

## 1 Make Observations

A hypothesis must be based on observations. Use your senses to observe the situation. Record your observations. Then review your observations to spot common features or events.

## 2 Use What You Know

Recall facts and ideas you've read about or learned in school. Think about your own experiences. Think about how these ideas relate to what you observe.

## 3 Ask Questions

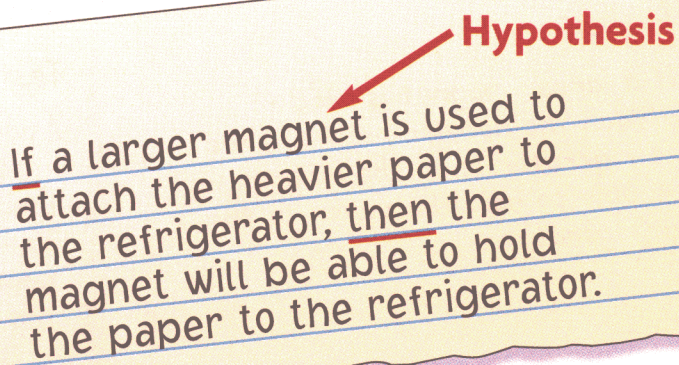
Write questions about what you observe. Make sure your questions can be answered by collecting evidence. Then choose one question as your focus.

## 4 Make a Hypothesis

Write a hypothesis. The hypothesis should provide an answer to the question you chose. Put your hypothesis into sentence form, using the words *if* and *then*. State your hypothesis so that you can test it.

## 5 Conduct a Test

Design an experiment to test your hypothesis. Carry out the test. Compare your results with your hypothesis. Don't worry if your hypothesis turns out to be false. A false hypothesis provides valuable information.



**Hypothesis**

If a larger magnet is used to attach the heavier paper to the refrigerator, then the magnet will be able to hold the paper to the refrigerator.

# USE THIS SKILL

## Make a Hypothesis

Read each item below. Write whether each hypothesis is worded correctly or incorrectly. Tell why you think each incorrectly written hypothesis is not correct.

1. Some rocks are naturally magnetic.
2. Can a magnet stick to a corkboard?
3. Can you give magnetic properties to a nail?
4. If the paper clip is plastic, then a magnet will not move it.
5. What happens to iron filings when you pour them over a magnet?
6. A bar magnet has a north-seeking magnetic pole and a south-seeking magnetic pole.
7. If you touch like poles of two magnets together, then the magnets push away from each other.
8. Are some magnets stronger than others?

### TEST TIP

On a test you may be given a set of data and asked to choose a hypothesis that explains it. Review the data. Don't just choose the hypothesis that makes sense to you. The correct answer tells most about the data.

## Practicing Skill 4

**HOW TO** Make a Hypothesis

Read the paragraph that follows. Then use the information in the paragraph to answer the questions on page 8.

**Thinking About Magnets**

*In school, Russell was learning about magnets. In his science class, he did an investigation using a bar magnet and an iron nail. He rubbed the iron nail on the bar magnet. Then he held the nail next to some other metal objects. The nail attracted the metal objects just like a magnet. Russell remembered learning that magnets attract iron and some other metals. He knew that some magnets are natural, and some are made by people. Russell had some questions about magnets:*

*What would happen if I rubbed other metal objects on a bar magnet?*

*Would other metal objects be able to attract metal objects like the nail did?*



**Use the information on page 7 to answer the following questions.**

1. What did Russell observe in his investigation?

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2. What did Russell already know about magnets?

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3. What questions did Russell have about magnets?

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4. Write a hypothesis that could answer Russell's questions about magnets.

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5. How would you test this hypothesis?

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