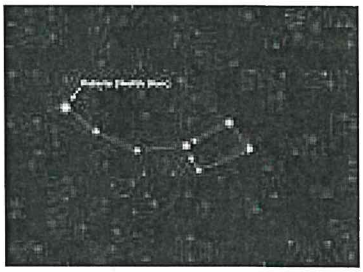
SNC **Earth and Space Science Review Assignment [50]** Name:_____

Terms that you should know.

Astronomy	Circumpolar	Ecliptic	Solstice	Nuclear Fusion
Universe	Revolution	Nebula	Equinox	Absolute Magnitude
Constellation	Rotation	Supernova	Luminous	Apparent Magnitude

1. Everything that exists, including matter and energy everywhere is called the _____.
2. The study of things beyond Earth is called _____.
3. Groups of stars that form patterns are called _____.
4. Another name for the North Star is _____.



   a. Why is this star useful?

   b. What constellation is it a part of?

   c. Constellations that never set and are directly overhead? _____ Name two constellations that fall into this category. _____ and _____.

5. Would people in Australia be able to use the North Star as a reference point in the sky? **Why or why not**?

6. One complete turn on the Earth's axis is a _____.

   a. Why do we have a day and night cycle?

   b. How long is a cycle? _____

7. Stars are luminous and Planets are non-luminous.
   a. What does this term mean?

   b. How is it that we are able to see planets?

8. Stars are luminous.
    a. List three other major differences between stars and planets.

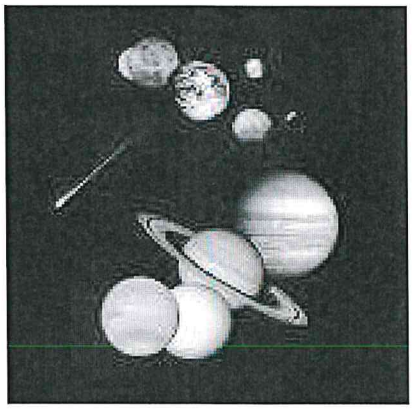
Stars	Planets

Planets

9. We are part of a solar system.
    a. Name the 8 planets in order from the Sun.

    b. Classify which 4 planets are terrestrial planets and which 4 are the gas planets.

10. Also identify the planet by the clue given:



    a) Which planet is known as the Red planet?_____

    b) Which planet is the largest? _____

    c) Which planet has 1000's of rings? _____

    d) Which planet is the brightest at night?_____

    e) Which star is closest to Earth? _____

    f) Which two planets is the asteroid belt between? _____ and _____

11. A planet's orbit around the Sun is called its _____.

    a. This movement is responsible for the reason why the Earth has _____

    b. What is the orbital period (revolution) of the Earth? _____

    c. Where is the Earth in the summer compared to the winter?

    d. Which of the 8 planets has the shortest orbital period? _____

Moon

12. Complete the chart below for the Moon

Surface Features and gravity	
Soil / Rock Composition	
Atmosphere / Weather	
Temperature	
Rotational and Revolution (these are the same)	

13. a) Label these moon phases.

    b) State 4 characteristics of the moon.

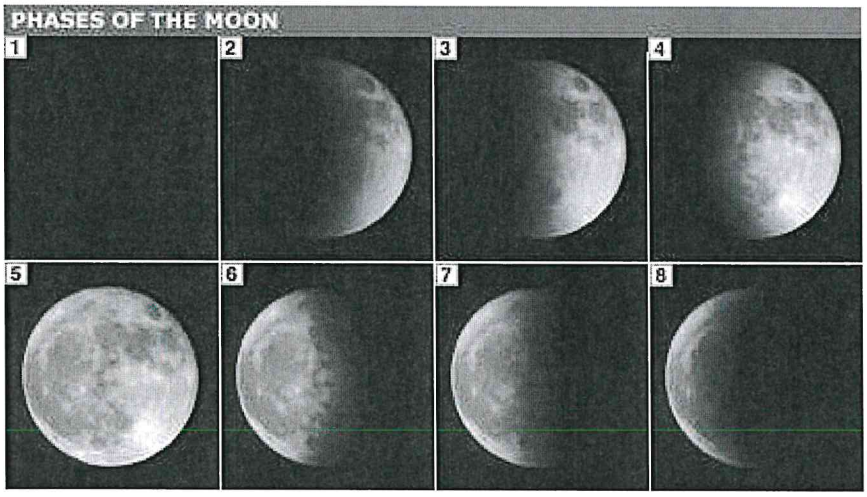
Define:

Waxing:

Waning:

New Moon:

Gibbous:

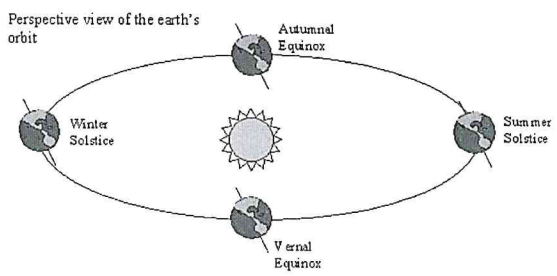


14. Why do we only ever see one side of the moon?

15. a. At different times of the year, the Earth is located at a different position around the Sun which influences the amount of light received by the Sun. **Use the picture below** to help you explain the following.

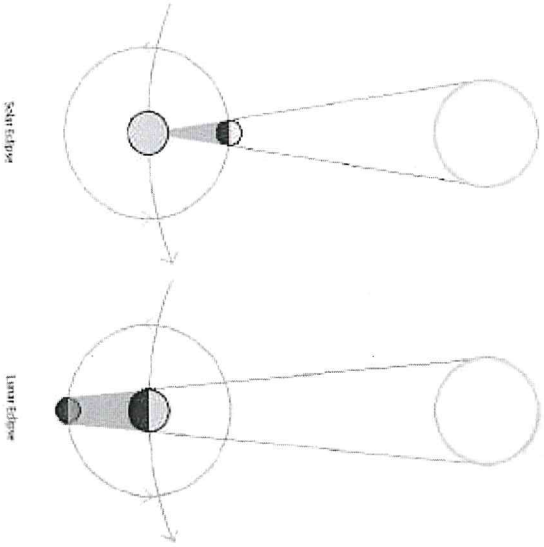
    a. Identify the summer and winter **solstice** dates, and its significance.

    b. Identify the fall and spring **equinox** and its significance.



16. Explain the differences between a **solar** and **lunar eclipses. Use the picture below** to help you.

	Position of sun earth and moon	Where shadow is cast
Solar Eclipse		
Lunar Eclipse		



Distances in Space

17. What is 1 **astronomical unit equal to in kilometers?** (This is the distance from Earth to the Sun)

18. Light travels about 9.5 trillion kilometres (approx. 10 trillion km) in a year, and this distance that light travels in a year is called a _____ _____.

19. The force that exists between the Earth and the Sun that keeps us in orbit is _____. This force is dependent on two things mass and _____. Which planet could you jump the farthest on and why?

19. If a star located 65 light years away from Earth stops giving off light energy at this very moment, how long will it be before we can know it? Explain.

20. Procyon is a star in our galaxy it is (1.08×10^{14} km = 108 000 000 000 000 km) from Earth. Calculate how far this is in light years.

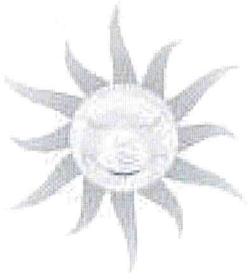
SUN

1. Where does the Sun set? _____Where does the Sun rise? _____

2. What is the imaginary path that all objects follow in the sky called? _____

3. What two elements are the most abundant in and around the sun? (you must know % of each!)

   _____ _____% _____ _____%



4. The sun produces energy [heat and light energy] through a process called _____ _____. In two sentences explain what happens.

5. Name 3 reasons why the sun is important.

1.

2.

3.

6. How are the Northern lights formed {Aurora Borealis}?

Galaxy

7. The Milky Way is an example of a _____.

   a. What are the three components of a galaxy? _____, _____, _____

   b. What are the three types of galaxies?

   c. What is the **explosion** called at the end of a large star's life?

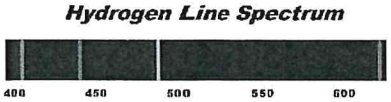
   d. What is the distance in light years across our galaxy?

   e. How many stars are in our galaxy?

   f. How many galaxies are in our observable universe?

Characteristic of Stars

a. What information does a **line spectrum** (spectrograph) give us?



b. Rank the **star's temperature** from hot to cool based on it colour (red, yellow, blue, white)

c. What two words are used to define the **brightness of stars as we see them from Earth?**

_____ _____

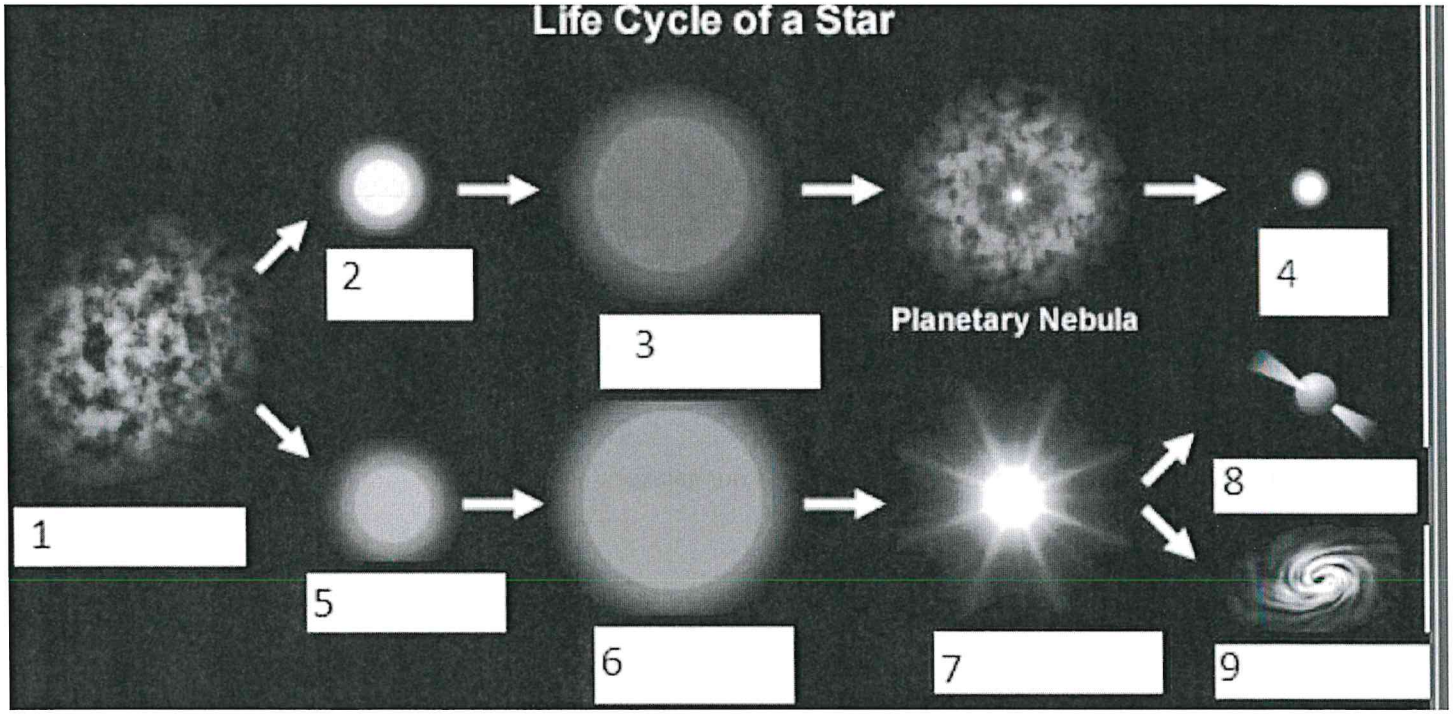
d. What two words are used to define the **brightness of stars if they were all lined up at the same distance?**

_____ _____

e. Which would be the brighter star based on the magnitude value Star A (-14.5) or Star B (-25.2)?

Life and Death of A Star

a. Label the various stages below.



1.
2.
3.
4.
5.
6.
7.
8.
9.

b. What is the definition for a **Blackhole**?

Other Objects in Our Solar System

Distinguish between comets, asteroids, meteors and meteorites.

Comets	
Asteroids	
Meteors Meteorites and meteoroid	

Space Travel

Identify five effects of that space travel will have on the human body. Explain