

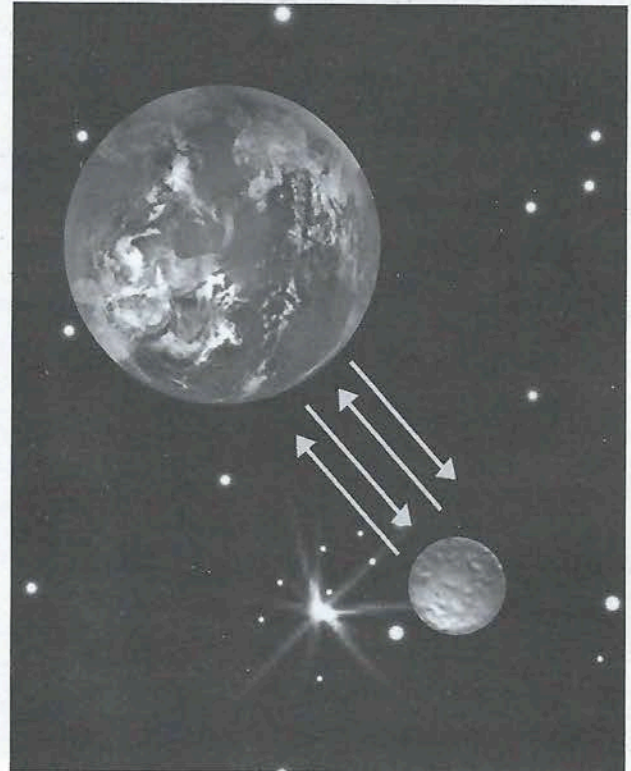
# Energy and Force

When children are on a playground, running, jumping, and swinging, an adult might say, "Children have a lot of energy!" What is energy? **Energy** is the ability to do work. The word "energy" comes from a Greek word that means "work."

Does this mean that energy works, that it has a job? What is the work that energy has the ability to do? **Work** is simply a transfer of energy from one object to another. For example, when a player hits a ball with a bat, the player works on the bat by using force on it (the swing), then the bat works on the ball (by hitting it), and finally the ball works on the glove (by landing in it and pushing the glove).

Work happens when a force causes an object to move in the direction of the force. **Force** is the push or pull from one object to another (the arms swinging the bat, the bat hitting the ball, the ball hitting the glove). Force causes objects to move, stop, or change speed or position. The greater the force, the greater the change in motion. **Gravity** is a type of force. It is the force of pull (or attraction) between two objects, such as the moon and Earth.

Sometimes the word "energy" is used to mean "usable power" when it refers to heat, electricity, and so forth. Nuclear energy, for example, is produced by a nuclear power plant to light a city's homes or cool its schools.



## Exercise

1. What is energy? \_\_\_\_\_  
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2. What is work? \_\_\_\_\_  
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3. What is force? \_\_\_\_\_  
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4. How is energy different from work? \_\_\_\_\_  
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