

## Motivation

- **What do you know about the solar system? What kinds of things can be found there?**  
*(Answers will vary. Encourage moons, stars, planets, orbits, galaxies, and all other related entities.)*
- **What is the solar system?**  
*(One Webster's dictionary defines the solar system simply as "the sun and all the heavenly bodies that revolve around it." NOTE: Do not identify the names or numbers of planets at this point in the discussion.)*
- **How many planets make up our solar system?**  
*(There are nine planets.)*
- **Can you name them? Which one is this?**  
*(They are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.)*
- **What are their locations in relation to the sun? How does this affect the planets?**  
*(The planets, in order of proximity to the sun, are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. Student answers with regards to distance from the sun might include references to temperature, climate, or other physical aspects of the planets that might be related to proximity to the sun.)*
- **What else do you know or think is interesting about the solar system?**  
*(Answers will vary.)*

## Development

- **What does Mercury look like?**  
*(Mercury is barren, covered with craters and cliffs, and looks like the Earth's moon. Its craters can stretch over 25 miles wide and its cliffs run along the surface of the planet. The cold polar regions of Mercury are said to form ice, though much less than on Earth.)*
- **Where is Mercury?**  
*(Mercury is the planet that is closest to the sun and is about 60 percent closer to the sun than Earth is. Mercury is 36 million miles from the sun, while Earth is 93 million miles away.)*
- **How big is Mercury?**  
*(Mercury is the eighth largest planet, with Pluto being the smallest. It has a radius of 1,515 miles, whereas Earth has a radius of 3,960 miles and is about 2.6 times bigger across than Mercury.)*

- **How did the planet Mercury get its name?**  
*(It is named after Mercury, the Roman god of commerce, travel, wrestling, and thieving. Mercury was originally based on the Greek god Hermes, who was the speedy messenger god, often portrayed wearing a hat and shoes with wings on them. The planet was probably named Mercury because it changes position in the sky more quickly than do the other planets.)*
- **How long does it take Mercury to orbit the sun?**  
*(Mercury takes up to 88 days to go around the sun, as compared to the 365 days it takes Earth to circle the sun.)*
- **What is the temperature on Mercury?**  
*(Mercury's temperature varies greatly because nights on Mercury last for about 3 months, and there is hardly any atmosphere to hold in heat. On the side that faces the sun, temperatures can reach 750 degrees Fahrenheit. On the side turned away from the sun, the temperature often falls to -240 degrees Fahrenheit. The almost 1000 degree range in temperature is the widest range experienced by any planet in the solar system.)*
- **What would I weigh on Mercury—more or less than on Earth?**  
*(Answers will vary. People weigh different amounts on different planets because of gravity. Gravity is a force that "pulls" between objects. Mercury has a much smaller mass than Earth, so its gravitational pull on our body is a lot less. As a result, a person weighing 100 pounds on Earth, would only weigh about 28 pounds on Mercury.)*

## The Planet Mercury Quiz

1. D. Oceans
2. A. Closest
3. A. 36, 93
4. C. Eighth
5. B. 2.6
6. C. Hermes
7. B. 4, 3
8. D. 750
9. B. —240
10. D. 84
11. B. Gravity