

Name: _____ Date: _____

Shatter Reality: 3rd Grade Modern Physics Quiz

Particle surfing, stretchy clocks, and invisible forces — students evaluate how the tiniest pieces of our universe challenge everything they see.

1. If you could ride on a magical skateboard moving almost as fast as light, why would you age slower than your friends back on Earth?

- A. The wind makes the clock hands move backward
- B. Fast motion stretches out time like a rubber band
- C. Skateboards don't have batteries for clocks
- D. Gravity disappears when you go fast

2. Imagine a giant bowling ball sitting on a soft trampoline. The way the ball curves the trampoline's fabric is how mass curves ____.

- A. The ocean floor
- B. The atmosphere
- C. Spacetime
- D. Magnetic fields

3. In the world of the very small, a particle can sometimes act like a solid marble and other times act like a wiggly wave in a pool.

- A. True
- B. False

4. If you throw a ball at a solid brick wall, it bounces back. But in 'Quantum Tunneling,' what might a tiny particle do instead?

- A. Turn into a bird and fly over
- B. Magically appear on the other side of the wall
- C. Explode the wall into dust
- D. Dissolve into a liquid

5. A Superconductor is a special material that, when frozen very cold, allows electricity to flow with zero ____.

- A. Speed
- B. Resistance
- C. Light
- D. Weight

6. The Uncertainty Principle says that if you know exactly where a tiny electron is hiding, you cannot know exactly how fast it is moving.

- A. True

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B. False

7. Why do scientists use 'Probability Clouds' to describe where an electron is, instead of drawing a specific circle path?

- A. Electrons are too blurry to see
- B. The electrons keep changing colors
- C. We can only predict the area where they might be
- D. Clouds are easier to draw than circles

8. The 'Photoelectric Effect' is the reason your calculator or a garden light can turn ____ into electricity.

- A. Sound
- B. Shadows
- C. Light
- D. Wind

9. Which of these is a real-world tool that uses modern physics to help your parents find their way to a new restaurant?

- A. A paper map
- B. GPS Satellites
- C. A compass
- D. Looking at the stars

10. Black holes are parts of space where gravity is so strong that even light, the fastest thing in the universe, gets trapped.

- A. True
- B. False