

# Experimental Research



## (Lower Primary and Primary Divisions)

### Experimental research involves:

1. Choosing and defining a topic. Pick a topic that interests you.
2. Asking questions about your topic. Why? What if...? How? It would be a good idea to do some reading about your selected topic. Libraries and the internet are a very useful resource. You could also discuss ideas with others familiar with your topic.
3. Forming an hypothesis. This is an educated "guess" as to what you think will happen in a certain set of circumstances or conditions. (Look at ONE change at a time).
4. Investigating your hypothesis. To do this properly you will need to design and carry out experiments in a safe manner.  
  
Data logging equipment can be used to collect data.
5. Carefully recording the results of the experiments. A survey, if it is used to collect data as part of an investigation, is regarded by STS as an experiment. (Keeping a log book or taking photographs are useful ways of recording).
6. Analysing results. What do your results mean?
7. Being prepared to change your original ideas and procedures as you get results which may be unexpected.
8. Working logically through your results so as to support or disprove your hypothesis.
9. Writing a report to tell others what you did and what you found, based on experiments you carried out. The experimental report is NOT a research assignment.

### Some examples of past topics

- Do emus eat flowers and grass?
- Do seeds grow better with tank or grey water?
- Does smell affect taste?
- Does micro-waved water affect plant growth?
- Does a bicycle travel further with tyres inflated?

### Writing an experimental research report

- ✓ Tick that you have satisfied each of the guidelines below.

#### Entry guidelines

Your report format must include the following:

- Introduction** - What gave you the idea? How did you get started?
- Aim(s)** - What you are trying to find out? What did you think would happen?
- Materials** - List these (everything!).
- Method/What-I-did**  
List everything you did, but remember to keep them in order (like a recipe).  
Describe the safety requirements you followed in conducting this experiment.
- Results** - Everything you discovered (or found out). Keep a little book (logbook) and record everything as you go. To show all this use graphs, tables, pie charts, photos etc...
- Discussion** - Discuss your results. How could you improve your experiments?
- Conclusion** - List the main things you have discovered or found out. Go back to your results - what do they tell you?
- Acknowledgements and References** - Make sure you include a list of people who gave you help/advice and list any books or websites you used.
- When your report is finished ask your teacher or parent(s) to check your report to make sure it follows the guidelines.
- Keep a copy of your work.
- Present your report stapled into a paper manila folder (not plastic), with completed yellow Face Sheet firmly attached to the outside front cover. This will also assist with postage and transport of entries.

### Entries must be posted or delivered to:

STAV House, (PO Box 109)  
5 Munro Street Coburg VIC 3058  
**and arrive by 29 July 2011**

### All guidelines should be followed to avoid being disadvantaged during judging.

Students who submit a project into the experimental research section are automatically entered into the **National BHP Billiton Science Awards**. Students who win major bursaries in this section of STS will become finalists in this national competition. You must notify STS if you do NOT want your project forwarded to BHP Billiton Awards. For more information go to <http://www.scienceawards.org.au>