Category 1: Research Investigation (Years 3-6)

What is a research investigation?

An investigation is an attempt to find, in a scientific way, the answer to an original question. The scientific way may involve careful recording of organised observations such as watching the behaviour of wild birds or the movement of planets. It may use an experimental procedure that involves designing an experiment, controlling variables, interpreting your data and making a conclusion. Investigations always look for reliable results that can be used to explain or predict events.

Note:
It is acceptable for students in Year 3-6 to be given assistance in generating questions for research, however, they should be able to design their investigation to answer the question.

If students in a class are investigating the same question then the teacher should select the best investigation for entry into this category.

A research investigation involves:

- **choosing and defining a topic.** *Pick a topic that interests you.*
- **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.*
- **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).*
- **investigating your hypothesis.** *To do this properly you will need to design and carry out experiments in a safe manner*.*
- **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).*
- **analysing results.** *What do your results mean?*
- **working logically through your results so as to support or disprove your hypothesis.**
- **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.*

** It is important that a risk assessment is completed before conducting the investigation. A **Risk Assessment Form** is required to be submitted with the entry.*

A successful STS Research Investigation entry will:

- follow the scientific method of investigation
- communicate ideas clearly
- be an original investigation
- include evidence of reading on the topic

STS Rules

It is important that all entries comply with the STS Rules. Please read these rules carefully to ensure your entry is eligible for judging.

The judges will be looking for entries that clearly communicate science ideas, use appropriate inquiry skills and that the technical language is appropriate for the age level of the entrants. Refer to the Australian Curriculum for details of the Science Inquiry Skills expected by students in each age grouping.

Entry guidelines

Tick that you have satisfied each of the requirements below.

Content

Your entry should include:

- ☐ entry label attached to the top right-hand corner of title page
- ☐ written report following the headings described below
- ☐ Risk Assessment Form
- ☐ Supervising Scientists Form (if required)
- ☐ Human Subject Permission Form (if required)

Your report format must include at least the following parts.

- ☐ **Title page and Table of contents**
- ☐ **Introduction -** *What gave you the idea? How did you get started? Include any background research you have done on the topic.*
- ☐ **Aim -** *What you are trying to find out? What did you think would happen?*
- ☐ **Materials -** *List these.*
- ☐ **Method -** 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). To show all this use tables, graphs, pie charts, photos etc…*
- ☐ **Discussion -** Discuss *your results describing the patterns and trends. 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.*

Presentation

- ☐ When your report is finished ask your teacher or parent(s) to check your report to make sure it follows the guidelines.

- ☐ Your report should be typed on single sided A4 paper and stapled in the top left corner. The whole report may be placed in a plastic sleeve for protection. Do not bind or place in a presentation folder.