

Write one important fact from each paragraph in this space.

## Science Shorts -6

### Gravity

Every object pulls on every other object. That pulling force is known as gravity. The Sun and every planet in our solar system exert pulling forces on each other. This is what keeps the planets orbiting around the Sun.

Even the smallest objects exert pulling forces on each other. Gravity exists between you and your chair. It even exists between your pencil and your books! The more mass two objects have, the greater the force of gravity between them. Mass is the amount of matter in an object. The Earth contains a lot of matter. So, the force of gravity between you and Earth is great.

The distance between objects also affects the force of gravity that objects exert on each other. As objects move farther apart, the force of gravity between them lessens. If this weren't true, you might be pulled off Earth by the gravitational pull of the much larger Sun.

Gravity makes things fall when you drop them. It also gives them weight. It holds you on Earth's surface, and it holds the Moon in orbit around Earth. It makes a basketball swoosh down through a hoop, and a baseball drop into the glove of an outfielder. Gravity creates waterfalls and makes rivers flow down to the ocean. It makes rain and snow fall from clouds to the ground.

Gravity acts in ways that are hard to see as well. It causes dense cold air to sink – pushing hot air upward. This is why houses are often warmer upstairs than downstairs. Gravity also causes ocean tides to ebb and flow.

Water in the oceans moves in response to the force of gravity between Earth and the Moon. This creates a bulge in the ocean where Earth is nearest the Moon. It creates a bulge on the opposite side of Earth as well. The bulges move as Earth rotates, staying on the side of Earth that is closest to the Moon, and on the opposite side of the Moon. These bulges are seen on Earth as high tides. Gravity between Earth and the Sun creates bulges, too. However, the Sun is much farther away from Earth than the Moon is. So the force of gravity between Earth and the Sun creates a smaller bulge, or tide.

Gravity is at work everywhere. Look around you and you will see examples of gravity in the classroom, at home and outside. This same force that pulls objects toward the center of the earth also keeps the planets circling the Sun!

Name \_\_\_\_\_



## Vocabulary

Write a word or phrase from the Word Box that correctly completes each sentence.

Word Box			
ebb	dense	bulges	flow
affects	rotates	orbit	solar system
mass	exists	exerts	

1. Our Sun and the planets and other objects that surround it make up our \_\_\_\_\_.
2. Water in the ocean \_\_\_\_\_, or rises, on the side of Earth that is closest to the Moon.
3. Earth \_\_\_\_\_, or turns, all the time.
4. The movements of ocean tides are called \_\_\_\_\_ and \_\_\_\_\_.
5. Cold air is more \_\_\_\_\_ than warm air. This means that the molecules in cold air are packed more closely together.
6. Earth and the Moon \_\_\_\_\_, or apply, a pulling force on each other.
7. The planets \_\_\_\_\_, or move around, the Sun.
8. \_\_\_\_\_ is the amount of matter in an object.
9. Gravity \_\_\_\_\_ everyone on Earth. It has an effect on all of us.
10. Gravity occurs between you and your pencil and between you and your desk. It even \_\_\_\_\_ between people.