

What Do You Remember?

- Using your own words, define the terms “Universe,” “solar system,” and “astronomy.” (8.1) **K/U**
- Identify the parts of the Sun (Figure 1). (8.2) **K/U**

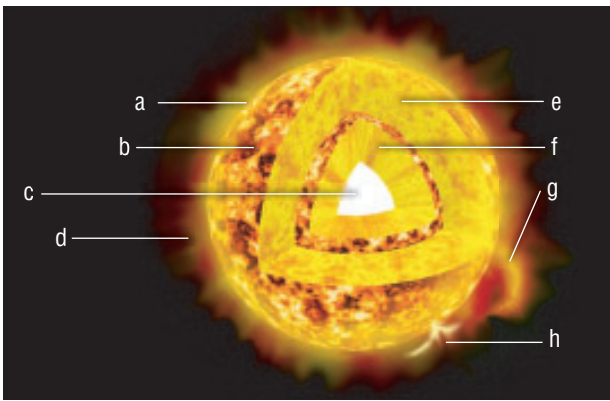


Figure 1

- Describe the way the stars, the Moon, and the planets move across the sky throughout the night. (8.8) **K/U**
- Draw a diagram illustrating how the phases of the Moon change throughout a month. (8.5) **K/U C**
- Write a paragraph retelling a First Nations legend about a constellation visible in the northern hemisphere. (8.6) **K/U C**
- Make a table comparing the terms “meteoroid,” “meteor,” and “meteorite.” (8.3) **K/U**
- Describe two reasons humans have sent artificial satellites into orbit around Earth. (8.11) **A**

What Do You Understand?

- What is an asteroid? Where in the Solar System would you find asteroids? (8.3) **K/U**
- What is a comet? Where in the Solar System would you find comets? (8.3) **K/U**
- What is retrograde motion and how does it occur? (8.9) **K/U**
- Describe how the Moon and the Sun cause tides on Earth. (8.5) **K/U**
- Explain how the particles released by the Sun cause the aurora borealis and the aurora australis. (8.2) **K/U C**
- What is the difference between a lunar eclipse and a solar eclipse? (8.5) **K/U**

- Explain how to determine the altitude and the azimuth of an object in the night sky. (8.9) **K/U T/I**
- Describe two ways in which radiation from the Sun supports life on Earth and two ways in which the Sun causes harm to people and technologies on Earth. (8.2) **C A**
- What are RADARSAT-1 and -2, and what do they do? (8.11) **K/U**

Solve a Problem

- How do the rotation and the revolution of Earth affect the apparent motion of celestial objects in the night sky? (8.5) **T/I**
- Compare the terrestrial planets with the gas giant planets. List two similarities and two differences. (8.3) **K/U**
- (a) Compare the model that people used to explain the Solar System 1500 years ago to the one we use today.
(b) Do you think the geocentric model was flawed? Explain your reasoning. (8.5) **K/U C**
- Your friend tells you that Earth is hot in summer and cold in winter because Earth is closer to the Sun in summer and farther in winter. Write a letter to your friend explaining the true causes of the seasons. (8.5) **K/U C**
- How is Mars similar to Earth? How is it different? (8.3) **K/U**
- Even without written records, scientists know that ancient peoples observed the motions of celestial objects in the night sky. How do they know this? (8.6) **T/I**
- A company wants to launch a series of communication satellites so that they continue to orbit above the same location on Earth at all times. At approximately what altitude would these satellites need to orbit Earth? Explain. (8.11) **T/I**
- You observe a bright object in the night sky and want to research what it is. Which two measurements would you need to make to describe its position to an astronomer? What else would you need to know aside from the object’s position? (8.8) **T/I**

25. Imagine you are lost in the woods of northern Ontario. What star could you use as a navigational guide? How could you find that star among the thousands of stars that are visible on a clear night? (8.8) **T/I**

Create and Evaluate

26. A satellite with booster rockets is slowing down while in Earth orbit. How would this affect the satellite's orbit? How could astronomers fix this problem? (8.11) **T/I**
27. Imagine you are the head of the Canadian Space Agency. In your notebook, list the following research projects in order of priority. Explain your reasoning. (8.11) **C A**
- a spacecraft designed to analyze atmospheric conditions on Mars
 - a space station for astronauts to perform experiments in Earth orbit
 - a spacecraft designed for passage to the Moon to analyze the Moon's surface
 - a spacecraft designed to collect data about the atmosphere of Venus
28. More than 2200 years ago, Aristarchus of Samos, an ancient Greek astronomer, suggested that the Sun was the centre of the Solar System. It took more than 1800 years for this theory to be revived by Copernicus. Why do you think it took so long for people to accept that the Sun was at the centre of the Solar System? (8.6) **T/I**
29. A new object is discovered in the Solar System and needs to be classified as a comet, an asteroid, a planet, or a dwarf planet. What information about the object would you want to collect to properly classify it? (8.3) **T/I**
30. If you were to build a machine that was solar powered, where on Earth would you build it? Why? (8.5) **T/I**

Reflect on Your Learning

31. In what ways could you use your new knowledge of the positions of the objects in the night sky?
32. How do you think you would feel if you discovered a comet or asteroid? What name would you give it and why?
33. Identify one topic covered in this chapter that you found difficult to understand.
- (a) Why was this topic difficult for you to understand?
- (b) What did you do to help overcome your difficulty?

Web Connections



34. Research the constellations that are visible in the night sky in a country in the southern hemisphere, such as Australia (Figure 2). **T/I**



Figure 2

35. Research some of the star stories that North American Aboriginal peoples have been telling for hundreds of years. How do they compare with the stories from Ancient Greece? Can you see any similarities in the stories? **T/I**
36. Research and write several paragraphs about how tides affect the lives of people who live and work on or near the sea. **T/I C A**



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