

Name/Number: \_\_\_\_\_

Date: \_\_\_\_\_

## Earth, Moon and Sun Study Guide

**Part A:** Define the following terms:

satellite: an object that moves around another object in space; the moon is a satellite of the Earth

orbit: the path that an object such as a planet makes as it revolves around a second object; the Earth has an elliptical (oval) orbit

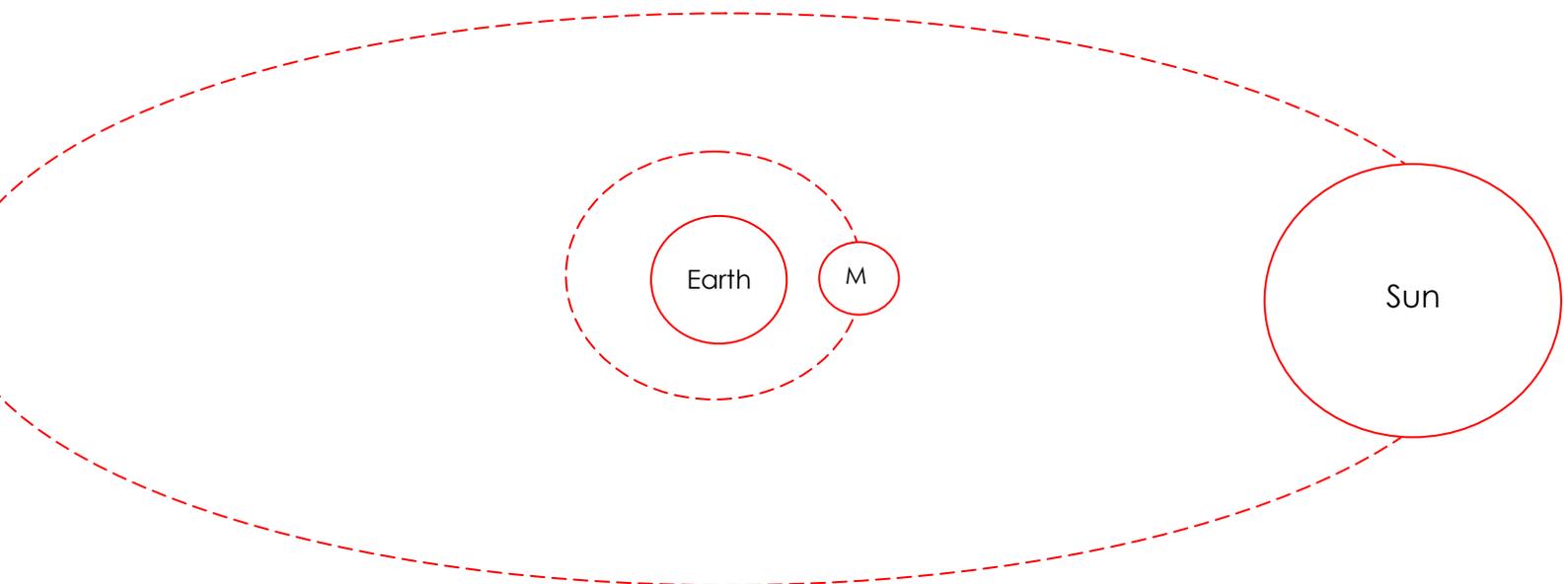
revolve: the movement of any object in an orbit; such as the Earth moving around the sun or the moon moving around the Earth

rotate: the movement of a planet or another object as it turns on its axis.

**Part B:** Draw and Label

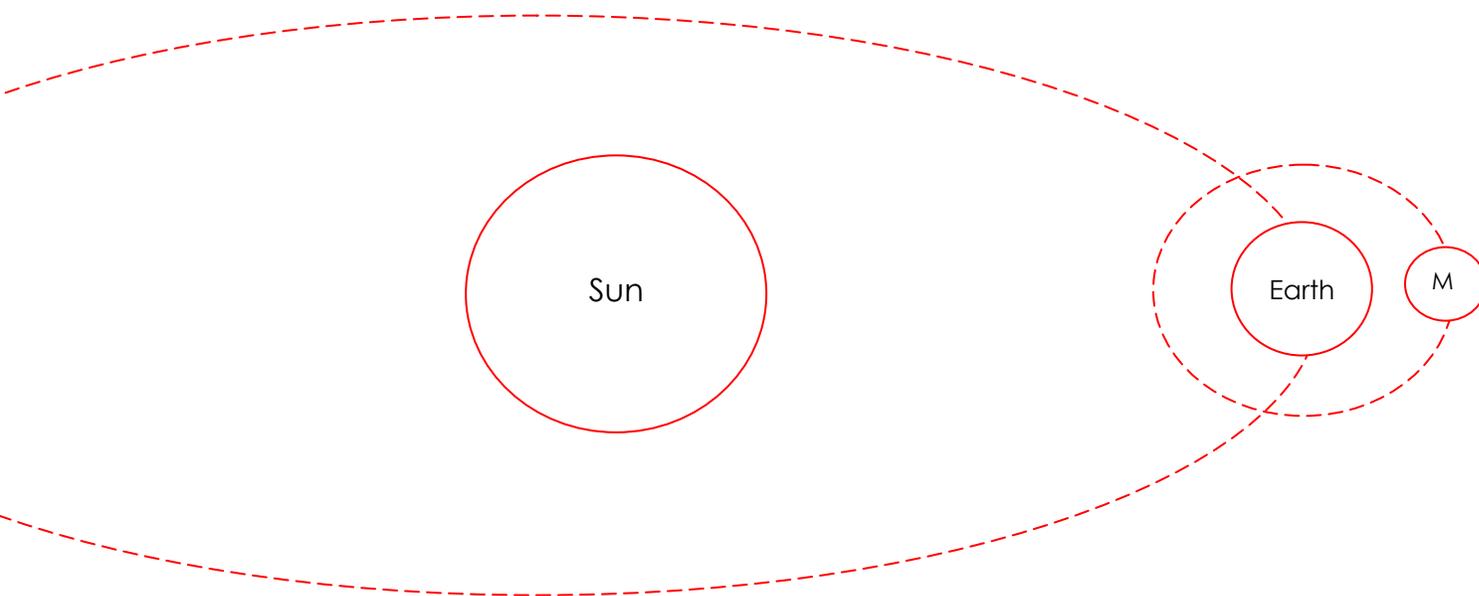
What is the Earth-centered model of the solar system? A model of the solar system where the Earth is the center and everything revolves around it.

Draw it below. (not to scale)



What is the Sun-centered model of the solar system? A model of the solar system where the sun is the center and everything revolves around it.

Draw it below. (not to scale)



**Part C:** Matching - Match the astronomer with his description.

- |                     |  |
|---------------------|--|
| <u>C</u> Aristotle  | a) He was born in Poland. He discovered that the Earth travels around the sun once a year.                     |
| <u>B</u> Ptolemy    | b) He was born in Egypt but lived in Greece most of his life. He created models of the sun, moon, and planets. |
| <u>A</u> Copernicus | c) He did not believe in empty space. He was born in Greece.   |
| <u>D</u> Galileo    | d) He made the first telescope and proved that the Earth and other planets moved around the sun.               |

**Part D:** Write the astronomers who believed in each of the models listed.

Earth-Centered	Sun-Centered
<u>Aristotle</u>	<u>Copernicus</u>
<u>Ptolemy</u>	<u>Galileo</u>

**Part E:** Shade in characteristics of the Earth, Moon, and Sun.

Characteristic of Earth - **BLUE**

Characteristic of Moon - **RED**

Characteristic of Sun - **YELLOW**

has large amounts of life-supporting water - <b>B</b>	has the most objects in orbit around it - <b>S</b>	men landed here for the first time in 1969 - <b>M</b>
has extremes of temperature - <b>M</b>	missions to explore this object were called the Apollo missions - <b>M</b>	its atmosphere is called a corona - <b>S</b>
has a protective atmosphere that blocks out damaging rays - <b>B</b>	1/4 the size of the planet that it revolves around - <b>M</b>	goes through eight different phases in a 28 day cycle - <b>M</b>
has no atmosphere - <b>M</b>	this object is actually a medium-sized star - <b>S</b>	experiences seasons due to the tilt of its axis - <b>B</b>
this is the largest object in our solar system - <b>S</b>	the third of our eight planets that revolve around the sun - <b>B</b>	provides heat and energy to surrounding objects - <b>S</b>
the only object that we know of that has life in our solar system - <b>B</b>	this object is about the same size as the planet Venus - <b>B</b>	about 110 times the size of Earth - <b>S</b>

**Part F:** Short Answer

How long is one of Earth's revolutions around the sun? 365<sup>1</sup>/<sub>4</sub> days

How long is one of the moon's revolutions around the Earth? 29 days/1 month

Why does the Earth experience seasons while it revolves around the sun?

The Earth is tilted on its axis. (axial tilt)

If it is summer in the Northern Hemisphere, what season is it in the Southern Hemisphere? winter

What causes the phases of the moon?

The phases of the moon are caused by its position relative to the Earth and sun. We see the sun's reflected light on the surface of the moon.

How has our understanding of the solar system changed over time?

Our understanding of the solar system has changed from an Earth-centered model to the sun-centered model.

How has NASA added to our understanding of the moon?

NASA launched the Apollo missions. They took pictures, conducted experiments, and brought back samples of the moon's surface.

How will our understanding of the Earth, moon and sun continue to change?

Our understanding will continue to change with new scientific discoveries.

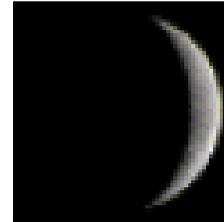
**Part G:** Label the phases of the moon using the pictures below.



First  
Quarter



Waxing  
Gibbous



Waxing  
Crescent



Full  
Moon



New  
Moon



Waning  
Gibbous



Waning  
Crescent



Last  
Quarter

**Word Bank**

Waxing Crescent	Waning Gibbous	Full Moon	Waning Crescent
Last Quarter	First Quarter	New Moon	Waxing Gibbous