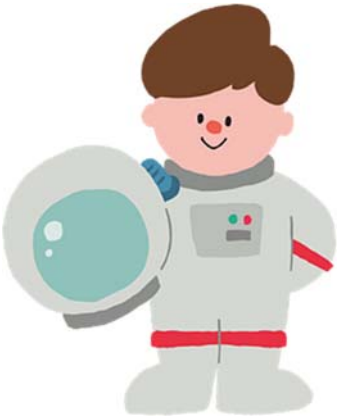
Name _____

Gravity Scenario: What Would Happen?

Instructions: Read each scenario carefully. Then, write a short explanation (2–4 sentences) describing what would happen and why, based on the effects of gravity. Use correct scientific reasoning in your answers.

Scenarios

1. A baseball is thrown straight up on the Moon. What happens to it after it leaves the player's hand?
2. An astronaut drops a wrench while repairing a satellite in orbit around Earth. Will it fall straight down to Earth or do something else? Explain.
3. A planet twice the size of Earth but with the same density is discovered. How would your weight there compare to your weight on Earth?
4. A comet passes very close to Jupiter. How will Jupiter's gravity affect its path?
5. A space station suddenly stops orbiting and becomes motionless above Earth. What will happen next?
6. A light beam passes near a black hole without entering it. Will its path be affected? Why or why not?
7. You are standing at the top of Mount Everest. Is the pull of Earth's gravity on you stronger, weaker, or the same as at sea level?
8. A small asteroid drifts slowly toward Mars from a great distance. What role will Mars's gravity play as it gets closer?



Bonus Challenge:
Choose any one scenario and rewrite it so that gravity would have no effect in the new version. Explain how that changes the outcome.