**6.E.1.1 Study Guide - Moon, Seasons, Tides, and Eclipse**

1. Know the definitions:

* 1. Rotation: ***The spinning of Earth on its axis***
  2. Revolution: ***The Earth’s yearly orbit around the Sun***
  3. Axis: ***The imaginary line around which a planet such as Earth spins***
  4. Waxing: ***Illumination of the moon increases***
  5. Waning: ***Illumination of the moon decreases***
  6. Crescent: ***Less than ½ of the moon is visible***
  7. Gibbous: ***More than ½ of the moon is visible***
  8. Solar Eclipse: ***When the moon temporarily blocks the sunlight reaching Earth. The Moon is between the Earth and Sun.***
  9. Lunar Eclipse: ***When the Earth’s shadow falls on the Moon.***
  10. Elliptical: ***The shape of the Earth’s orbit around the Sun***

2. How many days does it take for the Earth to complete one rotation and one revolution?

1. Rotation: ***24 hours or 1 day***
2. Revolution: ***365 1/4 days***

3. Why do we have leap year?

***We have leap year because it takes 365 ¼ days for the Earth to Orbit the Sun. After 2 years, we are ½ a day off. After 3 years we are ¾ of a day off. On the fourth year we are 4/4 or a full day off. To make up for this, we add an extra day in February every 4 years.***

4. Know the phases of the Moon based on the position of the sun.



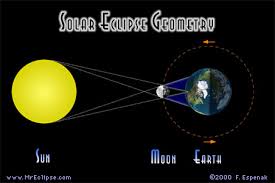
5. What causes the phases of the Moon?

***The Moon’s revolution around the Earth in relation to the Earth***

6. What is the difference between a Solar Eclipse and a Lunar Eclipse?

***A solar eclipse occurs during the New Moon phase. The Moon casts a shadow, and when the Earth is in the Umbra or Penumbra of the shadow, that portion of the Earth has an eclipse of the Sun. In the umbra it is a total eclipse, and in the penumbra it is a partial eclipse. A lunar eclipse occurs during the full moon phase. The Earth casts a shadow that the Moon comes into. In the umbra of the Earth’s shadow it is a total eclipse of the moon, and in the penumbra of the Earth’s shadow it is a partial eclipse. Due to the moon’s elevation, we do not have an eclipse every time the Moon is in the new or full moon phases.***

7. Which type of eclipse is shown below?



***Solar Eclipse***

8. Which phase of the Moon occurs at the same time a Solar Eclipse occurs?

***New Moon***

9. Which phase of the Moon occurs at the same time a Lunar Eclipse occurs?

***Full Moon***

10. Why do we only see one side of the Moon?

***The Moon’s rotation and revolution take the same amount of time***

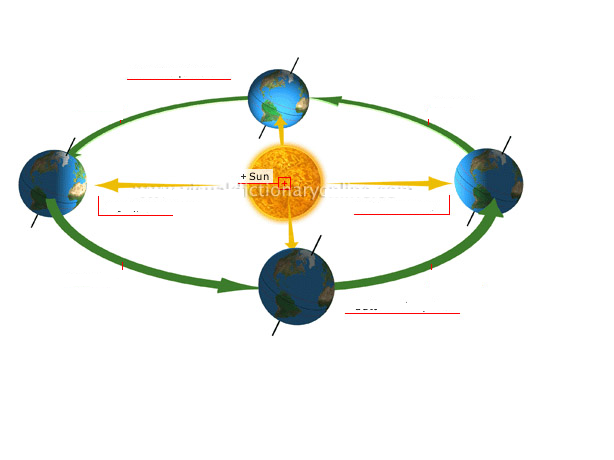
11. What causes day and night

***The Earth rotating on its axis.***

12. Why does the Earth have seasons?

***Tilt of the Earth as it orbits the Sun.***

13. Given a picture of the Earth in relation to the Sun, determine the season.



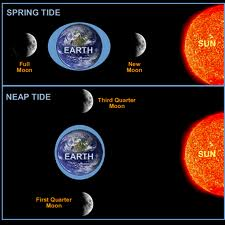
Fall

Spring

Summer

Winter

14. Given a picture of the Earth, Sun, and Moon, know which type of tide is occurring.



***Neap tide or low tide***

***High Tide or Spring Tide***