

Name \_\_\_\_\_

## Cosmic Collisions: Can Comets Collide with Earth?

### Short Answer Key

1. Comets have highly elliptical orbits because they originate in regions far from the Sun, such as the Kuiper Belt and the Oort Cloud. Earth's orbit is nearly circular because it formed closer to the Sun and was influenced by gravitational forces.
2. The Tunguska event in 1908 involved the explosion of a comet or asteroid in Earth's atmosphere over Siberia. It flattened trees and caused shockwaves but left no impact crater. This event raised awareness about the potential dangers of cosmic collisions.
3. Astronomers track NEOs, including comets, using telescopes and observatories. This monitoring is crucial for identifying potential threats and calculating their trajectories accurately.
4. Mitigation measures may include deflection strategies, such as launching spacecraft to change the course of a comet, or evacuation plans for areas at risk. International cooperation is essential in developing and implementing these measures.
5. Comets are considered remnants from the early solar system, preserving information about its formation and evolution. Studying comets helps scientists learn about the composition and conditions of the early solar system.

