

# Safety in the Laboratory



Your Name .....Date.....

This 'writE Science' sheet is all about **safety**. Safety means being able to use the science lab without anyone getting hurt. Can you work safely in this science laboratory? If not, you will not be able to do any experiments.



We use a lot of dangerous experimental equipment in this laboratory. This is equipment we use for investigating our world. This equipment includes power supplies that run off 240 volt electricity, breakable glassware, and heavy things. We also use chemicals that are poisonous, corrosive, or highly flammable, like the gas available at the side benches. Nasty stuff!

**Diagram 1: be careful with chemicals and glass.**

However, the most dangerous thing in the laboratory could be the **behaviour** of the person next to you - if they are not careful. Behaviour is about how people act, and if they do not behave safely then they are dangerous. What would happen if someone carelessly bumped you when you were pouring some acid? Your eyes could be damaged, your face scarred, and your hair may be frazzled. If someone stuck a piece of wire in a power point, their brain might be fried, or they may have a heart attack. Running or pushing in the lab is also dangerous!

Broken glass or spilt chemicals may result in severe injury. Using equipment incorrectly can damage you, as well as the equipment. See diagram 1.

Because there is a risk of injury in the lab, we have **safety equipment**. This is equipment that prevents harm or helps if something does go wrong. It includes safety glasses, fire extinguishers and fire blankets. Safety glasses are particularly important when using dangerous chemicals or hot liquids. If you lose your eyesight, you will never get it back. Students with long hair need to tie it back so it is out of the way when using Bunsen burners.

So the message is BE SENSIBLE. Follow your teacher's instructions, and use the science lab to enjoy learning about all the wonderful things in this world.

### Part 1. Purpose of the text

Find the key ideas from the text, and their meaning in the context of the experiment. **Organise** below.

a. Title (purpose)

Key word(s)

Line no.s

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Meaning in

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context

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### Part 2. Equipment

a. Find the safety equipment mentioned in the text, and **generate** a list explaining where it is kept in the lab.

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### Part 3. Have a guess!

a. What is a chemical you might use in science? 

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b. What would happen to your eyes if you got acid in them? 

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c. What was the **purpose** of this writE science sheet? 

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### Safety and Danger Demonstration

Your teacher will bubble flammable gas into soapy water. The resulting bubbles will be lit.

1. **Synthesise** new knowledge by forming a prediction: I think when the bubbles are lit then...

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2. **Generate** a list of observations, based on what you experienced with your senses:

Saw	Heard	Felt	Smelt
<hr/>	<hr/>	<hr/>	<hr/>

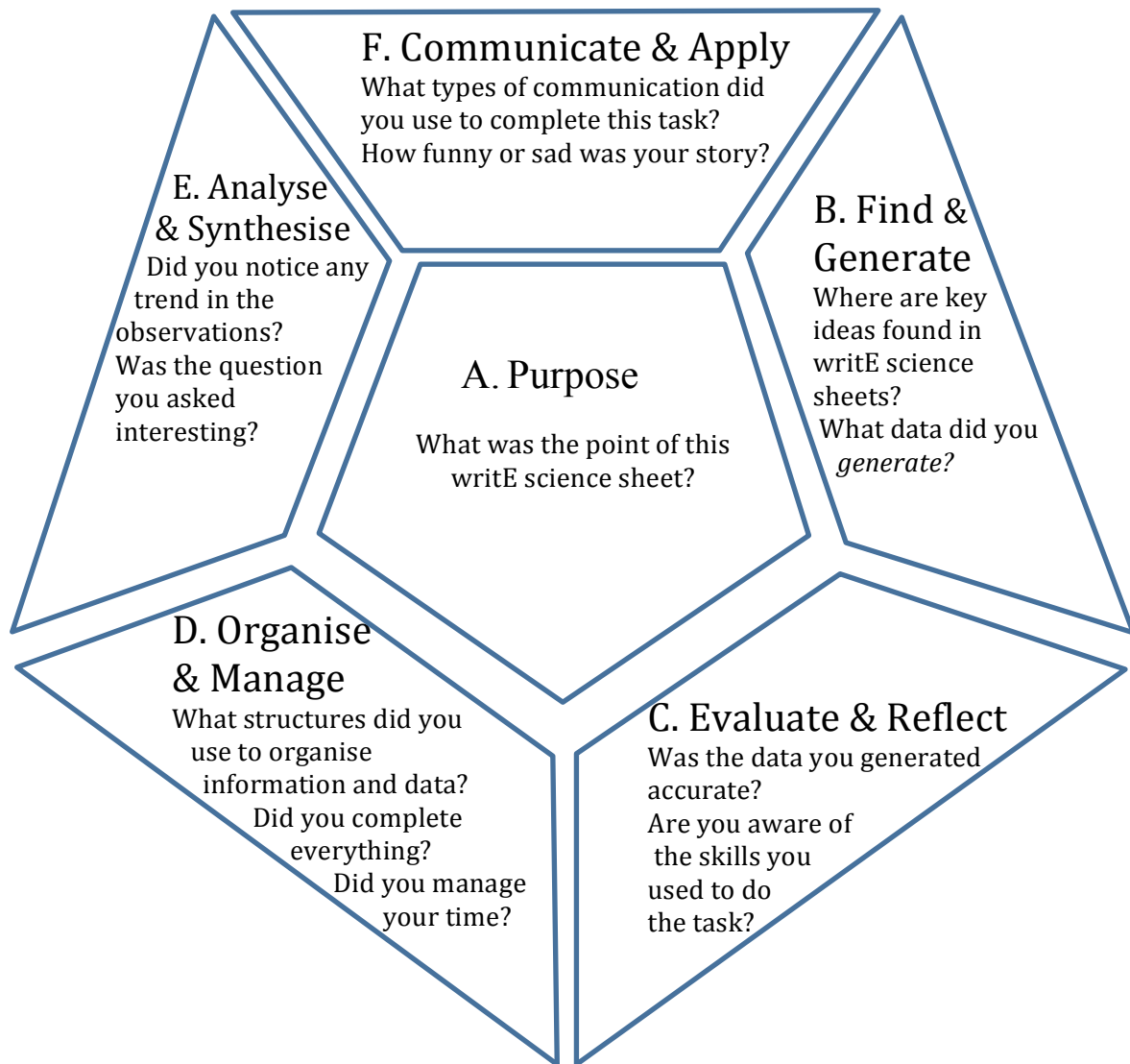
**Infer why this happened:** I think this happened because...

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**Part 4. Communicate and apply** your understanding of the key words: write a short story about some science students who acted dangerously (use the next piece of lined paper. Make up a title, and include the word 'explosion'.)



A series of horizontal lines spanning the width of the page, providing a template for writing a short story.



**Part 5. Evaluate and reflect.**

**Evaluate** this activity and **reflect** by suggesting how to improve it.



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Page 3 and onwards given out at teachers' discretion.

## Teacher's notes:

1. The story is written so that the key words we are concentrating on are in bold type. These are always the leading idea of a paragraph, and so are in the first sentence of that paragraph. These keywords are to be placed in the small bubbles in the structured overview. The second sentence contains a definition of the key word. Students should be assisted with as much effort as you can afford, to write this definition in **point form**, leaving out joining words at least. I think constant modeling is necessary, especially from other students when they show good note-taking skills. The rest of the paragraph contains supporting details about the keyword. Again, point-form notes are to be taken.

Remember, this is part of a year-long strategy to assist students in developing note-taking skills. The idea is to make their writing an activity that requires their brain. Converting text to notes means they have to actively engage with the text. They struggle to make meaning of it, and so it can assist their understanding. For them to be able to use their notes and write good sentences/paragraphs from them is also something we will develop. This is all very difficult for many students. But these skills are common to other work across the learning areas. Set the kids a high standard for this piece, so all other work can be compared to it. Any questions you have, please feel free to ask.

John W.

## Equipment

Pneumatic trough (big glass bowl)

Bunsen burner lead (i.e. a bayonet socket with an open-ended tube)

Detergent

Tape, taped onto a metre rule

Matches

The demo is to engage students in aspects of safety and danger. Tie in fire equipment, safety glasses, etc. Also, you can begin to introduce the need for observations involving all the senses.

1. Place enough detergent in a 2/3 water-filled bowl to bubble easily. Place bowl on top of a bench protector.
2. Place free end of Bunsenless tube into the detergent solution. Turn on gas, until you have a heap of bubbles.
3. Turn off gas. Darken room. Hold lighted taper to the gas bubbles.

It is worth practicing beforehand, but this is not very dangerous. Wear lab coat and safety glasses.