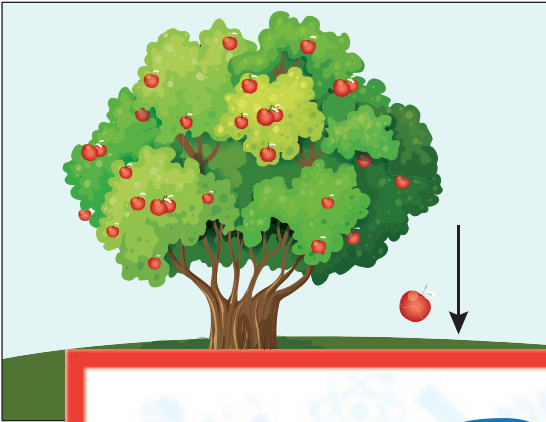


# Gravity: Shaping Our World

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Have you ever wondered why everything falls to the ground instead of floating away into space? Well, let's dive into the fascinating world of gravity and discover how it works.

A long time ago, a brilliant scientist named

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a similar way. It pulls objects toward the Earth because our planet is big and has lots of mass.

Gravity is a force inherent to all objects with mass, although its strength varies depending on an object's mass and proximity to other objects. In simpler terms, the closer you are to an object and the more massive that object is, the stronger the gravitational force it exerts. For instance, the Sun and the Earth have significantly more gravity than smaller objects, like a basketball or a pencil.

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You know that feeling when you drop your favorite ball, and it goes straight down to the ground? That's gravity in action! It makes everything fall to the ground.

Ever wondered why you weigh a certain number of pounds or kilograms? Well, that's because of gravity. Your weight is like the Earth's way of pulling you toward the ground. If you're heavy, gravity pulls you harder. But if you were on the Moon

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any air to breathe!

If the sun were less massive, the balance of gravitational forces that keep the Earth in orbit would be upset. This could cause Earth to veer off its path and potentially head into space.

If the Moon were to stop moving around the Earth, Earth's gravity would pull the Moon closer, causing it to move toward Earth.

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The Moon's gravitational attraction as it orbits Earth causes the shape of our planet to change slightly. This effect leads to the rise and fall of ocean tides, creating the familiar rhythm of high and low tides.

Interestingly, when gravity is present, all objects fall at the same rate, regardless of their mass. This is known as the equivalence principle. If you were to

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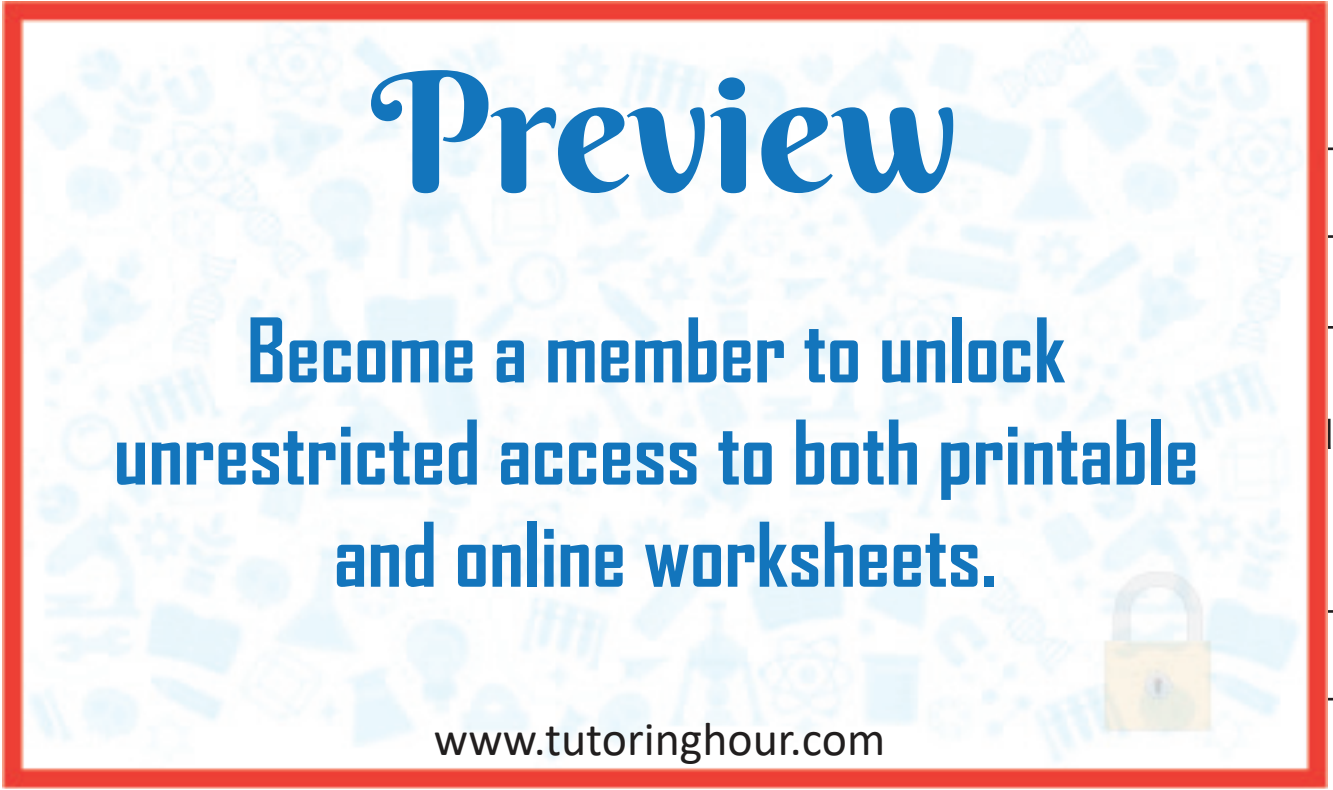
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- 1) Who was the scientist known for his groundbreaking work on gravity, and what was the name of his important book?

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- 4) What is the equivalence principle in gravity, and how does it affect the way objects fall?

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# Gravity: Shaping Our World

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- 5) Give one real-life example of how gravity affects our world, as mentioned in the passage.

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- 6)

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- e) Isaac Newton's book "Mathematical Principles of Natural Philosophy" introduced the three laws of motion.

- 7) Imagine you are holding a balloon filled with helium. You accidentally let go of the balloon. Does the balloon fall to the ground? Explain.

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