

The Force of Gravity

Amazing Fact

International Space Station astronauts return from missions having aged slightly less than they would have if they had remained on Earth!

Challenge 1

Space has an effect on nearly every part of the human body because there is less gravity to create the conditions we experience living on Earth.

Gravity is a type of force, which attracts a body towards the centre of the Earth. A force is a push or pull acting upon an object.

Other forces include:

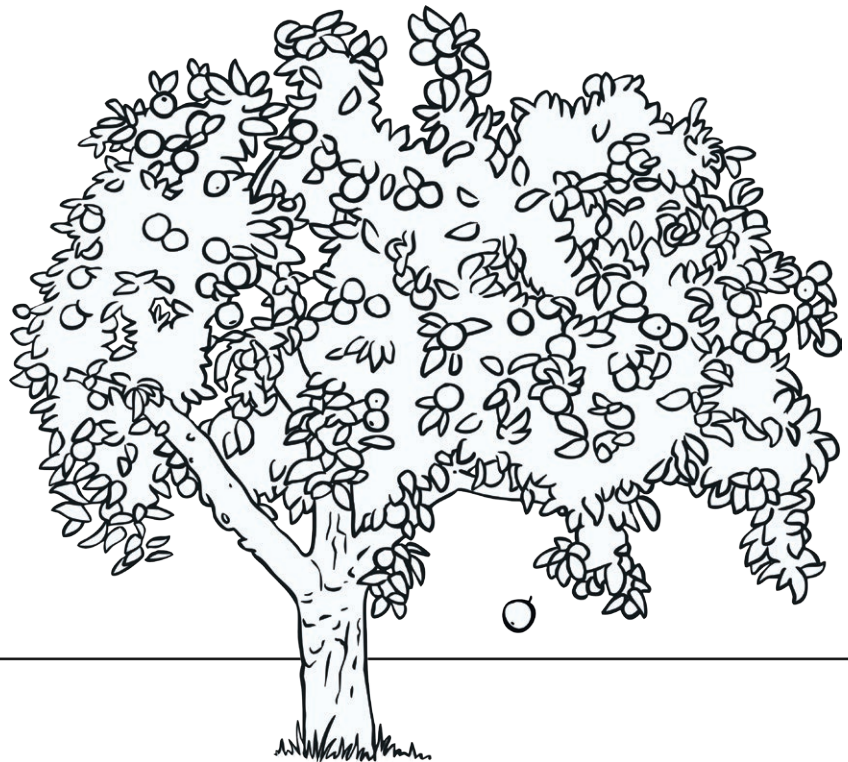
- **Air resistance** – the force of air pushing against a moving object.
- **Friction** - this resistance between two surfaces that are in contact with each other.

Look carefully at the illustrations on the activity sheet provided and use arrows to identify each example of the 3 forces.

Challenge 2

Using the Internet or non-fiction books, can you find out which famous scientist discovered the force of gravity?

How did they discover it?

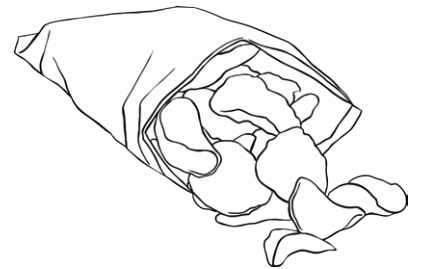
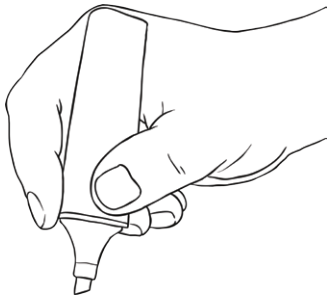


You could also try to find out:

- how this can possibly be true;
- what would happen if there were twins, and one stayed on Earth while the other went off on a high speed space mission and then returned to Earth.

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Draw an arrow to indicate the forces present in each image and label them.





The Force of Gravity Answers

<p>A diagram of a tree with a small fruit falling from it. An arrow labeled "gravity" points down from the top of the tree. Another arrow labeled "gravity" points down from the falling fruit. A third arrow labeled "air resistance" points up from the fruit.</p>	<p>A diagram of a cup. An arrow labeled "gravity" points down from the top of the cup. A second arrow labeled "gravity" points down from the center of the cup.</p>	<p>A diagram of a soccer player kicking a ball. An arrow labeled "gravity" points down from the player's head. Another arrow labeled "gravity" points down from the ball. A third arrow labeled "friction" points left from the ball.</p>
<p>A diagram of a hand holding a pen. An arrow labeled "gravity" points down from the pen. A second arrow labeled "friction" points left from the pen.</p>	<p>A diagram of a jar with a strawberry on the label. An arrow labeled "gravity" points down from the top of the jar.</p>	<p>A diagram of a crumpled bag. An arrow labeled "gravity" points down from the top of the bag. A second arrow labeled "friction" points right from the side of the bag.</p>
<p>A diagram of a skier. An arrow labeled "gravity" points down from the skier. A second arrow labeled "friction" points right from the skier's skis.</p>	<p>A diagram of a person sitting on a chair. An arrow labeled "gravity" points down from the person's head. A second arrow labeled "gravity" points down from the person's back. A third arrow labeled "friction" points right from the chair's legs.</p>	<p>A diagram of a cyclist. An arrow labeled "gravity" points down from the cyclist's head. A second arrow labeled "friction" points down from the cyclist's back. A third arrow labeled "air resistance" points left from the cyclist's front wheel.</p>