

# Physical Science Readers: All About Energy

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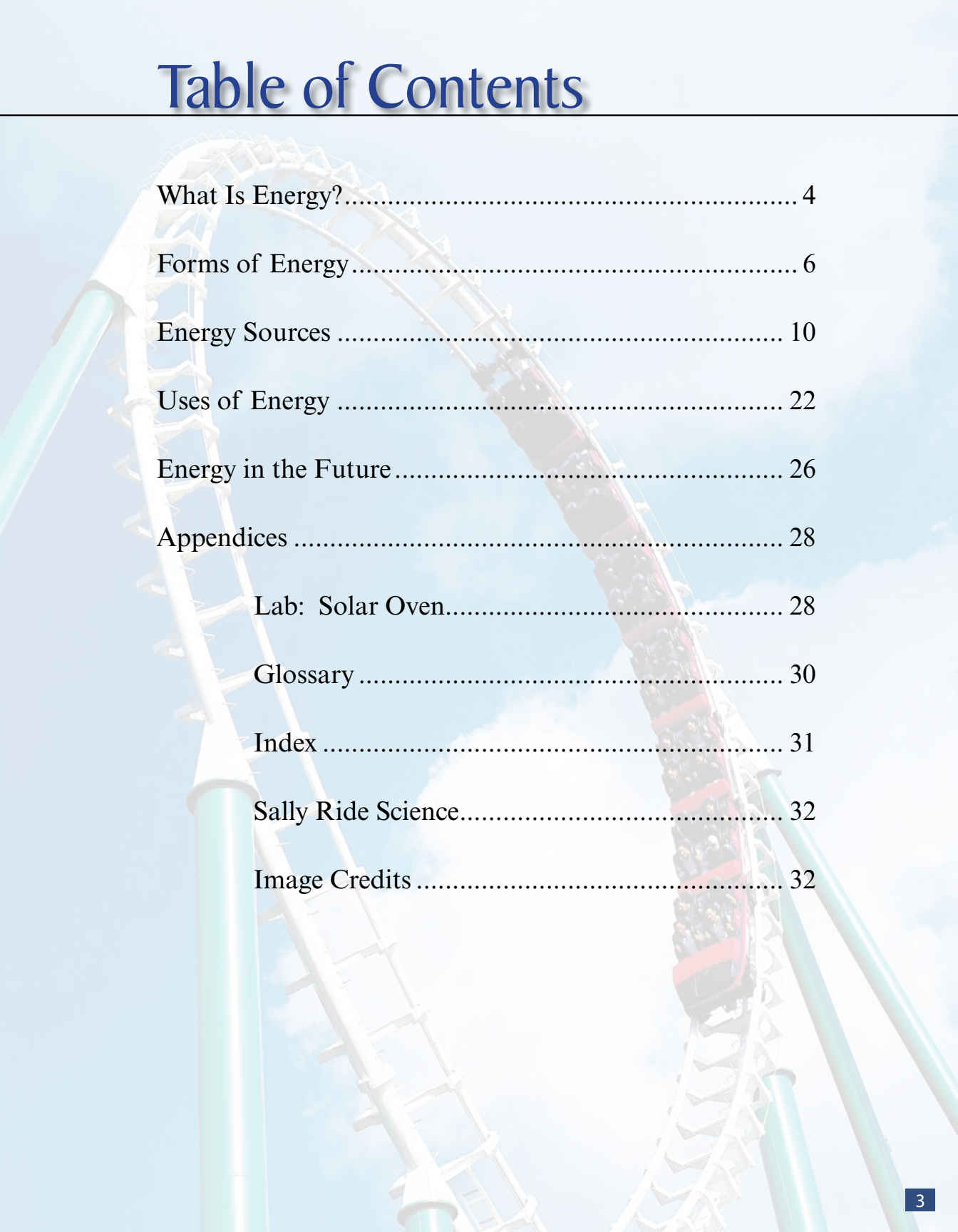
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# What Is Energy?

Did you just lift this book? You needed **energy** to do it. Did water flow from the faucet when you brushed your teeth this morning? Energy did that, too. Did you ride in a car, bus, or train today? Energy made that happen. In fact, all day, every day, energy is on the move in you, around you, and everywhere else.

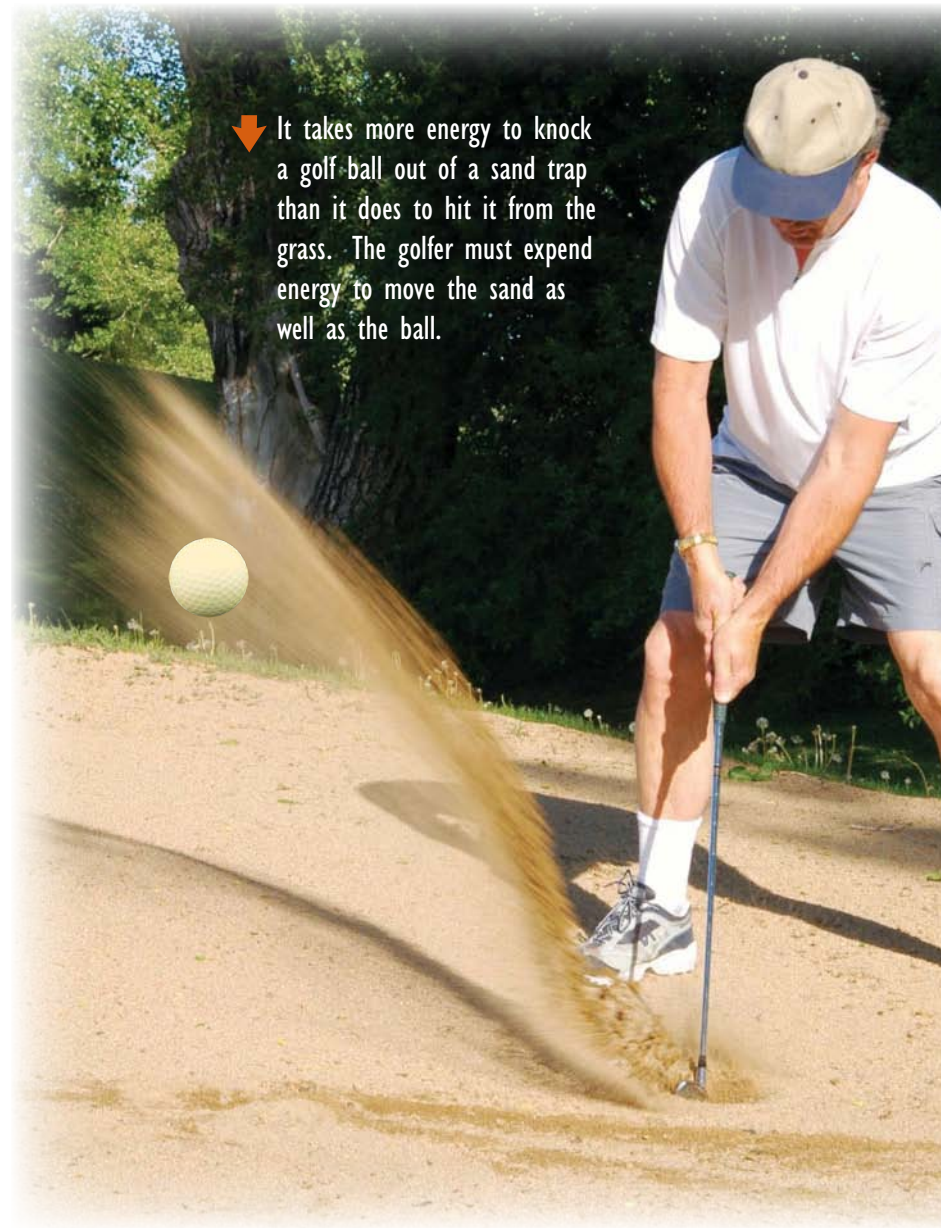
What is energy? Energy is the ability to do work. No matter who or what is doing the work, energy is being used. Machines use energy. Heat and power use energy. Living things use energy, too. That means you use energy all the time.

Scientists use a **formula** to show work being done. They say that work is the **force** exerted, multiplied by the distance. The formula is  $W = Fd$ . This makes sense. To push a heavy object any distance, it takes more work than pushing a light object the same distance. Another way to look at it is this: if you put energy into an object, then you work on that object.



↑ Can you tell where energy is being used here?

Energy cannot be created or destroyed. The total amount of energy that goes into a system must equal the total energy out of that system. It may change in form within the system, but the total amount of energy will not change.



↓ It takes more energy to knock a golf ball out of a sand trap than it does to hit it from the grass. The golfer must expend energy to move the sand as well as the ball.

## Fire

People have long used energy to make their lives easier and better. One of the very first energy “inventions” was fire. People used the energy of fire to cook food, heat themselves, and give light.

