Safe working practices: Design and Technology Stages 4–5

In *Design and Technology* you will develop confidence and skills in using a range of resources to manage and produce quality design solutions. Working safely is a responsibility of all workers, including those working in offices.

This material addresses aspects of the following syllabus outcomes:

4.6.2/5.6.2 A student applies risk management practices and works safely in developing quality design solutions.

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

Designing in an appropriate environment

Designers are regularly required to develop solutions to a problem in an office area. The office environment must be a healthy, safe environment to work in. The office environment has many variables that can be controlled, including:

- temperature
- humidity
- air quality
- lighting.

The correct combination of these elements needs to be maintained in order to produce an environment conducive to comfortable work.

Temperature

In Australia most people work comfortably at temperatures between 20° and 26° Celsius. The position of desks in offices can obviously localise temperatures. For example, a desk in direct sunlight may be a lot hotter compared to a desk positioned under an air conditioning vent. Clustering of computers can also generate heat that raises localised temperatures.

Humidity and ventilation

Air conditioning can also affect the amount of water vapour in the air. The optimum comfort range for relative humidity is 40–60%. Low humidity can cause dryness of the eyes, nose and throat and may also increase the frequency of static electricity shocks.

Relative humidity above 60% can contribute to fatigue and reports of *stuffiness*. Ventilation refers to the movement of air and rate of fresh air input. Rooms should not be too stuffy through lack of air movement however they shouldn't have too much movement otherwise draughts can be felt.

Contaminated air

Air contaminants are sometimes a result of poorly maintained air conditioners and poor air ventilation. Appropriate control measures are essential in avoiding illness related to poor air quality.

Smoking in the workplace also contributes to air contamination and there has been an increased limit put on smoking in the workplace. Organisations have integrated no smoking policies into the workplace to limit passive smoking.

Modern photocopiers are also fitted with ozone filters to limit the emission of ozone. High ozone levels can result in eye and respiratory infection, headaches and loss of the ability to smell.

Lighting

The basic requirement for adequate lighting are that the work must be easy to see and the light comfortable to the eyes. Sharp differences in illumination and glare should be avoided to limit eyestrain.

Activity 1

Read the guidelines on the working environment of designers then decide if the following statements are true or false. Shade the box with the correct answer.

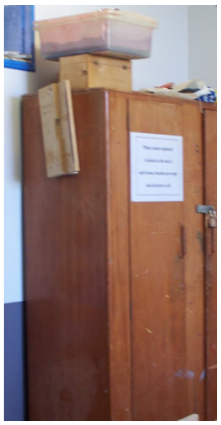
	Statement	**Answer**	
1.	A designer can work productively in a cold room below 16°C however should avoid working in rooms above 26°C.	T	F
2.	Humidity is an element that affects all employees and cannot be controlled because it is just a weather condition.	T	F
3.	Clustering of computers together can generate unnecessary heat in an office.	T	F
4.	*Stuffy* work areas can be avoided through adequate ventilation.	T	F
5.	Non-smoking areas are increasing in the workplace because more people are smoking.	T	F
6.	Modern photocopiers emit high levels of ozone and are dangerous in most offices.	T	F
7.	High ozone levels can affect the health of workplace employees.	T	F
8.	Poor lighting is necessary in some offices to reduce the company's electricity bill.	T	F
9.	Offices can have too much ventilation that leads to an uncomfortable, draughty environment.	T	F
10.	An employee who is comfortable and healthy is likely to be more productive in the workplace.	T	F

Office accidents

There are several types of common office accidents that can occur. They include:

Slips: caused by slippery floors, uncleaned spillages or gripless shoes.

Trips: caused by objects lying on the ground or jutting out into aisles or poorly maintained floor surfaces.



Falls: caused by reaching out from ladders when trying to reach an object.

Manual handling injuries: caused by carrying, stacking, pushing, pulling, rolling, sliding, lifting or lowering loads.

Activity 2

Use the word bank to fill in the spaces in the following statements.

trips	level	falls	manual	clear	training

Employers are required to provide adequate _____ for workers involved in _____ handling.

All surfaces in the office should be _____ and _____ of obstructions. This should assist in controlling the risk of _____ and _____.

Activity 3

Complete the following table by identifying methods of controlling the risk of injury. The first example is given to you.

	Scenario	**Risk control**
1.	Cooking oil has been spilt onto the tiled floor of the office kitchen.	Clean the spillage immediately with an absorbent cloth and remove all oil.
2.	A section of carpet has ripped and lifted in a poorly lit hallway.	
3.	A designer stands on a swivel chair to remove a textbook from a shelf that is too high to reach when standing.	
4.	A full, three-drawer filing cabinet has to be moved from one end of the room to another (about five metres away).	
5.	An office assistant is required to collate bundles of paper on a desk that requires them to stoop continuously for a period of one hour.	
6.	Several electrical items in the office are plugged into one power point through the use of double adaptors.	