



TEACHER GUIDE

GRAVITY PULLS THINGS DOWN GRADES K-2

COMMON MISCONCEPTIONS

- **Heavier objects fall faster than lighter objects.**
It might seem strange, but objects that are heavy and objects that are light fall at the same speed. What can affect the speed of the fall is air resistance. This was made famous by Galileo. Astronaut David Scott showed it with an experiment on the Moon during the Apollo 15 mission in 1971, dropping a feather and a hammer from his hands. Because of the extremely small amount of lunar atmosphere, there was no drag on the feather, which hit the ground at the same time as the hammer.
- **Astronauts are weightless on the moon because there is no gravity above Earth.**
Every planet and moon has mass, and so every planet and moon exerts a gravitational force. That means there is gravitational attraction between the moon and a person standing on it. People have different weights on different planets. There are calculators online which will show you what you will weigh on different planets.

TEACHING TIP

For the purpose of this lesson, focus solely on the idea that gravity pulls all objects on Earth down. Students at this age are often more confused by the concept of Earth's sphere and center. Since students learn best with concrete terms and ideas, focus only on the observations of gravity pulling everything down to the ground – not the invisible force pulling things towards the center of a sphere we are standing on.

GRAVITATIONAL PULL

Gravity is the invisible force with which a planet or any other object draws things toward its center. The larger the mass of an object, the stronger its gravitational pull. The force of gravity keeps all of the planets in orbit around the sun which has the strongest gravitational pull in our solar system because it is so massive.

GRAVITY ON THE MOON

If you were on the moon, you would weigh about one-sixth of what you weigh on Earth. That is why astronauts on the moon were able to jump around carrying large weights on their backs.

TIPS FOR TEACHERS

- Make a class book with drawings your students make showing what would happen on Earth if there was no gravity.
- Read your students the fairy tale Chicken Little. Discuss with them why Chicken Little mistakenly thought the sky was falling and how gravity caused the acorn to fall from the oak tree.



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