Safe use of elementary tools, materials and equipment:
Engineering structures and mechanisms: Industrial Technology

Answers

Activity 1

For each of the elementary tools listed below, match the name to the correct safe usage procedure in the table.

Tool	Safe usage procedure
File	Never used without a handle as the tang could cause injury.
Hacksaw	Ensure the teeth on the blade point forward and that it has been tightened into position to prevent breakage.
Ball pein hammer	Check for loose heads or split handles.
Cold chisel	Never use without eye protection.

The risks associated with operating equipment can be reduced by the use of some very basic safe working practices.

Activity 2

Read the incomplete safe working practices statements below. Insert the appropriate missing words from the table so that each statement reads correctly.

unauthorised	off	identified	regular	feeding	lighting
stop	problem	cleaned	isolated	machine	adequate signage

Safe working practices for machines

- Use mechanical feeding wherever possible.
- Maintain machines and guards on a regular basis not just when there is a problem.
- Ensure adequate lighting.
- Ensure that emergency stop buttons are clearly identified and have adequate signage.
- Ensure that machines are switched off and isolated when not in use or when being cleaned.
- Ensure that unauthorised persons cannot access machine areas.

Activity 3

Examine the following engineering workshop tasks listed below. Identify the minimum PPE you would need to wear from the list provided below in order to safely carry out the task listed. Select the most appropriate PPE then drag and drop in the correct place in the table.

overalls	apron	hair restraint	dust mask	face mask with filtration canister(s)
shoes with firm leather uppers	safety glasses	welder's leather gloves	ear protection	

Practical task	Minimum PPE requirements
1. Filing a piece of steel.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses • and possibly ear protection
2. Using a hacksaw.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses • and possibly ear protection
3. Cutting a piece of steel plate in the vice with a cold chisel.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses • and possibly ear protection
4. Brazing two pieces of steel together.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses • welder's leather gloves

5. Applying enamel paint to a steel component in an enclosed area.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses • leather gloves • face mask with filtration canister(s) • and possibly ear protection.
6. Using an electric portable drill to insert holes in a piece of aluminium.	• overalls or apron • hair restraint • shoes with firm leather uppers • safety glasses