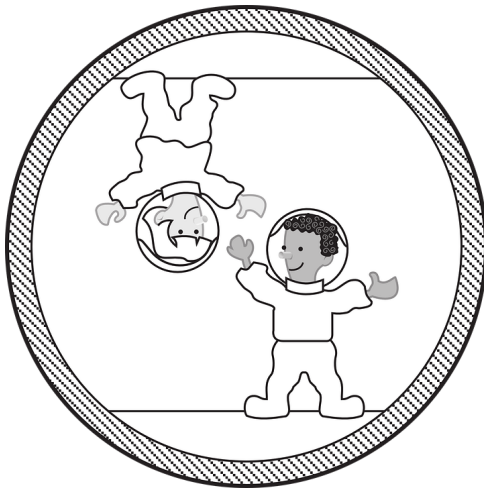


Age: 8+

G is for... Gravity

What is gravity? Gravity is a pulling force. It is the reason we are able to walk standing up with our feet on the ground. Gravity is also the reason that everything falls to the floor when it is not being held up by something or someone.

Example: Without gravity, if you were to kick a soccer ball or throw a baseball it would move in an upward direction never coming back down.



Fun facts about gravity:

- Objects of different mass will fall to earth at the same rate because of gravity [acceleration of objects with gravity = 9.807 meters per second squared]
- Gravity from the moon creates ocean tides.
- Mars is smaller than earth meaning that it also has less gravity. So if you weigh 100 lbs on earth, you would only weigh 38lbs on Mars.
- There is microgravity in space, meaning very little gravity. NASA astronauts in videos/pictures will always be seen “floating” in air because of significant lower gravity then compared to earth.

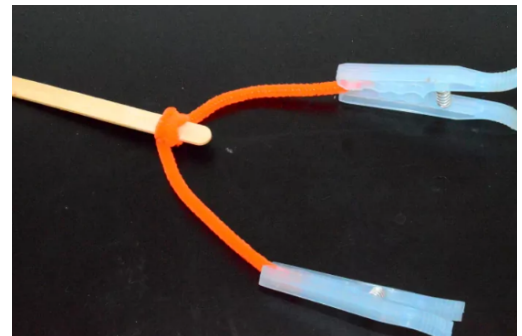
Experiment: Center of gravity experiment

Materials:

- a craft stick
- a chopstick
- a pipe cleaner (legs)
- 2 clothespins (shoes)

Instruction:

1. Get the craft/popsicle stick and draw a face on it
2. Next, retrieve the pipe cleaners (legs) and center it on the opposite end of the face
3. Wrap the pipe cleaner tightly around the bottom of the craft stick twice on each side.
4. Clip a clothespin (shoes) on the end of the pipe cleaner.
5. Clip the other clothespin on the other end of the pipe cleaner.
6. Carefully balance the end of the craft stick on the chopstick. Adjust the pipe cleaner's position on both sides to achieve balance.
7. Now that you've succeeded in balancing a craft stick, you can substitute the pipe cleaner and the clothespins with other materials to see the differences. You can even substitute the craft stick with a pencil or other types of sticks.



Job Exploration:

Astronaut: An astronaut is a type of scientist that takes a spaceship to outer space to study things like asteroids, the atmosphere, and the moon. To become an astronaut, you should have interests in physics, chemistry, geology, and biology.

Aerospace Engineering: Aerospace engineers design aircraft, spacecraft, satellites, and missiles. They also create and test prototypes to make sure that they function according to design.

Physics: Physicists study the ways in which various forms of matter and energy interact. Theoretical physicists may study the nature of time or the origin of the universe.

For more information about this activity and lesson vision:

<https://www.ducksters.com/science/gravity.php>

<https://www.rookieparenting.com/can-you-balance-a-craft-stick-on-a-chopstick-science-experiment/>