Personal protective equipment (PPE): Industrial Technology

In this activity you will learn about the range of personal protective equipment available and when each should be worn in a technology-learning environment. Specifically, you will learn how to use personal protective equipment when using a range of materials, tools, and machines.

This material addresses aspects of the following syllabus outcome:

5.1.1 A student identifies, assesses and manages the risks and OH&S issues associated with the use of a range of materials, hand tools, machine tools and processes.

Extract from: Stage 4–5 Industrial Technology Syllabus © Board of Studies NSW 2003.

What is personal protective equipment?

Personal protective equipment (PPE) are the tools that ensure your basic health protection and safety. PPE is any device or appliance designed to be worn by you when you may be exposed to one or more health and safety hazards.

Various hazards that you may encounter in a technology learning environment could include any or all of the following:

- machinery and operation of power tools
- risks encountered in handling hot components or dangerous impact
- breathing problems caused by exposure to irritant and toxic gases
- electrical risk from power tools.

Personal protective equipment (PPE) is the equipment worn by workers to reduce their exposure to these hazards. PPE includes items such as:

eye protection	e.g. goggles, glasses, welding helmets	
hearing protection	e.g. ear plugs, ear muffs	

respiratory protection	e.g. respirators, face masks, cartridge filters	
foot protection	e.g. leather footwear with firm uppers or safety boots	
body protection	e.g. aprons, safety harnesses	
head protection	e.g. hair restraint, hard hats	

Features of PPE

Basic health and safety requirement
PPE must provide adequate protection against all risks to your health.

Design principles
PPE must be designed and manufactured in a manner so that you can safely carry out your activity without any injury or hazard to your health. While using the PPE, you should not be restricted from properly carrying out the required task.

Protection given by PPE
PPE must be designed and manufactured so as to stop risks to you under likely conditions of use. PPE and its material must not be a health hazard to you. PPE and its parts should not have sharp or rough surfaces, projections and the like that might cause injury and irritation to you. PPE, in no case, should cause movements, which would endanger you or anyone who is working nearby.

Comfort and efficiency
PPE must be designed and manufactured to fit comfortably on you. It must provide comfort to you while not taking away your ability to do the task in hand. PPE must be light and yet must provide plenty of protection to you. The PPE must also adhere to principles of ergonomics to facilitate safe and comfortable working.

Compliance
PPE should have clearly identified on it a recognisable Australian compliance label.

Activity 1: The right PPE for the job

Read the material above and complete the following task by inserting the minimum PPE you would require in order to safely carry out the task listed.

Practical task	Minimum PPE required
1. using a drill press	
2. using a fixed disc sander	
3. using an orbital sander	
4. using a cordless drill	
5. using an angle grinder	

Activity 2: Risk assessment

Look at Figure 1 featuring students working in a technology workshop. Circle the six situations where the use of PPE would prevent a potential accident happening.