

# Gravity Lesson Plan

**Learning Objectives:** Students will:

- Understand the meaning of gravity
- Students will use observation skills to draw conclusions and make predictions.

**Idaho State Standards Met:** K.S.3.1.1, 1.S.3.2.1, 2.S.3.2.2, 3.S.3.1.1, 4.S.3.1.1, 5.S.3.3.2, 6.S.3.3.3, 7.S.3.1.1, 9-10.B.3.1.2

**Background:** Gravity is a force of attraction that exists between any two masses, any two bodies, any two particles. Gravity is not just the attraction between objects and the Earth. It is an attraction that exists between all objects, everywhere in the Universe. Explain that on Earth, gravity is the force that keeps us on the ground. In space, things float because there is not enough gravity to pull them down.

**Attention getter:** Show the students a ball and ask them what would happen if you let go of the ball. Explain that if an object is held in one's hand and then released, it moves toward the center of the Earth. It is being pulled (as all other material objects are being pulled) by the force of gravity, the attraction between the masses of the two bodies, the object and the Earth. The movement of the object toward the Earth is called "falling."

**Activity:** Materials: A Styrofoam cup, a pencil, water, and a bucket.

1. Poke a hole in the side of the cup with the pencil. Make the hole about 2 inches above the bottom of the cup.
2. Cover the hole with your thumb and fill the cup with water.
3. Hold the cup up high and uncover the hole. Make sure the water flows into the bucket or do this experiment outside. What happened to the water? Did it gush out of the cup? Cover the hole with your thumb again and fill the cup.
4. Now make a hypothesis: If you drop the cup into the bucket, would the water flow more quickly or more slowly out of the hole in the cup?
5. Hold the cup high and drop it into the bucket. What happened to the water coming out of the hole?

**What happened:** When you're holding the cup, gravity pulls down on both the cup and water. But the only thing that moves is the water, because you keep the cup in place.

When you drop the full cup from a height, gravity pulls down on the cup and water equally and they fall at the same speed. As they descend together, there is no force pushing the water through the hole.