

## Here's What You Do

1. Hold the magnet near an American quarter. Does the magnet attract the quarter?
2. Now try a Canadian quarter. Aha!
3. What do you think will happen if you try this with other coins? Try it and see.
4. Are any American coins attracted to the magnet? What about the other coins?

## What's Going On?

Your magnet was attracted to the Canadian quarter, but not to the American quarter. The Canadian quarter contains nickel, which magnets attract. Many foreign coins contain either iron or nickel and are attracted to magnets. (For more fun with magnets, see page 320.)

Inside a coin-operated vending machine is a coin-testing unit that rejects counterfeit, foreign, or defective coins. Many of these testers use magnets to separate Canadian coins from U.S. coins. Coin testers may also weigh the coin, check its diameter, test its electrical conductivity, and use other characteristics to find out if a coin is fake or foreign. So don't bother trying to fool a smart vending machine like this!

## Tools for Exploration

### Asking questions

We started out with one question — what makes a vending machine reject foreign coins? That question led us to other questions. How are foreign coins different from American coins? What happens if you bring a magnet near a Canadian quarter? How about an American quarter? Come up with questions of your own and experiment to find the answers.