

Name _____

Date _____

How Gravity Affects the Sun, Moon, and Earth



Gravity, is the natural phenomenon by which physical bodies appear to attract each other with a force proportional to their masses. Gravity is the agent that gives weight to objects that have mass and causes them to drop to the ground when released. Gravitation is an offshoot of a more fundamental phenomenon defined by general relativity, which suggests that space-time is curved according to the presence of matter through a not yet discovered mechanism.

The force of gravity affects the world in many ways. Gravity keeps the moon in orbit around us. The moon also has a gravitational effect on us. The moon's gravitational effect on us is rather weak, although it can be credited with the formation of tides in oceans all over the world.

The earth stays in orbit around the sun by the sun's gravitational force, although gravity can actually curve space, and the earth's orbit is merely its movement through space predominantly curved by the sun's intense gravity.

Every planetary body, including the Earth, is surrounded by its own gravitational field, which exerts an attractive force on all objects. Assuming a spherically symmetrical planet the strength of this field at any given point is proportional to the planetary body's mass and inversely proportional to the square of the distance from the center of the body.

Gravity affects Earth because gravity attracts everything and makes everything stable. That is why we cannot float because gravity is forcing us to stay on down.

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How Gravity Affects the Sun, Moon, and Earth Questions

- 1. Gravity is the natural phenomenon by which physical bodies tend to _____ each other.**
 - a) Repel
 - b) Attract
 - c) Avoid
 - d) None of the above

- 2. The gravity of the moon does not affect Earth because**
 - a) Its gravity is weak
 - b) The moon is too far from earth
 - c) The moon is Stationary
 - d) All of the above

- 3. Humans do not float on the surface of the earth because of**
 - a) The Earth's gravity
 - b) The Sun's gravity
 - c) The Moon's gravity
 - d) None of the above

- 4. The Earth orbits around the sun because of**
 - a) The Earth's gravity
 - b) The Sun's gravity
 - c) The Moon's gravity
 - d) None of the above

- 5. Formation of tides in the ocean is caused by**
 - a) The Earth's gravity
 - b) The Sun's gravity
 - c) The Moon's gravity
 - d) None of the above

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Answers

1. **b**
2. **a**
3. **a**
4. **b**
5. **c**

Explanation of Answers

1. **Gravity**, is the natural phenomenon by which physical bodies appear to attract each other with a force proportional to their masses.
2. Moon has a gravitational effect on Earth, such gravity, however is very weak.
3. Gravity effects earth because gravity attracts everything and make them stable. That's why humans cannot float because gravity is forcing us to stay down.
4. The earth is held in orbit around the sun by the sun's gravitational force.
5. Moon has a gravitational effect on us, such gravity, is however weak can be attributed to the formation of tides in the oceans of the world.

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How Gravity Affects the Sun, Moon, and Earth Writing Activity

1. What would happen if earth did not exert any force of gravity on us?

2. How does earth orbits around Sun? Explain by the concept of gravity.

3. How are tides formed in oceans?

4. Explain the concept of gravitational force.
