

# SAFETY

CONCEPTS

## HEALTH & SAFETY IN TECHNOLOGY CLASSROOMS



*An introduction  
to health & safety concepts for students  
using technology classrooms*

## ACTIVITY 1 Danger in the classroom!

Take 2 minutes to look around the classroom. Try to find at least 5 things that you think could be dangerous. List each danger in the space below. Write a short note beside it explaining why you think it's dangerous.

### Example



1. Trailing leads on the floor - this could cause someone to trip over and bang their head.

## Things in my classroom that could be dangerous

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_

## ACTIVITY 2 Words

Every activity has its own vocabulary. For example, every sport uses different words to describe the positions of each player (for example, full forward, scrumhalf, point guard). It is important to understand the words used to discuss an activity before doing it. Health & safety has its own vocabulary too.

### Explain the following terms in your own words

**1. Hazard**

---

---

---

---

---

---

---

---

**2. Risk**

---

---

---

---

---

---

---

---

**3. Risk magnitude**

---

---

---

---

---

---

---

---

**4. Control**

---

---

---

---

---

---

---

---

**5. Personal protective equipment**

---

---

---

---

---

---

---

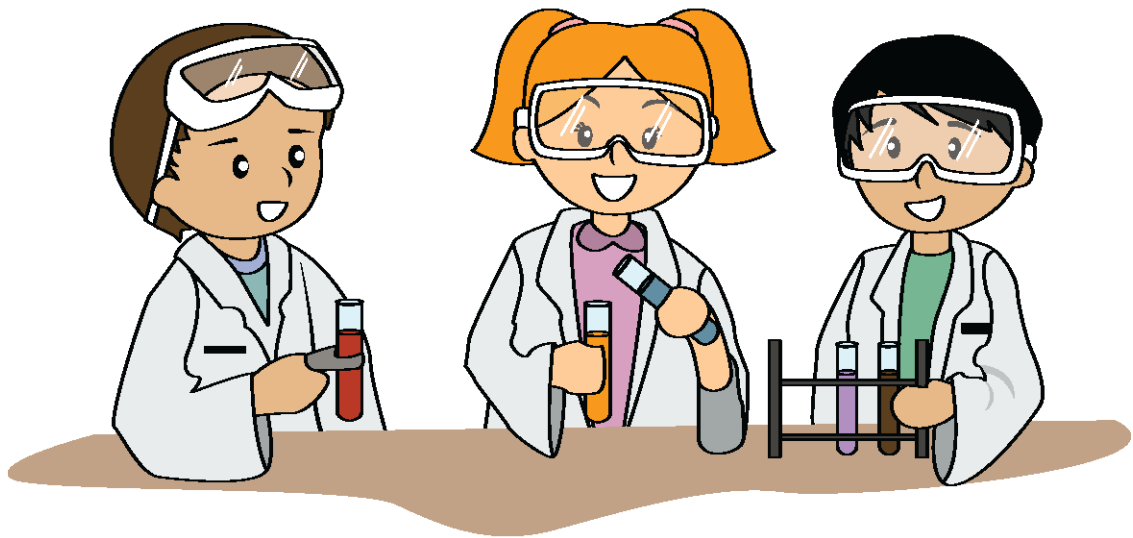
---

## ACTIVITY 3 Identifying hazard & risk

Look at the examples shown on the screen. In each case, identify whether each statement describes a hazard or a risk (by ticking either hazard or risk). Then decide whether the risk magnitude is low, medium or high. Finally, explain what risk control measures you would use to control the risk.

### Example

What is the hazard here?  
What is the risk?



- |  |                                 |                               |
|--|---------------------------------|-------------------------------|
| 1. the chemicals   | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. the student on the left getting the chemicals splashed in his eyes or the student in the centre spilling the chemicals on her hands | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

### Control

To control the risk I would

.....

.....

## Now look up at the screen

### 3.1 Image: trailing lead

- |                                       |                                 |                               |
|---------------------------------------|---------------------------------|-------------------------------|
| 1. the lead trailing across the floor | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. tripping over the lead             | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

### Control

To control the risk I would

.....

.....

### 3.2 Image: wearing a hoodie using a pillar drill

- |    |   |                                 |                               |
|----|---|---------------------------------|-------------------------------|
| 1. | the drill rotating at high speed                  | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. | the hoodie strings getting entangled in the drill | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

#### Control

To control the risk I would

.....

.....

### 3.3 Image: using a scroll saw with no guard

- |    |                                  |                                 |                               |
|----|----------------------------------|---------------------------------|-------------------------------|
| 1. | cutting your finger on the blade | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. | the saw blade is not guarded     | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

#### Control

To control the risk I would

.....

.....

### 3.4 Image: using a lathe without safety glasses

- |    |                                    |                                 |                               |
|----|------------------------------------|---------------------------------|-------------------------------|
| 1. | not wearing safety glasses         | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. | waste material flying into the air | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

#### Control

To control the risk I would

.....

.....

### 3.5 Image: using a strip heater/ line bending heater

- |    |                       |                                 |                               |
|----|-----------------------|---------------------------------|-------------------------------|
| 1. | touching the hot line | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |
| 2. | the hot line          | <input type="checkbox"/> hazard | <input type="checkbox"/> risk |

**Risk magnitude** (please tick the appropriate box)       Low       Medium       High

#### Control

To control the risk I would

.....

.....

## ACTIVITY 4 Choosing the best controls

In this activity you are shown a number of options that could be used to reduce the risk associated with a particular process. Working in pairs, discuss the options and number each risk control measure in order of merit on a scale of one to four, (1 = best... 4 = worst). When you have completed the first example discuss the advantages and disadvantages of each with your teacher and the rest of the class.

### 4.1 Image: A can of spirit based varnish & white spirits.

**Hazard:** Using chemical products.  
**Risk:** Eye contact/ skin contact/ breathing in fumes.  
**Controls:**

	wear safety glasses and gloves		use a smaller can of varnish & a smaller brush
	use a pre-finished board		use a water based varnish

### 4.2 Image: A bandsaw cutting a piece of steel – no guard.

**Hazard:** Unguarded cutting tools.  
**Risk:** Cutting yourself, getting waste in your eyes, hearing damage.  
**Controls:**

	guard the saw and wear personal protective equipment		buy in the steel cut to size
	cut the steel with a hacksaw		guard the saw only

### 4.3 Image: Corded power tools (belt sander) & an extension lead.

**Hazard:** Extension lead trailing across the aisle.  
**Risk:** Tripping over the lead.  
**Controls:**

	use a cordless tool		cover the lead with a floor mat
	move the work to a bench near a socket		use a hand tool instead

### 4.4 Image: Lifting a heavy box.

**Hazard:** The box is very heavy.  
**Risk:** Injury to your back.  
**Controls:**

	remove the contents and pack into two smaller boxes		get someone to help you lift the box
	use a hand cart to move the box		ask your teacher to lift it

### 4.5 Image: Mains powered electrical tools.

**Hazard:** Electricity.  
**Risk:** Electric shock.  
**Controls:**

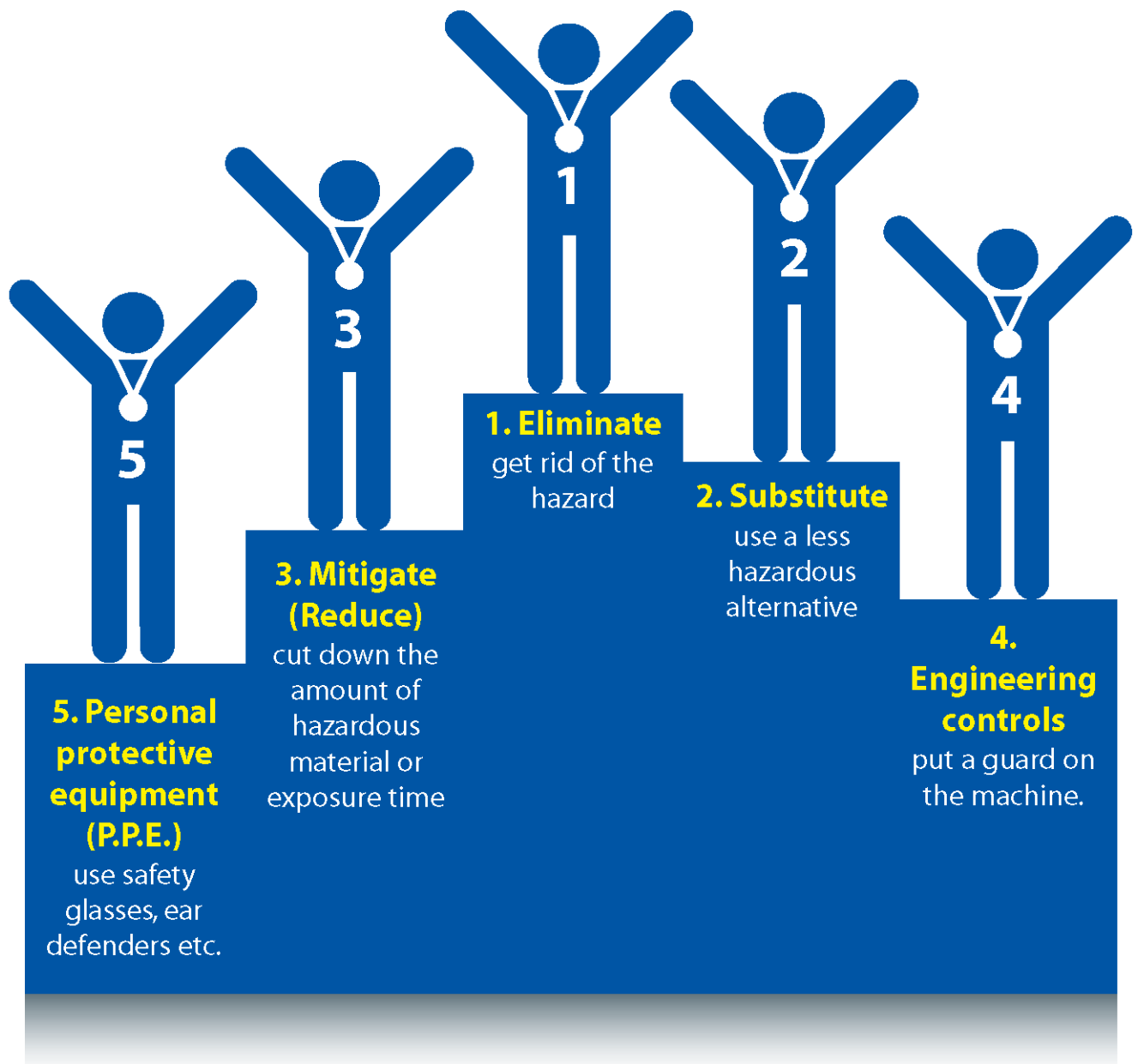
	use 110V tools		use hand tools instead
	use cordless power tools		check for faults before use

Generally there are 5 things you can do to control risks – although sometimes only some of them apply to particular situations.

## REMEMBER

it is always best to eliminate (get rid of) the hazard if possible, next best is to substitute it for something safer.

## CONTROL HIERARCHY



## ACTIVITY 5 Taking responsibility

It is very important to behave responsibly when in a technology classroom. One of the best things about doing technology subjects is that you get to design and make your own work.

If you are going to do this, your teacher has to be able to trust you to use tools and equipment safely when you are working independently. Your teacher also has to trust you to behave safely toward other students.

Behaving responsibly sometimes means that you have to have the maturity to display leadership qualities. This is just like when the captain of a team has to make difficult decisions under pressure – he or she has to tell the other players what to do.

In the technology classroom this might mean having the leadership ability to tell someone to wear their safety glasses or to use a tool properly or maybe you'll have to tell someone to stop messing.

You should also remember it is a legal offence to endanger someone at school.

### 5.1 Write a short note explaining, in your own words, why it is important to behave safely in the technology classroom:

.....

.....

.....

.....

.....

.....

.....

### Role play

This activity creates some situations that will allow you to display leadership and encourage safe behaviour. Feel free to adapt the dialogue to something you'd say in this situation – just get the message across.

**Role play 1**  
**Student A is standing at the lathe. (S)he has the work-piece mounted and is about to turn the lathe on. Student B notices that Student A is not wearing eye protection, even though it is right beside the lathe.**

**Student B:** "Hey (name) don't forget your safety glasses"  
**Student A:** "I'm not wearing them – I'll look stupid"  
**Student B:** "Don't be daft – everyone wears them. Anyway, if something flies into your eyes you could be really badly hurt."  
**Student A:** "Don't mind that – I'll be grand"  
**Student B:** "I'm serious (name) you really should put them on – anyway, you heard (teacher) if anyone is caught not wearing the safety glasses (s)he'll turn it off for the rest of the class"  
**Student A:** "Would you just get lost and mind your own business"  
**Student B:** "Okay – suit yourself. But I'm telling (teacher) 'cause if you get hurt none of us will be allowed to use the lathe ever again"  
**Student A:** "Alright, alright – I'm putting them on"  
**Student B:** "Good – call me when you're finished, I want to use it after you"



## Role play 2

The teacher has gone to the door to talk to the school principal. Student A is throwing small waste pieces of wood/ plastic/ steel at other students.

**Student A:** *Throws a waste piece of wood/ plastic/ steel at a group of students. Remember this is a role play – don't actually throw anything!!*

**Student B:** Cut it out (name)"

**Student A:** "Ah, don't be such a loser, I'm only messing" *Throws another piece.*

**Student B:** "Listen, if you hit someone in the eye it could be serious"

**Student A:** "Who left you in charge? I'll do whatever I like" *Throws another piece.*

**Student C:** "Would you ever cop on"

**Student A:** "Stop now or I'm calling (teacher)"

**Student B:** "Alright, alright – I'll stop".

*Student A & C look at each other and throw their eyes up.*

## Role play 3

Student A is about to use the bandsaw. The work-piece is 6mm in thickness but the guard is 50mm above the work-piece.

**Student B:** "(Name) you should lower the guard before you use that"

**Student A:** "What do you mean?"

**Student B:** "Well, the guard should be just above the work-piece. The less of the blade exposed, the less likely you are to get injured."

**Student A:** "Oh right... Could you remind me how to lower it? I can't remember."

**Student B:** "No problem – you just twist this..." *Shows the student how to lower the guard.*

## Now, go ahead and make up your own role play...

**Scenario:** .....

.....

.....

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :

**Student** ..... :