

Comets

By Cindy Grigg

¹ Our solar system consists of the sun and the eight planets. But that's not all. Comets also are bound by gravity to orbit around our sun. They are part of the solar system, too.

² A comet is an icy body that orbits the sun. At the center of a comet is a small, solid ball called a **nucleus**. It is made of several gases, water, and dust that are frozen into a kind of dirty snowball. Sometimes it can also be made of rock. The nucleus is only a few kilometers or a few miles in diameter. A cloud of dust and gases called a **coma** surrounds the nucleus. Together, the nucleus and the coma form the comet's head.

³ When the comet is far from the sun, it travels at about 2,000 miles per hour. As it gets closer to the sun, its speed increases. It may travel at over 100,000 miles per hour! As a comet approaches the sun, its icy body begins to melt, releasing gas and dust. The solar winds push against the coma, making a tail that streams from the nucleus. The **tail** of a comet may extend millions of kilometers into space. It is usually curved because of the movement of the comet.

⁴ Because the tail of a comet is blown outward by the solar wind, the tail always points away from the sun. As the comet nears the sun, the tail is behind it. However, as the comet moves away from the sun, the tail is in front. The tails of some comets are large enough and reflect enough light to be visible from Earth. As the comet continues its orbit and gets farther from the sun, the tail disappears from sight.

⁵ Some comets make many revolutions around the sun. The most famous returning comet is Halley's Comet. It revolves around the sun once every 76 years. It was named for Edmund Halley who discovered it in 1682. Its orbit of about 7 billion miles takes it just past Neptune. The tail of Halley's Comet has been measured at about 93 million miles. That's the same distance from the Earth to the sun! Halley's Comet last came near Earth in 1986 and will return again in 76 years. Other comets make a single orbit before vanishing forever into outer space.

⁶ Meteor showers sometimes occur when the Earth passes through the dusty orbit of a comet. Some happen on a regular basis. Every year, the Perseid meteor shower occurs in August, and the Leonid meteor shower happens in November. Meteor showers are seen on Earth when the dust from a comet passes into Earth's atmosphere. The dust may have been left there in space for hundreds of years!

⁷ As comets pass through the solar system, they can be broken into pieces. In 1994, comet Shoemaker-Levy 9 was broken into 20 pieces by Jupiter's gravity. Each of these pieces collided with Jupiter in one of the most spectacular shows in recorded history.



Comets

1. Name the three parts of a comet. _____ _____	2. Why does the tail always point away from the sun? <input type="radio"/> A Because you can't see it pointing toward the sun <input type="radio"/> B Because of the solar wind <input type="radio"/> C Because of opposite magnetic forces
3. What is a comet made of? <input type="radio"/> A Ice made from frozen gases, water, and dust <input type="radio"/> B Fire and ice <input type="radio"/> C Moon dust	4. Does a comet always travel at the same speed? Explain. _____ _____
5. How often is Halley's Comet seen from Earth? <input type="radio"/> A Every 76 years <input type="radio"/> B Every century <input type="radio"/> C Every 25 years	6. In what year will Halley's Comet be seen again? _____ _____
7. How long is the tail on Halley's Comet? <input type="radio"/> A As long as from the sun to Earth <input type="radio"/> B 93 million miles <input type="radio"/> C Both a and b are correct	8. What causes a meteor shower? <input type="radio"/> A Large asteroids entering Earth's atmosphere <input type="radio"/> B Stars <input type="radio"/> C The tiny pieces of dust left behind by a comet

