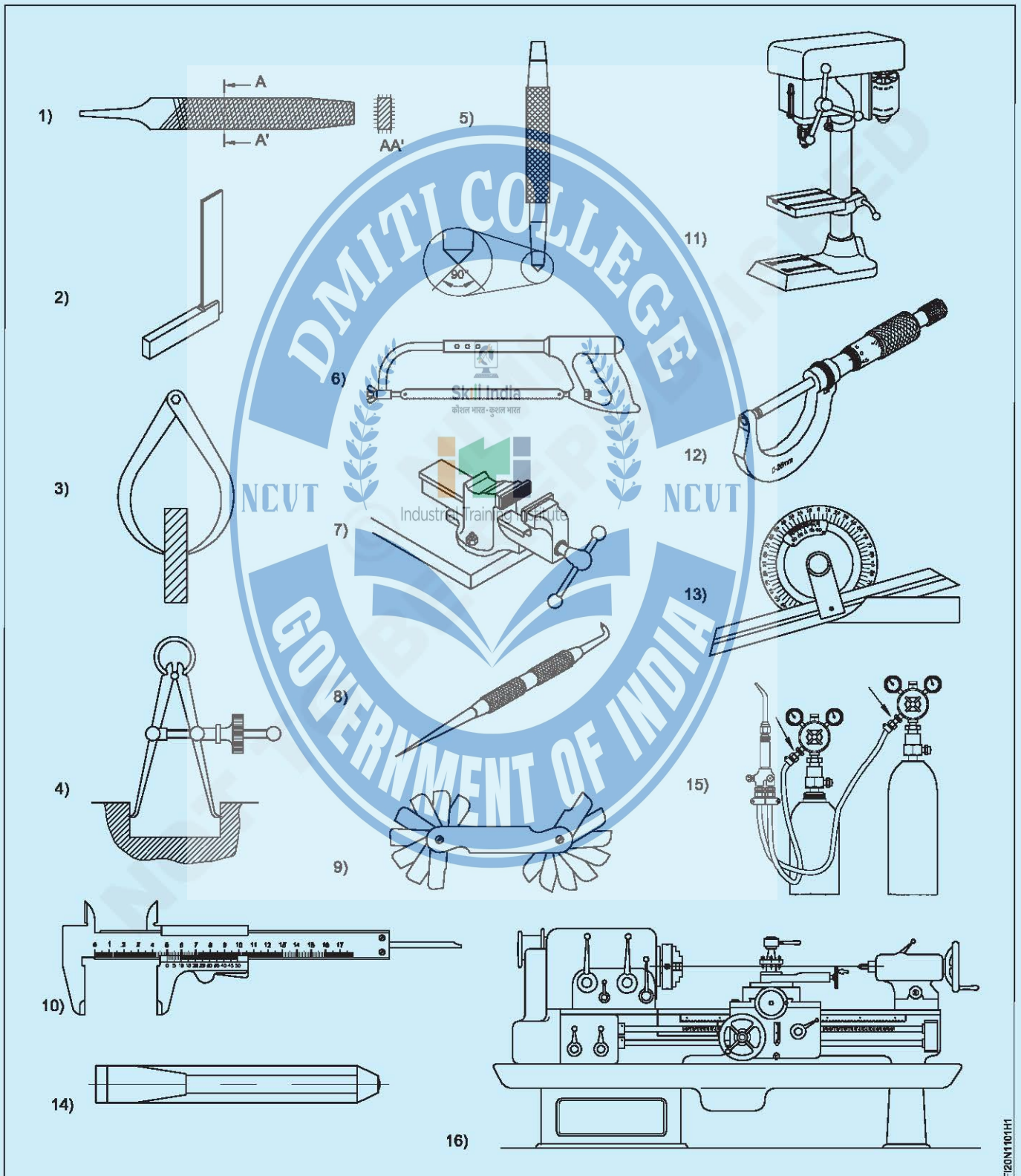


Importance of trade training, list of tools & machinery used in the trade

**Objectives:** At the end of this exercise you shall be able to

- identify the tools and equipment used in fitter section
- record the names of tools, do's and don't of each tool
- record the names of the industries where the fitters are employed.



## Job Sequence

Instructor shall display all the tools and equipment in the section and brief their names, uses and the safety point to be observed for each tool and equipment.

- Trainees will note down all the displayed tools names, uses and the precaution to be observed while working with each tool.
- Record it in Table 1.
- Get it checked by the instructor.

Table 1

Sl.No	Name of tool/equipment	Uses	Precaution to be observed (Do's and Don't)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Instructor shall brief the role of a fitter in industries. Emphasis more on the assembly shop by providing the names of the private and public sector industries, where the fitters are largely employed. Ask the trainees to note down the names of the industries.

**Safety attitude development of the trainee by educating them to use personal protective equipment (PPE)**



Scan the QR Code to view the video for this exercise

- Objectives:** At the end of this exercise, you shall be able to
- identify personal protective devices
  - interpret the different types of personal protective devices.

Fig 1



**Job Sequence**

- Read and interpret the visuals of personal protective equipment on real devices or from the charts.
- Identify and select personal protective equipment used for different types of protection.
- Write the name of the PPE and the corresponding type of protection and the hazards in table 1.

The instructor shall display the different types of personal protective equipment or charts and explain how to identify and select the PPE devices suitable for the work and ask the trainees to note down the hazards and type of protection in the Table 1.

The instructor shall demonstrate how to wear and remove the all the PPE's.

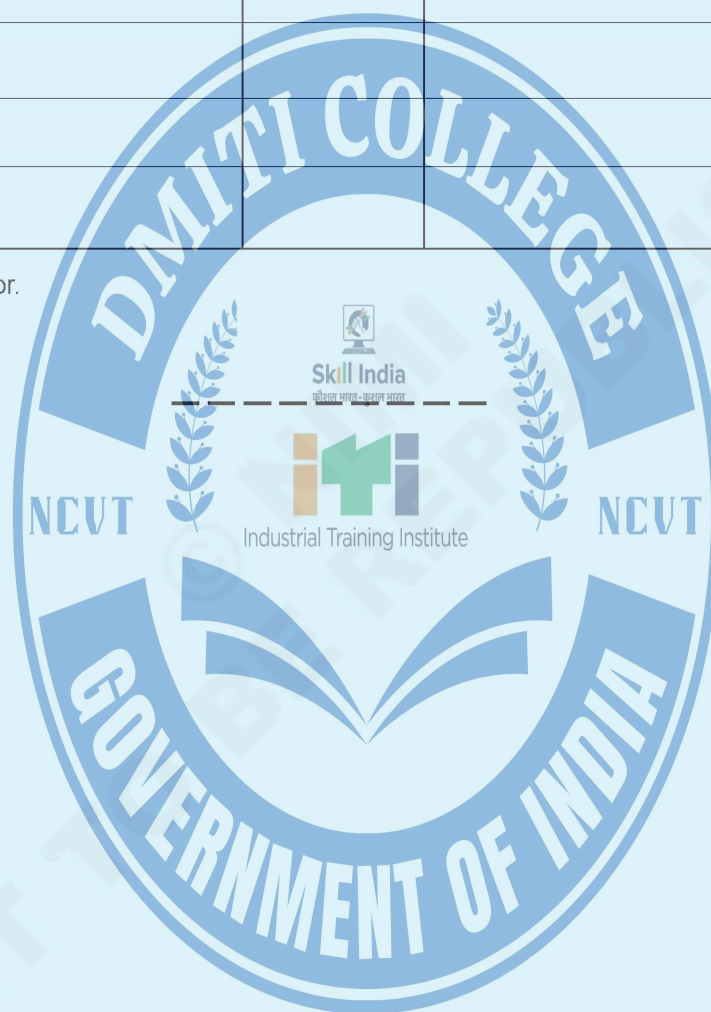
Ask the trainees to practice it.

TASK 1:

Table 1

S.No.	Name of the PPE	Hazards	Type of protection
1			
2			
3			
4			
5			
6			
7			
8			
9			

Get it checked by your instructor.



## First aid method and basic training

**Objectives:** At the end of this exercise, you shall be able to

- provide first aid for choking, wound, burn, bites and sting on human.
- take care a person with, eye injury, nose bleeding, diabetes, heat exhaustion by first aid treatment
- give first aid treatment to person with heat stroke.



Scan the QR Code to view the video for this exercise

## Job Sequence

### TASK 1: Chocking

- Severe choking: back blows and abdominal thrusts as shown in Fig 1.



- Stand behind them and slightly to one side. Support their chest with 1 hand. ...
- Give up to 5 sharp blows between their shoulder blades with the heel of your hand. ...
- Check if the blockage has cleared.
- If not, give up to 5 abdominal thrusts.

### TASK 2: Wound (Fig 2 to 3)

The first step in care of a wound is to stop the bleeding.

- Locate the source of the bleeding.
- Wash your hands and, when possible, wear gloves or use a barrier between you and the wound.
- Remove any loose debris.
- Apply direct pressure on wound (Fig 1)

- Dress the wound with cotton bandage (Fig 2)



### TASK 3: Burns (Fig 1, 2, 3)



#### Treating minor burns

- Cool the burn.
- Remove rings or other tight items from the burned area.
- Don't break blisters.
- Apply lotion.
- Bandage the burn.
- If needed, take a nonprescription pain reliever, such as ibuprofen (Advil, Motrin IB, others), naproxen sodium (Aleve) or acetaminophen (Tylenol, others).



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### TASK 4: Bites and Stings (Fig 1,2,3)



- Stop the wound from bleeding by applying direct pressure with a clean, dry cloth.
- Wash the wound. ...
- Apply an antibacterial ointment to the wound. ...
- Put on a dry, sterile bandage.
- If the bite is on the neck, head, face, hand, fingers, or feet, call Doctor right away

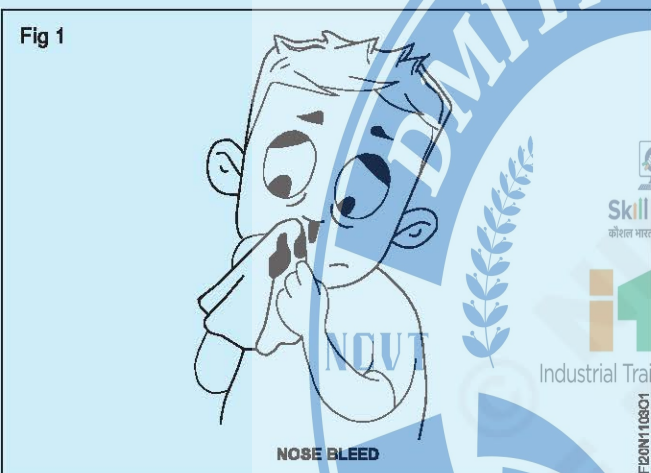
**TASK 5: Eye Injury (Fig 1 & 2)**



- Ask patient to look up.
- Draw lower eyelid down. If object visible, remove with corner of moist cloth.
- If not visible, pull upper lid down.

- If unsuccessful, wash eye with sterile saline or clean water.
- If still unsuccessful, cover injured eye only and seek medical aid.

**TASK 6: Nose Bleedings (Fig 1 & 2)**



- Make a patient to sit straight and bend forward the head portion only ( This will reduce blood pressure in the Veins of your nose)
- Ask the patient to breathe out from the nose.
- Pinch the nose to take out the blood in the nose.

- To prevent re-bleeding, don't pick or blow your nose and don't bend down for several hours.
- If re-bleeding occurs, go through these steps again.

**TASK 7: Diabetes ( Low blood Sugar)(Fig 1 & 2)**



- Follow the Basic First Aid Plan to assess the casualty.
- Give high-energy foods or sugar.
- Only give food if the casualty is conscious.

- If medical aid is delayed give sugar every 15 minutes.
- The casualty will recover quickly if low blood sugar level is the cause.

## TASK 8: Heat Exhaustion (Fig 1 to 2)



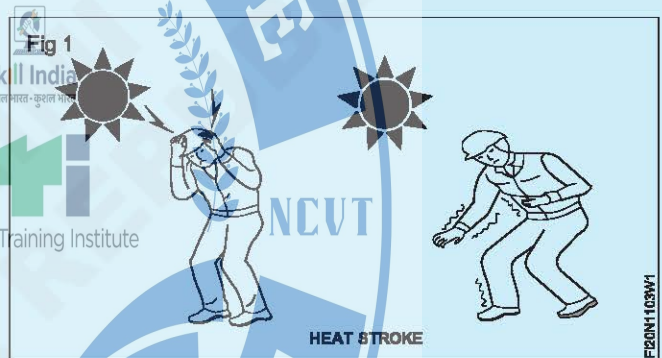
### Heat Exhaustion

- Rest in a cool place. Getting into an air-conditioned building is best, but at the very least, find a shady spot or sit in front of a fan.
- Drink cool fluids. Stick to water or sports drinks.
- Try cooling measures.
- Loosen clothing.



## TASK 9: Heat Stroke

- Put the person in a cool tub of water or a cool shower.
- Spray the person with a garden hose.
- Sponge the person with cool water.
- Fan the person while misting with cool water.
- Place ice packs or cool wet towels on the neck and armpits.
- Cover the person with cool damp sheets.

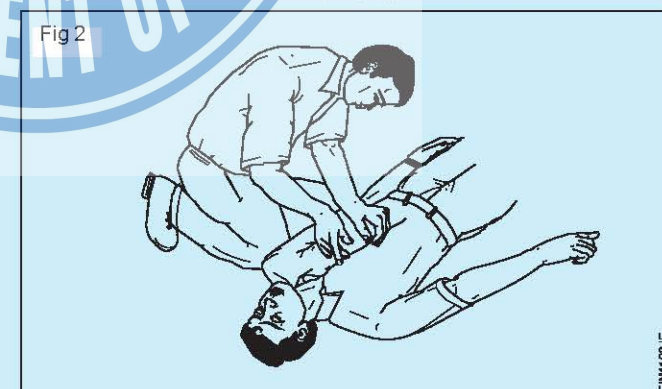
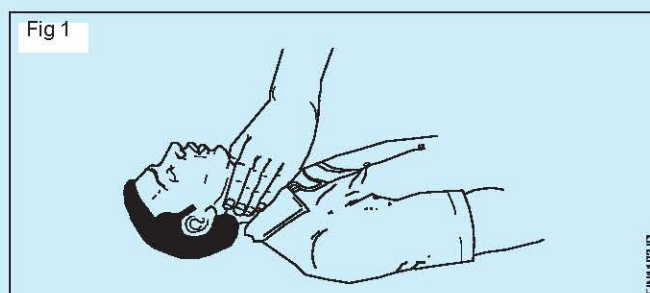


## TASK 10: Resuscitate a victim who is under cardiac arrest by (CPR) cardio pulmonary resuscitation

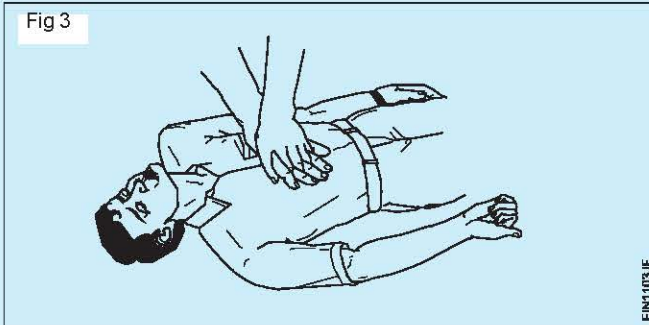
**In cases where the heart has stopped beating, you must act immediately.**

- Check quickly whether the victim is under cardiac arrest.

**Cardiac arrest could be ascertained by the absence of the cardiac pulse in the neck (Fig 1), blue colour around lips and widely dilated pupil of the eyes.**



- Lay the victim on his back on a firm surface.
- Kneel alongside facing the chest and locate the lower part of the breastbone. (Fig 2)
- Place the palm of one hand on the centre of the lower part of the breastbone, keeping your fingers off the ribs. Cover the palm with your other hand and lock your fingers together as shown in Fig 3.



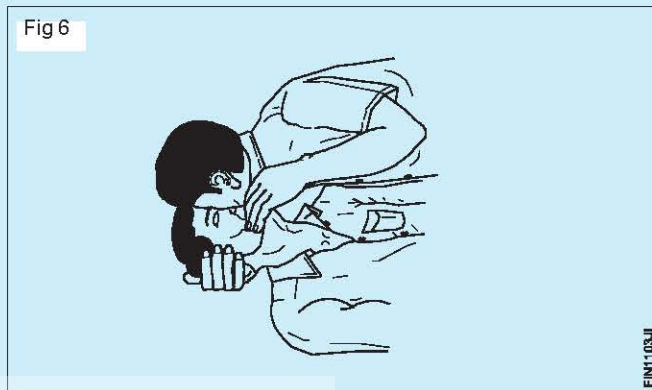
- Keeping your arms straight, press sharply down on the lower part of the breastbone; then release the pressure. (Fig 4)



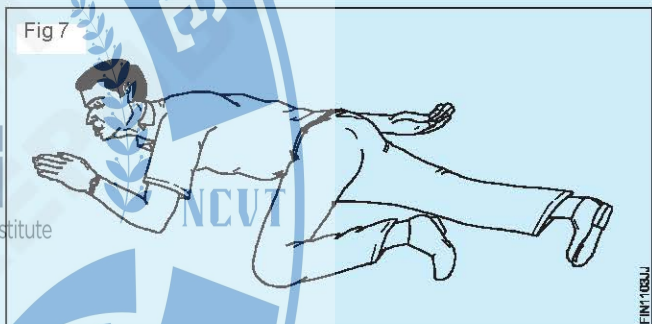
- Repeat step above, fifteen times at the rate of at least once per second.
- Check the cardiac pulse. (Fig 5)



- Move back to the victim's mouth to give two breaths (mouth-to-mouth resuscitation). (Fig 6)



- Continue with another 15 compressions of the heart followed by a further two breaths of mouth-to-mouth resuscitation, and so on, check the pulse at frequent intervals.
- As soon as the heartbeat returns, stop the compressions immediately but continue with mouth-to-mouth resuscitation until natural breathing is fully restored.
- Place the victim in the recovery position as shown in Fig 7. Keep him warm and get medical help quickly.



#### Other steps

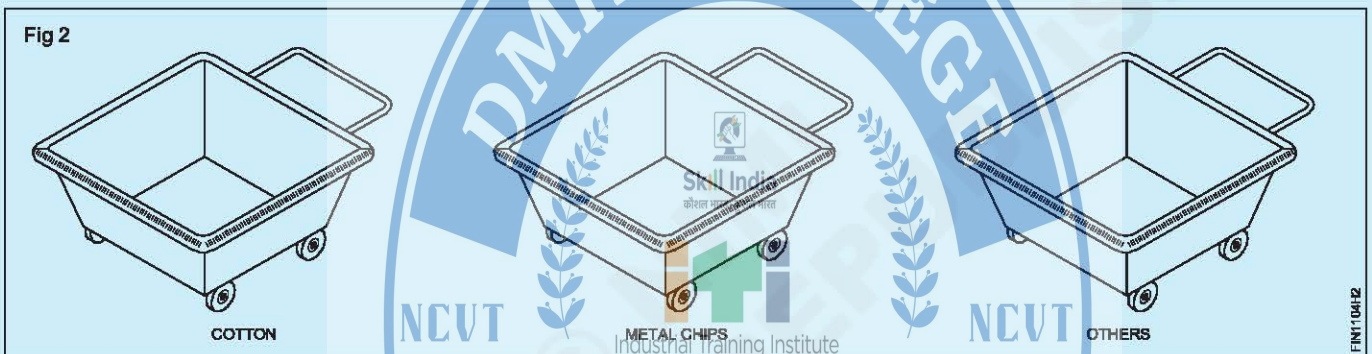
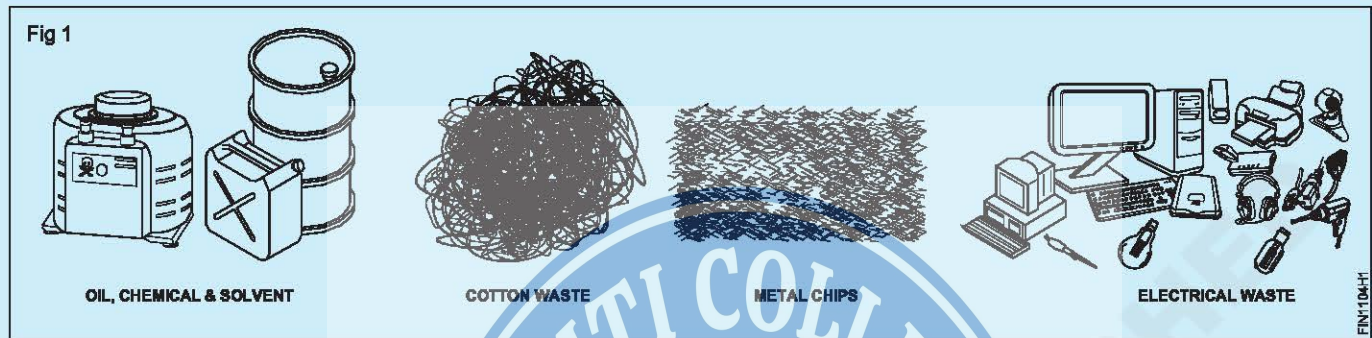
- Send word for a doctor immediately.
- Keep the victim warm with a blanket, wrapped up with hot water bottles or warm bricks; stimulate circulation by stroking the insides of the arms and legs towards the heart.

**Safe disposal of waste materials like cotton waste, metal chips / burrs etc.**



Scan the QR Code to view the video for this exercise

- Objectives:** At the end of this exercise you shall be able to
- identify and segregate the waste material in workshop
  - arrange the waste material in different bins.



**Job Sequence**

- Separate the cotton waste.
- Collect the chips by hand shovel with the help of brush. (Fig.2).
- Clean the floor, if oil is spilled.
- Separate the cotton waste material and store it in the bin provided to store the waste cotton material. (Fig.2)
- Similarly store the each category of metal chip in separate bins.

**Do not handle the chip by bare hand**  
There may be different metal chips. So separate the chip according to metal.

**Each bin should have name of the material.**

Identify the material given in fig 1 and fill in table 1

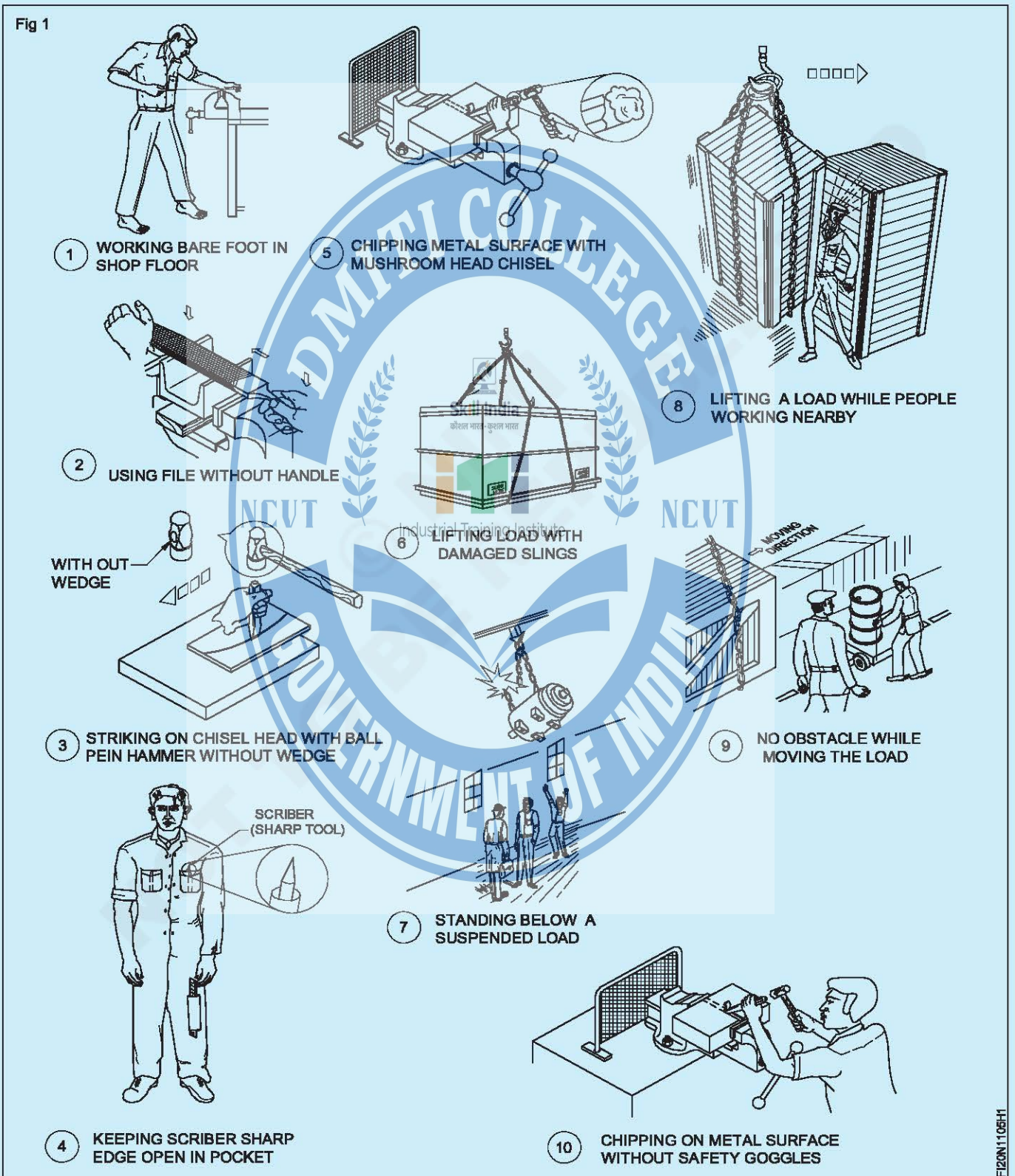
Table 1

S. No.	Name of the material
1	
2	
3	
4	
5	

Hazard identification and avoidance

Objectives: At the end of this exercise you shall be able to

- identify the occupational hazards
- suggest suitable methods to avoid occupational hazards.



FI20N1105H1

## Job Sequence

**The instructor shall emphasise the importance of hazard and avoidance to the students and insist them to follow properly.**

- Study the drawing of industrial hazards.

- Identify the type of hazards.
- Name the hazards against their names.
- Record the hazards and avoidance in Table 1.

**Table 1**

S. No.	Identification of hazards	Avoidance
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- Get it checked by your instructor



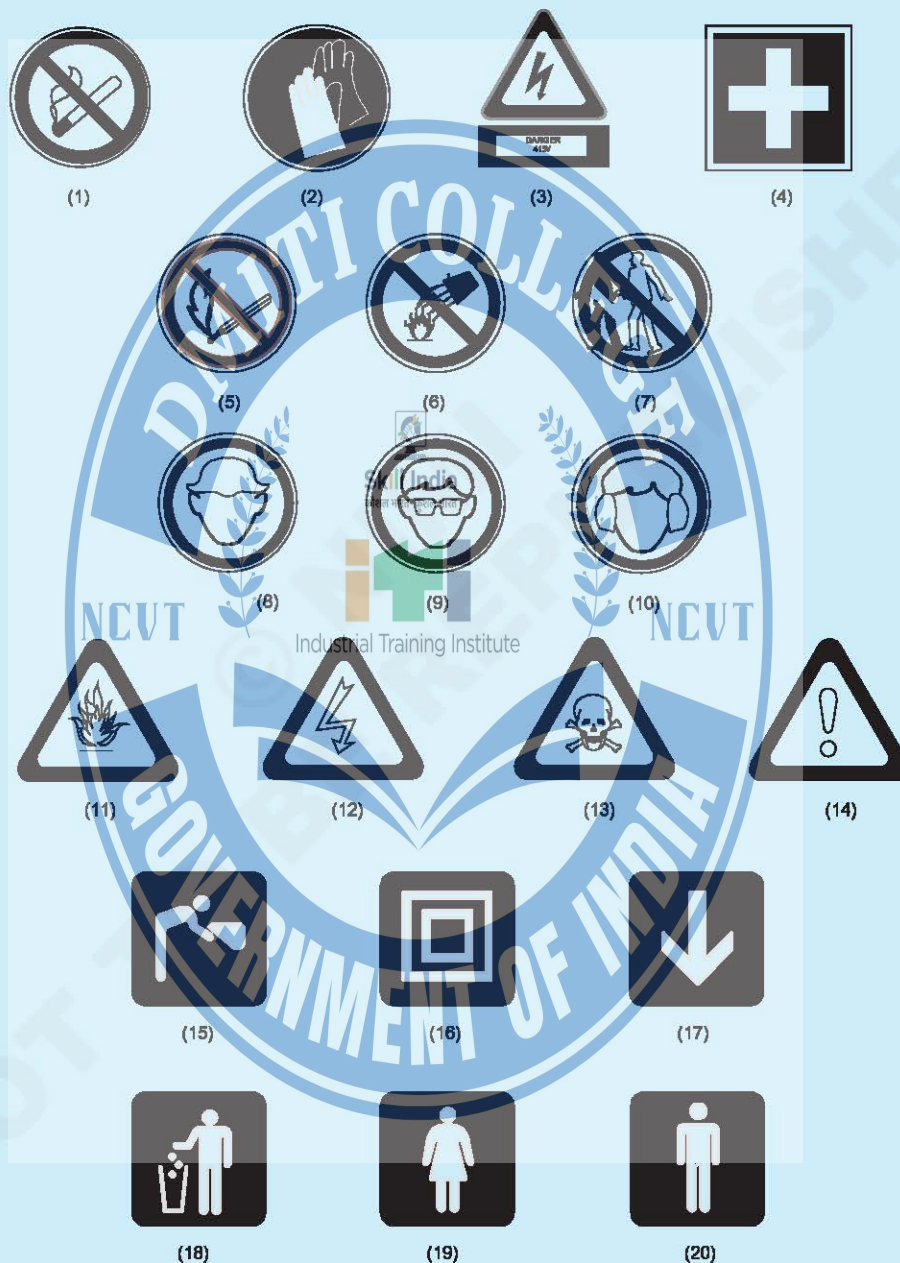
Scan the QR Code to view the video for this exercise

**Safety sign for danger, warning, caution and personal safety message**

**Objectives:** At the end of this exercise you shall be able to

- identify the basic categories of safety sign
- record the meaning of safety sign in the table given.

Fig 1



**Job Sequence**

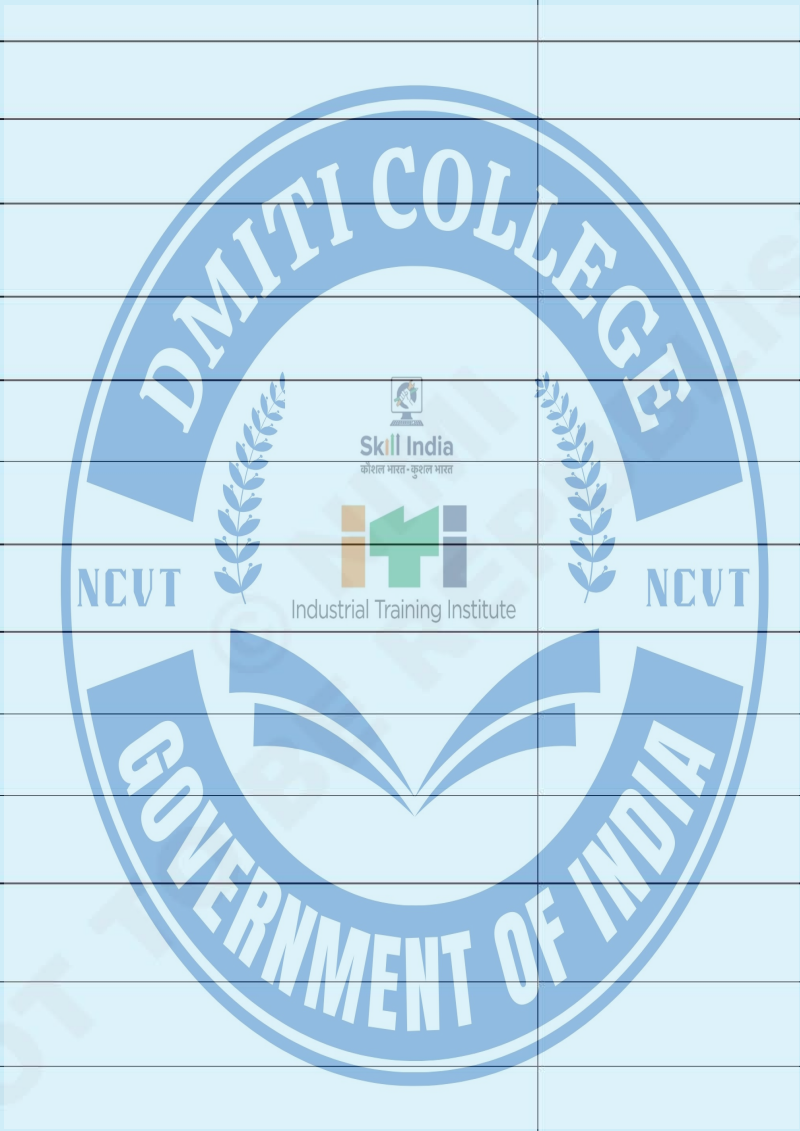
Instructor shall provide various safety signs, chart categories and explain their meaning, description. Ask the trainee to identify the sign and record in Table 1.

- Identify the safety sign from the chart.
- Record the name of the category in Table 1.
- Mention the meaning description of the safety sign in Table 1.

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Table 1

Fig. No.	Basic Categories/Safety sign	Meaning - description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		



- Get it checked by your instructor.

## Preventive measures for electrical accidents and step to be taken in such accidents

**Objective:** At the end of this exercise you shall be able to

- adopt preventive measures to avoid electrical accidents
- take care of a person with electrical accident.



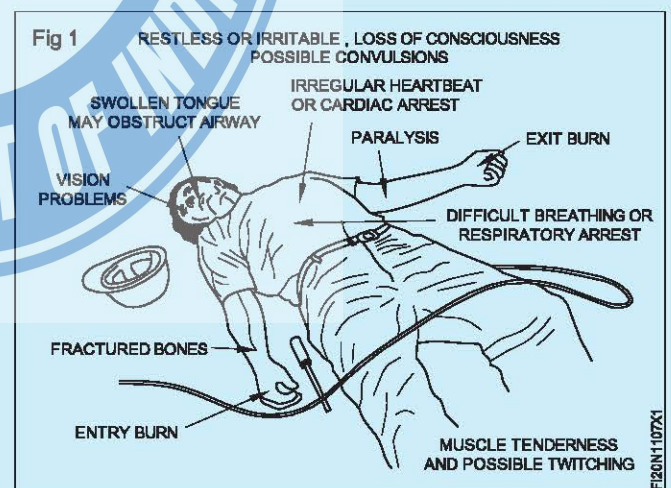
Scan the QR Code to view the video for this exercise

**Note:** The instructor shall arrange suitable electrical Safety poster/chart/slogan appropriate to this exercise

### Preventive measures for electrical accidents

- Never touch any electrical apparatus /machinery with wet hands or while standing in water.
- If you get a tingle or shock when touching any electrical item, a sink, tub, or other wet area, turn off the power at the main panel and immediately call an electrician.
- Don't use damaged or broken cords/ wires or plug in anything with a missing prong.
- When unplugging, don't pull the cord; pull it by the plug.
- Don't overload sockets; use a power extension board with a safety switch.
- Know the location and how to operate shut-off switches and/or circuit breaker panels. Use these devices to shut off equipment in the event of a fire or electrocution.
- Avoid for water or chemical spills on or near electrical equipment. Wear rubber shoes in wet areas.
- Cover unused outlets and keep metal objects away from outlets. you should always take extra care to ensure that you do not come into contact with the exposed live wires as this runs the risk of shock and burns.
- Put a notice nearby to the appliance to inform others of the danger and to ensure that it is protected until you are able to schedule repairs.
- Use safe work practices every time electrical equipment is used.
- All electrical installations regardless of whether at home or in the workplace, must be grounded, which is otherwise known as earthing to track down any excess electricity, the most effective route to return to the ground without posing any safety risks.
- It is safe to work on the electrical equipment that is plugged in with only dry hand and wear non-conductive gloves and insulated-soles shoes.
- Disconnect the device from the source in the period of service or maintenance of the device.
- Disconnect the power source before servicing or repairing electrical equipment.
- All electrical cords should have sufficient insulation to prevent direct contact with wires.
- In a laboratory/workshop it is particularly important to check all cords before each use, since corrosive chemicals or solvents may erode the insulation.
- Damaged cords should be repaired or taken out of service immediately, especially in wet environments such as cold rooms and near water baths.
- Keep away from the energized or loaded circuits Arcing, sparking, or smoking from the equipment
- If the device interacts with water or other liquid chemicals, equipment must be shut off power at the main switch or circuit breaker and unplugged.
- If any individual comes in contact with a live electric line, do not touch the individual or equipment / source/ cord; disconnect the power source from the circuit breaker or pull out the plug using a leather belt.
- always stay at least ten feet away from the overhead power lines, carry highest voltage, which means that should anyone come into contact with them, there is a significant risk of not only electrocution but also severe burns.

### First Aid for Accidental Electric Shock Victims (Fig 1)



- Ensure that you are taking sufficient safety precaution to protect yourself before going to help the other person met with accidental electric shock.
- Talk to the person and ask loudly, "Are you OK?"; make him feel comfortable.

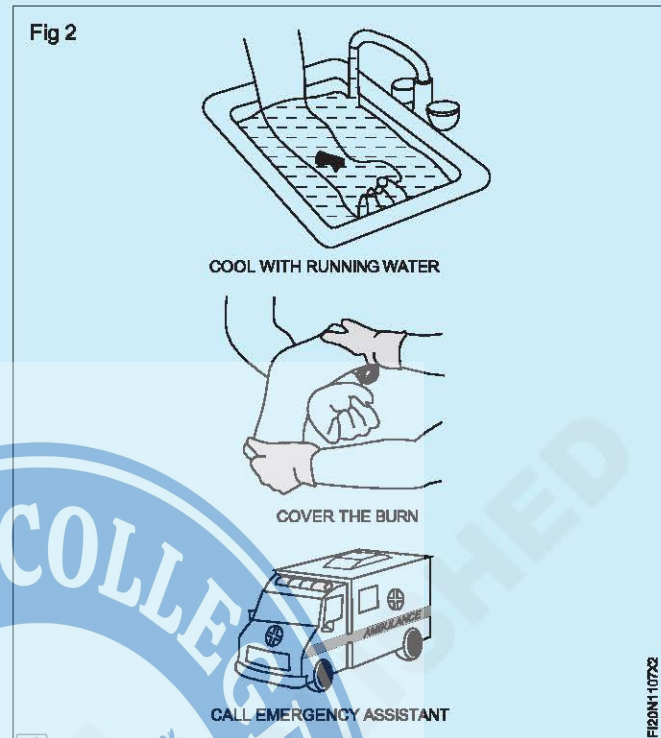
- Check for ventilation and airways; clear obstruction and provide fresh air flow.
- Check for signs of normal breathing; observe breathing.
- If not breathing normally, begin CPR
- Unplug the appliance or turn off the power at the control panel.
- If you can't turn off the power, use a dry wooden piece, like a broom handle, dry rope or dry clothing, to separate the victim from the electrical contact / power source.
- Do not try to move the victim touching a high voltage wire; Call for emergency help/immediate superior for assistance.
- Unconscious victims should be placed on their side to allow drainage of fluids; Keep the victim lying and observe for the symptoms shown in Fig.1
- Do not move the victim if there is a suspicion of neck or spine injuries call for the ambulance service.
- If the victim is not breathing, apply mouth-to-mouth resuscitation. If the victim has no pulse, begin cardiopulmonary resuscitation (CPR). Then cover the victim with a blanket to maintain body heat, keep the victim's head low and get medical attention.

#### First Aid for Accidental Electrical Burn Victims

#### Electrical burns vary in severity depending upon the following conditions

- how long the victim is in contact with the electric current;
- the strength of the current flow;
- the type of current AC or DC; and
- the direction of the current takes through the body.
- Observe the person, if the person is conscious and there are no signs of shock (such as being cold, clammy, pale and having a rapid pulse)
- Do not apply grease or oil to the burn.
- Cover the burn with a dry, sterile dressing.
- There may be more than one area burned.

- If the person has electrical burn, check for shock and follow the outlined points shown in Fig.2



- Keep the victim from getting chilled; Seek medical attention as soon as possible.

#### Accidental Electrical Fire

- Keep flammable materials away: Electrical appliances or outlets that come into contact with flammable materials that may trigger a fire.
- Inspect electrical wiring: Have your electric wiring checked to prevent electrical fires. Wiring does not last forever, so it is a good idea to have your wiring checked
- Be wary of certain appliances: If an appliance blows a fuse, trips a circuit, or sparks while being used, unplug the appliance immediately, and check to see if it needs to be repaired or replaced.
- Check Switches or outlets that are hot to touch and/or emit an acid odour; Inspect and repair outlets and switches.
- In case of electrical fire, use only CO<sub>2</sub> type of Fire extinguisher.

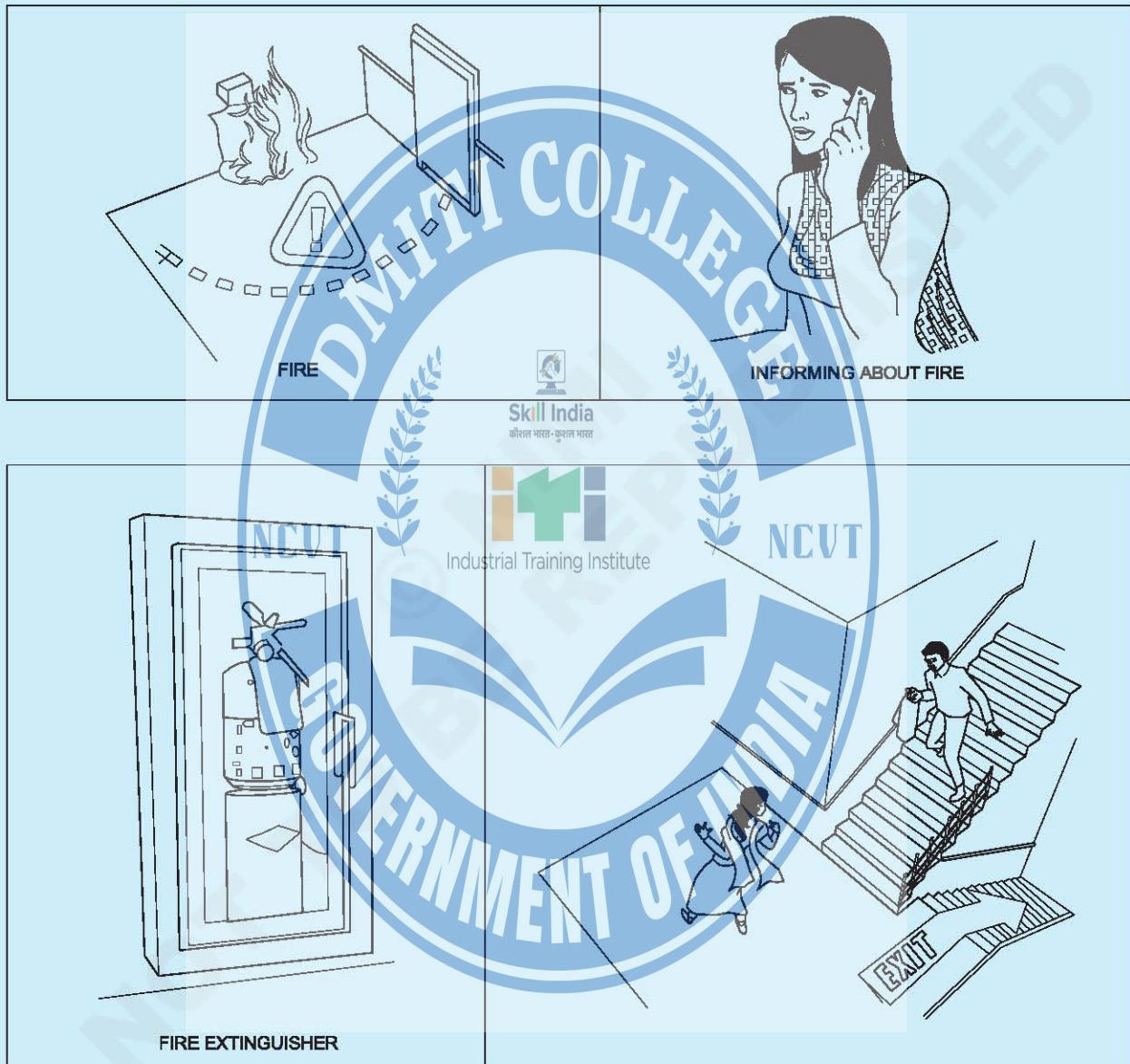
### Uses of fire extinguishers

- Objectives:** At the end of this exercise you shall be able to
- select the fire extinguisher according to the type of fire
  - operate the fire extinguisher
  - extinguish the fire.



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Fig 1



### Job Sequence

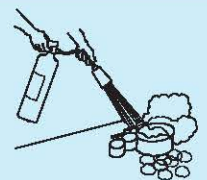
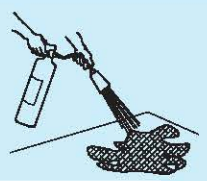
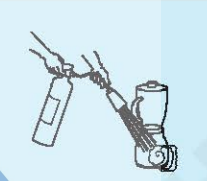

#### Extinguishing fire

- Alert people surrounding by shouting fire, fire, fire.
- Inform fire service or arrange to inform immediately.
- Open emergency exist and ask them to go away.

- Analyze and identify the type of fire. Refer Table1.

**All fire extinguisher are labelled to indicate which class of fire they are designed to combat.**

**Table1**

Class 'A'	Wood, paper, cloth, solid material	
Class 'B'	Oil based fire (grease, gasoline, oil) & liquefiable solids	
Class 'C'	Gas and liquefied gases	
Class 'D'	Metals and electrical equipment	

**Assume the fire is 'B' type (flammable liquefiable solids)**

- Select CO<sub>2</sub> (carbon dioxide) fire extinguisher
- Locate and pick up CO<sub>2</sub> fire extinguisher. Check for its expiry date.
- Break the seal.

**Stand back:** Face the fire and keep your back to the exit stay between six and eight feet away from flame.

**Operator:** Operate the fire extinguisher

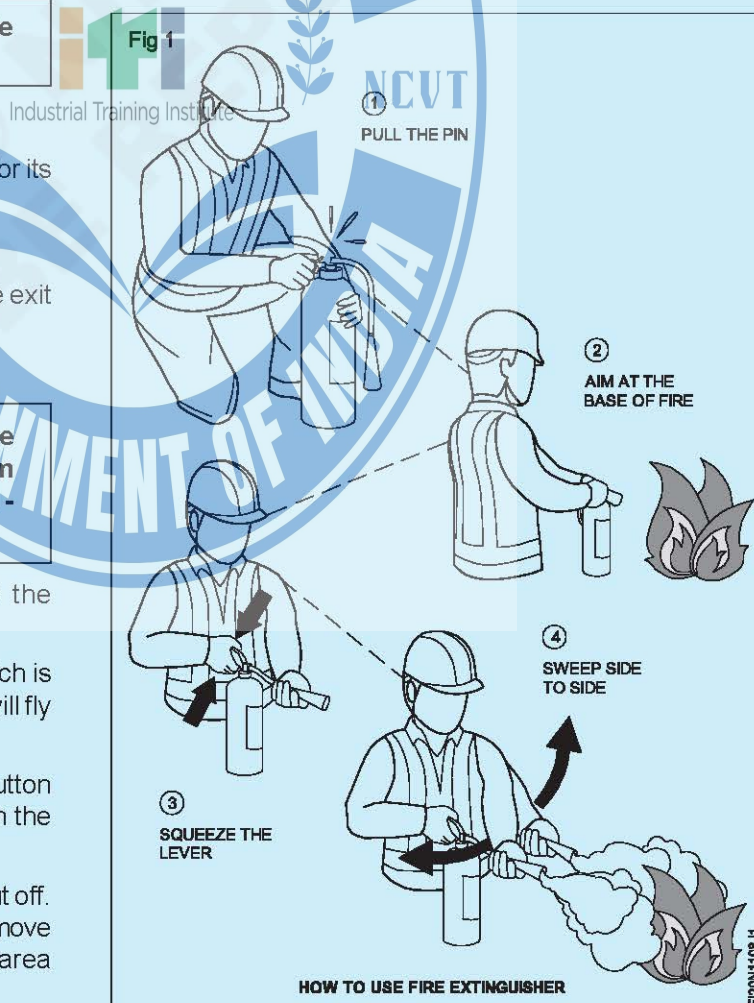
**Most of the fire extinguisher operator the same basic way stand six to eight feet away from the fire and remember to PASS - PULL - AIM - SQUEEZE - SWEEP.**

**PULL** the pin: This will allow you to discharge the extinguisher. (Fig 1)

**AIM** at the base of fire: If you aim at the flames (Which is frequently the temptation). The extinguishing agent will fly right through and do no good. (Fig 2)

**Squeeze** the top handle or lever: This depress a button that releases the pressurised extinguishing agent in the extinguisher. (Fig 3)

**Sweep** from side to side until the fire is completely put off. Start using the extinguisher from distance away. Then move forward. Once the fire is put off keep on eye on the area incase re-ignite. (Fig 4)





## Job Sequence

The instructor shall guide and demonstrate the students to practice and understand precautions to be followed while working in fitting jobs.

- Record the precautions to be followed while working in fitting job in Table 1

Table 1

Fig. No.	Description	Record precautions to be followed while working in fitting job
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- Fill up and get it checked by your instructor.



## Job Sequence

The instructor shall emphasise the students about the safe use of tools and equipment used in trade and guide them to record the safety points

- Record the precautions to be followed while working in fitting job in Table 1

Table 1

Fig. No.	Description	Record precautions to be followed while working in fitting job
1		
2		
3		
4		
5		
6		
7		
8		
9		

- Fill up and get it checked by your instructor.