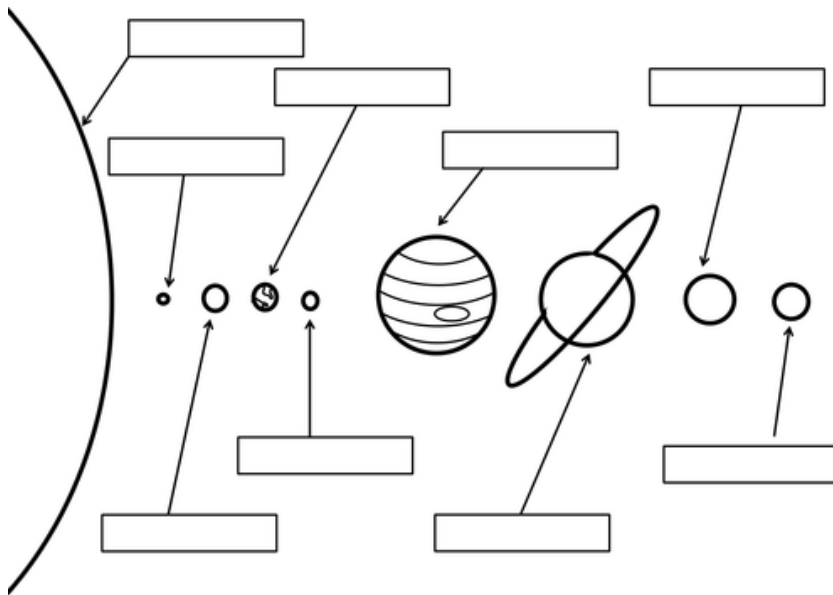


Astronomy Study Guide

Ms. Gately 18-19

Solar System:

- 1) There are _____ planets in the solar system.
- 2) The _____ is at the center, with all planets having an _____ (oval) orbit. The correct organization of the solar system was discovered by Nicolaus _____ in 1543.
- 3) Label the sun & planets below:



- 4) The two planets that do NOT have moons are _____ & _____
- 5) Pluto is NOT a planet, and is considered a _____, because it is too _____ and has not “cleared its _____” (meaning it does not have enough gravitational pull to clear its path of other objects as it orbits in the sun)
- 6) Our solar system is in the _____ galaxy.

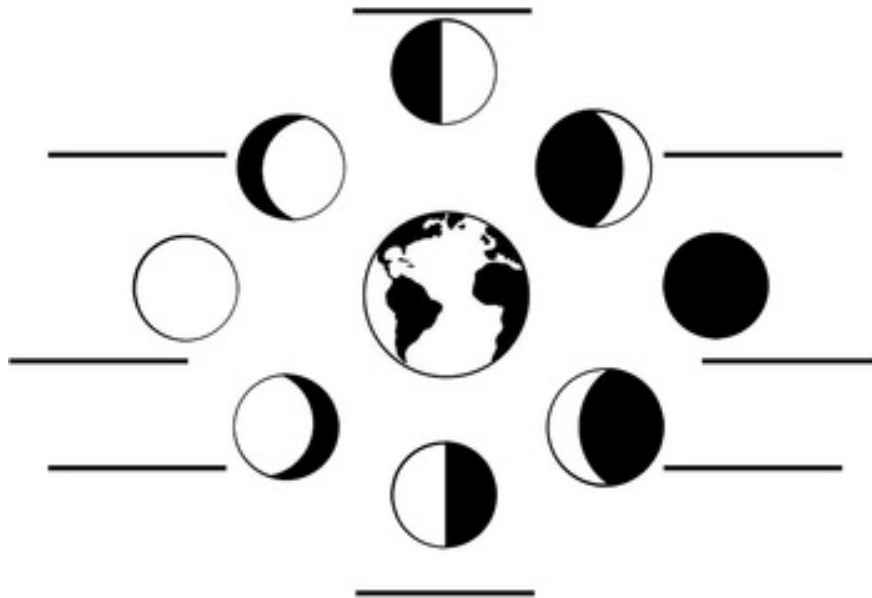
Sun-Earth-Moon:

- 7) The Earth orbits the sun every _____ days, which is equal to one _____.
- 8) The Earth spins on its axis once every _____, which is equal to one _____.
- 9) The moon orbits the Earth every _____, which is equal to one _____.

Moon Phases:

10) The moon cycles through all of its phases every _____ days (once/month).

11) Label the moon phases below:



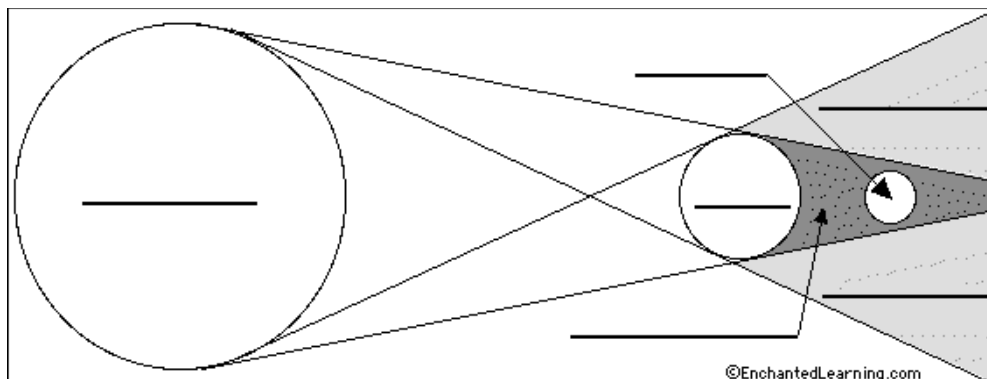
Eclipses:

12) An eclipse occurs when one *celestial body* (space object) blocks _____ from another celestial body.

13) A lunar eclipse occurs when the Earth's _____ blocks the moon.
This occurs during a _____ Moon.

- a. The Earth casts two shadows that fall on the moon during a lunar eclipse:
- b. _____ = full, dark shadow
- c. _____ = partial outer shadow

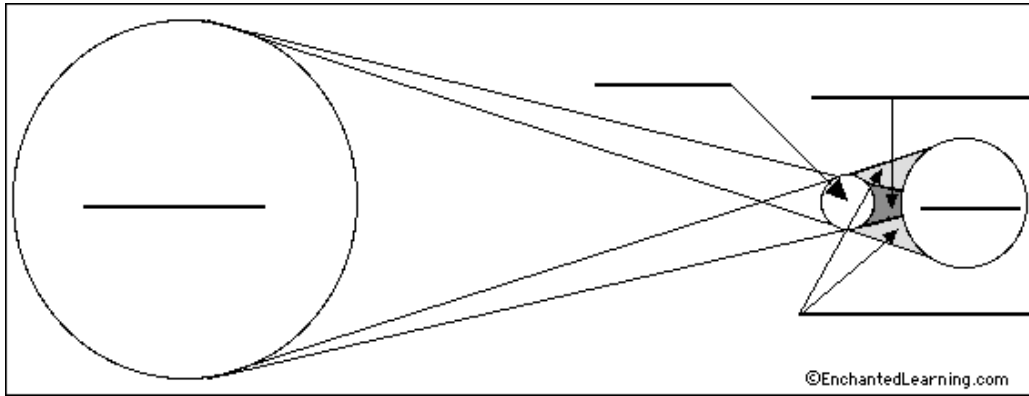
14) Label the lunar eclipse below:



Eclipses (Continued):

15) A solar eclipse occurs when the _____ passes between the Sun and the Earth, blocking the Sun's light from reaching Earth. This occurs during a _____ Moon.

16) Label the solar eclipse below:



Tides:

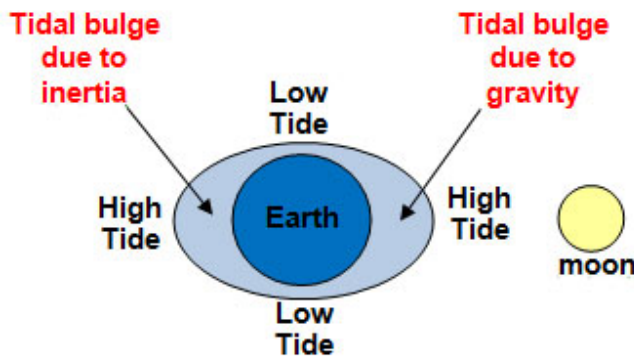
17) The tides are created from the _____ pull from the _____ and _____.

18) The _____'s gravity has a greater effect on the Earth because it is _____ to Earth than the sun.

19) This tidal force causes the _____ to bulge out from the sides of the Earth.

20) A _____ tide occurs when gravity from the moon creates a tidal bulge.

A _____ tide occurs when the water is at a 90-degree angle with the moon.



21) The tidal range is the difference in water level between _____ tide and _____ tide.

Name: _____ Color: _____ Date: _____ I

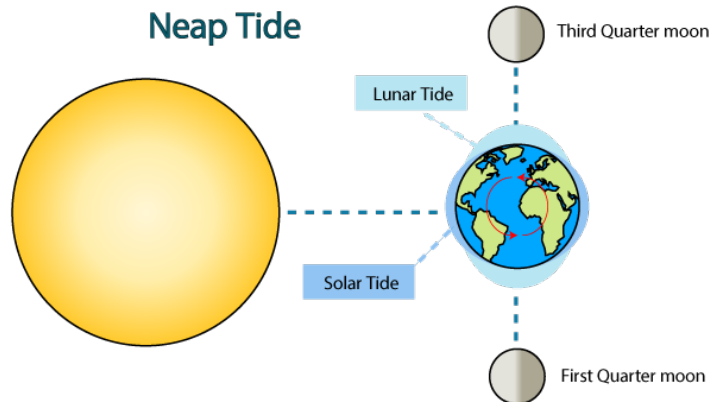
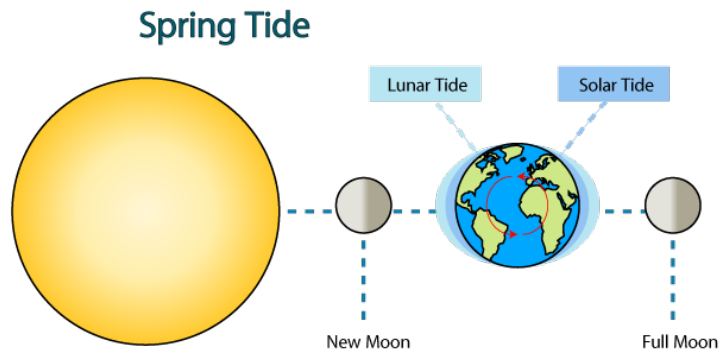
Tides (Continued):

22) A spring tide occurs when the sun, moon and Earth are in a _____ line.

a. This occurs during _____ Moon and _____ Moon phases.

23) A neap tide occurs when the sun, moon and Earth form a _____ degree angle.

a. The occurs during _____ Moon and _____ Moon phases.



Seasons:

24) The seasons are caused by the _____ of the Earth's axis as it rotates the _____.

25) The Earth rotates on its axis, but the axis always points the _____ direction.

26) The two hemispheres of the Earth (Northern and Southern) experience _____ seasons.

27) Summer occurs when the Earth is tilted _____ the sun.

28) Winter occurs when the Earth is tilted _____ from the sun.

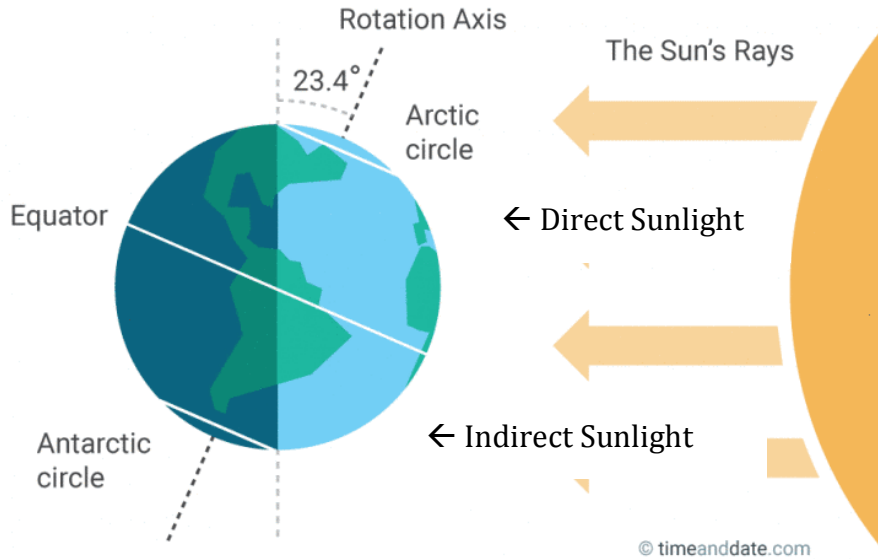
29) The seasons are NOT caused by the Earth being closer or farther from the _____.

Seasons (Continued):

30) A solstice is an event that occurs when the _____ reaches its highest and lowest points in the sky at noon.

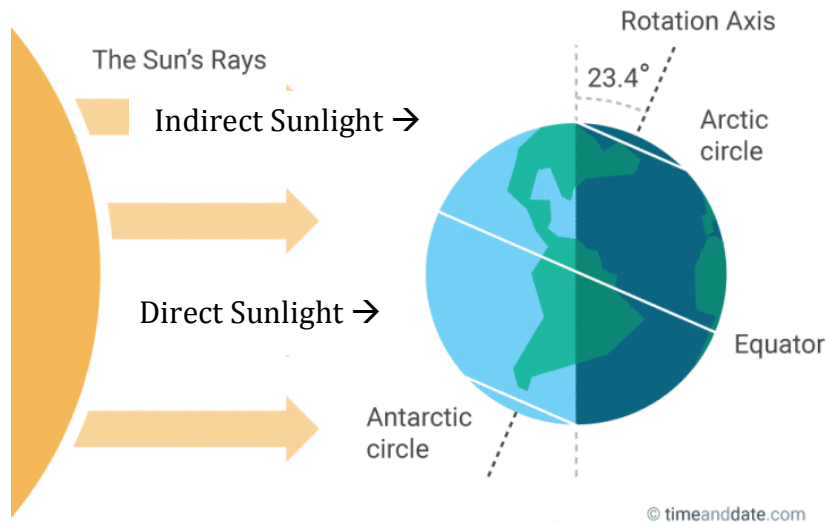
31) The summer solstice is when the sun reaches its _____ position in the sky and occurs on _____. It is the _____ day of the year.

Summer Solstice in Northern Hemisphere:



32) The winter solstice is when the sun reaches its _____ position in the sky and occurs on _____. It is the _____ day of the year.

Winter Solstice in Southern Hemisphere:



Name: _____ Color: _____ Date: _____ I

Stars:

- 33) Stars are made of _____, mostly _____ and _____.
- 34) There are (thousands or millions or billions) of stars in a galaxy. (*circle one*)
- 35) Stars are so far away that their light takes _____ of years to reach Earth.
(Many have burned out before we ever see their light on Earth!)
- 36) Scientists study stars based on their _____, using an instrument called a spectrograph.
- 37) Studying the spectrum of _____ that stars give off helps scientists determine which elements make up the star.
- 38) *Opposite of what you may think....* _____ stars are the hottest (above 30,000 degrees Celsius) and _____ stars are the coolest (less than 3,500 degrees Celsius).
- 39) Stars are too far away to measure their distance in miles or kilometers, so scientists use the unit of _____, which is the distance light can travel in a year.

Galaxies:

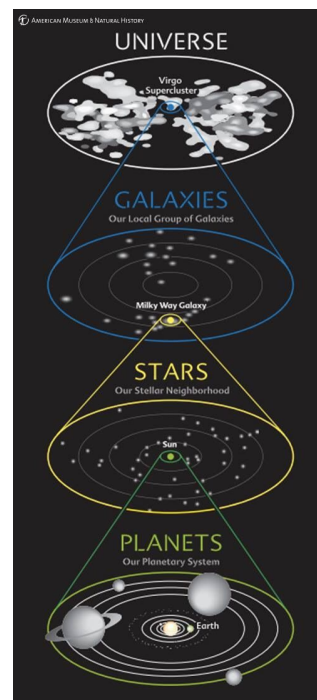
- 40) A galaxy is a large group of gas, dust, and billions of _____. (The biggest galaxies can contain *trillions* of stars!)
- 41) Our Milky Way galaxy is known as a _____ galaxy, which means that it has a central bulge (made of _____ stars) and arms that form a spiral (made of gas, dust, and _____ stars).
- 42) The Milky Way is one of _____ or even _____ of galaxies in the universe.

Relative Size:

43) Put the following in order from SMALLEST to LARGEST:

Sun, Earth, Solar System, Moon, Galaxy, Universe

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____



Name: _____ Color: _____ Date: _____ I

Astronomy Study Guide

WORD BANK

Directions: Use this word bank to fill out each section of your study guide. Words that are typed two or more times below indicate they are used more than once in that particular section. **CROSS OUT THE WORDS AS YOU USE THEM!**

Solar System:

Mercury, Mercury, elliptical, Uranus, Saturn, 8, Jupiter, sun, sun, small, Milky Way, Neptune, Venus, Venus, Copernicus, Earth, Mars, dwarf planet, neighborhood

Sun-Earth-Moon:

waning gibbous, waning crescent, year, 365, day, first quarter, last quarter, month, full moon, new moon, 29 days, 29 days, waxing gibbous, waxing crescent, 24 hours

Eclipses:

penumbra, penumbra, penumbra, umbra, umbra, umbra, light, sun, sun, sun, shadow, Full, New, Earth, Earth, moon, moon, moon

Tides:

sun, water, gravitational, closer, high, high, low, low, New, Full, First Quarter, Third Quarter, straight, moon, moon

Seasons:

tilt, shortest, sun, sun, sun, December 21st, towards, highest, same, June 21st, opposite, away, lowest, longest

Stars:

helium, gas, light, light, red, hydrogen, light-year, millions, blue

Galaxies:

spiral, trillions, stars, old, new, billions