Name: _____

# 📖 Reading: What Is Gravity?

Gravity is the invisible force that pulls objects toward each other. It keeps your feet on the ground instead of floating into space, and it keeps the Moon circling Earth. Every object that has mass, from a grain of sand to a giant planet, has gravity. The more mass something has, the stronger its gravitational pull becomes. That is why you feel Earth's gravity much more strongly than the gravity of a small object like a pencil or a pebble.

Earth's gravity pulls everything toward its centre. When you drop a ball, it falls to the ground because gravity is constantly pulling it downward. This same force holds the air around our planet, keeps oceans in place, and even affects how mountains and rivers form over time.

Gravity does not only work on Earth. It shapes the entire universe. The Sun's enormous mass gives it a very strong gravitational pull, which keeps all the planets in orbit around it. Each planet is also moving forward in space, and that motion combines with gravity to create a smooth, curved path called an orbit. If gravity suddenly disappeared, the planets would fly off in straight lines into the darkness of space. If their forward motion stopped, they would spiral straight into the Sun.

Astronauts on the International Space Station (ISS) often appear to be floating, but they are not truly weightless. They are actually falling toward Earth at the same rate that the station moves forward. This constant falling and forward motion keeps them in orbit, a state called free fall. The same thing happens with the Moon. It is always being pulled toward Earth by gravity, but its forward motion keeps it travelling around our planet instead of crashing into it.

Gravity also affects how tides move on Earth, how stars form in distant galaxies, and how black holes are created. It is one of the four fundamental forces of nature, and it connects every object in the universe, no matter how big or small. The next time you drop something, look up at the sky and remember: the same force that keeps your pencil on the floor is also guiding entire planets through space.

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## Comprehension Questions

1. In your own words, what is gravity?

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2. Why do objects fall toward the ground?

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3. Why do the planets orbit the Sun?

4. What would happen if gravity disappeared?

5. Explain why astronauts feel weightless even though gravity is still acting on them.