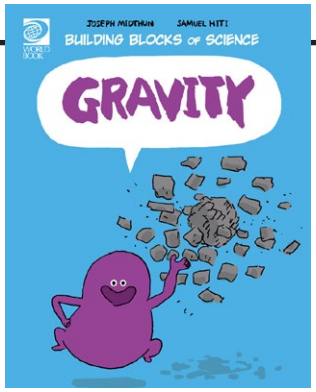

BUILDING BLOCKS OF PHYSICAL SCIENCE

Gravity

What would happen if you kicked a ball in outer space? Find out about gravity and how it works by following the cartoon character "Gravity" to the top of a skyscraper, to the moon, and even to a black hole!

What did you learn?

QUESTIONS

1. The strength of gravity depends on what?
   a. Energy and electricity
   b. Speed and height
   c. Distance and mass
   d. Magnetism and force

2. Which scientist concluded, "An object in motion tends to stay in motion"?
   a. Albert Einstein
   b. Isaac Newton
   c. Stephen Hawking
   d. Marie Curie

3. Which objects have gravity?
   a. Planets
   b. The moon
   c. Stars
   d. All of the above

4. Gravity is responsible for creating which very violent, powerful object in the universe?
   a. Black holes
   b. Planets
   c. Meteors
   d. Galaxies

5. Why would you weigh less on the moon than on Earth?

6. Why does a hammer fall faster than a feather on Earth?

TRUE OR FALSE?

_____ 1. Gravity is the force that keeps your feet on the ground.

_____ 2. The farther apart two objects are, the stronger the pull of gravity between them.

_____ 3. Earth's gravity pulls you toward the ground.

_____ 4. Gravity causes objects to speed up as they fall.

_____ 5. On the moon, objects fall at the same rate.

_____ 6. Without gravity, the universe could exist.

ANSWERS

1. **c. Distance and mass.** According to page 6, we know that, "The strength of gravity depends on two things: distance and mass." So, the correct answer is C.

2. **b. Isaac Newton.** According to page 17, we know that, "During the 1600's, the English scientist Isaac Newton defined this idea. He put it this way ... An object in motion tends to stay in motion." So, the correct answer is B.

3. **d. All of the above.** According to page 18, we know that, "The planets, moon, and stars have gravity, too." So, the correct answer is D.

4. **a. Black holes.** According to page 26, we know that, "Gravity creates the most violent and powerful objects in the universe ... black holes!" So, the correct answer is A.

5. According to page 10, we know that, "The moon has less mass than Earth, so its gravity is weaker. Therefore, you'd weigh less on the moon."

6. According to page 14, we know that, "Friction makes two objects resist each other when one is pushed or pulled across the other. It causes moving objects to slow down or stop. A falling object experiences different friction. The friction comes from tiny, invisible pieces of matter in the air. The size, shape, and weight of an object determine how fast or slow it will fall through this matter. As you can see, it is easier for a hammer to pass through the air than a feather."

TRUE OR FALSE? ANSWERS

1. **True.** According to page 5, we know that, "Gravity is the force that keeps your feet on the ground." So, the correct answer is True.

2. **False.** According to page 6, we know that, "The farther apart two objects are from each other, the weaker the pull of gravity between them." So, the correct answer is False.

3. **True.** According to page 7, we know that, "Earth's gravity pulls you toward the ground." So, the correct answer is True.

4. **True.** According to page 12, we know that, "... gravity causes objects to speed up as they fall." So, the correct answer is True.

5. **True.** According to page 15, we know that, "On the moon, there is no air to cause friction. So, all objects fall at the same rate." So, the correct answer is True.

6. **False.** According to page 28, we know that, "Without gravity, the universe could not exist!" So, the correct answer is False.