

# Working Models

## (All Divisions)

Although you are encouraged to follow this year's theme, you may choose to explore a scientific topic of your choice.

(Note that Information and Scale Models is a separate section to Inventions. See page 16 for information about the Inventions section.)

### Scale models

As the title suggests, this is a scaled representation of an existing invention. You are asked to make a WORKING model that simulates the operation of, and the scientific principles behind, an existing technology. You should choose a model which clearly illustrates a scientific principle. For example, you could construct a scale model of a hydroelectric power station that demonstrates how potential energy can be used to generate electricity.

### Information models

Information models are WORKING models that either demonstrate a scientific principle or concept, or simulate a scientific technique. These models are intended to educate people about the concept being illustrated. For example, if you wanted to show how electrons flow through a wire you couldn't use electrons (because they are so small) but would use something large enough to see to represent the electrons.

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

### Entry guidelines

- Your model must be a WORKING model.
- Your model must be no larger than 0.5m x 0.5m x 0.5m, and weigh no more than 15 kg unless special permission is granted by the Science Talent Search Section Co-ordinator.
- Attach a photo of your model to your report to give to the judges on Judging Day
- You must include with your model a written explanation which:
  - identifies your model either as a scale model or an information model. Also label your model as 'scale' or 'information'.
  - describes how you went about building it, problems you encountered and how they were solved.
  - includes instructions on how to operate your model, where appropriate.
  - shows a clear understanding of the science being demonstrated.**

The explanation should be no more than four A4 pages in length, presented in a paper manila folder (not plastic) with a copy of the completed Face Sheet firmly attached to the front. Clearly indicate on the front of the folder whether it is a scale model or an information model.

- Your model must be original (volcanoes will score poorly!!). Models made from kits without original input do not score well.
- Scale models must be selected carefully to illustrate the scientific concept chosen. The best scale models will clearly and accurately illustrate only one or two scientific concepts. These should be the major concepts in the operation of the model.
- Your model must be safe to operate in a crowded area. All models must have appropriate safety features; eg. boilers must have correctly operating safety valves. Dangerous chemicals must not be used, and rocket models will not be judged.

### Judging criteria

On Judging Day you will present and discuss your model with the Judges.

Your model will score best if:

- it is well constructed
- it is easy to use
- the scientific principle used is clearly understood and demonstrated
- it is appropriate to the concept being illustrated
- you have shown resourcefulness in the parts you have chosen to use
- you can explain your model clearly and accurately in terms of the **science** behind it, how it works and the design process
- you can show that you have put effort into making the model.
- Information models should show original and creative presentation.

### JUDGING DAY FOR MODELS

**Saturday 13 August 2011**

Methodist Ladies' College,  
Fitzwilliam Street Entrance, Kew

**Country entrants are strongly encouraged** to bring their model along to Judging Day to discuss their entry with Judges (rather than posting the model).

If country entrants post their model it must be well packaged to avoid damage during transit, and must arrive at STAV by 29 July.

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