

Using Models and Analogies in Science

Goal • Plan to build a model to demonstrate or explain a concept.

Introduction

This inquiry will help you build a model to demonstrate or explain a concept that you are studying in class, or researching.

What do Do

Follow the steps in the outline below.

Outline

1. Name the topic you are studying.

2. What scientific concept from this topic can you demonstrate or explain with a model you can build?

3. Describe a model that could demonstrate or explain this concept. Provide a general description, then include general requirements, such as batteries or power hook-up, space for a demonstration, containers, moving parts, apparatus, supports, or safety precautions.

4. In your Science Log, or on a separate piece of paper, develop a plan for building the model in your description. Include the following:

- timing — How long will it take? When do you plan to have it completed?
- materials — What materials do you need? Where and how will you obtain them?
- equipment — What special equipment do you need? When and how will you obtain it?
- costs — What costs does this work entail? What costs will you cover? What, if any, assistance do you need?
- location — Does building or testing this model require any special locations? If so, outline the locations and when and for how long you will need them.
- access to resource people — Does building this model require the help of specific experts? If so, outline who they are, how you plan to contact them, and when and for how long you will need to see them.
- testing — When and how do you plan to test this model?
- safety arrangements — What special safety equipment and what safety precautions are needed?



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5. On a separate sheet of paper, sketch your model. Show the estimated dimensions, parts, and materials. When your plans are complete, revise this sketch to become detailed blueprints that can guide constructions.
6. Review your plans with your teacher and model-building resource person. Once your preparations have been approved, build and test your model.
7. When you are satisfied with your work, present it to your class. Be prepared to explain how your model works and how it is related to the science concept you are demonstrating.

