for any noise or distortion if noise still persists it indicates the balls have worn out and bearing is to replaced.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources	
Dismantling wheel baring	1 hour	Tools and equipments	



- Divide the class into pairs.
- Go around and make sure they are doing it properly.
- Wrap the unit up after summarizing the key points and answering questions.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.21: Vehicle Washing and Cleaning

Resources to be Used



 Available objects like marker, duster, whiteboard, participant manual, vehicle washing and cleaning material etc.

Say



- Regular cleaning and washing the vehicle helps in keeping the vehicle looking nice and clean and also give a better feel while driving.
- For protecting exterior of the vehicle from dirt, oil and debris damage and better maintenance, vehicle washing and cleaning is very important.



Fig: 2.3.5: Washing Two Wheeler

Demonstrate



Interior and Exterior cleaning



- STEP 1. Cover tail end of silencer with PVC cap to avoid water entry in silencer
- STEP 2. Set water washer pressure for vehicle washing is 25 bar max. & set the nozzle in spray mode.
- STEP 3. Clean the exterior surface of engine metal parts by diesel or kerosene with soft nylon brush
- STEP 4. Dismantle the small chain cover & clean the area between magneto cover & engine sprocket by using nylon brush and kerosene or diesel
- STEP 5. Wash the vehicle by keeping nozzle 2 meters away from parts
- STEP 6. Adjust nozzle to jet mode & wash under the front & rear mudguard to remove the mud & dirt.
- STEP 7. Clean painted parts by gently rubbing their surface with solution of mild car shampoo / liquid solution.
- **STEP 8**. Rub the front & rear tyres by nylon brush to remove dirt & mud.
- STEP 9. Water wash the vehicle with the nozzle in spray mode & clean all soap & shampoo foam.

STEP 10. Dry the vehicle by using low pressure (2bar) compressed air.

STEP 11. Vehicle should be wiped off by cotton cloth immediately after washing.

STEP 12. To avoid water entry & paper filter, do not apply water on area beneath seat.

Ask



- Ask about car washing process
- Ask about drying and rising process

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time Resources	
Car washing process	2 hour	Car washing material

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.
- Wrap the unit up after summarizing the key points and answering questions.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.22: Check Speedometer Cable & Worm Gear

Resources to be Used



• Available objects like marker, duster, whiteboard, participant manual, speedometer, tools and equipments etc.



- Speedometer is used to know a vehicle speed / wheel speed.
- It is classified into two types- Analogue and digital.

Demonstrate 🔄



Replace worn out gear / speedometer cable



- STEP 1. If the speedometer moves to a few distance then it is alright
- STEP 2. Rotate the front wheel in the forward direction
- STEP 3. If the speedometer in not moving then check cable
- STEP 4. The cable might be loose. Tighten then at both ends, near the speedometer and near speedometer.
- **STEP 5**. If the worm gear is worn-out the speedometer oscillates.
- STEP 6. Replace gear arrangement
- **STEP 7**. Lubricate the gears and the cable.



- Ask about speedometer.
- Ask about how to replace damaged speedometer.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Replacing worn out speedometer	2 hour	Vehicle, speedometer, tools and equipments



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.23: Periodic Maintenance Service

Resources to be Used



 Available objects like marker, duster, whiteboard, participant manual, maintenance tools and equipments etc.



- Automobiles need periodic maintenance. Like we need to wash, bathe similarly our automobiles should be kept clean.
- Load on automobile makes them either damaged or in poor working condition. Therefore, there is need for regular maintenance and servicing of automobiles.
- Automobile service and maintenance activities are carried out Auto Workshop or Auto Service Station.

Demonstrate



Maintenance Check-up



- **STEP 1**. Topping of oil level
- STEP 2. Proper tension of Belt
- **STEP 3**. Battery for cleanliness and level of electrolyte.
- STEP 4. Brakes
- STEP 5. Toping up of Coolant if required in the coolant reservoir
- STEP 6. Check the Serviceability of cooling system Hoses
- **STEP 7.** Proper Tyre inflation pressure
- **STEP 8.** Air-conditioning (if applicable)

Service at work shop



Check/Top up all vehicles' oil levels: Service mechanic with the help of measuring stick check the engine oil, coolant, brake oil, and water. During routine check-up, oil, water, coolants are topped up otherwise it is changed.



- Ask about need of vehicle maintenance.
- Ask about how to do the vehicle maintenance.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources	
Vehicle maintenance	2 hour	Vehicle, maintenance tools and equipments	



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

2.3.24: Replacing Wiper

Resources to be Used



Available objects like marker, duster, whiteboard, participant manual, wiper etc.

Say



- For removing rain and debris from a windscreen the device used is called windscreen wiper. Having a
 wiper in the vehicle is also a legal requirement.
- A wiper contains metallic arms, rotating from one end to other end with an attachment of rubber blade. The blade is placed on glass and swung back and forth to push the water away from glass.
- Movement speed of wiper can be adjusted using a liver near steering having option for multiple continuous speeds and "intermittent" settings.

Demonstrate



Removing windscreen wiper motor



- STEP 1. Lift out the motor and linkage together.
- **STEP 2.** Disconnect the wiper arms
- STEP 3. Unplug the electrical connections, and then remove the bolts holding the motor to the bulkhead
- STEP 4. Before removing a pushrod system, mark the angles of the rods to aid refitting.

Refitting wiper motor



- **STEP 1**. When reassembling a pushrod linkage, use the guide marks you made to position rods at the correct angles.
- **STEP 2**. Once the motor is back in place, test the wipers with the blades lifted off the screen.
- STEP 3. Wet the screen with the washer and test the blades in different wiping position.
- STEP 4. Take the wiper arms off from their spindles and realign them. Some motors have an adjuster nut for adjusting the parking position

Ask



- Ask about wiper and its use.
- Ask about fitting procedure of wiper.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources	
Fitting wiper and wiper motor in car	2 hour	Wiper and fitting tools	

Do



- Divide the class into four equal groups.
- Go around and make sure they are doing it properly.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.

UNIT 2.4: Skill - Automotive Technician

Unit Objectives



At the end of this unit, Student will be able to:

Understand Core / Generic Skills

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.



Writing Skills

- Record and document the basic details of repairs and maintenance performed on various aggregates/components
- Record all diagnostics done by senior technicians as per the prescribed format recommended by the OEM/ auto component manufacturer
- Write legibly in at least one language

Reading Skills

Read the basic specification of a vehicle or any other component or part

- Read work orders, specifications etc. related to the job including instructions mentioned on the job card
- Read the service circulars/ sign boards placed in the workshop with respect to the overall process to be followed for service, repair and maintenance of the vehicle
- Read any specific safety related guideline (applicable for CNG/ LPG/ Electric vehicle)

Oral Communication (Listening and Speaking Skills)

- Interact with customer / service advisor and senior technicians
- Interact with team members including colleagues in the workshop to work efficiently

Professional Skills

Decision making:

- Judge when to seek assistance from a superior.
- Decide on the level of top up required of various lubricants / oil / coolant / grease for routine maintenance of the vehicle after judging the current levels.

Plan and Organize:

- Plan work according to the required schedule and location.
- Organize the schedule to complete the work on the vehicle timely in case other aggregate repairs/ maintenance work is also required to be done.
- Organize the workplace and work according to the principles of 5S.

Customer centricity:

Ensure that customer needs are assessed and every effort is made to provide satisfactory service.

Problem solving:

- Assist in repairs under the supervision of the senior technician
- Bring any noticeable issues (both in the aggregates currently working or any other aggregate on which there is no work to be done) to the attention of the supervisor.

Analytical thinking:

Evaluate the complexity of the tasks to determine if he/she needs any assistance from the senior technician.

Critical thinking:

• Analyse, evaluate and apply the information gathered from observation, experience, reasoning or communication to act efficiently.



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.









3. Plan & OrganizeWork to MeetExpected Outcomes

Unit 3.1 – Performance criteria for Planning & Organizing Work

Unit 3.2 – Knowledge & Understanding: Planning & Organizing Work



Key Learning Outcomes



At the end of this module, students will be able to:

- 1. Perform the job within given time as per quality standards / work schedule
- 2. Identify and manage resources and use it efficiently and effectively
- 3. Perform in accordance with the organizational policies and procedures
- 4. Manage your time effectively at work
- 5. Apply best practices to keep your workplace clean
- 6. Acquire knowledge and understanding required for planning & organizing

UNIT 3.1: Performance Criteria for Planning & Organizing Work

Unit Objectives



At the end of this unit, learners will be able to:

- Perform the job within given time as per set quality standards / work schedule
- Identify resources and use it efficiently and effectively

Resources to be Used



• Available objects such as a duster, pen, notebook etc.



Welcome and greet the participants. Revise the learnings of the previous sessions and ask them if they have any doubts.



- Keep immediate work area clean and tidy
- Learn, understand and implement the principles of " 5 S"
- Treat confidential information as per the organization's guidelines
- Work in line with organization's policies and procedures
- Work within the limits of job role
- Obtain guidance from appropriate people, where necessary
- Ensure work meets the agreed requirements

UNIT 3.2: Knowledge & Understanding - Planning & Organizing Work

Unit Objectives



At the end of this unit, students will be able to:

- Perform as per the organizational policies and procedures
- Manage your time effectively at work
- Apply best practices to keep your workplace clea

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual



- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Capture their responses on board and share them wherever necessary.
- Tell them that they will learn about organization policies and procedure, time management and 5S safety approach.

3.2.1: Organization Policy & Procedures

Say



- Most of the organizations usually formulate set of policies, principles and guidelines to reach long term goals.
- The policies and procedures are designed by the organization to control and establish decisions. This help the organization to take corrective action and activities within the organization take place with the set boundaries.
- A policy is a set of procedures which define the guidelines for dealing with human resource management issues in the organization. It communicates an organization's values and the organization's expectations of employee's behaviours and performance.
- Workplace policies also strengthen and simplify SOPs (standard operating procedure) in a workplace.
- Every company has different policies and procedures. Company should explain its policies and procedures to their employee in detail within first week of employment.
- When you work in any organization, you have particular tasks to do as part of your job. If you work within the roles, responsibilities and boundaries of your job description, you will also be working in line with the organization's beliefs and values.
- When you work in any organization, you have particular tasks to do as part of your job. If you work within the roles, responsibilities and boundaries of your job description, you will also be working in line with the organization's beliefs and values.

Elaborate



Benefits of Organizational Policies & Procedures

- Helps us to abide with employment policies and its associated legislation
- To make sure regularity and reliability in decision making and operational procedures
- Save time when a new problem can be handled quickly and effectively by following existing policy through an existing policy
- Provide the support system for business planning
- Assist in performance assessment and strengthen accountability
- Clarify functions and responsibilities
- Help employees know what is expected of them with respect to standards of behaviour and performance
- Acts as strategy in decision making process in a regular working pattern thus reduces dependency to ask help from seniors
- Help us to adopt a consistent and clear response across the company to continually refer to situations

involving employee interaction

• Allow us to demonstrate good faith that employees will be treated fairly and equally

Examples of Common Workplace Policies

- Code of conduct
- Recruitment policy
- Internet and e-mail policy
- Mobile phone policy
- Non-smoking policy
- Drug and alcohol policy
- Health and safety policy
- Anti-discrimination and harassment policy
- Grievance handling policy
- Discipline and termination policy



Fig: 3.2.1: Common Workplace Policies Examples

Work within the Limit of Your Job Role

The tasks you do in your job are directed by:

- Your job description
- · Codes of practice, regulations and laws
- Workplace policies and procedures

The organization's beliefs (or philosophy) are its main goal or aim. The goals worked out by the people who start the service and should describe the reason the service was first set up or the reason the service exists. For example, the service may exist to provide information and support to people with disabilities. The belief or goal of the service is supported by its policies and procedures.

Work in line with Organization Policies & Procedures

There are many ways that you can keep information private and confidential. For example:

- Do not use the person's full name if you are speaking to them on the telephone or talking to them in a public space such as a waiting room. Always be aware that other people may hear your conversation.
- Do not talk about customer or co-workers in social situations or give away information that might identify a person.

You should not share customer information with your co-workers without the customer's permission even though you work closely together and are employed by the same organization.

Always follow your organization's procedures about destroying private or confidential information. Make sure information not to be recycled – be locked away when they are not being used – are disposed of properly such as shredded.

Guidance from Appropriate People

You may experience situations when you have problems doing your job well. Unexpected things can happen to change the day-to-day operations of an organization or workplace.



Fig: 3.2.2: Keep Organizational Information Private and Confidential

When you have difficulties in carrying out your duties, you need to report these problems to your supervisor. It is important that you report problems to your supervisor so that solutions can be found.

Managing Time/Materials/Cost Effectively

In your work environment you may need to perform various types of task. You need to clearly understand what is expected of you.

You must have a clear understanding of what you are expected to do and you must also know how you should work with other team members.

Ask



- Ask about need of organization policies and procedures
- Ask about general policies and procedures follow in automobile industry
- Ask about necessity of confidentiality in organization policies and procedures



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

3.2.2: Time Management

Say



- Time management is the process of planning and practicing control over the time given to a specific task, especially to increase effectiveness, efficiency and productivity. It is an activity with the goal to increase the overall advantage of a set of activities within the limited condition of a limited time.
- As a leader, you will want to accomplish many things in your time of office. The best favour you can
 do for yourself is to determine what those goals are and make sure your efforts are always directed
 toward their achievement.
- Do prioritize and control your work.
- As you prioritize tasks and set deadlines, you will want to organize your plans and actions. Organize
 our plans, but it is important for you in today's environment to use planner as it includes calendar
 and enough space to make notes.
- The strategies we have mentioned so far have all concerned common business practices. Say "No" to work which is not in your plan.
- Everybody has various set of commitments and concerns, but for better accomplishment focus on the task at a moment is very much required.
- Achievement of goals needs to be celebrated so that a healthy balance in life between work and play
 can be maintained. After completing a task or finish project you need to be rewarded by yourself.

Elaborate



As our time is always in demand, we need to think about how to use our time and for more effective time management we need to consider certain strategies. Time management does not means to work harder or for longer period but it help us to work smartly so that we can finish our work easily and quickly.

If we can manage our time more effectively, we will be rewarded in a variety of ways:

- We will be more competent in our routine job and also can support others
- We can accomplish great success in every role as a leader
- On a personal level, you will certainly feel healthier, more energetic, and in a generally better mood.

Obstacles to Effective Time Management

There are many factors contributing to disturbance due to which it becomes for us in effective management of our time.

- · Objective is not clear
- Disorganization
- Inability to Say "No"
- Interruptions
- More Interruptions
- Periods of Inactivity
- Too Many Things at Once
- Stress and Fatigue
- All Work and No Play

The obstacle we face in our day to day life is not very difficult to resolve. The most important thing is to identify existence of obstacle which is affecting our ability in time management. After identifying the obstacle we start think solution to resolve it.

Set Clear Goals

Effective goals share a number of characteristics in common. Effective goals should be:

- S Specific
- M Measurable
- A Achievable
- R Realistic
- T Time-based

Prioritizing work

It is important to make a list of tasks periodically that confront you and prioritize them. Below mentioned technique may help in prioritizing:

 Do – Choose most important task from the list which you consider as important for your organization. These are the task you need to do yourself.



Fig: 3.2.3: Prioritize

- Delegate There could be many persons in an organization who possess various skills and
 experience to carryout variety of task. Delegating not only helps to free up your time so that
 we can do other works but also ensures resources applied can be used more effectively through
 certain degree of motivation.
- **Delay Until another Time** There are too many things close to the dead line which creates a dangerous situation. It is always good to consider when things are due, how long it will take to accomplish and your current workload.
- **Delete** If we set our goals as explained earlier, we will experience that some of these goals are not achievable or realistic, or that they are just not important.

When you prioritized your task it is important for you to:

- Address the Urgent Things having short-term consequences should be tackled first.
- Accomplish What You can Early Reports, registrations and requests that can be handled early should come next. Don't put off until tomorrow what you can do today.
- Attach Deadlines to Things You Delay Attaching deadlines to things we delayed When we are very sure that things can definitely wait be careful in taking such decision by adding a deadline for that task in our schedule.

Organize

As you prioritize tasks and set deadlines, you will want to organize your plans and actions. Some time we are using paper and pencil to organize our plans, but it is important for you in today's environment to use planner as it includes calendar and enough space to make notes. Most of the planners are equipped with calendar space, space to note down daily activities, contact information, and "to do" lists. Look for the planner which satisfy your need and start using it. You will feel like it is an essential tool for you to manage your time.

Learn When to Say "NO"

As strategies first thing you need to learn is to say "NO" when it is appropriate. Your life in an organization has always been about giving all that you can to serve your organization.

When we say no it does not mean that we are closing the door of our responsibility. It should be considered as we are very serious to meet our in-hand commitments and achieve it as far as possible within allotted time.

To be able to say "NO", you will have to accept these three principles:

· We should realize that we cannot do every thing

- We should not undertake the task or project that we are not sure to complete within the allotted time frame.
- We will not make commitments that are not consistent with the goals and objectives I have set for myself.

Use Your Waiting Time

Other factors contribute personal time management skill for making good use of your "waiting time."

You need to think over everyday how much time you spend doing nothing?

Use your waiting time is to always make sure you have something with you that you can accomplish in the event that you are kept waiting. For instance:

- Reading Correspondence
- Writing Letters or Memos
- Reading or Listening to Tapes

Focus On Task

When you serve as a leader you are managing many activities and we cannot cut ourselves from this fact. There is no way around this fact. But, one important strategy to keep in mind is to concentrate completely on the current task.

Manage Prime Time

When you plan your tasks, think about your own "prime time." If you do your best work early, plan to do the routine tasks later in the day and concentrate on the more challenging tasks when you are at your best. If you don't really get going until later, handle the routines in the morning and save the more difficult tasks for later.

Ask



- Ask about importance of time management
- Ask about criteria for managing your time
- Ask about factors need to consider for time management

Activity



- Ask the students to assemble in groups of 9-10 in ground.
- Organize a race that is broken into various stages like lemon race, followed by one-leg race and balloon race.
- Ask the team members to decide among themselves who will do what.
- The team that would be able to complete the task within a time of 4mins/ at the earliest would be the winner.

Explain



- On the basis of the activity, discuss the factors that caused the team members lag behind and which factors enabled them to carry it within the assigned time.
- Relate it to the wider arena- that is to time management (when more than 1 person is involved) in general sense



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.

3.2.3: Workplace Cleanliness

Say

2

- In the workplace, hygiene is very important. Through the introduction of some sensible office policies, make sure that your workplace is clean and hygienic as possible. Workplaces should be safe and clean with minimal exposure to germs.
- Many workers find themselves overwhelmed by the amount of junk and clutter on their desks.
 By sparing a few minutes each day, the office surroundings can be professional, healthier and less stressful.
- Poor housekeeping and hiding hazards can cause frequent accidents which can cause injuries.
- These are foundational to Kaizen (continuous improvement) and a manufacturing strategy based "Lean Manufacturing" (waste removing) concepts.
- 5S is one of the activities that will help ensure our company's survival.

Elaborate



5S Approach

5S is created by a list of five Japanese words: seiri, seiton, seiso, seiketsu, and shitsuke. 5S system is implemented for organizing the workplace for increasing effectiveness and efficiency by maintaining the area and items, storing the items used, and sustaining the new practices.

Some new concepts are:

- Red Tag Process for tagging, removing and disposing of items that are not needed in the work area.
- Lean Manufacturing concept that seek continuous improvement by removing waste in processes.

Some Japanese words you need to know:

- Kaizen (pronounced "kizen") Improvement
- Kaizen Event and 5S Event Planned improvements to a specific area or process (usually take 3 to 5 days). 5S Events focus on making 5S improvements.
- Muda (pronounced "moo da") waste
- Gemba(pronounced "gimba") workplace
- Kanban (pronounced "kon bon") Pull type inventory control system. Items are only produced to meet customer's needs. The request to produce more is signaled from an upstream operation and/or customer orders.

• Value Stream Map – A diagram of all processes needed to make and deliver the product to the customer.

Phases of 5S:

Japanese term	English Term	Meaning in Japanese Context
Seiri	Sort	Dispose off unnecessary items or properly remove.
		Do work simply by removing obstructions.
		Stop buildup of needless things.
		Calculate necessary items for costing and other factors.
		Remove all parts not in use.
		Separate unwanted items from the workplace.
		Define a red-tagged area to keep unnecessary items.
		Waste removal.
Seiton	Set	For items to be easily available arrange them all properly
		 By arranging work station in such a way that all tooling / equipment is in close proximity that can avoid loss and misuse of time.
		Work on first come and first serve basis method
		All work should be complete on regular basis
Seiso	Shine	Workplace should be completely clean and clear
		Stop weakening of machinery and equipment
		Keep workplace safe and clean
Seiketsu	Standardize	Regulate the best practices in the work area.
		Keep high standards at workplace organization at all times.
		Keep everything in order and according to its standard.
		Everything in its right place.
Shitsuke	Sustain	To maintain in working order
		Also translates as "do without being told"
		Regular audits to be perform
		Discipline and Training

Waste (Muda)

Some of the main forms of waste are:

- Overproduction
- Waiting for materials, machines or instruction
- Transportation or movement
- Excessive inventory
- Inefficient machine processing and/or operation
- Producing defects
- Part or line changeover or machine setup
- · Inadequate housekeeping
- Miscommunication or inadequate instruction

Good Housekeeping

To ensure good housekeeping:

- Pick up anything you find lying on the floor
- Store all tools properly
- Spilled oil, water or any other liquid should be wiped up immediately
- · Creepers, jacks and other such floor equipment should not be left scattered around
- Be careful about projection e.g. jack handles. See that they don't project from under the car

Ask



- You could ask the objectives and advantages of 5S
- You could ask the benefits of good housekeeping practices.
- You could ask the elements of an effective housekeeping program

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Do the 5S audit of your training center and make the 5S Audit form and fill it.

Field Visit

• Conduct a skill practice activity.

- Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.
- Say students to complete the exercises given in end of unit.









4. Work Effectively as Team

Unit 4.1 – Performance Criteria for Working Effectively as Team

Unit 4.2 – Knowledge & Understanding: Working Effectively as Team



Key Learning Outcomes



At the end of this module, students will be able to:

- 1. Interact & communicate effectively with colleagues including member in the own group as well as other groups
- 2. Use all forms of verbal and non-verbal communication to communicate clearly and effectively with your colleagues, supervisors, customers and other stakeholders
- 3. Demonstrate communication skills
- 4. Judge your customers' body language and accordingly use an appropriate approach to deal with them
- 5. Apply the best practices for grooming to look presentable and make good impression on your customers
- 6. Use proper personal etiquettes at workplace
- 7. Acquire knowledge and understanding required for team working

UNIT 4.1: Performance Criteria for Working Effectively as Team

Unit Objectives



At the end of this unit, learners will be able to:

• Interact & communicate effectively with colleagues including member in the own group as well as other groups.

Do



 Welcome and greet the participants. Revise the learnings of the previous sessions and ask them if they have any doubts.

Resources to be Used



• Available objects such as a duster, pen, notebook etc.

Say



- Maintain clear communication with colleagues (by all means including face-to-face, telephonic as well as written)
- Work with colleagues to integrate work
- Pass on information to colleagues in line with organizational requirements both through verbal as well as non-verbal means
- Work in ways that show respect for colleagues
- Carry out commitments made to colleagues
- Let colleagues know in good time if cannot carry out commitments, explaining the reasons
- Identify problems in working with colleagues and take the initiative to solve these problems
- Follow the organization's policies and procedures for working with colleagues

UNIT 4.2: Knowledge & Understanding - Working effectively as team

Unit Objectives



At the end of this unit, students will be able to:

- Use all forms of verbal and non-verbal communication to communicate clearly and effectively with your colleagues, supervisors, customers and other stakeholders
- Discuss the importance of communication skills
- Judge your customers' body language and accordingly use an appropriate approach to deal with them
- Apply the best practices for grooming to look presentable and make good impression on your customers.
- Use proper personal etiquettes at workplace

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual

Do



- Greet and welcome the participants to the next unit of the program.
- Ask form the students, what they understand by the team work and how it helps them at workplace.
- Discuss their answers.
- Explain them what is a team and how team work helps them in their career growth.
- Tell them how team work helps them in accomplishing their career goals.
- Explain them the characteristics of a good team.
- Explain them as a professional, what your team mates expect from you and how you have to meet their expectation as a good team player.

4.2.1: Communication Skills

Say



Communication is a tool that connects us with other human beings. An effective communication
not only helps in developing a sense of belonging but also facilitates better working, improves
relationships, reduces stress.

4.2.2: Technical Knowledge

Say



- Communication is the process of exchange of words, ideas, feelings. It is the meaningful exchange of information between two or more participants.
- Communication requires a sender, a message, a medium and a recipient.
- Communication process is complete only when a receiver understands the sender message.

Elaborate



Elements of communication



Fig: 4.2.1: Process of Communication

- 1. Sender: The person who shares information, ideas or solutions to other with a purpose is called sender or communicator.
- 2. **Message:** This is the ideas or information of the communication.
- 3. Receiver: When a person receives the message which is meant for him is called receiver. Job of receiver is not limited to receive the message only but also to understand it properly so that desired objectives can be achieved.
- 4. Feedback: The process of making sure that receiver has received the correct message and understood the sense of message by the sender.

Components of effective communication

Various researches have shown that an effective communication consists of:

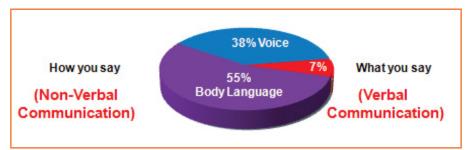


Fig: 4.2.2: Process of Communication

Team Activity



- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Effective communication between 2 persons	1 hour	Communication tools



- Ask them to get into pairs for practice and do some casual conversation.
- Go around and make sure they are doing it properly.

Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

— Notes		

4.2.3: Verbal Communication

Say



- Verbal communication means you listen to a person to understand what message the person is trying
 to convey. The speaker has the advantage of immediate feedback. This type of communication is best
 for conveying emotions and can involve storytelling and critical conversations.
- Verbal communication consists of sharing thoughts through the meaning of words.
- Dealership Executives are not that educated and hence have poor vocabulary. Because of this
 Dealership Executives feel inferior and lack confidence. But, they should understand that words
 account for only 7% in conversations and do not matter that much. Instead by improving their voice
 and body language, they can do a better job of communicating.
- Verbal communications are of two types: written and oral communication.

Elaborate



How to improve verbal communication

Some of the ways through which you can improve your verbal communication are:

- Read newspapers/magazines, etc.
- Practice using 10-15 new words everyday
- Avoid using slangs
- Think before you speak

Activity



- Ask 2 students to explain the process and components of verbal communication.
- Pay attention to the way they explain.
- Categorize the various types of communication used by them.

Explain



Discuss the situations in which each of them is used.

4.2.4: Non-Verbal Communication

Say



- A nonverbal communication can also be called Body language because this communication does not
 involve any verbal interaction but mere observation of the people involved in the communication.
 Both verbal and written communications convey nonverbal communication and are also supported
 by body language, eye contact, facial expression, posture, touch and space.
- Speech requires the presence of a voice that can be modulated. Vocal features that contribute to our interpretation of spoken language such as voiced pauses or intonation plays an important part to help us understand what is said to us.
- Speech is a small part of communication process. Most of the time it is considered that most of the
 information is conveyed by non verbal communication, voice tome, facial expression, eye contacts
 and other gestures, standing posture and so on.

Elaborate



Components of Non-verbal Communication:

- Voice
- Body language

Voice

It is a specified quality, pitch and tone of vocal sound.

For an effective communication, voice has 38% importance.

Characteristics of a Good Voice:

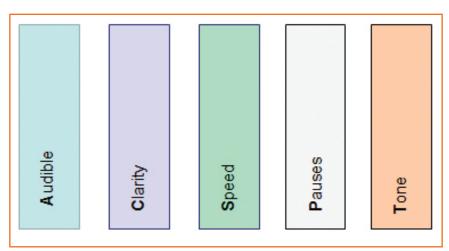


Fig: 4.2.3: Characteristics of a Good Voice

Body language

Body movement within communication process is basically representing to emphasize what we want to say and also to express our emotion and attitudes. While saying something some time body movement can also cause a conflict. If the person you are communicating with is a skilled observer can easily note you behavior to use as a clue of your feeling or thinking process.

Our human face is capable to reflect our expression and distortions. These reflection is getting interpreted depend on the situation we are communicating. For example we reflect shy expression on face when are asked any embarrassing question.

For an effective communication, Body Language has 55% importance.

Components of Body Language:

- Body Posture
- Gestures
- Facial Expressions
- Eye Movements

Observe Your Customers' Body Language:

- How they sit
- How they stand
- How they use their hands and legs
- What they do while talking to you

Customers touching their hair or yawning while interacting, for instance, can indicate boredom. By understanding the customer's feelings through their body language, you can change the manner in which you interact with them.

Activity



- Ask 2 students to explain the process and components of non-verbal communication.
- Pay attention to the way they explain.
- Categorize the various types of communication used by them.

Explain



• Discuss the situations in which each of them is used.

4.2.5: Listening Skill

Say



- Listening is one of the most significant skills one can have. To become a better listener it is important that you practice active listening at all time of verbal communication.
- Active listening is one of the important skill of our communication process but many time as a communicator we spend our energy on what we wanted to say and not much focusing on what the other party wanted to say.
- Listening is basically the ability of a person to receive message properly and accurately interpret it in the communication process.
- Listening is considered as the key factor for successful communication process.

Elaborate



Listening is basically the ability to accurately receive and interpret messages.

Over and average a person spend around 70% of their time in some type of communication. Out of this 70% communication time 45% spend in listening, 30% in speaking, 16% in reading and 9% in writing.

If you interrupt before your speakers have finished their sentences, then the focus has shifted to you from the speakers. Also, you are communicating to the speakers that your ideas are more important. Besides, it's rude to interrupt.

Follow these tips to become an attentive listener:

- Focus on the speaker. Pay attention to what the speaker is saying. Look directly in the eye of your speaker.
- Take notes: This will help you stay alert.
- Reconfirm and ask questions: Always reconfirm your understanding by repeating the information that was shared with you. Ask questions to understand the message better. These tips will e sure that you heard what was said.
- Remove Distractions: Focus on the instruction received. We should avoid mobile phone use, shuffling paper, looking outside from window or other similar activities. If you are performing these activities, listening process get disturbed and speaker will get a message that you are not taking interest.

Activity



- Call 3 students.
- Give a student a written piece. Ask him to read it out loudly to the other 2 students.
- Provide one student with earphones to listen to music while listening to the information.
- Let the other person listen to it without any distraction.
- At the end of the reading, ask both the student to tell what has been read out.
- As a matter of fact we would find out that the person who has put all his attention in listening would yield better results in comparison to the other one.

Explain



• Discuss with the students the importance of being an active speaker in a debate where counter questioning is allowed.

4.2.6: Writing Skill

Say



- Writing forms an important form of communication. A better writing skill allows our messages to be communicated effectively with clarity.
- It is also having advantage to spread it to a larger audience comparatively face to face or telephonic discussion.
- The medium using which we communicate with the help of written to convey the message is called written communication.

Elaborate



Use the following do's and don'ts for written communication:

- Use simple language
- Highlight important words
- Use appropriate salutation and greeting
- Keep your sentences short and to the point
- Proof read the text before sharing

Tips for written communication:

- Do write with the reader in mind. If you're writing about a technical subject for a non-technical reader, avoid using technical jargon and acronyms they may not know.
- Be clear about what you are actually trying to communicate. Use short words and sentences to get across your point. It can be useful to use a list of bullet points rather than paragraph to make it easier to read and understand the information.
- Use salutation Sir/Ma'am, Mr./Mrs./Ms., etc. and Greeting Good Morning, Hi, etc.
- Choose an appropriate font and size for your writing. Wingdings and Comic Sans are obviously out and anything less than 8-point will give your readers a headache.

Activity



- Ask students to form pair
- Ask students to write a fire accident report to the management.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

4.2.7: Grooming

Say



- An art of keeping your body and mind clean is Personal Grooming. It is very important that everyone
 should take care of their hygiene cleanliness. Due to this, one would not just look good but feel
 healthy to. Taking care of your body appearance is imperative. Once you enter your store/department
 you need to be dressed in full uniform as per company standards, and also properly groom yourself
 as per the service ethics.
- Grooming is basically the state, condition, manner or style in which a person appears.
- Good personal grooming can make you look good. Looking good usually improves your self-esteem and confidence.
- Dressing is also an important part of personal grooming. Clothes should be clean and free of stains, holes, and wrinkles. Properly fitting clothes look best. Wearing clothing that is too big or small in size can make a person look untidy.
- For lady sales executive, dress code would be Salwar kurta/Saree/T-Shirt with Jeans.
- · Tips for dressing

T-shirt

- Wear well-ironed T-shirt
- Make sure the collars are clean
- Tuck the shirt in the pant
- Wear normal fit, fit shouldn't be too loose or too tight

Trousers/Jeans

- Wear well-ironed trousers/jeans
- Make sure it's not low waist
- Avoid boot cut styles
- Avoid stuffing the pockets

Shoes

- Make sure they are neat and clean
- Ensure they are not too colourful
- Wear clean socks
- Ensure your shoes fit well, neither too tight or too loose

Belt

- Wear a Black color belt
- Ensure it's made of good leather
- Ensure it's not too long and not too short

Avoid belts with flashy buckles

Watch

- Wear a good quality watch
- Ensure it's simple with straight or classy lines
- Make sure it's not flashy
- Personal grooming not only makes us presentable but also makes us feel confident about ourselves.
 Good personal hygiene is essential for good health. Habits that are considered personal grooming include, bathing, dressing, applying makeup, hair removal and taking care of one's teeth, nails and skin.

Ask



- Ask the students to write about why one's uniform should be neat, clean and ironed.
- Ask the students to discuss the importance of uniform in school.
- Also ask them to discuss about incidents when they formed an opinion about others based on their dress

4.2.8: Etiquette

Say



- Office etiquette is important because bad manners at work can be bad for business by negatively affecting employee morale and productivity.
- Etiquette is basically polite behavior and courtesy, a person is expected to follow.
- Certain etiquettes that should be kept in mind are as follow:
 - o Stand straight, make eye contact and turn towards people when they are speaking and genuinely smile at people.
 - o Follow the dress code prescribed by the organization.
 - o Limit personal calls especially when you are working in a manufacturing unit.
 - o Eat and smoke to the designated areas only otherwise it may disturb other people.
 - o Apart from certain etiquettes, certain ethics are also expected to be followed by the employees of an organization. Ethics are basic rules regarding how people of a particular profession/professional setting are supposed to work. Certain work ethics include:
 - o Discipline: It takes a certain level of commitment to finish your tasks every day. Only with discipline one can stay fixed on goals and determined to complete his assignment.
 - o Commitment to work: A strong sense of commitment to work affects how an individual work and the amount of work he does. When a worker is committed to work he turns up on time, puts in his best efforts and completes the projects to the best of his ability.
 - o Punctuality: It shows that you are dedicated to your work, interested in the work and capable of handling responsibility. Being punctual shows your professionalism and commitment to work.

Activity



- Ask the students to narrate instances when they have been scolded by their school teachers/ elders for behaving inappropriately-like dragging one' feet while walking, etc.
- Look for other such instances.

4.2.9: Rapport Building

Say



- By improving your overall communication skills, you can build rapport with people at your work.
- Rapport is basically "Getting along well with others".
- Rapport building helps us:
 - o Establish feelings of Harmony, Goodwill and Trust
 - o Know more about the prospect's mood, attitude, style, needs, values and interests
 - o Get the prospect talking
 - o Promote open communication, develop trust and improve the probability of deal closure

Elaborate



Barriers to Rapport Building:

- Lack of interest
- · Lack of understanding
- Hesitation

To overcome these barriers and to build rapport, you need to understand the different types of customers, which brings us to our next topic "Customer Types".

4.2.10: Team work

Say



- Tell them now they will learn about supporting and guiding team members.
- Tell the participants; while working in an organization they have to support and guide other team members also.
- A good team is the one that motivates its members to have a positive attitude, perform better.
- Team work is a very important part of working life. They can have a big impact on the profitability of an organization, team and individual performance, company reputation, etc.

Do



- Acknowledge their response and encourage them to share their views with the group.
- Make sure participants express their views but at the same time should not deviate from the main topic.

Elaborate



Lessons from the Geese:

Teams are much more effective than individuals for work. Let's look at an example from Mother Nature to learn how an effective team works.

The geese actually fly in a group on their long flight of migration.

The flapping of the geese that are in front of the formation creates a draft for the geese at the rear reducing air resistance. This indicates their true sense of responsibility towards the fellow beings.

When the leader of the formation of the geese is tired, it goes back and another goose then comes in the front to lead the group of Geese. So, these Geese have no fixed leadership or hierarchy.

No goose likes to fly out of formation because it would get tired easily. Even if it does fly out of formation, it quickly comes back to its place. So, Geese have amazing team sense!

Geese also make a lot of noise while they fly. But it's interesting to note that the noise is not made by the geese leading the formation, but by the Geese in the back of the formation, which serve to support and keep everyone going. Isn't that the unique vocal support?

If one goose is ill and falls out of formation, a few of others stay with it, to be with it until it gets well or dies. Now, that's what we call team spirit!

Geese are unique as a team. The team behaves as a cohesive whole with a common goal of reaching a particular destination in mind. Team members help each other since they can collectively achieve much more than they can alone.

As explained about the Geese, being a human if we are sharing common set of direction and have consider our community can move fast and reach to our goal in shorter period because we move with trust on each other.

Considering the Geese if we follow their footsteps we will be connected with the persons who could lead us to reach our destination. We willing accept help from others and offer our help to others.

It pays to take turns in doing the hard tasks and share the leadership. As with Geese, people are interdependent on each other's skills, capabilities and unique arrangements of gifts, talents and resources.

We need to make sure we are encouraging each other in the team. In teams where there is encouragement, the production is much higher.

If we have as much sense as Geese, we will stand by each other in difficult times as well as when we are strong. Now, what do you say to that!!!

Team Player Styles:

Contributors

The following are the key characteristics of Contributors:

- Logical
- Efficient
- Organized
- Proficient
- Relevant
- Pragmatic
- Systematic
- Dependable
- Responsible

Contributors tend to be task-oriented. Their strengths lie in sharing information with the team and making sure every aspect of a work is taken care of.

Collaborator

The following are the key characteristics of Collaborators:

Cooperative

- Flexible
- Confident
- Forward-looking
- Conceptual
- Accommodating
- Generous
- Open
- Visionary
- Imaginative

Collaborators are highly goal-oriented.

Communicator

Here are the key characteristics of Communicators:

- Tactful
- Helpful
- Friendly
- Patient
- Informal
- Relaxed
- Supportive
- Encouraging
- Considerate
- Spontaneous

The Communicator is a process-oriented member who is an effective listener.

Challenger

The key characteristics of Challengers are:

- Candid
- Ethical
- Questioning

- Honest
- Truthful
- Outspoken
- Principled
- Adventurous
- Aboveboard
- Brave

The Challenger is a member who questions the goals, methods and even the ethics of the team. He is willing to disagree with the leader and encourages the team to take calculated risks.

Activity



- Divide students into teams and give them equal amounts of newspaper, gum, cello tapes no scissors or blade should be used. Ask them to construct a castle in 30 mins. Best team will be identified based upon the following criteria:
- Which team can build the tallest, structurally-sound castle?
- Which team can build a castle the fastest?
- Divide students into teams and in each team, 1 person should be the player. The player should not speak throughout the game, The eyes of the player will be tied and the rest of the team should direct him towards the exit of the room. The player should not touch any object till he/she reaches the exit door. Also, the team members should make sure they give him the proper clue for the directions. There is one more requirement. The player should first be directed to a place where the marker pen is placed. The player needs to pick it and then go towards the exit door. The team should co-ordinate amongst them and helps the player throughout the game. Time limit is 15 mins for each team.
 - o Questions to ask during the review:
 - o Did you come up with a strategy before starting the challenge?
 - o Did you adapt your game plan?
 - o How did you feel being blindfolded? Did you always trust your communicators?
 - o Did you get frustrated at any point?

Notes for Facilitation



- Summarize the main points of the session with the participants.
- Ask them if they have any query pertaining to the topics taught in the session.
- Encourage them to ask questions and answer their queries satisfactorily.

4.2.11: Resolving Conflict

Say



- Conflict It can be defined as a serious disagreement or argument.
- Conflict exist in almost all organization and some time it is also consider positive as it helps in healthy exchange of ideas and creativity.
- Unsolved problems may lead to increased levels of bitterness and frustration
- By deciding not to say something that would make you sound aggressive or frustrated, you can avoid unnecessary conflicts.
- Conflicts take place when people are rigid and are not willing to cooperate with each other.

Elaborate



To resolve conflicts in a team, you should use these steps:

- Examine what is causing trouble
- Discuss the issue with the conflicting party
- Clarify expectations and roles
- Find an option which benefits all
- Utilize constructive feedback
- Reach agreements

You should always depersonalize conflicts by adopting these steps:

- Focus on issues not personalities
- Encourage both sides to be objective
- Evaluate concerns of both sides
- Encourage people to listen to other's view
- Encourage points of agreement
- Don't dwell on anger

Use the following do's to resolve complaints:

- Be warm to the others
- Show empathy
- Acknowledge the other's feelings
- Listen actively

- Isolate the core problem
- Provide a satisfactory resolution and an alternative
- Follow-up after the resolution

Avoid the following don'ts to resolve complaints:

- Take a confrontational attitude
- Make assumptions
- Use technical or professional jargon
- Pass the blame
- Make unrealistic commitments
- Exceed your authority
- Sacrifice your company's interest

Follow these best practices for giving feedback effectively:

- Hold the discussion in private
- Remain calm
- Show empathy
- Discuss the most important issues only
- Support your argument with facts, figures and observed behaviour
- Try to reach an agreement
- Summarise your understanding

Activity



- Call out a student randomly.
- Ask them to narrate an incident when they had a fight with their friend and it resulted in further problems in school, became a cause for mental stress.

Explain



• Discuss the importance of resolving conflicts for a person's mental peace, maintaining order and healthy environment in workplace.

4.2.12: Conduct at Workplace

Elaborate



Creativity:

- Improved Productivity Successful teams develop the ability to accomplish more and faster.
- Improved Creativity cross functionality application of different minds to the task usually produces original out of the box thinking.
- Focus Properly tasked teams can solve intractable organizational problems.
- Development serving on a team participating in team activity provides good development experience sometimes fast track for team members.
- Employee satisfaction successful teams often have a good time members also have a sense of achievement.

Working in Teams:

- Managers: hold Conventional managerial responsibility and are drawn from the hierarchical culture of the organization.
- Facilitators: these are neutral, objective individuals who are chosen for their process consulting skills.
- They may also act as arbitrators in times of conflict between managers and team players.
- Team leader: These are often the department supervisors who must work with managers and facilitators and help them to shape the team.
- Team Players: these are the members of the team who share a common goal or purpose. They must be trained and developed to assume the special skills and responsibilities of self-management.
- Support Groups: these are clusters of individual who work with the team supporting them with specific required- e.g. the human resource, finance and administration departments.

Ask



- Ask students about advantages of team work
- Ask students about importance of teamwork

Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.
- Say students to complete the exercises given in end of unit.

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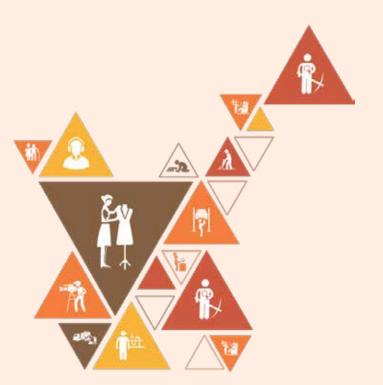




5. Maintain a Healthy,Safe and SecureWorking Environment

Unit 5.1 – Performance Criteria for Healthy, Safe & Secure Work Environment

Unit 5.2 – Knowledge & Understanding: Healthy, Safe & Secure Work Environment



Key Learning Outcomes 👸



At the end of this module, students will be able to:

- 1. Perform as per the need of resources to maintain a safe, secure working environment
- 2. Maintain safe & secure workplace
- 3. Assess your responsibilities for workplace safety
- 4. Use best practices to remove potential hazards from your workplace and prevent accidents
- 5. Apply appropriate strategies to deal with emergencies at workplace

UNIT 5.1: Performance Criteria for Healthy, Safe & Secure Work Environment

Unit Objectives



At the end of this unit, learners will be able to:

Perform as per the need of resources to maintain a safe, secure working environment



Welcome and greet the participants. Revise the learnings of the previous sessions and ask them if they have any doubts.

Resources to be Used



Available objects such as a duster, pen, notebook etc.



- Comply with organization's current health, safety and security policies and procedures
- Report any identified breaches in health, safety, and security policies and procedures to the designated person
- Coordinate with other resources at the workplace to achieve the healthy, safe and secure environment for all, incorporating all government norms esp. for emergency situations like fires, earthquakes etc.
- Identify and correct any hazards like illness, accidents, fires or any other natural calamity safely and within the limits of individual's authority
- Report any hazards outside the individual's authority to the relevant person in line with organizational procedures and warn other people who may be affected
- Follow organization's emergency procedures for accidents, fires or any other natural calamity. Identify and recommend opportunities for improving health, safety, and security to the designated person
- Complete all health and safety records are updates and procedures well defined

UNIT 5.2: Knowledge & Understanding - Healthy, Safe & Secure **Work Environment**

Unit Objectives



At the end of this unit, students will be able to:

- Maintain safe & secure workplace
- Assess your responsibilities for workplace safety
- Use best practices to remove potential hazards from your workplace and prevent accidents
- Apply appropriate strategies to deal with emergencies at workplace

Resources to be Used



- Available objects such as white Board, white board marker pens, duster.
- PC with LCD Projector or Flip Chart
- Participant Manual



- Greet and welcome the participants to the next unit of the program.
- Ask form the students, what they understand about health & safety at workplace.
- Discuss their answers.

5.2.1: Importance of Safe & Secure Working Place

Say



- Workplace safety play an important role in organization as it boosts the productivity.
- If the workers in the organization feel safe they can work with their full capabilities and potential and it also reflect positivism in the working environment.
- Measures needs to be taken to eliminate risks at work and ensure a safe and comfortable environment for the employees.

Elaborate



The responsibilities of the employers for maintaining safe workplace are:

- Healthy workplace should be provided
- Train the worker as per their job profile
- Maintain training records (who, what and when)
- Establish and maintain a comprehensive occupational health and safety program, including a written health & safety policy and an incident investigation procedure
- Support supervisors, safety co-ordinators and workers in their health and safety activities
- During potential hazard reporting action should be taken immediately
- During incident instant investigation should be initiated
- Provide adequate first aid facilities and services
- Ensure supply of personal protective equipment as per nature of job

The responsibilities of the supervisors for maintaining safe workplace are:

- Instruct workers in safe work procedures
- Train workers for all tasks assigned to them, and check that their work is being done safely
- Ensure that only authorized, adequately trained workers operate tools and equipment or use hazardous chemicals
- Ensure that equipment and materials are properly handled, stored and maintained
- Enforce health and safety requirements
- Correct unsafe acts and conditions
- Identify workers with problems that could affect safety at the worksite

• Develop health and safety rules and inspect the workplace for hazards

The responsibilities of the workers for maintaining safe workplace are:

- Know and follow health and safety requirements affecting your job
- If you don't know how to do something safely, ask for training before you begin work
- Work safely, and encourage your co-workers to do the same
- If unsafe condition is observed try to correct it and inform supervisor
- In case of any injury should be immediately reported to first aid attendant and supervisor
- Take the initiative. Make suggestions to improve health and safety

Ask



- Ask three aspects are important for progress of safety.
- Ask the essential elements necessary for safety
- Ask about the good safety practices
- Ask about responsibilities of employer and worker

Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

5.2.2: Workplace Hazards

Say



- The situation which can create threat to human life, property of workplace or environment is defined as hazard.
- Most of the hazards are hidden in nature which reflects theoretical risk but the fact is that if it becomes active it may lead to emergency.
- Hazards are sometimes classified into three modes: dormant, armed and active

Elaborate



The common types of hazard are:

- A situation which cause physical harm to body or create extreme stress is referred as physical hazard. A physical hazard may be natural or human made also.
- Chemical hazards are substances which can create harm to human health, harm body parts, property or environment. Chemical hazard may be natural or human made also.
- Biological hazards In this type of hazard biological agents plays a crucial role can cause harm to human health or body parts. These biological agents can be fungus, bacteria, viruses, parasites and foreign toxins.
- Psychological hazards usually taken place due to stressful working environment. Here potentially a
 person could be a hazard when affected psychological disturbance through stress or shift patterns
 and when a person is under the influence of alcohol, illness and lack of training.
- Electrical hazards are dangerous condition where a worker can or does make electrical contact with equipment or a conductor. From that contact, the person may sustain an injury from shock, and there is a potential for the worker to receive burn or blast injury.

Reporting of any hazard incidents

Follow your organization structure to report any hazards/incident to the relevant person.

Structure could be different from organization to organization.

Ask



- You can ask the different types of hazard
- You can pick the students and ask the hazard warning sign.
- You can ask the different ideas to control the hazard.

- Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- You could show the various Hazard signs and ask the identification from the students one by one.

Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

5.2.3: Organization's Emergency Procedures

Say



- Every workplace should have a plan for dealing with emergencies. You should be instructed in that plan within your first few days on the job and have refresher training from time to time.
- A workplace emergency is an unforeseen situation that threatens employees, customers, or the public; disrupts or shuts down your operations; or causes physical or environmental damage. Emergencies may be natural or manmade and include - floods, hurricanes, tornadoes, fires, toxic gas releases, chemical spills, radiological accidents, explosions, civil disturbances, and workplace violence resulting in bodily harm and trauma.
- The best way is to prepare to respond to an emergency before it happens. Few people can think clearly and logically in a crisis, so it is important to do so in advance.
- The company must determine potential hazards and the appropriate controls and protective equipment for those hazards. Personal protective equipment for emergency may include items such as Safety glasses, goggles, or face shields for eye protection, hard hats and safety shoes for head and foot protection, proper respirators, chemical suits, gloves, hoods, and boots for body protection from chemicals, special body protection for abnormal environmental conditions such as extreme temperatures; and any other special equipment or warning devices necessary for hazards unique to the worksite.

Elaborate



Once you have been trained, you should be able to answer these questions:

- Where the emergency phone numbers are posted?
- Where are the fire extinguishers and how and when should they be used?
- What other specialized equipment may be needed in an emergency, and how it is used?
- Where are the fire alarms and fire exits?
- What is the evacuation plan for the building?
- What should you do during an earthquake?
- In case of evacuation, where outside the building is the assembly point and who should you report to?

It is the discipline of dealing with and avoiding both natural and manmade disasters.

You should follow these steps for medical emergency procedures:

- An emergency medical service should be available near to your dealership
- At least one person should be trained enough to handle any medical emergency

- First-aid supplies should be available at the dealership
- Check Call Care route should be followed

You should follow these emergency instructions in case of fire:

- Activate the ALARM.
- Evacuate the area.
- Call the fire department.
- Fight the fire only if:
 - o You know how.
 - o The fire is small.
 - o You are confined to the area where it started.
 - o You have a way out.
 - o You can work with your back to the exit.
 - o You have the right type of extinguisher.
 - o You are confident in operating it effectively.
- DO NOT fight the fire if:
 - o You have any not very sure and have any doubts.
 - o It is spreading very fast and crossed the starting area.
 - o Escape route is blocked.

Follow these steps for fire prevention:

- · Don't unnecessarily accumulate trash and litter
- Keep the workplace areas neat and clean
- Keep yourself updated about location of fire alarm boxes and extinguishers
- Make sure you have knowledge about various types of fire extinguishers and confident to use them
- Store hazardous materials in designated areas
- Keep exits free of obstructions
- Know location of emergency exits and procedures
- Handle flammable liquids with caution

Fire extinguishers

Different fuels create different fires and require different types of fire extinguishing agents.

Class A

Class A fires are fires in ordinary combustibles such as wood, paper, cloth, trash, and Plastics.



Class B

Class B fires are fires in flammable liquids such as gasoline, petroleum oil and paint. Class B fires also include flammable gases such as propane and butane. Class B fires do not include fires involving cooking oils and grease.



Class C

Class C fires are fires involving energized electrical equipment such as motors, transformers, and appliances. Remove the power and the Class C fire becomes one of the other classes of fire.



Class D

Class D fires are fires in combustible metals such as potassium, sodium, aluminum and magnesium.



Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.

Activity



- Conduct a skill practice activity.
- Ask the students to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Skill Practice	Time	Resources
Use of fire extinguisher	2 hour	Fire extinguisher
		PPE



- Ask them to get into pairs for practice.
- Go around and make sure they are doing it properly.
- Wrap the unit up after summarizing the key points and answering questions.

Field Visit



• You could visit any of the industry and show the firefighting equipment. With the help of field visit you could show the where we need to fit various firefighting equipment and its role.

5.2.4: Evacuation Procedures in Emergency

Say



- An evacuation plan lays out how to exit a warehouse safely during an emergency me. Every member
 of the warehouse and visitors should be familiar with several ways to leave the warehouse and
 know a safe meeting place outside the building. In simple terms 'Emergency evacuation plan is the
 immediate and urgent movement of people away from the threat or actual occurrence of a hazard'.
- Certain areas have been designated as 'Safe assembly points' in a warehouse. It is advisable that all
 the warehouse colleagues should assemble at the specified assembly points in case of an emergency.
 This is useful for the responsible personnel (departmental safety officers/ fire wardens/supervisors
 etc.) to know the where-about of their colleagues in the event of any disaster or accidents. The
 specific assembly points should have been indicated in the fire escape routes maps posted at the
 area.
- First aid mock drills will test the efficiency of the emergency response procedures required in a nonemergency situation and to educate the warehouse employee to react quickly during the cri cal emergency times. This could be of any types like fatal injuries to a co-worker, snake bite mock drill, fire accidents etc

Elaborate



As the first step a layout must be made of the building, including:

- Evacuation Routes
- Fire Extinguisher (locations)
- Fire Alarm Stations (locations)
- First Aid Kit (locations)

The second step for evacuation procedures for workers & visitors in case of emergency includes creating a map of the parking lot and surrounding buildings.

This must show the Rally Point. Rally Point must be a safe distance from the building. It must be easily accessible, out of the way of emergency services, and should not be beside the fire hydrant.



- What do you understand by a workplace emergency?
- · What is an emergency action plan?
- What PPE can be used during emergency?

Notes for Facilitation



- Find out from the students what according to them emergency situations are.
- Give the overview of the prevention measures taken by companies to deal with the emergency situations.

5.2.5: Auto Shop Safety

Say



- Personal Safety: Observe the following general safety precautions while working in automotive workshop
- Don't indulge in horseplay
- Don't scatter the tools etc. on the operating machinery
- Don't keep sharp objects or tools in your pocket
- See that your dress is suited to the job. It should not be loose which may get caught in the moving machinery
- Never use compressed air for blowing out dirt from Tour clothes
- While chipping, grinding or using air hose or doing any other job where there is danger of flying particles, goggles must be worn



- What procedures we have to follow in autoshop for safety
- Ask about areas in auto shop, where safety is the major concern.

5.2.6: Workshop Equipment and Safety

Say

2

- Personal Safety: Observe the following general safety precautions while working in automotive workshop.
- Don't indulge in horseplay.
- Don't scatter the tools etc. on the operating machinery.
- Don't keep sharp objects or tools in your pocket.
- See that your dress is suited to the job. It should not be loose which may get caught in the moving machinery.
- Never use compressed air for blowing out dirt from tour clothes.
- While chipping, grinding or using air hose or doing any other job where there is danger of flying particles, goggles must be worn.
- When car is jacked up, make sure the jack is properly centered and will not slip.



- List hazardous equipments available ina auto shop
- Ask about safety measures required when using hazardous equipments.

5.2.7: Safety with Hand Tools

Say



- Use the correct tool for the job in hand
- Use the tool correctly
- Keep the tools clean and in good working condition
- Grease or oil on tools should be wiped off as it is difficult to hold and use such tools
- Store the tools in their proper places



- List hand tools available ina auto shop
- Ask about safety measures required when using hazardous equipments

5.2.8: Safety with Power Tools

Say



- Electric shock: The safety precautions are
 - o Don't use damaged chords
 - o Don't stand in water or even wear wet shoes when working with electrical equipment
 - o Make sure the electrical equipment is properly earthed
- Flying metal chips the safety precautions is ALWAYS WEAR GOGGLES
- Injuries due to unsafe use of tools: The safety precautions are:
 - o Carefully study the instructions before using any equipment
 - o Keep hands and clothes away from moving parts
 - o Make sure the electrical equipment is properly earthed
 - o When working on devices like clutches, valves etc. which have springs, make sure the springs will
 - o Don't adjust or oil moving part of a machine

Ask



- List power tools available ina auto shop
- Ask about safety measures required when using hazardous equipments

Notes for Facilitation



- Show the steps for handling of hand tools.
- Precautions when using powered tools.
- Using power tools.

5.2.9: Safety Equipment

Say



- When working on vehicles, think safety first. You should use the proper tools and clothing to protect yourself.
- PPE Required in auto shop are:
 - o Eye Protection is a must when working on cars. Eyes are so fragile. Safety glasses and goggles will help prevent foreign materials from entering your eyes. These are especially important when inspecting the underbody of a vehicle and working around chemicals.
 - o Use earplugs or earmuffs when the work area is excessively loud. Noise with high decibel levels can damage your hearing.
 - O Use work gloves when you are performing work on tyres or exhaust. Extremely worn tyres can have sharp steel belts poking from the tread. Exhaust systems can be hot and have rusty holes that can cut your hands. Use disposable latex gloves when you are working with chemicals, oils, and grease

Ask



- You can pick the students and ask the safe practices for avoiding general shop hazards.
- You can ask the various types of personal protective equipment.

Do



- Ask them to get into pairs for practice.
- Go around and make sure they are doing it properly.
- Wrap the unit up after summarizing the key points and answering questions.

Notes for Facilitation



- Summarize the main points.
- Ask participants if they have any doubts.
- Encourage them to ask questions.
- Answer their queries satisfactorily.
- Tell participants to complete the questions at the end of the unit.
- Ensure that every participant answer all the questions.
- Say students to complete the exercises given in end of unit.

—— Notes 📋 ——	









6. Employability & Entrepreneurship Skills

Unit 6.1 – Personal Strengths & Value Systems

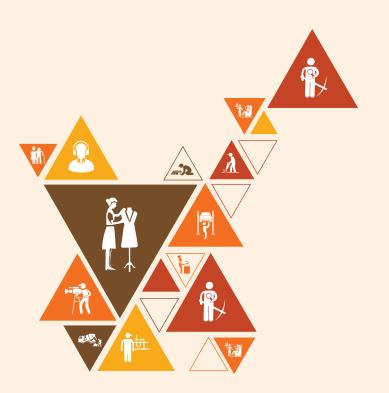
Unit 6.2 - Digital Literacy: A Recap

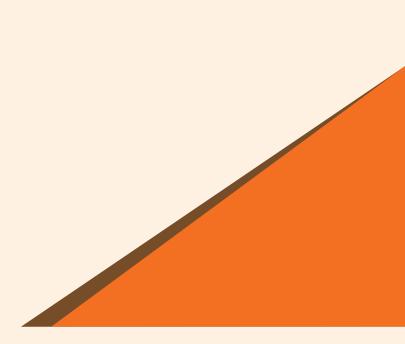
Unit 6.3 - Money Matters

Unit 6.4 – Preparing for Employment & Self Employment

Unit 6.5 – Understanding Entrepreneurship

Unit 6.6 – Preparing to be an Entrepreneur





Introduction: Employability and Entrepreneurship Skills

This Facilitator's guide includes various activities which will help you as a facilitator to make the sessions participative and interactive.

Ice breaker

• You can begin the module with the following ice breaker:

Five of Anything Ice Breaker Steps:

- Divide the participants into groups of four or five by having them number off. (You do this because people generally begin a meeting by sitting with the people they already know best.)
- Tell the newly formed groups that their assignment is to share their five favourite movies of all time, their five favourite novels or their five least liked films. The topic can be five of anything most liked or disliked.
- This ice breaker helps the group explore shared interests more broadly and sparks lots of discussion about why each person likes or dislikes their selected five.
- Tell the groups that one person must take notes and be ready to share the highlights of their group discussion with the class upon completion of the assignment.

Expectation Mapping

- 1. During the first session and after ice breaker session, ask the participants to answer the following question: "What do I expect to learn from this training?"
- 2. Have one of the participants write their contributions on a flip chart sheet.
- 3. Write down your own list of covered material in the training on another flip chart sheet.
- 4. Compare the two sheets, commenting on what will and what will not be covered during the training.
- 5. Set some ground rules for the training sessions. Ask the participants to put these rules on a flipchart and display it in the class.
- 6. You may get back to those sheets once again at the end of the last session of the training.
- 7. Benefits of doing this activity:
 - Participants feel better as their opinions are heard.
 - Participants get to know what they should expect from the training.
 - The facilitator gets to know which points to emphasize, which to leave out, and which to add during the training.
- 8. Expectations from the participants:
 - Must sign the attendance sheet when they arrive for class.
 - Conduct themselves in a positive manner
 - Be punctual, attentive, and participative
- 9. Explain the contents that are going to get covered one by one and connect it with the expectation mapping done earlier.
- 10. By the end of this exercise, the participants should have a clear understanding of what to expect from the session and what are the areas that will not get covered.

Defining Objectives

- 1. Defining the objectives in the beginning of the units sets the mood for the unit.
- 2. To begin with the end in mind sets the expectations of the participants as what could be the important takeaways from the session.
- 3. It is also a way of making participants take responsibility of their own learning process.
- 4. For the facilitator, the objectives decide a designed path to progress on so that the learning stays aligned and on track.

- 5. Read the objectives slowly, one by one, and ask the participants to explain what they think it means.
- 6. At the end of the session, you could again revisit the objectives to find out from the participants about how many objectives have been achieved.

In order to effectively facilitate this workshop:

- 1. You must have thorough knowledge of the material in the Participant Handbook, and be prepared to answer questions about it.
- 2. You may also wish to read other material to enhance your knowledge of the subject.
- 3. There may be issues raised with which you are not able to deal, either because of lack of time or knowledge. You can either state that you will obtain answers and get back to the participants with the information. Incase the query can be turned to an assignment to the class, do so. You can work with the the participants on the assignement.
- 4. You must have a very clear understanding of what the participants want to accomplish by the end of the workshop and the means to guide the participants.
- 5. As the facilitator, it is your responsibility to make sure that all logistical arrangements are made for the workshop. This may involve doing it yourself or confirming that someone else has made all necessary arrangements associated with the workshop. Assume nothing and check everything before the workshop begins.
- 6. To break the monotony and boredom during sessions, introduce mini breaks in the form of stretching exercises, jokes, some group songs or games.
- 7. Invite discussion from the participants.
- 8. Probe the participants further and lead them to come to affirmative conclusions.
- 9. Let the participants answer. No answer is incorrect.
- 10. Ask one participant to write all the points on the whiteboard.
- 11. Build the sessions from the answers provided by the class.
- 12. Prepare for the sessions in advance so that the resources like flipcharts, handouts, blank sheets of paper, marker pens, etc. can be kept ready.
- 13. Ensure that resources like board, markers, duster etc. is available before your session starts.

General instructions for role playing:

- 1. You are not being asked to be an actor or to entertain. The purpose of the role play is to provide a situation in which you can practice certain skills.
- 2. When you read the brief, try to imagine yourself in the situation described and behave in a way you feel to be natural but be conscious of the fact that your role may require a different approach from that which you might normally use.
- 3. You (and others) may benefit from the change in approach and behaviour. Therefore, try to use the approach you feel to be most appropriate for the circumstances described in your brief.
- 4. The brief is just the starting point. It simply sets the scene and the tone of session or activity. Try not to keep referring to the brief as this will affect the spontaneity of the meeting. Allow the role play to develop as you think it might in real life and change your reactions in line with the behaviour and responses of others involved.
- 5. If you find that you have too little information to answer questions or to describe what has happened in the situation, do feel free to add your own thoughts and ideas. Try to keep these within the framework of the role you are taking and try to make your improvisations as realistic as possible.

UNIT 6.1: Personal Strengths & Value Systems

Key Learning Outcomes



At the end of this unit, participants will be able to:

- Explain the meaning of health
- 2. List common health issues
- 3. Discuss tips to prevent common health issues
- 4. Explain the meaning of hygiene
- 5. Discuss the purpose of Swacch Bharat Abhiyan
- 6. Explain the meaning of habit
- 7. Discuss ways to set up a safe work environment
- 8. Discuss critical safety habits to be followed by employees
- 9. Explain the importance of self-analysis
- 10. Discuss motivation with the help of Maslow's Hierarchy of Needs
- 11. Discuss the meaning of achievement motivation
- 12. List the characteristics of entrepreneurs with achievement motivation
- 13. List the different factors that motivate you
- 14. Discuss the role of attitude in self-analysis
- 15. Discuss how to maintain a positive attitude
- 16. List your strengths and weaknesses
- 17. Discuss the qualities of honest people
- 18. Describe the importance of honesty in entrepreneurs
- 19. Discuss the elements of a strong work ethic
- 20. Discuss how to foster a good work ethic
- 21. List the characteristics of highly creative people
- 22. List the characteristics of highly innovative people
- 23. Discuss the benefits of time management
- 24. List the traits of effective time managers
- 25. Describe effective time management technique
- 26. Discuss the importance of anger management
- 27. Describe anger management strategies
- 28. Discuss tips for anger management
- 29. Discuss the causes of stress
- 30. Discuss the symptoms of stress
- 31. Discuss tips for stress management

UNIT 6.1.1: Health, Habits, Hygiene: What is Health?

Unit Objectives | 6



At the end of this unit, participants will be able to:

- Explain the meaning of health
- List common health issues
- Discuss tips to prevent common health issues
- Explain the meaning of hygiene
- Discuss the purpose of Swachh Bharat Abhiyan
- Explain the meaning of habit

Resources to be Used



Participant Handbook

Ask



- What do you understand by the term "Health?"
- According to you, who is a healthy person?

Say



Discuss the meaning of health and a healthy person as given in the Participant Handbook.

Ask



When did you visit the doctor last? Was it for you or for a family member?



- Discuss the common health issues like common cold, allergies etc. Refer to the Participant Handbook.
- Let us do a small activity. I will need some volunteers.

-Role Play



- Conduct a small skit with volunteers from the class. Consider one of the villagers has been appointed as a health representative of the village, what measures will you as a health representative suggest to the common villagers to prevent common health issues discussed.
- You will need at least 4 volunteers (Narrator, Health Representative, Head of the Village, Doctor).
- Explain the health concerns of the village to the Narrator. The Narrator will brief the class about the skit.
- Give the group of volunteers, 5 minutes to do discuss.
- At the end of 5 minutes, ask the group to present the skit to the class assuming them as the villagers.
- The class can ask questions to the group as a common villager.

Summarize | 🎏



Through this activity we got some tips on how can we prevent these common health issues.



Let us now see how many of these health standards we follow in our daily life.

- Activity



Health Standard Checklist from the Participant Handbook.

Ask



How many of you think that you are healthy? How many of you follow healthy habits?

Say



- Let's do an exercise to find out how healthy you are.
- Open your Participant Handbook section 'Health, Habits, Hygiene: What is Health?', and read through the health standards given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

Do



- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise.
- At the end of 5 minutes, ask the participants to check how many ticks have they got.

Summarize |



Tell them that they need to follow all the tips given in this checklist regularly in order to remain healthy and fit.

Ask



Discuss:

- Is it necessary to practice personal hygiene every day? Why?
- How does a person feel when they do not practice good personal hygiene? Why?
- Can good personal hygiene help a person feel good about his/her self? How?

Say



Discuss the meaning of hygiene as given in the Participant Handbook.

Activity 2



Health Standard Checklist: Hygiene

Say



- Let's do an exercise to find out if we maintain good hygiene habits or not.
- Open the Participant Handbook and read through the Health Standard checklist given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

Do



- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise...
- At the end of 5 minutes, ask the participants to check how many ticks have they got.
- Ask them to calculate their score.
- Tell them what each score indicates by reading aloud what has been mentioned in the Participant Handbook.

Ask



- How many of you have heard about "Swachh Bharat Abhiyan"?
- Can you tell the class what it is about?

Summarize \ \(\beta \)



• Tell them about Swachh Bharat Abhiyan as given in the Participant Handbook and request them to take a pledge to keep our country clean.

Ask



· What is a habit?

Say



Discuss some good habits which can become a way of life.

Summarize |



• Tell them about good and bad habits and the reasons to make good habits a way of life.

UNIT 6.1.2: Safety

Unit Objectives | @



At the end of this unit, participants will be able to:

- Discuss ways to set up a safe work environment
- Discuss critical safety habits to be followed by employees

Resources to be Used



- Participant Handbook
- Safety signs and symbols
- Safety equipments
- Blank papers
- Pens



- There are many common safety hazards present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness and death.
- Safety Hazards include:
 - Spills on floors or tripping hazards, such as blocked aisles or cords running across the floor.
 - Working from heights, including ladders, scaffolds, roofs, or any raised work area.
 - Unguarded machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch.
 - Electrical hazards like cords, missing ground pins, improper wiring.
 - Machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc.)

Team Activity



Safety Hazards

- There are two parts to this activity.
- First part will cover the potential safety hazards at work place.
- Second part will cover a few safety signs, symbols and equipments at work place.
- Use this format for the first part of the activity.

	PART 1	
Hazard	What could happen?	How could it be corrected?

Ask



How could you or your employees get hurt at work?

Say



• Let's understand it better with the help of an activity. You will be given a handout within your groups. You have to think about the possible hazards of your workplace, what damage these hazards could cause and about the corrective action.

Do



- Divide the class into five to six groups of four participants each.
- Put the format on the board for the activity.
- Give blank papers and pens to each group.
- The group is expected to think and discuss the potential safety hazards in the workplace.
- Ask the group to discuss and fill the format using the blank sheet.
- Give the groups 5 minutes for the activity.
- For the second part of the activity, show the class some pictures of safety signs, symbols and equipments.
- Now they will put down a few safety symbols, signs or equipment against the safety hazards identified.
- Give them 5 to 10 minutes to discuss and draw/note it.
- At the end of 10 minutes the groups will present their answers to the class.

Say



- Now, let's discuss the answers with the class.
- All the groups will briefly present their answers.

Do



- Ask the audience to applaud for the group presentation.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.
- Tell the group to wind up the discussion quickly if they go beyond the given time limit.

Ask



De-briefing

- · What did you learn from the exercise?
- As an entrepreneur, is it important to ensure the safety of your employees from possible hazards? Why?

Summarize 🔎



- Ask the participants what they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the tips to design a safe workplace and non-negotiable employee safety habits.

UNIT 6.1.3: Self Analysis- Attitude, Achievement Motivation: What is Self Analysis?

- Unit Objectives | 🎯



At the end of this unit, participants will be able to:

- Explain the importance of self- analysis
- Discuss motivation with the help of Maslow's Hierarchy of Needs
- Discuss the meaning of achievement motivation
- List the characteristics of entrepreneurs with achievement motivation
- List the different factors that motivate you
- Discuss the role of attitude in self- analysis
- Discuss how to maintain a positive attitude
- List your strengths and weaknesses

Resources to be Used



- Participant Handbook
- Old newspapers
- Blank papers
- Pencils/ pens

Activity



This is a paper pencil activity.

What are the three sentences that describe you the best?

What do you need to live happily?

What are your strengths and weaknesses?

Do



- Write the three questions on the board/flipchart before the session begins.
- Give plain papers and pencils/pens to each participant.
- Tell participants to write the answer for the three questions on the paper.
- Tell them the purpose of this activity is not to judge anyone but to understand more about self.

Say



Discuss the concept of Self Analysis and motivation with reference to Maslow's Hierarchy of Needs as discussed in the Participant Handbook.

Team Activity



Tower building

Each group which will create tower using the old newspapers.

Do



- Divide the class into groups.
- Give them some old newspapers.
- The task is to create a tower out of the newspapers.
- The group which will create the highest tower standing on its own will be considered the winning group.
- Groups can use as many newspapers as they want to and in any way they want.

Ask



- · What did the winning group do differently?
- If you were given a chance, how would you have made the tower differently?
- · How did you feel while making the tower?
- Did you feel motivated?

Say



• Discuss the concept of achievement motivation and characteristics of entrepreneurs with achievement motivation as discussed in the Participant Handbook.

Ask



• Is your attitude positive or negative?

Say



• Let me tell you a story:

It's Little Things that Make a Big Difference.

There was a man taking a morning walk at the beach. He saw that along with the morning tide came hundreds of starfish and when the tide receded, they were left behind and with the morning sun rays, they would die. The tide was fresh and the starfish were alive. The man took a few steps, picked one and threw it into the water. He did that repeatedly. Right behind him there was another person who couldn't understand what this man was doing. He caught up with him and asked, "What are you doing? There are hundreds of starfish. How many can you help? What difference does it make?" This man did not reply, took two more steps, picked up another one, threw it into the water, and said, "It makes a difference to this one." What difference are we making? Big or small, it does not matter. If everyone made a small difference, we'd end up with a big difference, wouldn't we?

Ask



• What did you learn from this story?

Activity



What Motivates You?

- This is an individual activity.
- It is an exercise given in the Participant Handbook.

Do



- Ask the class to open their Participant Handbook and complete the exercise given in the section What Motivates You?
- Ensure that the participants have opened the correct page for the activity.
- Give the class 5 minutes to complete the activity.



Discuss the concept of attitude and how to cultivate a positive attitude as discussed in the Participant Handbook.

Summarize 📜



• Close the discussion by summarizing how self-analysis, knowledge about what motivates you and your positive attitude can help in your business as well in life.

UNIT 6.1.4: Honesty & Work Ethics

Unit Objectives 6



At the end of this unit, participants will be able to:

- Discuss the qualities of honest people
- Describe the importance of honesty in entrepreneurs
- Discuss the elements of a strong work ethic
- Discuss how to foster a good work ethic

Resources to be Used



Participant Handbook

Ask



- What do you understand by honesty?
- Why is it important for entrepreneurs to be honest?
- Do you remember any incident where your honesty helped you in gaining confidence?
- Do you remember any incident where someone lost business due to dishonesty?

Say



- Talk about honesty, qualities of an honest person, and the importance of honesty in entrepreneurs as discussed in the Participant Handbook.
- "Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem.
- Keep your discussion focussed around the following:
 - What went wrong?
 - · Who was at fault?
 - Whom did it impact- the customer or the businessman?
 - How would it impact the business immediately? What would be the long term impact?
 - What could be done?
 - What did you learn from the exercise?

Do



- Divide the class into four groups of maximum six participants depending on the batch size.
- Give one case study to each group.
- Instruct them to read the case carefully.
- Put down the de-brief questions on the board and ask the groups to focus their discussion around these questions.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem. Give the class 5-10 minutes to discuss the case and note down their solutions.
- At the end of 10 minutes the team should present their case solution to the class. The presentation can be a
- Ask the group to select a group leader for their group. The group leader to discuss and assign roles to the group members for the presentation.

Team Activity 🚉



Case Study Analysis

Scenario 1

Aakash has a small mobile retail sales and repair shop in Allahabad. He has one of the most popular outlets and has great rapport with his customers.

It's around 11 AM when a customer barges in to the shop and starts shouting at Aakash for giving her a faulty instrument. The screen of her mobile is cracked from one side. Aakash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue him and to go to Consumer Court for cheating her. Now, the problem occurred somewhere outside the shop but as other customers were listening to the conversation, it might impact his business. The situation needs to be managed very sensitively. What would you do if you were in Aakash's place?

Scenario 2

Rajni does beautiful Phulkari embroidery on suits and sarees. She has a small home-based business. She has a huge list of customers on Facebook and WhatsApp who give her orders regularly. Smita is one of her old and regular customers. As her sister-in-law's weddingwas around the corner, Smita wanted to buy few handcrafted Phulkari duppatta. She placed an order for three duppattas via WhatsApp and requested Rajni to send them as soon as possible. When the parcel reached Smita through courier she found that out of the three duppatas, only one was hand embroidered and the other two had machine embroidery on them. Even the length and the quality of the material was not as desired. Smita was heartbroken. It was a complete waste of money and moreover she couldn't wear what she had planned to during the wedding functions. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment.

Smita has also sent a feedback and expressed her disappointment on the social media... this will directly affect Rajni's business. What would you do if you were in Rajni's place?

Scenario 3

Shankar is a tattoo artist who has a small tattoo showroom in a big, reputed mall in New Delhi. Mr Saksham had an appointment for today, at 11:00 am but he reached at 11:50 am. Meanwhile, Shankar had to reschedule his next appointment. After availing Shankar's services, Mr Saksham started yelling in an abusive language, refusing to pay the requisite amount, and finding faults in the services provided by him. Who was at fault in this case? What should Shankar do? Should he confront Saksham or give in to the demands of the client?

Scenario 4

Shailender is an online cloth reseller who does business through social networking sites such as Facebook and WhatsApp. Priyanka made online payment for a dress to Shailander. But she did not receive the dress for a month. When she asked for a cancellation, Shailander started misleading her. For almost 45 days, he kept promising her that he will pay the amount today, tomorrow, day after etc. Even after repeated calls and messages when she did not receive the payment or the dress, she decided to write a post against him on a popular social media platform. As a result, Shailender lost lots of customers and his flourishing business faced a major crisis. How could this situation have been managed?



- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Once the presentation is over, the class can ask their questions.



- Congratulate each group for the group presentation.
- Ask the audience to applaud for them.
- $Ask\,de-brief\,questions\,to\,cull\,out\,the\,information\,from\,each\,group.$
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.

Summarize \(\beta \)



- Ask the participants what they have learnt from the exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- $Close \ the \ discussion \ by \ summarizing \ the \ importance \ of \ honesty \ and \ work \ ethics \ for \ entrepreneurs.$

UNIT 6.1.5: Creativity and Innovation

Unit Objectives 6



At the end of this unit, participants will be able to:

- List the characteristics of highly creative people
- List the characteristics of highly innovative people

Resources to be Used



- Participant Handbook
- Chart papers
- Marker pens

- Ask



- You must be aware of the term 'Rags to riches' and heard stories related to the term.
- What do these stories tell us?
- What was so special about these people?

Say



- Let's have a look at these stories.
- There are some inspiring stories about people which I would like to share with you.
- Narrate these stories to the class.

A.P.J. Abdul Kalam

Who has not heard of A.P.J. Abdul Kalam: Avul Pakir Jainulabdeen Abdul Kalam hailed from a very humble background. His father was a boat owner. To help his family, Kalam would work as a newspaper vendor. With limited resources, he graduated in Physics and studied aerospace engineering. He was instrumental in India's step towards nuclear energy. In 2002, he became the 11th President of India.

Water filter/purifier at source

Two young boys studying in classes 4 and 5, from Lingzya Junior High School, Sikkim designed a simple innovative low cost water purifier.

Inspiration behind the idea: Most people today prefer to use a water filter/purifier at their home.

Both the children have given idea to have filter/purifier at the source of water so that everyone has access to clean water without having to make an investment in purchasing a filter/purifier.

Soring's idea is to have a centralised purification system at the point of distribution like water tank while Subash's idea is to have such purifiers attached to public taps.

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-youngindians/20151208.htm

Solar seeder

This is a story of a innovative solar seeder and developed by Subash Chandra Bose, a class 8, student from St Sebasthiyar Matriculation School, Pudukkottai, Tamil Nadu. Subash has developed a solar powered seed drill, which can undertake plantation for different size of seeds at variable depth and space between two seeds.

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-youngindians/20151208.htm

Looms for physically challenged

Now this is really inspiring of two sisters, Elakkiya a Class 6 student and Pavithra a Class 9 student of SRC Memorial Matriculation, Erode, Tamil Nadu.

The two sisters have come up with loom for lower limbed physically challenged. In their loom they have $replaced \ the\ pedal\ operated\ system\ with\ a\ motor\ and\ a\ gearbox\ attached\ to\ a\ pulley\ mechanism.$

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-youngindians/20151208.htm

- Ask |



- If they can, why can't you?
- Discuss concepts related to 'Creativity and Innovation' with the participants as given in the Participant Handbook.

Sav



- Recall the stories on motivation.
- What is the inner drive that motivates people to succeed?
- Let's learn more about such creative and innovative entrepreneurs with the help of an activity.

Team Activity



- This is a group activity.
 - Think of any one famous entrepreneur and write a few lines about him or her.

Activity De-brief

- Why did you choose this particular entrepreneur?
- What is his/her brand name?
- What creativity does he/she possess?
- What was innovative about their ideas?

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6 depending on the batch size.
- Give each group a chart paper.
- Tell the participants they have to write a few lines about any one famous entrepreneur.
- Give the participants 10 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.
- Ask each group to read out what they have written.
- Ask the de-brief questions.

Summarize | 2



- Summarize the unit by asking participants if they know of some people who are highly creative and innovative in their approach.
- Ask them to share some experiences about these people with the class.

Notes for Facilitation



• Source for stories on innovations:

http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-youngindians/20151208.htm

UNIT 6.1.6: Time Management

- Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Discuss the benefits of time management
- List the traits of effective time managers
- Describe effective time management techniques

Resources to be Used



Participant Handbook

Ask



Does this sound like you?

- I can never get enough time to finish what I am doing in a day.
- I have so many things to do that I get confused.
- I want to go for a walk and exercise, but I just do not have the time.
- I had so much to do, so I could not deliver that order on time.
- I would love to start my dream business; but, I just do not have the time.

Example \



• Let's look at these two examples:

Example 1:

Ankita works from home as a freelance writer. She says she can easily put in 8 hours of dedicated work in a day. Because she works from home, she saves money on travel and has a comfortable work routine. But there is a challenge and it is distraction. As she works from home, she can easily just get up and sit down on the sofa to watch TV, wasting valuable time. She may have chores to do, errands to run and bills to pay. She ends up working only two to three hours a day and the result is, her work gets piled up. She is unable to take on more work due to this. Even though her quality of work is appreciated her clients are not very happy about the delay in submission.

Example 2:

Javed has started a successful online selling company from home and makes a good living from his sales. He has set up a small office space in his living room. As both his parents are working full-time, he also has the role of taking care of his two younger siblings. He almost spends half of his day with the younger kids. He does not mind it but it means taking time away from the work. He is still able to manage his online business with these commitments. He wants to spend some more dedicated hours so as to increase his profits. He also wants to look into new business avenues. What should he be doing.



- Does this happen with you too?
- Do you find it difficult to prioritize your work?
- Are you able to manage your time effectively?

Activity



- Conduct a group discussion based on the above examples.
- Direct the discussion on how to prioritize work and manage time effectively.

Say



- Time management is not only about how hard you work but also about how smart you work.
- Discuss "What is Time Management" with the participants as given in the Participant Handbook.

Ask



- Why is it important to manage time? How does it help?
- What happens when you don't manage your time effectively?
- Do you find it difficult to prioritize your work?

Say



- Discuss the benefits of time management given in the Participant Handbook.
- Let's learn effective time management with the help of an activity.

Activity



Effective Time Management

• This activity has two parts:

PART 1

TO-DO LIST

- You have to make a to-do list.
- List all of the activities/ tasks that you have to do.
- Try to include everything that takes up your time, however unimportant it may be.
- If they are large tasks, break them into action steps, and write this down with the larger task.
- You can make one list for all your tasks or have separate to-do lists for personal and professional tasks.

PART 2

URGENT-IMPORTANT GRID

- You have to make a grid as shown on the board here. .
- This grid has four boxes. As you can see, each box has a different heading.
- At the heart of the urgent-important grid, are these two questions:
 - Is this task important?
 - Is this task urgent?
- Now, you have to think about each activity that you have written in your to-do list and put it into one of the four categories.
- · What do these categories depict?
- Category 1: Urgent/Important
 - This category is for the highest priority tasks. They need to get done now.

Category 2: Not Urgent/Important

- This is where you want to spend most of your time.
- This category allows you to work on something important and have the time to do it properly.
- This will help you produce high quality work in an efficient manner.
- The tasks in this category are probably the most neglected ones, but also the most crucial ones for success.
- The tasks in this category can include strategic thinking, deciding on goals or general direction and planning—all vital parts of running a successful business.

Category 3: Urgent/Not Important

- This is where you are busy but not productive. These tasks are often mistaken to be important, when they're most often busywork.
- Urgent but not important tasks are things that prevent you from achieving your goals.
- However, some may be activities that other people want you to do.

· Category 4: Not Important and Not Urgent

- This category doesn't really include tasks, but rather habits that provide comfort, and a refuge from being disciplined and rigorous with your time management.
- Some may be activities that other people want you to do.
- These might include unplanned leisure activities as well.

TO- DO list format

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

URGENT-IMPORTANT GRID

URGENT/ IMPORTANT

- Meetings
- Last minute demands
- · Project deadlines
- Crisis

NOT URGENT/ IMPORTANT

- Planning
- Working towards goals
- Building relationship
- Personal commitments

1

2

3

4

- Interruptions
- Phone calls/ E-mails
- Other people's minor demands

URGENT/ NOT IMPORTANT

- Internet surfing
- · Social media
- Watching TV

NOT URGENT/ NOT IMPORTANT

URGENT/ IMPORTANT GRID format

1 2
3 4
URGENT/ NOT IMPORTANT
NOT URGENT/ IMPORTANT



- Put down the formats for the to-do list and the urgent/important grid on the board.
- Instruct the participants to prepare their to-do list first.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to divide the tasks in to-do list into the four categories.
- Explain the four categories to the participants giving examples specific to their context.
- As you explain the categories fill the grid with the type of tasks.
- Give the participants 40 minutes to fill the grid.
- Then explain how to balance the tasks between the four categories.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say



Activity De-brief:

How can we balance tasks between the four categories?

How to manage time through this grid?

- Category 1: Urgent/Important
 - Try to keep as few tasks as possible here, with the aim to eliminate.
 - If you spend too much of your time in this category, you are working solely as a trouble shooter, and never finding time to work on longer-term plans.
- Category 2: Not Urgent/Important
 - Plan these tasks carefully and efficiently as they are most crucial ones for success.
 - If necessary, also plan where you will do these tasks, so that you're free from interruptions.
 - Include strategic thinking, deciding on goals or general direction and planning in your planning process.
- Category 3: Urgent/Not Important
 - Ask yourself whether you can reschedule or delegate them.
 - A common source of such activities is other people. Sometimes it's appropriate to say "no" to people politely, or to encourage them to solve the problem themselves.

Category 4: Not Important and Not Urgent

- You also want to minimize the tasks that you have in this category.
- These activities are just a distraction avoid them if possible.
- You can simply ignore or cancel many of them.
- Politely say "no" to work assigned by others, if you can, and explain why you cannot do it.
- Schedule your leisure activities carefully so that they don't have an impact on other important tasks.
- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

Summarize



• Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

Notes for Facilitation



- Here is a short story. You can conclude the session narrating the story. To make it more interesting you can perform the demonstration described and discuss the short story.
 - One day an expert in time management was speaking to a group of students. As he stood in front of the group, he pulled out a large wide-mouthed glass jar and set it on the table in front of him. Then he took out a bag of about a dozen rocks and placed them, one at a time, into the jar. When the jar was filled to the top and no more rocks would fit inside, he asked, "Is this jar full?" Everyone in the class said, "Yes." Then he said, "Really?"
 - He reached under the table and pulled out a bucket of gravel (small stones). He dumped some gravel in and shook the jar causing pieces of gravel to work themselves down into the space between the rocks. Then he asked the group once more, "Is the jar full?" By this time, the class began to understand. "Probably not," one of them answered. "Good!" he replied.
 - He reached under the table and brought out a bucket of sand. He started dumping the sand in the jar and it went into all of the spaces left between the rocks and the gravel. Once more he asked the question, "Is this jar full?" No!" the class shouted. Once again he said, "Good." Then he grabbed a jug of water and began to pour it in until the jar was filled to the brim. Then he looked at the class and asked, "What is the point of this illustration? "One student raised his hand and said, "No matter how full your schedule is, if you try really hard you can always fit some more things in it!" "No," the speaker replied, "that's not the point. The truth this illustration teaches us is: If you don't put the big rocks in first, you'll never get them in at all." What are the 'big rocks' in your life? Your children; your loved ones; your education; your dreams; a worthy cause; teaching or mentoring others; doing things that you love; time for yourself; your health; your mate (or significant other). Remember to put these BIG ROCKS in first or you'll never get them in at all. If you sweat about the little stuff (the gravel, sand, and water) then you'll fill your life with little things you worry about that don't really matter, and you'll never have the time you need to spend on the big, important stuff (the big rocks).
- End the story with these lines...

So, tonight, or in the morning tomorrow, when you are reflecting on this short story, ask yourself this question: What are the 'big rocks' in my life? Then, put those in your jar first

UNIT 6.1.7: Anger Management

Unit Objectives | @



At the end of this unit, participants will be able to:

- Discuss the importance of anger management
- Describe anger management strategies
- Discuss tips for anger management

-Resources to be Used



Participant Handbook

Ask



- What is anger? Is anger good or bad?
- Is anger normal or an abnormal behaviour? How can anger harm you?
- Why is it important for entrepreneurs to manage their anger?



- Talk about anger and the importance of anger management in entrepreneurs as discussed in the Participant Handbook.
- Let us do a small activity. This is an individual activity.
- Think of the incidents and situations that angered you and hurt you.

Do



- Instruct them to note down these situations under different categories (as given in the Activity).
- Give the class 3-5 minutes to think and note down their answers.
- At the end of 5 minutes, ask some participants to volunteer and present their answers.
- They can also share these situations with their fellow participants if they do not wish to share it with the entire class.

- Activity



- Do you remember any incident which has hurt
 - you physically
 - you mentally
 - your career
 - your relationships.

Ask



- Do you ever get angry?
- What are the things that make you angry?
- Do you remember any incident where your anger management helped you in maintaining healthy relationship?
- Do you remember any incident where someone lost business/friend/relationship due to temper (anger)?

Say



- There are a few strategies which can help in controlling your anger. Let's do an activity to understand the anger management process better.
- This is an individual activity.
- Think of the incidents/situations which trigger your anger (the cause).
- Then think what happened as a result of your anger (the effect).
- You need to come up with some techniques to manage your anger.

Do



- Give the class the anger triggers (the cause) as listed in the activity.
- Put down the activity format (Anger Triggers, Result of your Anger, Anger Management Techniques) on the board and instruct the class to write the answers under different categories.
- Give the class 3-5 minutes to think and note down their answers.
- At the end of 5 minutes, ask the participants who wish to volunteer and present their answers.

Activity 2



Trigger points and Anger Management Techniques Activity

Anger Triggers

List of triggers that make you angry:

Someone says you did something wrong.

You want something you can't have now.

You get caught doing something you shouldn't have been doing.

You are accused of doing something you didn't do.

You are told that you can't do something.

Someone doesn't agree with you.

Someone doesn't do what you tell him to do.

Someone unexpected happens that messes up your schedule.

Result of your anger:

Write the techniques that you use to manage your anger: **Anger Management Techniques**

Say |



- Now, let's discuss the problems and solution with all.
- The individual will first briefly describe trigger points to the class.
- Then discuss the result of the anger. Other participants are requested to remain quiet while one is making the presentation.
- Post presentation, other participants may ask questions.



- Congratulate each individual for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions after the presentation to the class.
- Keep a check on the time. Ask the participants to wind up the activity quickly if they go beyond the given time limit.

Ask



De-brief questions:

- In the situation described by the presenter, who was at fault?
- How could you have handled this situation alternatively?

Summarize | 📜



- Close the discussion by summarizing the strategies and tips of anger management for entrepreneurs.
- Ask the participants what have they learnt from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation



- Encourage the participants to share information about them while presenting the situations to the class.
- Keep the format of the Activity prepared in a chart paper so that it can be displayed during the session.

UNIT 6.1.8: Stress Management: What is stress?

Unit Objectives | ©



At the end of this unit, participants will be able to:

- Discuss the causes of stress
- Discuss the symptoms of stress
- Discuss tips for stress management

Resources to be Used



Participant Handbook

Ask



- You are waiting in the reception for an interview or a very important meeting, suddenly your legs are shaky, your hands are cold, you are feeling nervous. Have you ever been in this kind of situation?
- Have you had days when you had trouble sleeping?
- Have you ever been so worried about something that you ended up with a terrible headache?

Sav



You've probably heard people say, I'm really stressed out" or "This is making me totally stressed."

Ask



- What do you understand by stress?
- What gives you stress?
- How do you feel when you are stressed or what are the symptoms of stress?
- How can stress harm you?
- Why is it important for entrepreneurs to manage stress?

Say



- When we feel overloaded or unsure of our ability to deal with certain challenges, we feel stressed.
- Discuss about stress, causes of stress, and symptoms of stress as discussed in the Participant Handbook.
- Let's understand the causes of stress and how to deal with them with the help of some case scenarios.
- You will be given some cases.
- You have to analyse the case scenario and then find an appropriate solution to the problem.
- This will be a group activity.

- Do



- Divide the class into four groups of 5-6 participants (depending on the batch size).
- Assign one case scenario to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Explain their discussion should result in getting answers for the following questions:

- What was/were the cause(s) of stress?
- Was the stress avoidable or manageable under the given circumstances?
- If yes, how do you think that the stress could be avoided (managed)?
- If no, then why not?
- Give the class 10-12 minutes to discuss the case and note down their solutions.
- At the end of 12 minutes, the team should present their case solution to the larger group.
- Ask the group to select a group leader for their group.
- The group leader to discuss and assign roles to the group members for the presentation.

Team Activity



Case Study Analysis

Scenario 1

Akash's alarm doesn't go off and he gets late getting out of the house. He hits traffic and ends up 15 minutes late to work, which his boss notices. He gets to his desk and finds he has to complete 2 reports in next one hour. Just when he is about to begin work, a message pops up "Telecon with the client begins in 10 minutes. Please be in the conference room in 5 minutes."

His is not prepared for the call. He is stressed. He does not want to speak to his boss about this. He is stressed, feeling uncomfortable and sick. Not in a position to attend the call or finish the reports on time.

Scenario 2

While paying his overdue bills, Rahul realised that it's the middle of the month and he has only Rs 500 left in his account. He has already asked all of his friends, and family for loans, which he hasn't paid back yet. He is still contemplating over the issue when his phone rings. His sister's birthday is due next week and she has seen a beautiful dress which she wants to buy but cannot tell the parents as it is a bit expensive. She wishes if Rahul could buy the dress for her. Rahul has promised to buy her the dress for her birthday.

Rahul is stressed, does not understand what to do. He is unable to concentrate on his work and unable to complete the tasks assigned. His team leader has already warned him of the delay.

Scenario 3

Sheela calls the cable company as she has unknown charges on her bill. She has to go through the automated voice mail menu three times and still can't get through to a customer care executive. After 15 minutes of repeated efforts, her call is answered. She explains the entire issue to the customer care executive but before the person could suggest a way out, the call drops.

Now Sheela has to call back and repeat the whole process all over again with a new customer care executive. She is very angry and calls again but cannot connect this time.

She has to leave to office so she decides to call from office and check. When she connects this time she is angry and argues with the executive on the call. All her co-workers around are looking at her as her volume has suddenly increased. She bangs the phone and ends the call.

Her co-worker Neelam enquires what has happened to her. She ignores her and just walks off. She has become irritable and her behaviour and tone with other co-workers is not acceptable.

Scenario 4

Arpit is a young entrepreneur who started doing business through Facebook few weeks back. He had always been into a job. Although Arpit has very few financial liabilities, it wasn't an easy decision to leave a comfortable job at once and look for newer pastures. Arpit's boss warned him of the consequences and the challenges of starting a business when nobody ever in his family had been in business.

He has not been able to get a good deal till now. This is an important life shift for him which comes with unknown variables. Arpit is nervous and is wondering if he has what it takes to fulfill the requirement of his new role, or the new experiences he's likely to face.

Ask



De-brief questions:

- What was/ were the cause(s) of stress?
- Was the stress avoidable or manageable under the given circumstances?
- If yes, how do you think that the stress could be avoided (managed)?
- If no, then why not?

Say



- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Post presentation, the other groups may ask questions to the group that has presented.

Do



- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell participants to wind up the discussion quickly if they go beyond the given time limit.

Say



- While it is common and normal to feel some tension. This feeling nervous and tensed can interfere with your thinking process and can have a negative impact on your performance.
- Stress can deplete the most vibrant of souls. It can have a negative effect on every aspect of a person's life including their health, emotional well-being, relationships, and career. However, one needs to understand the causes and types of stress before looking for ways to manage it.

De-brief:

Scenario 1

The cause of stress was lack of time management and the habit of procrastinating. If Akash would have managed his time well, planned alternate ways to get up on time, finished prior tasks on time and planned for client meetings in advance then he wouldn't have faced stress.

Scenario 2

The cause of stress was lack of financial planning. Rahul should have planned his financial resources well in advance and saved some money for the rainy day. Also, differentiating between needs and wants and keeping a check on non-essential expenditure would have saved Rahul from this situation.

Scenario 3

Sometimes, stress is caused due to external factors instead of internal ones. In this case, the stress was unavoidable because we have no control over this customer care system. Every time, you will get in touch with a new executive and will have to explain all over again. This might cause stress but despite being frustrated and angry there is little that we can do about it. All Sheela could do was to find ways to calm herself down through some breathing exercises and meditation, reading some good book or listening to music and then start afresh.

Scenario 4

A positive, major life change can be a source of good stress. Regardless of how good the change is, it can be stressful. Stress caused by a positive and major life change can be beneficial because it causes a person to step out of their comfort zone and learn new skills. Here, Arpit may become a successful entrepreneur or learn new ways to do things differently.

Now let us see this scenario, can I have a volunteer to read out this case to the class.

Do



• Ask one of the participant who can volunteer and read out this scenario to the class.

Scenario 5

Rakesh lives in Kathmandu with his wife and two beautiful daughters Sarah and Sanya. Nepal was hit by a massive earthquake and Rakesh's building collapsed during the earthquake. During evacuation, Rakesh realised that though his wife and Sarah were fine and suffered only minor bruises, Sanya was nowhere in the scene. Panic stricken, he started calling her name and searching her frantically. A little later, he heard a meek voice from beneath the debris. He quickly removed the rubble to find a huge bed. Rakesh was pretty sure that Sanya was trapped underneath. Though he was badly bruised, he gathered all his courage and with all his might, he lifted the several-ton bed to save Sanya's life. Everyone was relieved to see Sanya alive and also extremely surprised to see this father's ability to access superhuman strength.

- Ask the audience to applaud for the participant after the scenario is read completely.
- Discuss the scenario, ask de-brief questions:
 - What kind of stress was Rakesh undergoing in this case?
 - Was the stress avoidable or manageable under the given circumstances?
 - What was the result of the stress?

Say



De-brief:

Not all stress is harmful; good stress is actually energizing. This was a case of lifesaving stress, or hero stress,
which is an important example of good stress. You may have heard stories in which a person performs an
impossible feat of physical strength in order to save their life or the life of someone they love. This type of
stress causing a surge of adrenaline is good for us.

Summarize **2**

- Close the discussion by summarizing the tips to manage stress as given in the Participant Handbook.
- Ask the participants what they have learnt from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation



- Keep printed copies of the activities/scenarios ready for the session.
- Put down the de-brief questions on a flip chart so that it can be displayed in the class during the activity.
- Encourage participation and make the discussions interative.

Notes			
Notes 📃			



UNIT 6.2: Digital Literacy: A Recap

Key Learning Outcomes



At the end of this unit, participants will be able to:

- 1. Identify the basic parts of a computer
- 2. Identify the basic parts of a keyboard
- 3. Recall basic computer terminology
- 4. Recall the functions of basic computer keys
- 5. Discuss the main applications of MS Office
- 6. Discuss the benefits of Microsoft Outlook
- 7. Identify different types of e-commerce
- 8. List the benefits of e-commerce for retailers and customers
- 9. Discuss Digital India campaign will help boost e-commerce in India
- 10. Describe how you will sell a product or service on an e-commerce platform

UNIT 6.2.1: Computer and Internet Basics: Basic Parts of a Computer

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Identify the basic parts of a computer
- Identify the basic parts of a keyboard
- Recall basic computer terminology
- Recall the functions of basic computer keys

Resources to be Used



- Participant Handbook
- Computer Systems with the required applications

Say



- Let's take a quick recap of the basic computer parts.
- Discuss 'Basic Parts of Computer' and 'Basic Parts of a Keyboard' with the class as given in the Participant Handbook.

Explain



Explain all the parts of the computer and the keyboard by demonstrating on the real system.

Ask



- Do you know about internet?
- Have you ever used internet?
- Why do you think internet is useful?
- What was the last task you performed on internet?

Say



- Let's look at some basic internet terms.
- Discuss 'Basic Internet Terms' with the participants as given in the Participant Handbook.

Summarize |



- Ask the participants what they have learnt from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of computer and internet for entrepreneurs.

Practical |

- Conduct a practical session.
- Ask the participants to assemble in the computer lab.
- Give some hands on practice exercises.

Do 🗸

- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.
- Ensure the participants complete the practical exercises assigned.

UNIT 6.2.2: MS Office and Email: About MS Office

Unit Objectives | @



At the end of this unit, participants will be able to:

- Discuss the main applications of MS Office
- Discuss the benefits of Microsoft Outlook

Resources to be Used



- Participant Handbook
- Computer Systems with MS Office

Ask



- What is the most frequent activity that you do on the computer?
- Do you know how to make presentations on the computer?



- Give a brief introduction of MS Office as given in the Participant Handbook.
- Discuss the most popular office products. Explain in brief their application, benefits and working.
- Microsoft Word is a word processing program that allows for the creation of documents. The program is equipped with templates for quick formatting. There are also features that allow you to add graphics, tables, etc.
- Microsoft Excel is a tool for accounting and managing large sets of data. It can also simplify analysing data. It is also used to create charts based from data, and perform complex calculations. A Cell is an individual data box which will have a corresponding Column and Row heading. This gives the cell a name, referred to as the Cell Reference. There can be multiple pages in each workbook. Each page, or sheet, is called a Worksheet. When you open a new Excel file, it automatically starts you with three worksheets, but you can add more.

-Explain



Explain the working and frequently used features of Office on a real system.

Ask



- What do you know about e-mails?
- Do you have an email id?
- How often do you check your e-mails?

Sav



- Communication is vital for every business. The fastest and the safest way to communicate these days are through emails. MS Outlook helps to manage your emails in a better way and also offers a host of other benefits.
- Discuss "Why Choose Microsoft Outlook?" with the participants as given in the Participant Handbook.



- Ask the participants to assemble in the computer lab.
- Explain the working of Outlook on a real system..

Demonstrate |



- · Demonstrate how to create email id.
- Demonstrate how to write new mails, send mails.
- Demonstrate how to use MS Office application to create a letter and send it as attachment in an email.
- Demonstrate how to use other MS Office applications.

-Practical 🞇



- Give some hands on practice exercises
- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.

_Summarize



- Ask the participants what they have learnt from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.

UNIT 6.2.3: E-Commerce

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Identify different types of e-commerce
- List the benefits of e-commerce for retailers and customers
- Discuss Digital India campaign will help boost e-commerce in India
- Describe how you will sell a product or service on an e-commerce platform

Resources to be Used



- Computer System with internet connection
- Participant Handbook

-Ask



- How many of you have done shopping online?
- Can you name at least five shopping websites?
- What is the product that you most frequently buy online?
- Why do you do shopping online instead of going to the market?

Say



- Give a brief introduction of "What is E-commerce". Refer to the Participant Handbook.
- E- commerce emerged in the early 1990s, and its use has increased at a rapid rate. Today, many companies sell their products online. Everything from food, clothes, entertainment, furnitureand many other items can be purchased online.

-Ask



What other types of transactions have you performed on the internet other than buying products?



• Give examples of e-commerce activities from Participant Handbook.

Team Activity



E-commerce examples

- Instruct the participants to list some of the payment gateways that they have used for e-commerce activities.
- Give them 5 minutes to make this list.
- Discuss payment gateways and transaction through payment gateways.
- Conclude the discussion by mentioning how important e-commerce has become in our day to day transactions.

Say



- E-commerce activities can be classified based on the types of participants in the transaction.
- Discuss "Types of E-commerce" from the Participant Handbook.

-Do



- Discuss all types of E-commerce by giving examples and names of some popular websites which use them.
- Make the discussion interactive by asking the class to share some popular e-commerce sites of each type.

·Say



- E-commerce activities bring a host of benefits for both, retailers and customers.
- Discuss benefits of E-commerce from the Participant Handbook.

-Explain



- The majority of the population that uses E-commerce activities lives in tier-1 and tier-2 cities. To encourage the use of digital money in tier-3 and 4 areas, PM Mr. Modi launched the "Digital India Campaign".
- Discuss "Digital India Campaign" from the Participant Handbook.
- By Digital India project the government will deliver services via mobile connectivity and in doing so, is expected to bring the internet and broadband to remote corners of the country. This connectivity will in turn enhance e-commerce activities also. Furthermore, the Indian Government is also modernizing India Post and aims to develop it as a distribution channel for e-commerce related services.

Say



- Now let us discuss how to sell a product using E-commerce.
- Every product has to be sold on a platform on the internet. Think of it as a shop that you have to sell your product. Now this shop can be your own or shared or rented. If the shop is your own or rented there will be only your products in that shop. If the shop is shared, there will be products of multiple sellers in that shop. A common example is a departmental store which has products from multiple brands in the shop.
- Similarly, in E-commerce the shop is the website where your products are displayed. If it is your own website it will exclusively showcase your products. In this case the cost that you will incur will be:
 - Developing the website
 - Hosting the website
 - Maintenance of the website
- If you rent a website it will also showcase your own products but the development, hosting and maintenance parts goes to the owner. This saves time and the cost to manage these activities.
- Smaller companies usually go for renting a website and the bigger ones develop their own website.
- The concept of shared platforms has become very popular in recent times. In this platform the sellers have to
 register and then they can sell their goods on a common platform. Among the most popular of these are
 Amazon, Myntra, Flipkart, etc.

-Role Play



- Tell the participants to choose a product or service that they want to sell online.
- Tell them to write a brief note explaining how they will use existing e-commerce platforms, or create a new e-commerce platform to sell their product or service.

Ask



- How much money are you carrying in your wallet?
- Do you have a credit/debit card?
- How do you make payments while doing online shopping?



- Demonetization has made carrying cash in the wallet very difficult. People either shop through cards or some other form of digital money.
- So what do you think is digital money?
- In this form the money is both paid and received digitally. There is no hard cash involved. It is an instant and convenient way to make payments.
- There are various types of digital payments. Let us discuss some of them in brief here.
- The first one is the most commonly used system i.e. the cards. Debit card, credit card, prepaid card, all fall under this category.
- Then is the e-wallet or the mobile wallet. This has become the most used form of digital money after demonetization. Examples are Paytm, state bank buddy, Freecharge, etc.
- Many other forms of digital money are also coming up in market like mobile apps, Aadhar card based payment, etc.

Do



Demonstrate how to make and receive payments through digital models like Paytm and state bank buddy.

-Ask



Why do you think people have started using digital money instead of hard cash? Is demonetization the only reason?



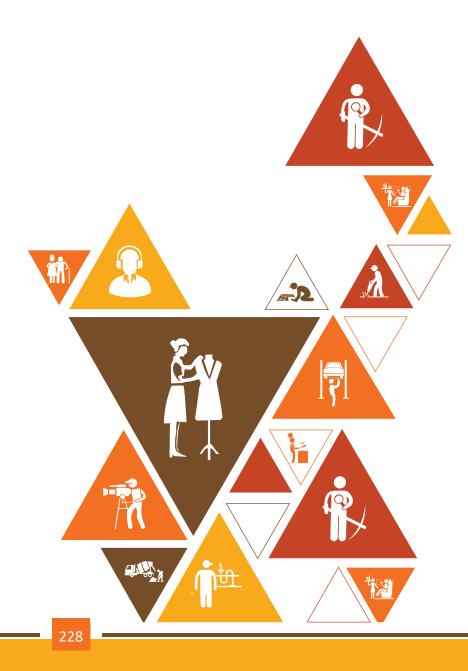
- Digital money gives a lot of advantages over the conventional hard cash. Some of them are:
 - Digital payments are easy and convenient. You do not need to take loads of cash with you, a mobile phone or a card will suffice.
 - With digital payment modes, you can pay from anywhere anytime.
 - Digital payments have less risk.

Summarize |



- Ask the participants what they have learnt from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of e-commerce and digital money.

Notes			
Notes 📃			



UNIT 6.3: Money Matters

Key Learning Outcomes



At the end of this unit, participants will be able to:

- 1. Discuss the importance of saving money
- 2. Discuss the benefits of saving money
- 3. Discuss the main types of bank accounts
- 4. Describe the process of opening a bank account
- 5. Differentiate between fixed and variable costs
- 6. Describe the main types of investment options
- 7. Describe the different types of insurance products
- 8. Describe the different types of taxes
- 9. Discuss the uses of online banking
- 10. Discuss the main types of electronic funds transfer

UNIT 6.3.1: Personal Finance - Why to Save?

-Unit Objectives



At the end of this unit, participants will be able to:

- · Discuss the importance of saving money
- · Discuss the benefits of saving money

Resources to be Used



Participant Handbook

Ask



- How many of you save money?
- Why do you feel the need to save it?
- Do you plan your savings?
- Where do you keep the money you save?
- · How do you use the money that you have saved?

-Example



Let's look at these two examples:

Example 1:

Suhani works in a good company and earns Rs.30, 000 month. She always saves 5000 per month and keeps it aside as a personal saving. She keeps the money at home and has saved quite a lot. One day her mother has a medical emergency and has to be taken to the hospital. Her family is worried about the amount they have to spend for the treatment. It will cost them at least 40,000.

Suhani says tells her family not to worry and that she has about 50,000, which she has saved over the months.

Example 2:

Jasmeet works in the same company and earns the same as Suhani. She is very fond of shopping and spends most of her money on buying new clothes. At the end of the month, she is always asking her father for money as her pay is finished.

Ask



- Who do you identify with –Suhani or Jasmeet?
- How do you think Suhani manages to save money which Jasmeet is unable to do?

Say



- We should always set aside some and save some money from our monthly pay. The future is unpredictable. Saving money not only gives you a sense of financial security but it can be used in case of emergencies.
- Discuss "Importance of Saving" with the participants as given in the Participant Handbook.

-Ask



- What are the benefits of saving money?
- What does being financially independent mean to you?

Say



- Discuss "Benefits of Saving" with the participants as given in the Participant Handbook.
- Now let us continue with Suhani's story. Suhani has told her family not to worry and that she has about 50,000, which she has saved over the months. The family is happy about Suhani's decision of saving money, which will be of great help for them now.

Suhani is going to the hospital today to pay the first instalment for the treatment. Suddenly finds only 35,000 in her cash box when she counts and does not remember using it. She has not kept any record and now she is upset.

Ask



- Was it a good decision by Suhani to save a part of her earnings every month?
- Was it a wise decision to keep all her savings as cash in a cash box?
- Could she have managed to save money in a better and more effective manner?
- Do you want to learn how to save money and use it effectively?

Say



· Let's learn personal saving with the help of a group activity.

-Team Activity 💃



Personal Finance-Why to save

• This activity has two parts:

PART 1

WAYS TO SAVE MONEY

- You are earning 30,000/- per month. You have recently changed your job and have to move to a metropolitan city. You are now living as a paying guest paying 10,000/- per month. Your other estimated expenditures like travel, food, recreation would be around Rs. 17,000 per month.
- · Make a list of different ways to save money.

PART 2

HOW WILL YOU USE THE MONEY

- After a year how much have you been able to save?
- How will you use the money that you have saved?

Do



- Divide the class into groups of four.
- Instruct the participants to think and prepare a list of the various ways they can save money.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to think of how they could use the money they have saved.
- Give the participants 10 minutes to prepare the list.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Activity De-brief

- What were the different ways you could save money?
- How much money were you able to save?
- How will you use the money you have saved in one year?

Say



• Discuss the importance of personal finance and why it is important to save money.

Summarize



You can summarize the session by discussing:

- The importance of saving money.
- Ways to save money.
- How the money saved can be used for different purposes.

UNIT 6.3.2: Types of Bank Accounts, Opening a Bank Account

-Unit Objectives



At the end of this unit, participants will be able to:

- · Discuss the main types of bank accounts
- Describe the process of opening a bank account

Resources to be Used



- · Account opening sample forms
- Participant Handbook

Ask



- How many of you save money?
- Where do you keep the money you save?
- · How many of you have a bank account?
- · What type of account do you have?

-Example



• Let's look at the given example:

Reena is in the third year of college but in the evening she gives tuitions for children living in her colony. She earns 15,000/- per month. As her students stay in different parts of the city, she has to walk a lot.

To save time, she decides to buy a second hand scooter for herself. But she has to save money for it. Her class mate advises her to open a recurring deposit account in the bank.

She goes to the bank close to her home. The personal manager gives her some forms to fill. She is confused as she has never done this before. Her elder sister has an account in the same bank. She asks for help from her sister. She goes to the bank the next day with her sister. The personal banker gives her a list of documents that she will need to submit with the form for opening an account. The banker advises her to open a 6 months recurring deposit.

-Ask



- Do you try to save money monthly but have to spend it on unforeseen expenditure?
- Have you ever thought of depositing your savings in a bank?

Say



- Before opening a bank account, you need to know the types of accounts we have in India.
- Discuss "Types of Bank Accounts" with the participants as given in the Participant Handbook.

-Ask



Can someone say what are the different types of bank accounts?

Say



Let's learn about the different types of bank accounts through an activity.

Team Activity 💃



- Divide the class in four groups.
- Label the groups as savings account, current account, recurring account and fixed deposit.
- On a chart paper, ask them to write the key points of their account.

Activity De-brief

• Ask each group to present the key points of their account.

-Say



- Now that you know about the four different types of accounts, let's learn how to open a bank account.
- Discuss "Opening a Bank Account" with the participants as given in the Participant Handbook.
- Discuss "Tips" that the participants should keep in mind while opening a bank account as given in the Participant Handbook.

-Ask



- What are the main documents required for opening a bank account?
- What are some important points to ask the bank personnel while opening an account?

Say



- Mention officially valid KYC documents (refer to the Participant Handbook)
- Now, let's understand the procedure of opening a bank account through an activity.

Team Activity



Opening a Bank Account

- This activity is done in groups.
- Divide the class in groups of four or six.

PART 1

FILLING A BANK ACCOUNT OPENING FORM

- You have to fill a bank opening form.
- You can refer to the section "Opening a Bank Account" of your Handbook for reference.
- List all the steps that you will be required to fill in the form.
- List the documents that you needs for filling the form.
- Now fill in the form.

Activity De-brief

How did you design the form?

- · What all details did you fill in the form?
- What were your KYC documents?
- How would this activity help you in future?



- Instruct the participants to read the section "Opening a Bank Account' of the Participant Handbook.
- Give each group one sample account opening form.
- Give the participants 5 minutes to read the form.
- Give them 15 minutes to fill it.
- Assist them by explaining each category and how to fill it.
- Keep a check on time.

No. of Dependents

Tell the group to wind up quickly if they go beyond the given time limit.

-Summarize 📜



Note:

- You can summarize the unit through a role play.
 - A person wanting to open an account in the bank.
 - What is the procedure that he will go through?
 - Discuss the key points of different types of bank accounts.
 - How to select the type of account
 - How to fill the account opening form.
- A sample account opening form is given in the following page for reference. Use it for the activity in the class.

Sample Bank Ad	count Openin	g form.		
Photograph				XXX Bank
		SAVING B	ANK ACCOUNT OPENING F	ORM
Account No.:				Date:
Name of the	e Branch			
Village/Tow	'n			
Sub District	/ Block Name			
District				
State				
SSA Code /	Ward No.			
Village Code	Village Code / Town Code		Name of Village /	Town
Applicant Det	tails:			
Full Name	Mr./Mrs./Ms.	First	Middle	Last Name
Marital Stat	us			
Name of Sp	ouse/Father			
Name of Mo	other			
Address				
Pin Code				
Tel No. Mobile				Date of Birth
	Aadhaar No.			Pan No.
MNREGA Jo				
Occupation,				
Annual Inco	me			

Detail of Assets	Owning Hous	se :	Y/N	Owning Farm :	
	Y/N No. of Anima	ıls :		Any other :	
Existing Bank				Tany Caree	
A/c. of family)	/ / N	If y	yes, No. of A/cs	
members /					
household	MI - II EE	1.1.	N//N		
Kisan Credit Card	Whether Elig		Y/N		
I request you to is					
I also understand that I am eligible for an Overdraft after satisfactory operation of my account after 6 months of opening my account for meeting my emergency/ family needs subject to the condition that only one member from the household will be eligible for overdraft facility. I shall abide by the terms and conditions stipulated by the Bank in this regard.					
Declaration: I hereby apply for opening of a Bank Account. I declare that the information provided by me in this application form is true and correct. The terms and conditions applicable have been read over and explained to me and have understood the same. I shall abide by all the terms and conditions as may be in force from time to time. I declare that I have not availed any Overdraft or Credit facility from any other bank. Place: Date: Signature / LTI of Applicant					
Nomination:					
I want to nomin			D-4f	Decree with size discount	
Name of Nominee	Relationship	Age	Date of Birth in case of minor	Person authorised in case to receive the amount of deposit on behalf of the nominee in the event of my /minor(s) death.	
Place:					
Date: Signature / LTI of Applicant					
Witness(es)*					
1					
2		-			
*Witness is requires only for thumb impression and not for signature					

UNIT 6.3.3: Costs: Fixed vs. Variables: What are Fixed and Variable Costs?

-Unit Objectives



At the end of this unit, participants will be able to:

· Differentiate between fixed and variable costs

Resources to be Used



- Participant Handbook
- · Blank sheets of paper
- Pens

-Ask



- What is cost?
- Will a telephone bill fall under the category of a fixed or variable cost?

Say



• Discuss: Fixed and Variable cost with examples.Let us do a small activity.

-Team Activity



Identify the type of cost

- 1. Rent
- 2. Telephone bill
- 3. Electricity bill
- 4. Machinery
- 5. Insurance
- 6. Office supplies/Raw materials
- 7. Employee salaries
- 8. Commision percentage given to sales person for every unit sold
- 9. Credit card fees
- 10. Vendor bills

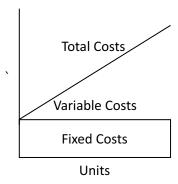
Do



- Divide the class into two groups. Read out the list of costs given in the activity.
- Read out each item from the cost list and ask the groups in turns to identify whether it is a fixed or variable
 cost.



- We saw that your utility bills like rent, electricity, telephone etc. are all fixed costs because you have to pay it every month.
- Variable costs is an expense which varies with production output or volume. For example commission, raw material etc.
- Discuss "Cost: Fixed vs. variables" with the participants as given in the Participant Handbook.
- Illustrate the relation between the costs with a graph.



Let's learn the difference between fixed and variable cost with the help of an activity.

Team Activity 🕍



Fixed vs. Variable Costs

- This is a group activity.
- You want to start your own entrepreneur business.
- State the type of business you want to start.
- List down all the cost or requirements for your business.
- How will you differentiate between the fixed and variable cost.

Activity De-brief

- What is the total cost of your business?
- What are the fixed costs?
- What are the variable costs?
- How did you differentiate between the fixed and variable costs?

Do



- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a sheet of paper.
- Tell the participants that they have to start their own entrepreneur business.
- Ask them the type of business they want to start.
- Instruct them to differentiate between the fixed and the variable costs of the business they want to start.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

-Summarize 📜

• Note: You can summarize the unit either by having a role play between a consultant and a budding entrepreneur explaining the differences between fixed and variable costs or by discussing the key points of the unit.

Notes for Facilitation



• Answers for the activity - Identify the type of cost

1. Rent (Fixed)

2. Telephone bill (Fixed)

3. Electricity bill (Fixed)

4. Machinery (Fixed)

5. Insurance (Fixed)

6. Office supplies/ Raw materials (Variable)

7. Employee salaries (Fixed)

8. Commision percentage given to sales person for every unit sold (Variable)

9. Credit card fees (Variable)

10. Vendor bills (Variable)

UNIT 6.3.4: Investments, Insurance and Taxes

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Describe the main types of investment options
- Describe the different types of insurance products
- Describe the different types of taxes

Resources to be Used



Participant Handbook

Ask



- · Ask the participants- "What do you see first thing in when you get your mobile bill? Apart from the amount and due date do you have a look at the taxes you are being billed for?
- Why do you think people get their cars insured or have a medical insurance?
- You have saved money and want to invest it, how would you decide what is the best investment for your money?

-Example



Let's have a look at a few scenarios.

Ranbir has sold his house and deposited the money in his bank. His Chartered Accountant tells him that he will have to re-invest the money otherwise he will have to pay capital tax. What is capital tax and how is it different from income tax?

Jasmeet and Anup are blessed with a baby girl. They decide to have an insurance policy that will mature when their daughter is ready to higher education.

Shivani is working in a corporate office and getting good pay. She will have to pay income tax so she decides to invest her money in tax saving schemes. She goes to the bank manager to discuss the best products in which she can invest.

-Sav



Discuss the Investment, Insurance and Taxes as given in the Participant Handbook.

·Ask



How do investments, insurances and taxes differ from each other?

Say



Let's learn the differences between the three by having an activity.



We will have a quiz today.

Team Activity



The activity is a quiz.

·Do



- Divide the class into groups of three and give a name to each group
- Explain the rules of the quiz. For each correct answer the group gets 1 mark. If the group is unable to answer the question is rolled over to the next group.
- Explain the purpose and duration of the activity.
- On the blackboard write the names of the groups.
- Ask the questions of the quiz.
- Keep a score for the groups.
- Set guidelines pertaining to discipline and expected tasks.

Summarize 🞏



Summarize the unit by discussing the key points and answering question

Notes for Facilitation



Questions for the quiz

1. What are bonds?

Bonds are instruments used by public and private companies to raise large sums of money.

2. Who issues the bonds?

Private and public companies issue the bonds.

3. Why are bonds issued?

To raise large amount of money as it cannot be burrowed from the bank.

4. Who is the buyer of stocks and equities?

The general public is the buyer.

5. What types of scheme is the Sukanya Samriddhi Scheme?

Small Saving Scheme

6. What is the difference between mutual and hedge funds?

Mutual funds are professionally managed financial instruments that invest the money in different securities on behalf of investors. Hedge funds invest in both financial derivatives and/or publicly traded securities.

7. Why is a loan taken from the bank to purchase real estate?

To lease or sell to make profit on appreciated property price.

8. Name the two types of insurances?

Life Insurance and Non-life or general insurance

9. Which insurance product offers financial protection for 15-20 years?

Term Insurance

10. What is the benefit of taking an endowment policy?

It offers the dual benefit of investment and insurance.

11. Mr. Das gets monthly return on one of his insurance policies. Name the policy?

Money Back Life Insurance

12. What are the two benefits of a Whole Life Insurance?

It offers the dual benefit of investment and insurance

13. Which policy covers loss or damage of goods during transit?

Marine Insurance

14. After what duration is the income tax levied?

One financial year

15. What is long term capital gain tax?

It is the tax payable for investments held for more than 36 months.

16. Name the tax that is added while buying shares?

Securities Transaction Tax

17. What is the source of corporate tax?

The revenue earned by a company.

18. Name the tax whose amount is decided by the state?

VAT or Value Added Tax

19. You have bought a T.V. What tax will you pay?

Sales Tax

20. What is the difference between custom duty and OCTROI?

Custom duty is the charges payable when importing or purchasing goods from another country. OCTROI is levied on goods that cross borders within India.

UNIT 6.3.5: Online Banking, NEFT, RTGS, etc.

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Discuss the uses of online banking
- Discuss the main types of electronic funds transfer

Resources to be Used



- Participant Handbook
- Computer System with internet connection
- Debit card

-Ask



- When was the last time you visited a bank?
- How do you pay your bill for electricity and telephone?
- Have you ever tried to transfer money from one bank account to another bank account using the online banking facility?



- Most of us lead a busy life. Time has become more important than money. In this busy schedule no one has time to stand in bank queues. That's where Online Banking comes in. Online banking or internet banking means accessing your bank account and carrying out financial transactions through the internet.
- Discuss "What is online banking?" from the Participant Handbook.
- There are various advantages of online banking:
 - It saves time, as you need to visit the branch.
 - You can conduct your banking transactions safely and securely without leaving the comfort of your home.
 - Online Banking also gives you round the clock access.
 - Online Banking makes it possible for you to pay your bills electronically.



- Show them how they can use the internet banking.
- Use the computer system and show the demo videos on how to use internet banking provided on most banking sites. the computer system.
- Tell the class the various features of online banking:
 - Through their website set-up your online account.
 - Choose a secure username and password.
 - Set-up your contact information.
 - Once your information is verified, you are good to go.
 - Once you enter the portal explore all the features and learn your way through the portal.
- Discuss about maintaining the security of the online account.

Say



- One of the biggest advantage that online banking offers, as discussed earlier, is transferring money from one
 account to another. This transaction is called electronic funds transfer. Electronic transfers are processed
 immediately with the transferred amount being deducted from one account and credited to the other in real
 time, thus saving time and effort involved in physically transferring a sum of money.
- Discuss "Electronic Funds Transfer" from the Participant Handbook.

Do



- Discuss how to transfer money from one account to another using online banking (NEFT/RTGS, etc.).
- Illustrate with an example.

Summarize 📜



- Close the discussion by summarizing the about online banking.
- Ask the participants if they have any questions related to what they have talked about so far.

Notes			
Notes 📃			



UNIT 6.4: Preparing for Employment & Self Employment

Key Learning Outcomes



At the end of this unit, participants will be able to:

- 1. Discuss the steps to follow to prepare for an interview
- 2. Discuss the steps to create an effective Resume
- 3. Discuss the most frequently asked interview questions
- 4. Discuss how to answer the most frequently asked interview questions
- 5. Identify basic workplace terminology

UNIT 6.4.1: Interview Preparation: How to Prepare for an Interview?

-Unit Objectives



At the end of this unit, participants will be able to:

· Discuss the steps to follow to prepare for an interview

Resources to be Used



Participant Handbook

-Ask



- · Have you ever attended an interview?
- · How did you prepare before going for an interview?

Say



- An interview is a conversation between two or more people (the interviewer(s) and interviewee) where questions are asked by the interviewer to obtain information from the interviewee.
- It provides the employer with an opportunity to gather sufficient information about a candidate and help them select the ideal candidate.
- It also provides the interviewee with an opportunity to present their true potential to the employer, build confidence and help make a decision about the job by asking questions regarding designation, salary, perks, benefits, promotions, transfers, etc.
- Let's do an activity to understand how to prepare for interviews better.

-Activity 1 🔀



· Introducing Yourself

-Do



- Select a participant and ask him/her to answer the following questions: "What can you tell me about yourself."
- Give the participant at least one minute to speak.
- Once he/she is done, ask the rest of the participant what they gathered about the participant who was
 providing information.
- Now repeat the exercise with five other participants.

-Ask



- What information you should include when you are describing or introducing yourself in an interview?
- What information you should not include when you are describing or introducing yourself in an interview?



- Tell the participants that when an interviewer asks you to say something about yourself, he/she is not asking you to present your life history.
- Introduction should be short and crisp, and should present you in a positive light. It should include the following points:
 - Any work experience that you might have
 - A brief summary of your educational qualifications
 - Your strengths and achievements
 - Any special projects that you might have been part of
- The following topics should be avoided during an introduction:
 - Detailed description of your family (unless you are specifically asked to do so)
 - Too much information about your weaknesses
 - · Information that is not true

Do



- Congratulate each participant for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.

-Activity 2



Planning the right attire

Do



Describe 2 individuals to the participants. One is wearing a casual t-shirt, jeans, and slippers. He has not combed his hair and neither has he trimmed or shaved his beard. The other individual is dressed formally with a shirt and pant, and is well-groomed. He has also worn formal shoes and a belt. Ask the participants which person would they prefer to hire in their organization and why?

Summarize 🔀



- Close the discussion by discussing 'how to prepare for an interview' as discussed in the Participant Handbook.
- You can add the following points to it:
 - Tell the participants to create a positive and good impression in an interview. It is important for them to prepare for an interview beforehand.
 - The interviewer analyses not only your technical knowledge in relation to the job, but also whether or not you are a fit for the organization.
 - · Every employer looks at the whole package and not just one or two things in isolation. Therefore, the way you dress and the way you present yourself is also important along with your skills and talents.
 - The participants will get only one chance to create a good first impression.

UNIT 6.4.2: Preparing an Effective Resume: How to Create an Effective Resume?

-Unit Objectives



At the end of this unit, participants will be able to:

· Discuss the steps to create an effective Resume

Resources to be Used



- Participant Handbook
- Blank papers
- Pens

-Ask



- When preparing for an interview, what are the most important things that you need to do?
- · What documents do you carry with you, when you go for an interview?
- · What is a resume?
- Why do you need a resume?

·Say



- Resume is not just a sheet of paper with your qualifications printed on it.
- It is a selling tool that will help the employer to see how and what you can contribute for company.
- Talk about the steps involved in creating an effective/attractive resumes discussed in the Participant Handbook.
- Now let's prepare a resume to understand the process in a better way.

Do



- This is an individual activity.
- · Give the details of the activity.
- Instruct them to read the activity carefully.
- The participant is expected to make an attractive resume based on the information provided.
- Give the class 25-30 minutes to study the case and create a resume.
- At the end of 30 minutes, the participants should exchange the resume with the person sitting next to him or her.
- Every participant will evaluate the resume prepared with their fellow participants.

Say



- Do you think the candidate should apply for the job posting described in the advertisement?
- We have already discussed the steps involved in creating an effective/attractive resumes.
- Now let's prepare a resume for the candidate details given in the activity.



Case Study Analysis

- In the first section of the activity, you are being given the information about a candidate who is applying for a particular job.
- In the second section, you are being given the detailed description of the job posting. Create a resume for the candidate to apply for the job posting.
- Use the information that has been provided about the candidate to create this resume.

Candidate Details

Nipesh Singla was born on 20th April, 1988 in Chandigarh, India. He currently resides at 1XX7, Sector XX D, Chandigarh –160018. His mobile number is 988XXXXX01, and e-mail address is nxxxxxxxxxla@gmail.com. Nipesh attended middle and senior school at Government Boys Senior Secondary School, Sector 15, Chandigarh. He has been a very talented boy since school. He was fond of painting and watching old Hindi movies. As part of a school charity program, he volunteered at the children's hospital during his senior years.

In July 2007, he joined Westwood School of Hotel Management, Zirakpur to pursue a diploma course in Hotel Management and Catering. After completing this course, he joined XYZ Group of Hotels as a Housekeeping intern in June 2010 for six months. In this role, he was responsible for cleanliness and maintenance of one floor in the hotel. Taking advantage of his strong interpersonal skills, he also got opportunities to make housekeeping arrangements for corporate meetings. While pursuing education, he gained working knowledge of Microsoft Word, Excel, Access and PowerPoint.

Nipesh is detail-oriented, flexible and adaptable. He has successfully worked with a diverse work force. He gelled well with his peers, both in college and during his internship. After completing the internship, his objective has been to find a job opportunity where he can use his skills and experience. Backed by experience, he is confident about his skills as housekeeping assistant.

Job Posting

* Do you see yourself as a HOUSEKEEPING SUPERVISOR?

What's your passion? Whether you're into cricket, reading or hiking, at IHG we are interested in YOU. At IHG, we employ people who apply the same amount of care and passion to their jobs as they do in their hobbies people who put our guests at the heart of everything they do. And we're looking for more people like this to join our friendly and professional team.

THE LOCATION:

At the moment, we are looking for HOUSEKEEPING SUPERVISOR to join our youthful and dynamic team at Holiday Inn Amritsar, Ranjit Avenue in Amritsar, Punjab (India). Holiday Inn Amritsar is ideally located in Amritsar's commercial district on Ranjit Avenue with the world famous Golden Temple located only a short distance away. Sparkling chandeliers mark an incomparable arrival experience as you escape to the welcoming environment that is, Holiday Inn Amritsar. The fresh international brand to celebrate and explore Amritsar.

Salary: Negotiable

Industry: Travel / Hotels / Restaurants / Airlines / Railways

Functional Area: Hotels, Restaurants

Role Category: Housekeeping

Role: Housekeeping Executive/Assistant.

Desired Candidate Profile

Friendly, pleasant personality, Service - oriented.

You should ideally be Graduate/ Diploma holder in HM and at least 2 years of experience as a supervisor in good brand with good communication skills, English is a must.

In return we'll give you a competitive financial and benefits package. Hotel discounts worldwide are available as well as access to wide variety of discount schemes and the chance to work with a great team of people. Most importantly, we'll give you the room to be yourself.

*Please get in touch and tell us how you could bring your individual skills to IHG.

Education-

UG: Any Graduate/Diploma holder

PG: Post Graduation Not Required

Say



• Now, let's share the resume with the fellow participant sitting next to you and evaluate each other's effort.

Do



- Congratulate each participant for making their first attempt towards creating an effective resume.
- As a follow up activity, you can suggest them to prepare their own resume and show it to you the next day.

Summarize \ \(\beta \)



- Close the discussion by showing some effective resume samples to the candidates.
- Ask the participants what they have learnt from this activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation



- Keep printed copies of the activity ready for the session.
- Put down the suggested format of the resume on the board while explaining the steps in preparing a resume.
- Do check the participants' resume and suggest necessary changes.
- Suggested example for the case presented:

Nipesh Singla

#1XX7, Sector XX-D

Chandigarh-160018

Mobile No: 91-988XXXXX01

E-mail: nxxxxxxxxxla@gmail.com

Objective: Seeking an opportunity to use my interpersonal skills and experience to contribute to your company's growth, profitability and objectives.

Professional strengths:

- Proficient in housekeeping
- Experienced in and capable of working with a diverse work force
- Team player and friendly in nature
- · Successful working in a multi-cultural environment

- Detail oriented, flexible, and adaptable
- Knowledge of Microsoft Word, Excel, Access and PowerPoint

Educational background:

- Diploma in Hotel Management and Catering, Westwood School of Hotel Management, Zirakpur
- High School, Government Boys Senior Secondary School, Sector 15, Chandigarh

Professional internships:

- Housekeeping Intern, XYZ Group of Hotels, New Delhi (June 2010 August 2010)
 - Responsible for cleanliness and maintenance of one floor in the hotel.
 - Got opportunities to make housekeeping arrangements for corporate meetings.

Volunteer Work:

• Student volunteer at children's hospital in Chandigarh.

Nipesh Singla

UNIT 6.4.3: Interview FAQs

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- Discuss the most frequently asked interview questions
- Discuss how to answer the most frequently asked interview questions

-Resources to be Used



Participant Handbook



- Tell the participants you will provide them with interview situation and questions and they have to try to answer them.
- Tell them you will also explain the different ways to approach these questions.

Do



- Divide the class in pairs and ask the participants to perform a role play.
- One partner will play the role of the interviewer while the other will play the role of the interviewee.
- Tell them the interviewer can start the interview by asking the interviewee to introduce himself/herself.
- Call all the pairs one by one in front of the class to enact the role play.
- Follow the same pattern for all other situations.
- Time allotted for each situation is 8-10 minutes.
- Congratulate each participant for giving their input.
- Ask the class to applaud each time a team has completed their role play.
- Keep a check on time.

-Role Play 🔽



Conduct a role play for the situation given.

Situation 1

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Then, the interviewer will bluntly ask the following questions:
 - How do you explain this huge time gap in your resume?
 - What is the reason for this?
 - Weren't you looking for a job or is it that no one selected you?





De-brief:

- When you put information on your resume, you should be prepared to answer any questions about it.
- Be present and focused on the questions being asked to you.
- One way of tackling the blunt questions is to tell the interviewer you did not come across an opportunity where you were sufficiently satisfied with both the remuneration offered as well as the profile. Therefore, you waited for the right opportunity to come along while looking for an ideal job.

-Role Play 😴



Conduct a role play for the situation given.

Role Play - Situation 2

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Then, at the end of the interview, ask the interviewee:
 - There are over 200 people who have applied for this job, some with excellent work experience. Why should I hire you?

Say



De-brief:

- There is nothing wrong with stating your strengths and achievements. However, do not come across as arrogant or too boastful.
- You need show the interviewee that you have unique skills or talents to contribute to the company. The interviewer needs to know how you stand apart from the rest of the crowd.
- Tell the interviewer you are looking forward to working with the company and that you are a hard-working individual.

-Role Play

Conduct a role play for the situation given.

Role Play – Situation 3

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Then, lean forward, clasp your hands on the table and in a soft voice ask the interviewee:
 - Did you ever experience any neglect or disregard from your previous office? In other words, did you ever suffer because your office or team displayed favouritism?

Say



De-brief:

- Keep this in mind: Do not criticize anyone during an interview.
- You are free to express your opinion, however, your language, answers, body language, and the tone of your voice should remain constructive and neutral.
- Since criticism will show you in negative light, you should keep your answers honest yet diplomatic.
- You can tackle such questions by saying, "I got along well with most of my faculty and peers."

Role Play 🥰

Conduct a role play for the situation given.

Role Play - Situation 4

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Then very bluntly ask the interviewee:
 - How long do you plan to stay with this company if you are selected?
- After the candidate responds, ask sarcastically:
 - Do you seriously mean that?

Say



De-brief:

- Don't provide unreal and idealistic answers.
- Your answers should be honest yet diplomatic. In a situation like this, the interviewer does not expect you to provide a specific timeline.
- You can say something like, "I would like to stay with the company as long as I can contribute constructively and develop as an employee, within the organization, professionally and financially."

Role Play



Conduct a role play for the situation given.

Role Play - Situation 5

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Ask him/her how important he/she thinks it is to be punctual in the corporate world.
- After he/she answers, look up sternly at the interviewee and in a crisp voice, say:
 - You were late for this interview by 10 minutes. That surely does not seem to be in line with what you just said?

Say



De-brief:

- Politely apologize for being late.
- You can add something such as, "I assure you this is not a habit". All your future actions should be in line with this statement.
- Avoid giving any excuses.
- You might feel obligated to provide a justification for your tardiness, but the interviewer is not interested in that.
- Do not over apologize. Once this response is out of the way, turn your focus back to the interview.



Conduct a role play for the situation given.

Role Play - Situation 6

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- After asking a few academic or job-related questions, ask the interviewee:
 - If you get this job, what salary package do you expect us to give you?

Say



De-brief:

If there is no way for you to avoid this question, respond to the interviewer by providing a reasonable and well-thought out salary range.

Role Play 🔽



Conduct a role play for the situation given.

Role Play – Situation 7

- The interviewer will start by asking the interviewee a few generic questions such as:
 - What is your name?
 - Tell me something about yourself?
 - Can you tell me something about your family?
- Then, bringing the interview to a close, ask the interviewee:
 - Do you have any questions for me?

Say



De-brief:

- Ask relevant questions.
- Don't bombard the interviewer with questions.
- If you have questions about the result of the interview, you can limit your questions to 1 or 2. Keep them short and relevant like:
 - When will I be informed about the results of the interview?
 - What are the working hours?
 - Will the job require me to travel?

-Explain



- Tell the participants to be prepared for answering different types of questions in an interview.
- Stay calm and focused, and take a moment to think about how you should respond. Always maintain a confident tone.
- Even if you don't intend to, your body language conveys your level of discomfort with a particular question. Try to keep your actions, tone, and gestures neutral.
- Maintain your composure while answering personal question.

Do

- Tell all the participants to form pairs again.
- Tell them to use the following list of frequently asked interview questions to conduct mock interviews.
- They will use all or some of these questions to conduct mock interviews with their partners.
- One partner will play the role of the interviewer while the other will play the role of the interviewee.
- After they are through asking and answering the questions, the roles will be reversed.
- The same list of questions will be used again.
- After each mock interview ask the interviewer to provide feedback and clear any doubts that may arise.
- Time allotted for each situation is 30-35 minutes.



Mock Interview Questions

Mock Interview Questions

Tell me something about your family.

What qualities would you look for in a Manager or a Supervisor?

Why did you apply for this job?

What do you know about this company?

How do you deal with criticism?

How do you plan to strike a good work-life balance?

Where do you see yourself five years from now?

Have you applied for jobs in other companies?

What kind of salary do you expect from this job?

Do you have any questions for me?

-Summarize 🔎



- Close the discussion by discussing the questions in the both activities.
- Ask the participants what they have learned from this activity.
- Ask if they have any questions related to what they have talked about so far.

UNIT 6.4.4: Work Readiness – Terms and Terminology

-Unit Objectives | 🎯



At the end of this unit, participants will be able to:

Identify basic workplace terminology

Resources to be Used 🗇



- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens

-Ask



- What do you understand by workplace terminology?
- Are offer letter and contract of employment the same?



Let's start this unit with an activity.

Team Activity



Workplace terminology

This is a group activity conducted in three parts.

Part 1

Sheila received a call from the recruiter of MND Company. Before she is recruited by the company, think of the recruitment process she will have to go through. Start from the telephone call to signing her letter of acceptance. Write down all the words that come to your mind.

Activity De-brief

- Have the participants read out the words they have written
- Encourage all the participants to participate in the activity

-Do



- Divide the class into small groups of 4 or 6.
- Instruct the participants that they will be doing a brainstorming activity.
- Give them one chart paper each. Tell them to divide the chart in two parts.
- Instruct them that they have to use one half of the chart paper now. The other half will be used later.
- The participants have to write all the words that come to their mind related to the recruitment process.
- Give them 10 minutes to do the activity.
- Tell them that there are no right or wrong answers.
- Keep a track of the time.

Say



- You all know quite a few words related to the terms used in the office.
- Let us talk about some new terms that have been missed out.
- Discuss "Work Readiness Terms and Terminology" with the participants as given in the Participant Handbook.

Ask



- · Why is it important to know the workplace terms?
- How do they help?
- Can the words be categorised further?

Say



• Let's now continue the activity.

Team Activity



Terms and Terminology

• This is again a group activity. The members of the group remain the same as in Activity 1.

Part 2

With the help of the new terms you have learned, make a flow chart of the hiring process of MND Company.

Activity De-brief

• Ask the groups to share the flow charts and the new terms they added while preparing the flow chart.

-Do



- Instruct the participants that they have to use the 2nd half of the same chart they had used before.
- Using the new terminology and the terms they had previously written on the chart, they have to make a flow chart of the hiring process of the MND Company.
- Give them 10 minutes for this activity.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say



· Let's go ahead with the activity.

Team Activity



Terms and Terminology

• The activity continues with the same group members.

Part 3

Sheila now works for the MND Company. She is not aware of the company culture and policies. She goes to the HR Department to get her doubts clarified. Can you think of the terms for which she wants clarity? Make a list of those words.

Activity De-brief

• Ask the groups to share their list of words. Some of the words are benefits, comp. time, deduction, employee training, holidays, lay-off, leave, maternity leave, mentor, notice, paternity leave, and time sheet.

- Instruct the participants to identify the key terms an employee of a company should know. They can use the same chart paper for this activity.
- Give them 5 minutes for this activity.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

-Summarize 📜



Note: You can either summarize the key points of the unit or have a role play where an employee has just joined a company and the HR Manager explains the terms of employment.



UNIT 6.5: Understanding Entrepreneurship

Key Learning Outcomes



At the end of this unit, participants will be able to:

- 1. Discuss the concept of entrepreneurship
- 2. Discuss the importance of entrepreneurship
- 3. Describe the characteristics of an entrepreneur
- 4. Describe the different types of enterprises
- 5. List the qualities of an effective leader
- 6. Discuss the benefits of effective leadership
- 7. List the traits of an effective team
- 8. Discuss the importance of listening effectively
- 9. Discuss how to listen effectively
- 10. Discuss the importance of speaking effectively
- 11. Discuss how to speak effectively
- 12. Discuss how to solve problems
- 13. List important problem solving traits
- 14. Discuss ways to assess problem solving skills
- 15. Discuss the importance of negotiation
- 16. Discuss how to negotiate
- 17. Discuss how to identify new business opportunities
- 18. Discuss how to identify business opportunities within your business
- 19. Explain the meaning of entrepreneur
- 20. Describe the different types of entrepreneurs
- 21. List the characteristics of entrepreneurs
- 22. Recall entrepreneur success stories
- 23. Discuss the entrepreneurial process
- 24. Describe the entrepreneurship ecosystem
- 25. Discuss the purpose of the Make in India campaign
- 26. Discuss key schemes to promote entrepreneurs
- 27. Discuss the relationship between entrepreneurship and risk appetite
- 28. Discuss the relationship between entrepreneurship and resilience
- 29. Describe the characteristics of a resilient entrepreneur
- 30. Discuss how to deal with failure

UNIT 6.5.1: Concept Introduction (Characteristic of an Entrepreneur, types of firms/ types of enterprises)

-Unit Objectives



At the end of this unit, participants will be able to:

- Discuss the concept of entrepreneurship
- Discuss the importance of entrepreneurship
- Discuss the characteristics of an entrepreneur
- Describe the different types of enterprises

-Resources to be Used 🎏



Participant Handbook

Say



Let's start this session with some interesting questions about Indian entrepreneurs.

-Team Activity 🙀



Quiz Questions

1. Who is the founder of Reliance Industries?

Dhirubhai Ambani

2. Who is the Chairman of Wipro Limited?

Azim Premji

3. Who launched e-commerce website Flipkart?

Sachin Bansal and Binny Bansal

4. Who is the founder of Paytm?

Vijay Shekhar Sharma

5. Who is CEO of OLA Cabs?

Bhavish Aggarwal

6. Who is the founder of Jugnoo?

Samar Singla (autorickshaw aggregator)

Who is the founder of OYO Rooms?

Bhavish Aggarwal

-Do



- Tell them that you will ask them few questions about a few entrepreneurs.
- Divide the class in to two groups.
- In turns ask the quiz questions to the groups.
- If the answer is incorrect pass the question to the other group.
- Share the answer if the groups are not able to answer.
- Congratulate the participants who answered correctly.

Ask



- What do you understand by entrepreneurs?
- What is the importance of entrepreneurship in today's scenario?
- What do you think are the characteristics of successful entrepreneurs?
- What are different types of enterprises that an entrepreneur in India can own and run?

Say



- Talk about entrepreneurs, importance of entrepreneurship, characteristics of successful entrepreneurs, and different types of enterprises in India as discussed in the Participant Handbook.
- Tell the participants, stories of successful Indian entrepreneurs- their struggles, the moments of heartbreak, the perseverance and triumph.
- Ask them if they know of any such entrepreneur.

·Summarize 📜



• Close the discussion by summarizing about the opportunities for entrepreneurs in India.

-Notes for Facilitation



- Check out different Government schemes for small entrepreneurs. Share the information with the participants.
- You can tell them about the government websites like Start Up India, mudra.org.in etc.
- Discuss about various schemes and policies by the Government of India for entrepreneurs.

UNIT 6.5.2: Leadership and Teamwork

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

- List the qualities of an effective leader
- Discuss the benefits of effective leadership
- List the traits of an effective team

Resources to be Used



- Participant Handbook
- Blank sheets of paper
- Pens

-Do



- Show the picture given below to the class.
- Ask them to quickly write on a piece of paper what comes to their mind after seeing the picture.
- Now ask them, "What do you understand from this picture?"
- Encourage participants to share their thoughts.





-Say



- This picture depicts the qualities of a leader and the difference between a leader and a boss.
- A boss focuses on structure and inspires fear whereas a leader follows vision and generates enthusiasm.
- A boss blames employees for the breakdown whereas a leader fixes breakdowns.
- A boss depends on authority whereas a leader depends on goodwill.
- A boss says "I" and a leader says "We."
- A boss drives employees whereas a leader coaches them.
- A boss takes credit whereas a leader gives credit.

-Say



• Talk about leadership and leadership qualities for an entrepreneur as discussed in the Participant Handbook.

·Ask



Why is it important for a leader to be effective? How does it help the organization?



- Let us discuss benefits of effective leadership as discussed in the Participant Handbook.
- "Out-of-the-box thinking" is one of the new leadership styles. It means thinking differently and from a new perspective.

-Ask



· Do you consider yourself a team player?

Team Activity



Long Chain

• This is a group activity.



- Divide the class into 2 teams.
- Ask each team to create a chain using materials they have in class such as shoe laces, belts, paper, handkerchief, ribbons, etc.
- The team that creates the longest chain wins the game.
- Observe if the participants are interacting with their team or working in isolation.
- Share your observations with the class.

Sav



De-brief:

- What did the winning team do differently?
- Who was responsible for the winning team's success?
- How does this activity explain the role of teamwork in entrepreneurial success?

Sav



- Tell the class that both the teams performed well.
- Discuss that the objective of this activity was to open communication channels and how this has been achieved.
- The participants should aim to keep the communication channels open when interacting with their peers and team members.
- It will set the pace and enthusiasm required for all the ensuing teamwork activities.
- Talk about teamwork and importance of teamwork in entrepreneurial success as discussed in the Participant Handbook.

Summarize | 📜



- Close the discussion by summarizing about the importance of teamwork for employees.
 - Teamwork helps in reducing stress for the employees.
 - Teamwork helps employers in generating more number of solutions to a problem and developing improved communication amongst employees.
- Ask the participants what they have learned from these exercises.
- Ask if they have any questions related to what they have talked about so far.

UNIT 6.5.3: Communication Skills: Listening & Speaking: The Importance of Listening Effectively

-Unit Objectives



At the end of this unit, participants will be able to:

- Discuss the importance of listening effectively
- Discuss how to listen effectively
- Discuss the importance of speaking effectively
- Discuss how to speak effectively

-Resources to be Used 🎏



Participant Handbook

-Activity 1



Activity – Chinese Whisper

Step 1: Form a circle.

Step 2: Start a whisper chain. Any one participant will whisper a message into his/her neighbour's ear. No one else must hear the message. The message can be serious or downright silly.

Step 3: The next person who first heard the message should whisper the message very quickly to the person sitting next to them.

Step 4: The game goes on until the last person says whatever they heard out loud and the first person reveals the real message.

Compare them and have a great laugh!

Ask



De-brief questions:

- Was the original message the same as the message that is communicated at the end of the game?
- Why do you think there was a difference in the messages?

Say



- No, the original message was not same at the end of game.
- The barriers to communication like language, disturbance and noise, poor listening skills, boredom, poor speaking skills, etc. are the potential reasons this happens.
- There are various aspects to communication. Speaking skills and listening skills are two major components to any communication. There is always some room for improvement in the way we communicate.
- It is important to accept the reality of miscommunication and work to minimise its negative impacts.

Say



- Communication is a two-way process where people exchange information or express their thoughts and feelings
- It involves effective speaking and effective listening.
- If I go to the store to get bread, I exchange money for the bread. I give something and get something in return. Communication takes place in the same manner. You have to provide and receive information for communication to take place.

Ask



- How often do you hear these statements?
 - "You're not listening to me!"
 - "Why don't you let me finish what I'm saying?"
 - "You just don't understand!"
- What do you think the other person is trying to convey to you through these sentences?
- We will not talk about the importance of listening effectively as discussed in the Participant Handbook.

Say



• Let's play a game to understand effective listening process better.

Do



- This is a class activity.
- The participants need to answer the questions they hear.
- · Instruct them to listen carefully.
- You will read it at a stretch and if need be repeat it once more.
- Tell the participants to raise their hand if they know the answer to the question asked.
- Keep a check on time.

-Activity 2



Riddles:

Is there any law against a man marrying his widow's sister?

If you went to bed at eight o'clock at night and set the clock's alarm to ring at nine o'clock, how many hours of sleep would you get?

Do they have a 26th of January in England?

If you had only one match and entered a dark room that had a kerosene lamp, oil heater, and a wood stove, what would you light first?

The Delhi Daredevils and the Chennai Super Kings play five IPL matches. Each wins three matches. No match was a tie or dispute. How is this possible?

There was an airplane crash. Every single person died, but two people survived. How is this possible?

If an airplane crashes on the border of two countries, would unidentified survivors be buried in the country they were travelling to or the country they were travelling from?

A man builds an ordinary house with four sides except that each side has a southern exposure. A bear comes to the door and rings the doorbell. What is the colour of the bear?

Answers:

There's no law against a man marrying his widow's sister, but it would be the neatest trick in the book since to have a widow, the man would have to be dead.

You'd get one hour's sleep since alarm clocks do not know the difference between morning and night.

Oh, yes. They have a 26th of January in England. They also have a 27th, a 28th, and so on.

First of all, you would light the match.

Who said the Delhi Daredevils and the Chennai Super Kings were playing against each other in those games?

Every SINGLE person died, but those two were married.

You can't bury survivors under any law especially if they still have enough strength to object.

The bear that rang the doorbell would have to be a white bear. The only place you could build a house with four southern exposures is at the North Pole where every direction is in South.

-Ask



De-brief question:

- What were the barriers that came into your way of listening?
- How can you overcome barriers to listening?

Say



- There is a difference between hearing and listening.
- If you don't listen properly, the message may be misunderstood.
- Be open-minded while listening to someone.
- It is important to listen effectively and carefully without making assumptions.

-Activity 3



Elevator Pitch:

You are in the lift of a hotel and you bumped into your former client who is a famous businessman. He has financed a lot of small business ventures and can finance your new start-up too. After exchanging pleasantries, he asks you what your new company does. You open your mouth, and then pause. Where do you even begin?

Then, as you try to organize your thoughts, his meeting is called, and he is on his way. If you would been better prepared, you're sure that he would have stayed long enough to schedule a meeting with you too.

If you were given another chance, what would you have said to this person?

Do



- Start off the task by providing a beginning sentence to get the story started, and then go around the classroom getting each one to add a new sentence to keep the story going.
- This task should be done spontaneously allowing only a little time to think (30 seconds).
- For example: There was once a student who was looking for a job after graduation.

-Notes for Facilitation



- Tell the participants to follow these steps to create a great pitch, but bear in mind that you'll need to vary your approach depending on what your pitch is about.
 - 1. **Identify Your Goal:** Start by thinking about the objective of your pitch. For instance, do you want to tell the potential clients about your organization? Do you have a great new product idea that you want to pitch to an executive or do you want a simple and engaging speech to explain what you do for a living?
 - 2. **Explain What You Do:** Start your pitch by describing what your organization does. Focus on the problems that you solve and how you help people. Ask yourself this question as you start writing: what do you want your audience to remember most about you? Keep in mind that your pitch should excite you first. After all, if you don't get excited about what you're saying neither will your audience. People may not remember everything that you say, but they will likely remember your enthusiasm.
 - 3. **Communicate Your USP:** Your elevator pitch also needs to communicate your unique selling proposition or USP. Identify what makes you, your organization or your idea unique. You'll want to communicate your USP after you've talked about what you do.
 - 4. **Engage with a Question:** After you communicate your USP, you need to engage your audience. To do this, prepare open-ended questions (questions that can't be answered with a "yes" or "no" answer) to involve them in the conversation. Make sure that you're able to answer any questions that he or she may have.
 - 5. **Put it all Together:** When you've completed each section of your pitch, put it all together. Then, read it aloud and use a stopwatch to time how long it takes. It should be no longer than 20-30 seconds. Remember, the shorter it is, the better!

Example:

Here's how your pitch could come together:

"My company deals with cloth retail online business and we use various e-commerce platforms to sell our products. This means that you can do shopping with ease and spend time on other important tasks. Unlike other similar companies, we have a strong feedback mechanism to find out exactly what people need. This means that, on average, 95 percent of our clients are happy with our products. So, how can you help us in creating our own web portal?

6. **Practice:** Like anything else, practice makes perfect. Remember, how you say it is just as important as what you say. If you don't practice, it's likely that you'll talk too fast, sound unnatural or forget important elements of your pitch. Set a goal to practice your pitch regularly. The more you practice, the more natural your pitch will become. Practice in front of a mirror or in front of colleagues until the pitch feels natural.

Summarize



• Close the discussion by summarizing how to speak effectively as discussed in the Participant Handbook.

UNIT 6.5.4: Problem Solving & Negotiation Skills

Unit Objectives



At the end of this unit, participants will be able to:

- Discuss how to solve problems
- · List the important problem solving traits
- Discuss ways to assess problem solving skills
- · Discuss the importance of negotiation
- · Discuss how to negotiate

Resources to be Used



Participant Handbook

Ask



- What is a 'problem'?
- What do you think are the problems you may face in the process of becoming a successful entrepreneur?

Say



- Discuss the definition of problem as given in the Participant Handbook.
- In a hurdle race the hurdles are the obstacles on the way to reach your goal.
- Similarly, obstacles are the hurdles you may face while reaching your goal i.e. to set-up your own business. Your goal will be to reach the finishing line after crossing these hurdles.

-Ask



- What do you do when you face a problem?
- How do you resolve it? You can pick examples from the question asked previously 'the problems they are likely to face in the process of becoming a successful entrepreneur'.

Say



• Discuss how to solve problems as given in the Participant Handbook.

Team Activity



- This is a group activity.
- The groups will solve the problem and come up with the best solution in each case.
- 1. Unable to arrange for some extra finance for setting up a beauty parlour. The loan sanctioned and disbursed is not enough. You have tried all your contacts, friends and relatives. But unable to manage the extra amount. Bank will not sanction more amount as you have used up the complete sanction limit.
- 2. You have rented a space for your business and all arrangements are done. You will be operating from the office space rented in two days. Now the owner comes up to you and says he wants to sell the place and wants you to vacate in 15 days.
- 3. You have just set up your business and need extra human resource. You have tried invieing a few also tied up with an agency for getting the right candidate. But you are unable to get the right candidate. If the candidate is good, you cannot offer the salary demanded. If the candidate agrees to the salary, he/she has other demands like working hours to be reduced, leaves etc. which may not work for your set up.

Do



- Divide the class into three groups. Give one scenario to each group.
- Explain the purpose and duration of the activity.
- Ask the groups to build on the scenario and present their solution as a role play.



De-brief questions:

- 1. What was the problem?
- 2. Is there any other alternative solution?
- 3. Is this the best solution presented?

Ask



Try to think of some people around you who are able to solve problems very easily. Even you or your friends might be approaching them when there is a problem. What qualities do they have? What personality traits do such people possess?



Discuss the important traits for problem-solving as given in the Participant Handbook.

Ask



In order to build a successful organization, you need to hire people who possess good problem solving skills. How would you assess the level of problem solving skills of potential candidates before hiring them?



Discuss how to assess for problem-solving skills as given in the Participant Handbook.

Summarize | 📜



- Ask the participants the things that they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Summarize the discussion on problem solving.

- Activity



The activity is to organise an election event. Select three volunteers from the group. They have to give a speech on their election manifesto to the class. They have to negotiate with the fellow participants and convince them to vote for them. The best negotiator will win the election.

Do



- Ask three participants to volunteer for the activity.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Ask



- Out of the three contestants, whom would you support? Why? What did they say or do which convinced you to make your decision?
- Have you ever tried to negotiate in your personal or professional life?
- Ask the class to share some of their experiences where they have been able to strike a deal by negotiating.

Say



• Discuss "What is Negotiation?" as given in the Participant Handbook.

Ask



 Why is it important to negotiate? As an entrepreneur, where do you think that negotiation skills will be needed?

Say



• Discuss the importance of negotiation while starting a business as given in the Participant Handbook.

Say



• Discuss the important steps to negotiate as given in the Participant Handbook.

-Role Play



- · Conduct a role play activity.
- Ask the participants to assemble together.
- · Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Do



- Divide them into groups of four (4) (depending on the batch size).
- Give them the hand-outs for role play scenarios.
- Two groups to be given scenarios on problem solving.
- Other two groups to be given scenarios on negotiation.
- The groups will build on the scenarios and prepare for the role play.
- Give the groups atleast 5 mins to discuss and be ready with the role play.
- Invite each group one by one to come and present their role play.

Problem solving Scenario 1

Avinash has a Mobile Repair Store in Allahabad. His outlet is one of the most popular one in the vicinity and he has great rapport with his customers. He is always well-dressed, jovial and full of energy.

It's around 11 AM, when a customer barges in to the shop and starts shouting at Avinash for giving her back the instrument which is still not working. The screen of her mobile is also cracked from one side. Avinash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue the company and to go to Consumer Court for cheating her.

Problem solving Scenario 2

You are running a successful small scale business, Shreeji Aggarbattis,. Your staff members do door to door selling and organise marketing campaigns in local markets. Your brand has established it's name in last few years.

Recently, lot of customers have been coming to you and lodging complaints that your staff members indulge in malpractices. Few of them informed you that a staff member engaged them in a friendly conversation. In the meanwhile, the other gave them lesser packets of aggarbattis than they paid for.

Another set of customers lodged complaint about the misconduct and rude behaviour of a particular staff member.

You often hear from your customers that the orders don't get delivered on time or wrong products get delivered.

You have already been struggling with shortage of staff and such complaints are a serious concern as it is hampering your brand image. What strategies will you adopt to solve this problem?

Negotiation Scenario 1

You have interviewed a prospective new employee who could be a key member of your new entrepreneurial venture. The new person is demanding a salary that is 20% higher than you thought based on your business plan. Finances are tight, yet you believe this person could make a significant impact on future profits. If you paid the required salary for the new person, then you would have to restructure your entire business plan. You've been searching for an individual with this skill level for three months. to the candidate is waiting for your response. Now you have to call him in to make the final negotiations.

Negotiation Scenario 2

You are a young entrepreneur who has just registered his start up project and applied for a bank loan accordingly. You receive a letter saying that your loan application has been rejected as your start up idea did not appeal to the bank and they think that it is not a revenue generating model. You have taken an appointment to meet the manager and show your negotiation skills to get your loan approved.

Notes for Facilitation



Facilitating Role Plays

Preparing for the activity

- 1. Carefully review the details of the scenario and the character descriptions.
- 2. Become familiar with the key issues being addressed in the scenario.
- 3. Study the provided material so that you are ready to address issues related to the situations depicted in the role-plays.
- 4. Anticipate and know how to address issues participants might raise during the activity.

Conducting the activity

- 1. Introduce the activity. Emphasize that role-playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
- 2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
- 3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
- 4. Give the pairs/groups 10 to 15 minutes to conduct the role-play (depending on the duration of the session).
- 5. After all the groups have finished with the role-play, conduct a debriefing session on each role-play.
- 6. Ask the groups to take five minutes to talk about what happened during the role-play. The groups should discuss the questions given in the debriefing for each role-play. Encourage participants to provide constructive criticism during their discussions.

Summarize



• Wrap the unit up after summarizing the key points and answering questions.

UNIT 6.5.5: Business Opportunity Identification: Entrepreneurs and Opportunities

-Unit Objectives



At the end of this unit, participants will be able to:

- Discuss how to identify new business opportunities
- Discuss how to identify business opportunities within their business

Resources to be Used



- Participant Handbook
- Blank sheets of paper
- Pens

·Ask



- How does an entrepreneur identify an opportunity?
- What do you think are the common queries or concerns faced by entrepreneurs?
- How can you identify new business opportunity?

Say



- Let's talk about opportunity, common queries or concerns faced by entrepreneurs, idea as an opportunity, factors to consider when looking for opportunities, ways to identify new business, and opportunity analysis as discussed in Participant Handbook.
- Let's do an activity to understand ways to identify business opportunities within your business.

Do



- Tell the class that this is an individual activity.
- Tell the participants to create a matrix on their notebooks.
- There will be four boxes in your matrix.
- Strength, Weakness, Opportunity and Threats will be the four headings of the matrix. This is called the SWOT matrix.
- Read out the questions to them and tell the participants they need to answer the questions asked in each matrix.
- Tell them they can also use their own understanding of themselves to fill the SWOT matrix.

Activity



Do your SWOT analysis

Strength

What are your strengths?

What unique capabilities do you possess?

What do you do better than others?

What do others perceive as your strengths?

Opportunity

What trends may positively impact you?

What opportunities are available to you?

Weakness

What are your weaknesses?

What do your competitors do better than you?

Threat

Do you have solid financial support?

What trends may negatively impact you?

Do



- Congratulate everyone for the class activity.
- Ask the audience to applaud for themselves.
- Allot the participants sufficient time to complete this activity, but do keep a check on time.
- Ask de-brief questions to cull out information from the participants.

-Ask



De-brief questions:

- What are your weaknesses according to your SWOT analysis?
- Do you think you can change your weakness into strength? How?
- Do you think you can work on your threats? How?

-Summarize 📜



- Close the discussion by summarizing ways to identify business opportunities within your business.
- Ask the participants what they have learned from this exercise.
- Ask if they have any questions related to what they have talked about so far.

UNIT 6.5.6: Entrepreneurship Support Eco-System

Unit Objectives | ©



At the end of this unit, participants will be able to:

- · Explain the meaning of entrepreneur
- Describe the different types of entrepreneurs
- List the characteristics of entrepreneurs
- Recall entrepreneur success stories
- Discuss the entrepreneurial process
- Describe the entrepreneurship ecosystem
- Discuss the purpose of the 'Make in India' campaign
- Discuss the key schemes to promote entrepreneurs

Resources to be Used



- Participant Handbook
- Chart papers
- Marker pens
- **Pencils**
- Colour pencils
- Scale
- Eraser
- Other requisite stationery material

-Ask



- Do you think that entrepreneurs need support?
- What do you think is an eco-system?
- What do you think 'entrepreneurship support eco-system' means?

-Sav



- Let's learn what entrepreneurship support eco-system means.
- Discuss 'Entrepreneurship Support Eco-System' as given in the Participant Handbook.

-Ask



- Can you define entrepreneurship support eco-system?
- What are the key domains of the support eco-system?

-Say



- Let's learn more about these domains by conducting an activity.
- You have to make a poster showing the components of the six main domains of entrepreneurship support eco-system.

Team Activity



Making a poster showing the entrepreneurship support eco-system.

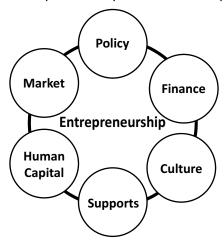
Do



- Divide the class into groups of four or six.
- Hand out chart paper and coloured pens.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

Activity De-brief

Ask each group to display their poster and explain the key domains of entrepreneurship support eco-system.



-Ask



What kind of government support eco-system is available for entrepreneurs in India?

Say



Discuss 'Make in India' campaign as given in the Participant Handbook.

Team Activity



Presentation on key schemes to promote entrepreneurs



- Divide the class into pairs.
- Number each pair from 1-15.
- Assign a scheme, same as their group number, to each group.
- Ask them to read the scheme carefully and present it to the class.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

Activity De-brief

• Ask each group to explain the scheme offered by government to promote entrepreneurs.

Summarize | 🎘



Summarize the unit by discussing the key points and answering questions the participants may have.

UNIT 6.5.7: Risk Appetite & Resilience

Unit Objectives 6



At the end of this unit, participants will be able to:

- Discuss the relationship between entrepreneurship and risk appetite
- Discuss the relationship between entrepreneurship and resilience
- Describe the characteristics of a resilient entrepreneur

Resources to be Used



- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens
- Marker pens

Ask



- Can you define risk or explain what constitutes a risk?
- What do you people mean when they say, "This may be a risky proposition"?
- What risks are they talking about?

-Example | 💝



• Let's have a look at these two examples:

Rohit and his family were travelling by car from Delhi to Nainital. It was their second trip there. Rohit was familiar with the road. His friends told him that the highway after Rampur was in a bad condition. They advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road. This road is in a better condition.

Since he was going with his family, and did want take the risk of getting lost, he left early. He took the Kaladhungi road and reached Nainital well in time.

Suresh and his family too were travelling by car from Delhi to Nainital. It was their second trip there. His friends too advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road as this road was in a better condition.

Suresh too decided to take the Kaladhungi road but he left Delhi in the afternoon. It was dark by the time he reached Kaladhungi, and he was sure that he was taking the correct turn. As it was late, he could not find anyone to give him directions. He ended up being in an unknown place that was scarcely inhabited.



- Let's see what type of risks Rohit and Suresh took.
- Discuss 'Risk Appetite and Resilience' with the participants as given in the Participant Handbook.



Let's learn more about risk appetite and resilience with the help of an activity.

Team Activity

Risk Appetite

- This is a group activity.
 - In the previous unit, you read success stories of Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
 - Mr Ambani left his job and started his company Reliance with just Rs. 50,000/-.
 - Dr Patel kept his job, went door-to-door to sell Nirma, and only when the brand started gaining popularity did he start his own company.
 - What types of risk did both of them take?
 - What risk factors, do you think, did they keep in mind before launching their company?
 - Write the Risk Appetite Statement of both the companies.

Activity De-brief

- Who took a greater risk?
- What are the differences between the Risk Appetite Statement of both the companies?

Do



- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to evaluate the risks taken by Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Ask



- Do you think all entrepreneurial ventures are successful?
- What happens if the first venture is not successful?
- Should the entrepreneur stop when faced with challenges or face them?

-Example



Let's have a look at the following example:

Vijay Shekhar Sharma is the founder of Paytm, which is a giant Indian e-commerce. He was born in a middle-class family in Uttar Pradesh. He started his first job at an MNC. He quit after six months and built a company One97 with his friends. As One97 grew bigger, it needed more money because it was running more servers, bigger teams, and had to pay royalty. At that time, the tech bubble popped and technology companies were running in losses. Finally, money ran out. So One97 took loans and then more loans at higher rates of interest, as high as 24 per cent, and became caught in a vicious cycle.

In 2014, Paytm was launched with online wallet services after which, the company enabled online payment transactions. The company got licenses from RBI in 2016 to launch India's first ever payment bank. Moreover, the main motive of Paytm was to transform India into a cashless economy.

After demonetization came into effect, Vijay Shekhar Sharma started promoting online and digital transactions to deal with the cash crunch. In fact, the service of the company's mobile wallet is accepted across India. The logo of Paytm is now popular almost everywhere from tea stalls to major companies.



- Let's see what qualities made Vijay Shekhar Sharma a resilient entrepreneur.
- Discuss Entrepreneurship and Resilience with the participants as given in the Participant Handbook.

Say



Let's learn more about entrepreneurship and resilience with the help of an activity.

Team Activity



Entrepreneurship and Resilience

- · This is a group activity.
 - Think of some entrepreneurship ventures that faced challenging times, but later resulted in success stories.
 - Who is the founder of that company?
 - What challenging times did it face?
 - How did it overcome those challenges?
 - List the resilient characteristics of the entrepreneur.

Activity De-brief

- Each group to give their presentation.
- Why did you choose this company?
- What is the success story of the company?



- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to think of an entrepreneur who faced challenging times, but eventually succeeded.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize | **建**



- You can summarize the key points of the unit.
- Ask the participants what they learned from the activities.
- Clarify any questions or doubts they might have.

UNIT 6.5.8: Success and Failures

-Unit Objectives 🏻 🎯



At the end of this unit, participants will be able to:

Discuss how to deal with failure

Resources to be Used



Participant Handbook

-Ask



- Have you heard the quote 'nothing is impossible'?
- What do you think it means?
- Do you think that all successful entrepreneurs became famous overnight or did they have to struggle or face failure before succeeding?

·Example| 💡



Let's have a look at this example.

Shah Rukh Khan, also known as, SRK or King Khan is a force to reckon with. Did he achieve stardom overnight? Shah Rukh Khan, who has seen many struggles in his life - he has slept on streets, struggled to support himself and his sister at a very young age, and lost his parents very early in life, which led to his sister seeking mental health support. Amidst all the chaos and challenges, he kept pushing himself, and today he stands tall as the 'Badshah of Bollywood'. Certainly those years were not easy for him.

When he was young, he stood at Marine Drive and said, "I will rule this city one day". Failure was not just his companion during or before his stardom, it is still a substantial part of his life. Success does not come easy. What made him a star was his acceptance of failure and the urge to improve.



- How do you define success and failure?
- What is fear?
- $Discuss\ "success\ and\ failure"\ with\ the\ participants\ as\ given\ in\ the\ Participant\ Handbook.$

Ask



- Have you felt or experienced fear?
- What led you to feel that emotion?
- How did you handle it?



Let's learn the about success and failure with the help of an activity.

Team Activity

- Divide the class into groups of four.
- Instruct them to think of one scenario where they have to interview a successful entrepreneur.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- They have to choose one person from the group as the interviewee and one as the interviewer.
- Go around and make sure they have understood what is to be done and are discussing the roles properly.
- Check that everyone understands their role. Give clarifications if needed. Give the participants about 5 minutes to discuss and decide their roles.
- Ask the groups to stop the discussion as soon as the time is over.
- Invite each group one by one to come and present their interview as a role play.

- Notes for Facilitation



Facilitating Role Plays

Preparing for the activity

- 1. Carefully review the details of the scenario and the character descriptions.
- 2. Become familiar with the key issues being addressed in the scenario.
- 3. Study the provided material so that you are ready to address issues related to the situations depicted in the role plays.
- 4. Anticipate potential questions that might be raised by the participants and be ready to address them.

Conducting the activity

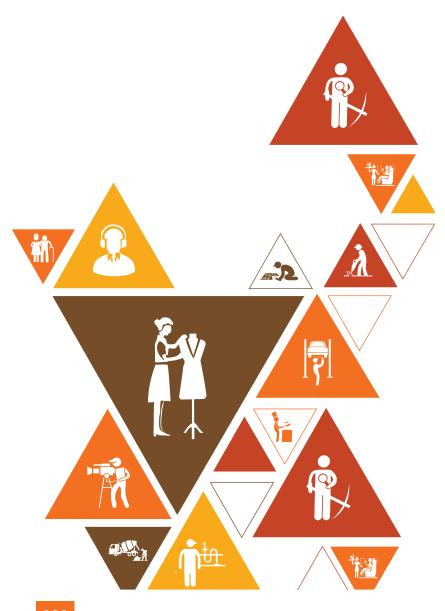
- 1. Introduce the activity. Emphasize that role playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
- 2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
- 3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
- 4. To maintain spontaneity of the interactions during the role play, ask the participants not to discuss the details of their roles prior to the role play.
- 5. Give the pairs 15-20 minutes to conduct the role play.
- 6. Circulate among the groups to answer any questions that may arise and provide guidance as needed.
- 7. After all the pairs have finished with the role play, conduct a de-briefing session on each role play.
- 8. Ask the groups to take five minutes to talk about what happened during the role play. The groups should discuss the questions given in the de-briefing for each role play. Encourage participants to provide constructive criticism during their discussions.
- 9. Conclude the activity by asking participants to think about whether and how they might use scripted role plays in their real life.

Summarize



• Wrap the unit up after summarizing the key points and answering questions.

Notes			
Notes 📃			



UNIT 6.6: Preparing to be an Entrepreneur

Key Learning Outcomes



At the end of this unit, participants will be able to:

- 1. Discuss how market research is carried out
- 2. Describe the 4 Ps of marketing
- 3. Discuss the importance of idea generation
- 4. Recall basic business terminology
- 5. Discuss the need for CRM
- 6. Discuss the benefits of CRM
- 7. Discuss the need for networking
- 8. Discuss the benefits of networking
- 9. Discuss the importance of setting goals
- 10. Differentiate between short-term, medium-term and long-term goals
- 11. Discuss how to write a business plan
- 12. Explain the financial planning process
- 13. Discuss ways to manage your risk
- 14. Describe the procedure and formalities for applying for bank finance
- 15. Discuss how to manage their own enterprise
- 16. List the important questions that every entrepreneur should ask before starting an enterprise

UNIT 6.6.1: Market Study/ The 4Ps of Marketing/ Importance of an IDEA: Understanding Market Research

- Unit Objectives



At the end of this unit, participants will be able to:

- · Discuss how market research is carried out
- Describe the 4 Ps of marketing
- Discuss the importance of idea generation

Resources to be Used



- Participant Handbook
- Chart papers
- Markers pens
- Blank sheets of paper

Ask



- Suppose, you want to open a restaurant, what are the factors you will consider?
- How will you promote your restaurant?

Example 🗣



Let's have a look at this example.

Arjun was an MBA working in a company. But he wanted to start a low cost budget hostel for foreign tourists coming to India. He did a lot or market research before starting the project. Based on the information he gathered, he made his business plan. His hostel is now flourishing and he is thinking of expanding to other tourist destinations.

Say



- Discuss "Market Study" with the participants. Refer to the Participant Handbook.
- Let's learn about market study and research with the help of an activity.

Team Activity



Market Study

- · This is a group activity.
- You want to start your own tuition centre.
- What type of research will you do?

Activity De-brief

- Ask each group to come forward and give a brief presentation.
- Encourage other groups to be interactive and ask questions.
- What factors did you keep in mind while doing your research?
- · Based on our research would you go ahead and open a tuition centre?

Do



- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a chart paper.
- Tell the participants that they have to start their own tuition centre.
- Give the participants 10 minutes to discuss and write the research work they need to do.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say



• By opening a tuition centre you are offering a service.

Ask



• What factors will you keep in mind before opening it?

Say



• Discuss "The 4Ps of Marketing" with the participants as given in the Participant Handbook.

Say



• Let's learn about the 4Ps of Marketing with the help of an activity.

Team Activity



4 Ps of Marketing

- This is a group activity.
- You have to sell a pen to four different segments:
 - 1. Rural villagers
 - 2. Rural middle class
 - 3. Urban middle class
 - 4. Upper end rich people (Niche market)

Keeping the 4Ps of Marketing in mind, what marketing strategy will you design to sell the pen?

Activity De-brief

- Ask each group to to present their strategy.
- Encourage other groups to be interactive and ask questions.

Do



- Instruct the participants that this is group work.
- Divide the class into four groups.
- · Give each group a chart paper.
- Assign each group a target audience for selling the pens:
 - 1. Rural villagers
 - 2. Rural middle class
 - 3. Urban middle class

- 4. Upper end rich people
- Tell the participants that they have to design a marketing strategy keeping the 4Ps of Marketing in mind.
- Give the participants 20 minutes to discuss and come up with their strategy.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit

Activity De-brief

- Ask each group to come forward and give a brief presentation.
- Ask each group what they kept in mind while designing their marketing strategy.
- Encourage other groups to be interactive and ask questions.



- Each entrepreneur has an idea of wants he wants to sell. It may be a service or a product.
- Discuss "Importance of an IDEA" as given in the Participant Handbook.

Summarize | 📜



- Summarize the key points of the unit.
- Ask the participants what they learnt from the activities.
- Encourage them to ask if they have any doubts.

UNIT 6.6.2: Business Entity Concepts

- Unit Objectives



At the end of this unit, participants will be able to:

Recall basic business terminology

-Resources to be Used



Participant Handbook

Say



- Let's recall some basic business terminology.
- Discuss the Business Entity Concepts as given in the Participant Handbook.
- Let's learn some basic business terminology by having an activity.
- We will have a quiz today.

Activity



The activity is a quiz.

Do



- Divide the class in two groups and give a name to each group.
- Explain the rules of the quiz. For each correct answer the group gets 1 mark.
- If the group is unable to answer the question is passed to the next group.
- Explain the purpose and duration of the activity.
- Ask the questions of the quiz.
- Keep a score of the groups.
- Set guidelines pertaining to discipline and expected tasks.

Summarize | 2



• Summarize the unit by discussing the key points.

Notes for Facilitation



QUESTIONS FOR THE QUIZ

1. What does B2B mean?

Business to business

2. What is a financial report?

A comprehensive account of a business' transactions and expenses

3. Who is a sales prospect?

A potential customer

4. How is working capital calculated?

Current assets minus current liabilities

5. What is an estimation of the overall worth of a business called?

Valuation

6. You are buying a house. What type of transaction is it?

Complex transaction

7. How will you calculate the net income?

Revenue minus expenses

8. How is Return on Investment expressed?

As percentage

9. How will you calculate the cost of goods sold?

Cost of materials minus cost of outputs

10. What is revenue?

Total amount of income before expenses are subtracted.

11. What is a Break-Even Point?

This is the point at which the company will not make a profit or a loss. The total cost and total revenues are equal.

12. What is the formula used to calculate simple interest?

A = P(1 + rt); R = r * 100

13. What are the three types of business transactions?

Simple, Complex and Ongoing Transactions

14. The degrading value of an asset over time is known as

Depreciation

15. What are the two main types of capital?

Debt and Equity

UNIT 6.6.3: CRM & Networking

Unit Objectives | @



At the end of this unit, participants will be able to:

- · Discuss the need for CRM
- Discuss the benefits of CRM
- Discuss the need for networking
- Discuss the benefits of networking

Resources to be Used |



Participant Handbook

Ask



- Can your business run without customers/buyers?
- Who is the most important entity in any business?



- The key to every success business lies on understanding the customer's expectations and providing excellent customer service.
- Discuss about CRM and its benefits. Refer to the Participant Handbook.
- Providing excellent customer service entails:
 - Treating your customers with respect.
 - Be available as per their need/schedule.
 - Handling complaints effectively.
 - Building long lasting relationships.
 - Collecting regular feedback.
- Handle customer complaints proactively. Ask "what happened", "why it happened", "how can it be avoided next time", etc.
- Collecting feedback from the customers regularly will enable you to improve your good/service.
- "Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem."

Do



- Divide the class into four groups of maximum six participants depending on the batch size.
- Give one case study to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Put down the discussion points (de-brief questions) on the board. Give the class 5-10 minutes to discuss the case and note down their solutions.
- At the end of 10 minutes, the team should present their case solution to the class.

Team Activity 🙀



Case Study Analysis

Raju runs a business of wooden furniture. He has a huge list of customers on Facebook and WhatsApp who give him orders regularly. Ankita is one of his old and regular customers. She placed an order for a new chester and TV cabinet via WhatsApp and requested Raju to send them as soon as possible. When the parcel reached Ankita through courier she found that chester was broken and the TV unit was chipped from the bottom. Ankita was heartbroken. It was a complete waste of money. She sent a message to Raju on WhatsApp, expressing her anger and disappointment. Raju might lose an old customer forever if he doesn't satisfy the customer. What should Raju do to retain his customer?

Scenario 2

Rajni runs a boutique shop. She sells suits and sarees. She is one of the most successful designer in her city. Rajni swears that all the clothes in her boutique have unique designs. Smita has to attend her cousin's wedding; she goes to Rajni's boutique to buy a saree. Smita wanted a unique designer saree. Rajni customized a saree for her and sent it over the courier. When Smita had a look at the saree she realised her two friends had the same design sarees. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment. Did Rajni make a false promise? Were her designs copied? What could happen to Rajni's image after this incident? What would you do if you were in Rajni's place?

Scenario 3

Shama is a beautician who offers parlour services to ladies by making home visits. Recently, Shama got her name registered on an e-commerce website. Two days earlier, she got a message from Mrs Sushma. The appointment was fixed for next day, 11:00 am and the remuneration for the services was decided beforehand. When Shama reached there at 10:50 am, Mrs Sushma was not at home. When Shama called her, she asked her to wait for a while. Mrs Sushma reached home at 11:45 am. Meanwhile, Shama had to reschedule her next appointment. After availing Shama's services, Mrs Sushma refused to pay the requisite amount and started finding faults in the services provided by her. Who was at fault in this scenario? What should you do in case the customer behaves unreasonably? What would you do if you were in Shama's place?

Scenario 4

Shailender is the manager of a car showroom. He proactively takes part in all the transactions that happen in his showroom. Vinita wants to buy a new car. She has chosen a car from Shailender's showroom. The salesperson has given her a very good discount and has also promised free service for one year. Vinita goes to the showroom and asks to complete all the formalities to purchase the car. When she sees the final bill she realize that she has not received the promised discount neither was there any mention of the free services. She immediately demands to see the Shailender. When Shailender's head asks how much discount Vinita was promised, he realised the discount will make the sale in loss. The car showroom owner might lose a customer and deal due to false commitments made by his manager. Besides, the customer might tell this to other people, creating a bad name and image for the showroom. If you owned that showroom, how would you have convinced your customer?

Sav



- Now, let's discuss the problem and solution with the class.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Present the solution as a role play.
- Post presentation, the other groups may ask questions from the group that has presented.

- Congratulate each group for the presentation/role play.
- Ask the audience to applaud for them.
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.



- If your customers are happy with you they will give referrals which will help to grow your business.
- One more way of growing business is 'Networking'.
- Discuss Networking and its benefits. Refer to the Participant Handbook.

Activity



Group Discussion

Conduct a group discussion in the class on how they can do networking for their business.

Summarize | 2



- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.

UNIT 6.6.4: Business Plan: Why Set Goals?

Unit Objectives



At the end of this unit, participants will be able to:

- Discuss the importance of setting goals
- · Differentiate between short-term, medium-term and long-term goals
- Discuss how to write a business plan
- · Explain the financial planning process
- · Discuss ways to manage your risk

Resources to be Used



- · Participant Handbook
- · Chart papers
- · Blank papers
- Marker pens
- Ruler

Ask



- Remember we had written SMART Goals in a previous session? Let's try and recall why it is important to set goals?
- While framing SMART goals, we talked about 'T' in SMART, which was 'Time Bound'? What do we mean by time bound goals?
- What time limit did you set for your goal- 3 weeks, 3 years, 10 years?

Say



• Talk about short term, long term and medium term goals, as discussed in the Participant Handbook.

Ask



• As you are planning to become an entrepreneur, you must have thought of an idea for a start-up. What is your business idea?

Do



• Ask few participants to share their business ideas.

Ask



- Have you created a business plan for your business idea?
- Do you think it is important to have a business plan in place? Why/ why not?

Say



- Talk about 'Why Create a Business Plan' as discussed in the Participant Handbook.
- Let's understand it better with the help of an activity.

Team Activity

Writing a business Plan

- This is a group activity.
- Give the groups the required resources such as chart paper and markers.
- This activity is divided into two parts:
 - 1. Create a business idea
 - 2. Develop a business plan
- The group will discuss and come up with a new business idea and present their idea to the class.
- In the second part of the activity the group will develop a business plan for the business idea.
- The business plan prepared will be presented by the groups to the class.

MY BUSINESS PLAN
Executive Summary: What is your Mission Statement?
Business Description: What is the nature of your business?
Market Analysis: What is your target market?
Organization and Management: What is your company's organizational structure?
Service or Product Line: What is the lifecycle of your product/ service?
Marketing and Sales: How will you advertise and sell your products?
Funding Request: How much fund is required and from where?

Say |



- Teams will need to brainstorm for this part of the activity.
- Use the blank papers for the second part of this activity
- Make your business plan on a chart paper based on the following parameters:
 - 1. Executive Summary
 - 2. Business Description
 - 3. Market Analysis
 - 4. Organization and Management
 - 5. Service or Product Line
 - 6. Marketing and Sales
- Explain each parameter in detail as done in the Participant Handbook.
- Discuss each parameter with the business idea examples of the groups.
- Groups will discuss and develop the business plan for their business idea.



- Now, let's share our plan with the class.
- Each group will briefly describe the plan to the class.
- $Post\ presentation, the\ other\ groups\ may\ ask\ questions\ to\ the\ group\ who\ have\ presented\ their\ plan.$

Do



- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Keep a check on time. Tell group to wind up the discussion quickly if they go beyond the given time limit.



- Along with a business plan, you need to create a financial plan and evaluate the risk involved with your start
- Discuss 'Financial Planning' and 'Risk Management' in detail as given in the Participant Handbook.

Summarize |



- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

- Notes for Facilitation



Keep the business plan format ready in a flipchart to display it during the activity.

UNIT 6.6.5: Procedures and Formalities for Bank Finance

Unit Objectives



At the end of this unit, participants will be able to:

• Describe the procedure and formalities for applying for bank finance

Resources to be Used



- Participant Handbook
- Bank loan/finance form sample

Ask



• While preparing a business plan in the last session, we discussed financial planning to arrange financial resources for your start-up. Therefore, how will you collect funds to start your business?

Say



- While most entrepreneurs think 'product' is the most difficult thing to decide for a business, start-up capital poses an even a bigger obstacle. Though there are various ways of funding the business, to convince investors to invest money is the most challenging.
- Some of the funding options available in India are:
 - Bootstrapping: Also called self-financing is the easiest way of financing
 - Crowd funding: Funds are collected by consumers pre-ordering or donating for starting the business.
 - Angel investors: Individual or group of investors investing in the company
 - Venture capitalists: Venture capitals are professionally managed funds who invest in companies that have huge potential. They usually invest in a business against equity.
 - Bank loans: The most popular method in India.
 - Microfinance Providers or NBFCs
 - Government programmes
- Let us know discuss the most popular method i.e. bank finance in detail here.

Do



- Discuss the list of documents that are required to apply for a loan like letter of introduction, business brochure, references of other banks, and financial statements.
- Explain the details to be filled in a loan application form.
- Divide the class into groups. Give each group a loan application form.
- Ask the groups to discuss and fill the form.

Summarize



- Close the discussion by summarizing the important documents needed for bank loan.
- Ask the participants if they have any questions related to what they have talked about so far.

Notes for Facilitation

(in case of partnership firm)



- Checklist of documents is provided as resources for the session.
- You can make some copies and distribute it during the group activity.
- Download sample loan application forms from any nationalised bank's website. Print sufficient copies to circulate it amongst the groups.

CHECKLIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH LOAN APPLICATION (Common for all banks) 1. Audited financial statements of the business concern for the last three years 2. Provisional financial statements for the half – year ended on 3. Audited financial statements of associate concern/s for the last three years 4. Copy of QIS II for the previous guarter ended on 5. Operational details in Annexure I 6. CMA data for the last three years, estimates for current year and projection for the next year 7. Term loan/DPG requirements in Annexure II 8. List of machinery in respect of machinery offered as security in Annexure III 9. Additional details for export advances furnished in Annexure IV 10. Property statements of all directors/partners/proprietor/guarantors 11. Copies of ITAO of the company for the last three years 12. Copies of ITAOs/WTAOs of the directors/partners/proprietor and guarantors 12. Copies of certificate from banks and financial institutions certifying the latest liability with them 14. Copy of board resolution authorizing the company to apply to your bank for the credit facilities mentioned in application 15. Copy of memorandum and article of association (in case of limited company)/partnership deed

16. Cash budget for the current year and next year in case of contractors and seasonal industries

UNIT 6.6.6: Enterprise Management – An Overview: How to Manage Your Enterprise?

Unit Objectives



At the end of this unit, participants will be able to:

• Discuss how to manage their own enterprise

Resources to be Used



Participant Handbook

Ask



- Having set-up a business, do you think it is possible to do everything on your own?
- Does one require trained persons for help?
- · What does management mean?

Say



Let's have a look at this example:

Kapil had a small business that was beginning to pick up pace. He wanted to expand his business, and therefore employed few more people. One day, as he was walking past Ramesh, one of his new employees, he overheard Ramesh talking rudely to a customer on the phone. This set him thinking. Kapil realised that he should have regular team meetings to motivate his employees and speak with them about any problems they might be facing during work. He should also conduct training sessions on new practices, soft skills, and technology, and develop work ethics manual for managing his enterprise.

Say



- Was Kapil correct in his approach or he should have scolded Ramesh instantly in front of his other employees?
- Discuss "Enterprise Management An Overview" with the participants as given in the Participant Handbook.

Say



• Let's learn how to effectively manage an enterprise or business through an activity.

Team Activity



Enterprise Management

- This is a group activity.
- Design a matrix listing the topics and key words that are needed to run an enterprise effectively and smoothly.

Activity De-brief

- Have each group present their matrix.
- Encourage participants of the other groups to ask question about each other's presentation.

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper and coloured pen.
- Tell the participants that they have make a matrix they need to fill.
- They have to write the main topics and key words that will them effectively manage their enterprise.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize | 💆



- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of effective management to run an enterprise as given in the Participant Handbook.

UNIT 6.6.7: 20 Questions to Ask Yourself before Considering Entrepreneurship

- Unit Objectives



At the end of this unit, participants will be able to:

• List the important questions that every entrepreneur should ask before starting an enterprise

Resources to be Used



- Participant Handbook
- Blank sheets of paper
- Pens

Ask



· Why do you want to become an entrepreneur?

Say



- It is very important to know why you want to become an entrepreneur. Your personal goals for becoming an entrepreneur play a key role in the success of your business. Your goals should be clear well before you start your business.
- Apart from the goals, the other aspects of business that you need to bear in mind are the potential problems that you may face to set-up, your areas of interest, and all the other dimensions of the business.
- Let's understand it better with the help of some questions that every entrepreneur should ask before starting their own business.
- Open the Participant Handbook section named '20 Questions to Ask Yourself Before Considering Entrepreneurship'. You have to answer the questions individually.
- Then, we will have a class discussion on all the questions.

Do



- Read out the questions one by one in front of all the participants.
- Participants have to answer all the one by one questions.
- Give the class 10-15 minutes to note down their answers.
- At the end of 15 minutes, open the discussion for all the questions.
- Moderate the discussion by focusing on the relevant points.
- Keep a check on time and don't let the discussion get sabotaged or lose track of time. Ensure all the questions
 are covered and discussed.

Summarize



- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.

Notes 🗒			
Totes			









7. Annexures

Annexure I: Training Delivery Plan

Annexure II: Assessment Criteria



Annexure I Training Delivery Plan

Training Delivery Plan					
Program Name:	Certificate Course in	Automotive Service Technician (2 & 3 W	heelers)		
Qualification Pack	Automotive Service T	echnician (2 & 3 Wheelers) - ACS/Q141	1		
Name & Ref. ID					
Version No.	1.0	Version Update Date	7-03-2017		
Pre-requisites to	10th Standard pass				
Training (if any)					
Training Outcomes	By the end of this pro	By the end of this program, the participants will be able to:			
	· ·	 Carry out routine service and minor repairs of Vehicles and aggregates of two and three wheelers 			
	2. Plan and orga	nize work to meet expected out comes			
	3. Work Effective	3. Work Effectively in a Team			
	4. Maintain a healthy, safe and secure working environment				

SI. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration
1	Introduction	Icebreaker	 Knowledge of two and three wheelerIndustry Description of different types of automobiles Explaination of service process of automobile work shop Responsibilities of service technician & customer expectations 		Group Activity: Passing the Parcel	Whiteboard/ Markers, Computer, Projector, screen	5 hour

2	Carry out repair and routine servicing and maintenance (including electrical and mechanical aggregates) of vehicles (two and three wheelers)	Overview of 2 & 3 wheeler vehicle, routine maintenance and servicing of all components of vehicle	Understand and know basic technology & functioning of various components & components & component system of the vehicle including Engine & fuel system Emission & exhaust system Gear box & clutch assembly Brake, steering & suspension system Electrical and ignition system Understand	ASC/ N01420 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC 11,PC12, PC13, PC14, PC15, PC16, PC17, PC18 KB1, KB2, KB3, KB4, KB5, KB6, KB7, KB8, KB9, KB10, KB11,	Facilitator-led-discussion Videos	Whiteboard/ Markers, Computer, Projector, screen Image Recognition tools, master samples, exhibits, Pneumatic Tools, Hand tools, Torque Wrenches, Vernier calliper, Micrometer, Multi Meter, Pullers, Sliding Hammer, Hydro Meter,	8 hrs
			sic technology & function- ing of various components & component system of the vehicle includ- ing o Engine & fuel system o Emission & ex- haust system o Gear box & clutch assem- bly o Brake, steering & suspension system o Electrical and ignition system	KB13 SA1, SA2, SA3, SA4, SA5, SA6, SA7, SA8, SA9, SA10, SA11 SB1, SB2, SB3, SB4, SB5, SB6, SB7, SB8, SB9, SB10, SB11, SB12, SB13, SB14, SB15, SB16, SB17	Battery Charging cur tester, Parts Washin Station, Emission gas analyser, Oil measure car (1 ltr & 1/2 l Oil collection tray, Ramp, personal protective equipments Fire	Compressor, Battery Charging cum tester, Parts Washing Station, Emission gas analyser, Oil measure cans (1 ltr & 1/2 ltr), Oil collection tray, Ramp, personal protective equipments,	

Understand and know basic technology & functioning of various components & component system of the vehicle including Demission & exhaust system of Electrical and ignition system Understand and know basic technology & functioning of various components & component of electrical and ignition system Understand and know basic technology & functioning of various components & component system of the vehicle including Dengine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of the vehicle including of Engine & fuel system of Electrical and ignition system of Electrical and ignition system O Electrical and ignition system The website wheeler wheeler engine and gear box cut with agert and gear box cut with agert and gear box cut component of electrical and ignition system The website wheeler engine and gear box cut with agert and gear box cut visions withing diagrams, wiring di			ı		I
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ignition system					
		ignition system			

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		Understand and		8 hrs
		know basic tech-		
		nology & func-		
		tioning of various		
		components		
		& component		
		system of the		
		vehicle including		
		o Engine & fuel		
		system		
		o Emission & ex-		
		haust system		
		o Gear box &		
		clutch assembly		
1		o Brake, steering		
		& suspension		
		system		
		o Electrical and		
		ignition system		
		ignition system		
		Should know the		8 hrs
		auto component		
		manufactures		
		specifications re-		
		lated to the vari-		
		ous components/		
		aggregates in the		
		vehicle.		
		vernoie.		
		Should know the		8 hrs
		auto component		
		manufactures		
		specifications re-		
		lated to the vari-		
		ous components/		
		aggregates in the		
		vehicle.		
				8 hrs
		Operate various		
		tools and equip-		
		ment required		
		for vehicle diag-		
		nostic and repair		
1				

	1
Operate various tools and equipment required for vehicle diagnostic and repair	8 hrs
Operate various tools and equipment required for vehicle diagnostic and repair	8 hrs
Diagnose the defect and performance issues in various component / subassemblies of the vehicle and use correct terminology for defects	8 hrs
Diagnose the defect and performance issues in various component / subassemblies of the vehicle and use correct terminology for defects	8 hrs
Diagnose the defect and performance issues in various component / subassemblies of the vehicle and use correct terminology for defects	8 hrs

 Diagnose the defect and performance issues in various component / subassemblies of the vehicle and use correct terminology for defects Analyse customer complaints, find root cause and rectify the same 		8 hrs
 Analyse customer complaints, find root cause and rectify the same 		8 hrs
Analyse customer complaints, find root cause and rectify the same		8 hrs
Analyse customer complaints, find root cause and rectify the same		8 hrs
Carryout repair job of major aggregates and sub-assemblies of the vehicle		8 hrs
Carryout repair job of major aggregates and sub-assemblies of the vehicle		8 hrs

 Carryout repair job of major aggregates and sub-assemblies of the vehicle 	8 hrs
 Carryout repair job of major aggregates and sub-assemblies of the vehicle 	8 hrs
Carryout repair job of major aggregates and sub-assemblies of the vehicle	8 hrs
Carryout routine servicing and maintenance requirements of the vehicle	8 hrs
Carryout routine servicing and maintenance requirements of the vehicle	8 hrs
Carryout routine servicing and maintenance requirements of the vehicle	8 hrs
Carryout routine servicing and maintenance requirements of the vehicle	8 hrs

Carryout routine servicing and maintenance re- quirements of the vehicle	8 hrs
Carryout routine servicing and maintenance re- quirements of the vehicle	8 hrs
 Carryout routine servicing and maintenance re- quirements of the vehicle 	8 hrs
 Prepare job card having information of the customer, vehicle and repair requirement. 	8 hrs
 Prepare job card having information of the customer, vehicle and repair requirement. 	8 hrs
 Prepare job card having information of the customer, vehicle and repair requirement. 	8 hrs
 Prepare docu- ment based on the action taken for the complaint registered in the job card. 	8 hrs

Prepare document based on the ac- tion taken for the complaint regis- tered in the job card.	8 hrs
 Prepare document based on the ac- tion taken for the complaint regis- tered in the job card. 	8 hrs
• Refer and under- stand a typical service manual to practice the proce- dures for key ser- vice tasks, locate consumables & spare part specifi- cations / number	8 hrs
Refer and under- stand a typical service manual to practice the proce- dures for key ser- vice tasks, locate consumables & spare part specifi- cations / number	8 hrs
Refer and under- stand a typical service manual to practice the proce- dures for key ser- vice tasks, locate consumables & spare part specifi- cations / number	2 hrs

3	Plan and organize work to meet expected outcomes	Planning and work organizing, organization policies and procedure, time management, goal focus	 Perform the job within given time as per quality standards/work schedule Identify and manage resource and use it efficiently and effectively Perform in accordance with the organisational policies and procedures 	N0001 led- discus PC3, PC4, PC5, PC6, Practi	discussion	Whiteboard/ Markers, Computer, Projector, screen typical 5 S literature	8 hrs 8 hrs
			Manage his/her time effectively at work				8 hrs
			Apply best practic- es to keep work- place clean				8 hrs
			 Apply best practices to keep workplace clean Acquire knowledge and understanding required for planning & organizing. 				8 hrs
			Acquire knowledge and understanding required for plan- ning & organizing.				2 hrs
4	Work effectively in a team	Communication skills, team work, conflict resolution	Interact & communicate effectively with colleagues including members in the own group as well as other groups	ASC/ N0002 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8 KB1, KB2 SA1, SA2, SA3, SA4 SB1, SB2, SB3, SB4 SB5, SB6	Facilitator-led-discussion Skill Practice (Activity)	Whiteboard/ Markers, Computer, Projector, screen,case studies	8 hrs

	Use all forms of		8 hrs
	verbal and non-		
	verbal methods		
	to communi-		
	cate clearly		
	and effectively		
	with colleagues,		
	supervisors,		
	customers and		
	other stakehold-		
	ers		
	Use all forms of		8 hrs
	verbal and non-		
	verbal methods		
	to communi-		
	cate clearly		
	and effectively		
	with colleagues,		
	supervisors,		
	customers and		
	other stakehold-		
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	ers' body lan-		
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	guage anduse		
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	approach to deal		
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	• ludge custom		8 hrs
	Judge custom- ors' body lan		
	ers' body lan-		
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	an appropriate		
	approach to deal		
	with them		
	 Apply the best 		
	practices for		
	grooming to		
	look presentable		
	and make good		
	impression on		
	customers		

			 Apply the best practices for grooming to look presentable and make good impression on customers Use proper personal etiquettesat workplace Use proper personal etiquettesat workplace Acquire knowledgeand understanding required for team working 				8 hrs 8 hrs
5	Maintain a Healthy, Safe and Secure working environment	Health and safety at workplace, hazards, emergency procedures and plan, fire evacuation	 Perform as per organisation policies & procedures to maintain a safe, secure working environment Maintain safe & secure workplace Use best practice to remove potenial hazards at workplace and prevent accidents Use best practice to remove potenial hazards at workplace and prevent accidents Apply appropriate strategies to deal with emergencies and accidents at workplace 	ASC/ N0003 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9 KB1, KB2, KB3, KB4 SA1, SA2, SA3 SB1, SB2, SB3, SB4, SB5, SB6	 Facilitator-led-discussion Skill Practice (Activity 	Whiteboard/ Markers, Computer, Projector, Fire extinguisher, First aid, BS IV-VI and disposal of hazardous items and parts to provide an overview	8 hrs 8 hrs

	Apply appropriate strategies to deal with emergencies and accidents at workplace		8 hrs
	Apply relevant norms to the ve- hicles and spare parts to ensure no damage to the environment		8 hrs
	Apply relevant norms to the ve- hicles and spare parts to ensure no damage to the environment		2 hrs

Annexure II Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for Fitter – Levelling, balancing and alignment	
Job Role	Service Technician 2 & 3 Wheelers
Qualification Pack	ASC/Q1411, v1.0
Sector Skill Council	Automotive

Sr. No.	Guidelines for Assessment				
1	Assessment to be conducted by ASDC as per competency output defined in the NOS/QP and heassessment criteria provided in the NOS/QP				
2	Assessment to be carried out by a third party Assessment Body duly affiliated to the SSC.				
3	ASDC assessments will be comprehensive and cover all aspects of acquired knowledge, practical skills and also basic ability to communicate. Accordingly, evaluation process would include:				
	i. Theory/Knowledge test				
	ii. Practical demonstration test				
	iii. Face to Face Viva-Voce				
4	Theory/Knowledge assessment will be carried out on line through a link provided for each assessment that generates a random paper from a bank of questions available at the back end.				
	- Exception to an online test in favour of Paper Test would be subject to non-availability of requisite broad band and/or hardware.				
	- On line test would be conducted in the presence of an ASDC assessor till web enabled proctoring is deployed.				
5	ASDC assessor would be conducting Practical and Viva as per the criteria provided in the				
	NOS/QP.				
6	Cut off criteria for certification (Marks obtained in %):75 %				

				Marks Allocation	
Assessment outcome	Assessment criteria (PC)	Total Marks	Out Of	Theory	Skills Practical
(NOS Code and Description)					
ASC/N1420 Carry out routine servicing and minor repairs of aggregates of two and three wheelers	To be competent, the user/individual on the job must be able to: PC1. understand the auto component manufacturer specifications related to the various components/ aggregates in the two/ three wheeler vehicle			5	15

PC2. follow standard operating procedures for using workshop tools and equipment for service and minor aggregate repairs in the two/ three wheeler vehicle PC3. conduct test drives/ rides to assess need for repairs, calibration or any other adjustments in the electrical/ mechanical aggregates in the two/ three wheeler vehicle PC4. review the job card and understand work to be carried out PC5. ensure OEM recommended procedure and checklist is followed for routine service or repair, confirm tasks to be carried out with superior calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates; • transmission system, • chassis, • electrical and electronic components; • Scooter (two stroke engine), • Scooter (two stroke engine), • Motor cycle (four stroke engine), • Motor cycle (four stroke engine), • Motor cycle (four stroke engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, nolls and grease required have been obtained			 	
need for repairs, calibration or any other adjustments in the electrical/ mechanical aggregates in the two/ three wheeler vehicle PC4. review the job card and understand work to be carried out PC5. ensure OEM recommended procedure and checklist is followed for routine servicing in case of nonroutine service or repair, confirm tasks to be carried out with superior PC6. calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates; • transmission system, • chassis, • electrical and electronic components; • Scooter (two stroke engine), • Scooter (four stroke engine), • Motor cycle (two stroke engine), • Motor cycle (four stroke engine), • Other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and	PC2.	procedures for using workshop tools and equipment for service and minor aggregate repairs in the two/		
work to be carried out PC5. ensure OEM recommended procedure and checklist is followed for routine servicing in case of non-routine service or repair, confirm tasks to be carried out with superior PC6. calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates; • transmission system, • chassis, • electrical and electronic components; • Scooter (two stroke engine), • Motor cycle (two stroke engine), • Motor cycle (four stroke engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and	PC3.	need for repairs, calibration or any other adjustments in the electrical/ mechanical aggregates in the two/		
procedure and checklist is followed for routine servicing in case of non-routine service or repair, confirm tasks to be carried out with superior PC6. calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates; • transmission system, • chassis, • electrical and electronic components; • Scooter (two stroke engine), • Scooter (four stroke engine), • Motor cycle (two stroke engine), • Motor cycle (four stroke engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and	PC4.		25	50
alignment, pressures, tension, speeds and levels relevant to: • engine and aggregates; • transmission system, • chassis, • electrical and electronic components; • Scooter (two stroke engine), • Motor cycle (two stroke engine), • Motor cycle (four stroke engine), • Motor cycle (four stroke engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and	PC5.	procedure and checklist is followed for routine servicing in case of non- routine service or repair, confirm		
 transmission system, chassis, electrical and electronic components; Scooter (two stroke engine), Scooter (four stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and 	PC6.	alignment, pressures, tension,		
chassis, electrical and electronic components; Scooter (two stroke engine), Scooter (four stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Motor cycle (four stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		 engine and aggregates; 		
electrical and electronic components; Scooter (two stroke engine), Scooter (four stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Motor cycle (four stroke engine), Motor cycle (four stroke engine), Oisc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		 transmission system, 	5	10
components; Scooter (two stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		• chassis,		
Scooter (four stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and				
Motor cycle (two stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		 Scooter (two stroke engine), 		
engine), • Motor cycle (four stroke engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		 Scooter (four stroke engine), 		
engine), • Disc & drum brakes system; • other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and			5	15
other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and				
to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings) PC7. ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		 Disc & drum brakes system; 		
maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and		to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body		
grade of lubricants, coolant, oils and	PC7.	maintenance and service, the		
		grade of lubricants, coolant, oils and		

PC8. ensure all dismantled components (including mechanical and electrical aggregates) are cleaned and conditioned prior to reassembly PC9. identify and change components requiring change due to continuous wear and tear including: • oil and air filters • 15
 belts wiper blades brake linings and pads drive
PC10. ensure disposal of materials (including waste oil, scrap of failed parts/ aggregates) in accordance with the organisation's policies
PC11. understand the various precautions to be taken to avoid damage to the vehicle and its components while working on other aggregates
PC12. record all service and repairs carried out and ensure completeness of tasks assigned before releasing vehicle for the next procedure
PC13. ensure all workshop tools, equipment and workstations are adequately maintained by carrying out scheduled checks, calibration and timely repairs where necessary
PC14. ensure any malfunctioning observed in tools and equipment are reported to the concerned persons
PC15. ensure any other repair requirements observed in the components/ aggregates systems (like engine, gear box etc.) while repairing/ overhauling of braking systems are reported to senior advisor for further inspection by other specialists

	PC16. able to measure/ inspect the machining or any other repair done from an outside source/ local machining garages PC17. utilise any computer-based applications relevant to service and repairs PC18. ensure that trainings organized by the OEM from time-to-time are attended and knowledge levels are upgraded (esp. in case of newly launched products, product	10	15
	refreshes)		
	subtotal	65	135
ASC/N 0001	To be competent, the user/individual on		
Plan and	the job must be able to:		
organise work to meet expected	PC1. keep immediate work area clean and tidy		
outcomes	PC2. treat confidential information as per the organisation's guidelines		
	PC3. work in line with organisation's policies and procedures		
	PC4. work within the limits of job role		
	PC5. obtain guidance from appropriate people, where necessary	12	28
	PC6. ensure work meets the agreed requirements		
	PC7. establish and agree on work requirements with appropriate people	18	42
	PC8. manage time, materials and cost effectively	10	44
	PC9. use resources in a responsible manner		
	subtotal	30	70

ASC/N 0002	To be competent, the user/individual on		
Work effectively in	the job must be able to:		
a team	PC1. maintain clear communication with colleagues (by all means including face-to-face, telephonic as well as written)		
	PC2. work with colleagues to integrate work		
	PC3. pass on information to colleagues in line with organisational requirements both through verbal as well as non-verbal means		
	PC4. work in ways that show respect for colleagues		
	PC5. carry out commitments made to colleagues		
	PC6. let colleagues know in good time if cannot carry out commitments, explaining the reasons		
	PC7. identify problems in working with colleagues and take the initiative to solve these problems	30	65
	PC8. follow the organisation's policies and procedures for working with colleagues		
	subtotal	30	65
ASC/N 0003 Maintain a	To be competent, the user/individual on the job must be able to:		
healthy, safe and secure working environment	PC1. comply with organisation's current health, safety and security policies and procedures		
	PC2. report any identified breaches in health, safety, and security policies and procedures to the designated person		
	PC3. Coordinate with other resources at the workplace to achieve the healthy, safe and secure environment for all incorporating all government norms esp. for emergency situations like fires, earthquakes etc.		

Percentage Weightage	32%	68%
Total	160	340
subtotal	35	70
PC8. complete all health and safety records are updates and procedures well defined		
PC7. identify and recommend opportunities for improving health, safety, and security to the designated person		
PC6. follow organisation's emergency procedures for accidents, fires or any other natural calamity	35	70
PC5. report any hazards outside the individual's authority to the relevant person in line with organisational procedures and warn other people who may be affected		
PC4. identify and correct any hazards like illness, accidents, fires or any other natural calamity safely and within the limits of individual's authority		





- Explain each Guideline for Assessment in detail
- Explain the score that each trainee needs to obtain
- Recapitulate each NOS one-by-one and take participants through the allocation of marks for Theory and Skills Practical.
- Explain the Allocation of Marks. Explain that they will be assessed on Theory and Skills Practical.
- Explain that for the first NOS, 60 marks are allotted for Theory and & 140 for Skills Practical.

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