



BUILDING BLOCKS OF PHYSICAL SCIENCE

Force and Motion

What is a force, and what is motion? Follow the funny characters "Force" and "Motion" as they punt a football, ride a bicycle, and blast off in a rocket plane to find out!

What did you learn?

QUESTIONS

1. What pulls everything down to the ground?
 - a. Gravity
 - b. Electricity
 - c. Magnetism
 - d. Sound
2. The tendency of an object at rest to remain motionless is called what?
 - a. Distance
 - b. Inertia
 - c. Friction
 - d. Magnetism
3. There are ___ kinds of simple machines.
 - a. 2
 - b. 12
 - c. 6
 - d. 20
4. Which is a simple machine?
 - a. Lever
 - b. Inclined plane
 - c. Wedge
 - d. All of the above
5. Can you define "acceleration"?
6. Can you explain how to change a bike's motion?

TRUE OR FALSE?

- | | |
|--|---|
| _____ 1. A force is a push or pull. | _____ 4. Smooth surfaces almost always cause more friction than rough surfaces. |
| _____ 2. A mechanical force acts when two objects touch each other. | _____ 5. It takes more force to move a heavy object than a light one. |
| _____ 3. Speed and direction are the two most important parts of motion. | _____ 6. A screw is a type of inclined plane. |

ANSWERS

- 1. a. Gravity.** According to page 7, we know that, "Gravity is the force that pulls everything ... down to the ground!" So, the correct answer is A.
- 2. b. Inertia.** According to page 14, we know that, "The tendency of an object at rest to remain motionless is called inertia." So, the correct answer is B.
- 3. c. 6.** According to page 24, we know that, "There are six kinds of simple machines." So, the correct answer is C.
- 4. d. All of the above.** According to pages 24-27, we know that levers, inclined planes, and wedges are simple machines. So the correct answer is D.
- 5.** According to page 12, we know that, "Acceleration is change in motion caused by a force."
- 6.** According to page 16, we know that, "When I push down on the pedals, the bike speeds up. The force of pushing on the pedals changes the bike's motion."

TRUE OR FALSE? ANSWERS

- 1. True.** According to page 6, we know that, "A force is a push or pull." So, the correct answer is True.
- 2. True.** According to page 7, we know that, "A mechanical force acts when two objects touch each other." So, the correct answer is True.
- 3. True.** According to page 10, we know that, "... the two most important parts of motion [are] ... [s]peed and direction!" So, the correct answer is True.
- 4. False.** According to page 18, we know that, "Smooth surfaces almost always cause less friction than rough surfaces." So, the correct answer is False.
- 5. True.** According to page 21, we know that, "It takes more force to move a heavy object than a light one." So, the correct answer is True.
- 6. True.** According to page 27, we know that, "A screw is an inclined plane wrapped into a spiral." So, the correct answer is True.