



Science Virtual Learning

6th Grade Science:

Orbital Periods

May 1, 2020



6th Grade Science

Lesson: May 1, 2020

Objectives/Learning Targets:

- Students will display orbital periods of the solar system's objects.

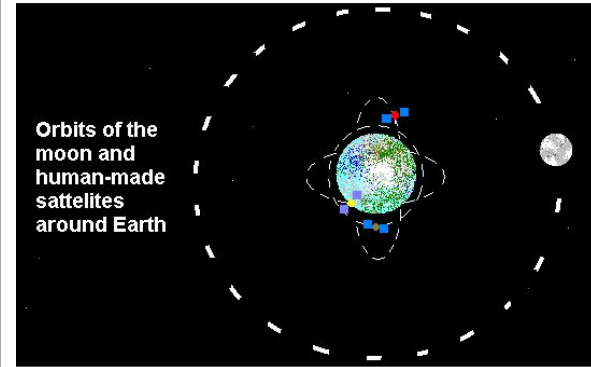
Essential Question:

- What is the appropriate way to display orbital periods of objects in our solar system?

Warm Up

- First, record your answers to the questions below on a piece of paper.

1. What is an orbit?
2. What causes an orbit to happen?
3. How long does it take the Earth to orbit (revolve) the Sun?
4. What is the difference between a rotation and revolution?



- Next, watch this [video: The Rotation and Revolution of Earth](#) and compare your answers to the information you learn from the video.

Warm Up Answer Key

1. What is an orbit?

Answer: An orbit is a regular, repeating path that an object in space takes around another one.

2. What causes an orbit to happen?

Answer: Orbits are the result of a perfect balance between the forward motion of a body in space, such as a planet or moon, and the pull of gravity on it from another body in space, such as a large planet or star. An object with a lot of mass goes forward and wants to keep going forward; however, the gravity of another body in space pulls it in. There is a continuous tug-of-war between the one object wanting to go forward and away and the other wanting to pull it in.

3. How long does it take the Earth to orbit the Sun?

Answer: Earth orbits the Sun at an average distance of 149.60 million km (92.96 million mi), and one complete orbit takes **365.256 days**. This is also called a revolution and an Earth year.

4. What is the difference between a rotation and revolution?

Answer: A rotation is the amount of time it takes a planet to rotate one time on its axis. (a day)
A revolution is the amount of time it takes a planet to orbit one time around the Sun. (a year)



Key Terms

orbit- the circular path of an object as it revolves around another object

revolution- the orbiting of an object around another object. One complete revolution around the sun is called a *year*.

rotation- one complete spin of a planet on its axis; i.e. a *day*.

Practice 1

- Read the NASA article: [How Long is a Year on Other Planets?](#)



- On a sheet of paper, use facts from the article to make a data table displaying the length of a year (orbital period) of the planets in the solar system.

**Hint: You need
9 rows and 2
columns!**

Planet	Orbital Period (in Earth Days)
Mercury	88
Venus	225
Earth	365
Mars	687
Jupiter	4,333
Saturn	10,759
Uranus	30,687
Neptune	60,190

Practice 1

Answer Key

- The categories belong in the left column of the data table.
- Notice a unit of measure is given. In this case it's "Earth Days". Always include a unit of measure for numerical data.

Use your data table
to answer these
questions on your
piece of paper.

Practice 2

1. Which planet has the longest orbital period?
2. How many Earth days does it take Jupiter to orbit the Sun?
3. Which planet has an orbital period of 10,759 days?

Practice 2 Answer Key

1. Which planet has the longest orbital period?

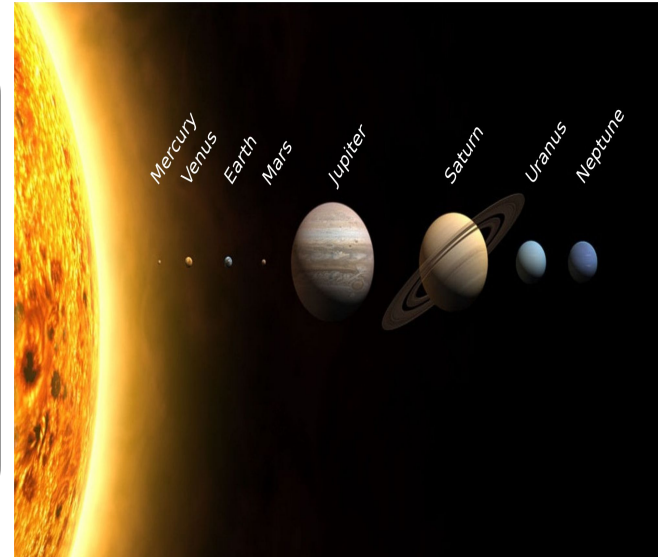
Answer: Neptune has the longest orbital period of 60,190 days.

2. How many Earth days does it take Jupiter to orbit the Sun?

Answer: It takes 4,333 Earth days for Jupiter to orbit the Sun.

3. Which planet has an orbital period of 10,759 days?

Answer: Saturn takes 10,759 days to orbit the Sun.





Additional Practice

1. Watch the [Study Jams](#) video, then test your knowledge with the quiz.
2. Read the ReadWorks article [How Long Is One Day On Other Planets.](#)
3. Watch the mini clip, read the “Let’s Break it Down” articles and answers the discussion questions on [Earth's rotation and orbit.](#)

Summary/Reflection

(Fill in the blanks)

- An _____ is a regular, repeating path on object in space takes around another.
- A _____ is the amount of time it takes a planet to rotate one time on its axis. A _____ is the amount of time it takes a planet to orbit one time around the Sun.

Summary/Reflection

Answer Key

- An orbit is a regular, repeating path on object in space takes around another.
- A rotation is the amount of time it takes a planet to rotate one time on its axis. A revolution is the amount of time it takes a planet to orbit one time around the Sun.