

SPACE STUDY GUIDE

Name _____ Period _____

Study Guide Due: _____

Space Final: _____

A. Formation of the Solar System: Number each step below in the order of which they form.

- _____ The planets begin to grow.
- _____ The nebula begins to collapse due to gravity.
- 1 A cloud of dust & gas, a nebula, forms
- _____ Planetesimals (building blocks of planets) begin to form.
- _____ Smaller planetesimals collide with larger ones.
- _____ The core of the nebula heats up, creating a solar nebula.
- _____ Remaining dust & gas leave, leaving a new solar system.
- _____ The solar nebula begins to rotate, flatten, and get warmer near its center.

B. Planetary Motion: Know the difference between rotation & revolution, and what is responsible for seasons.

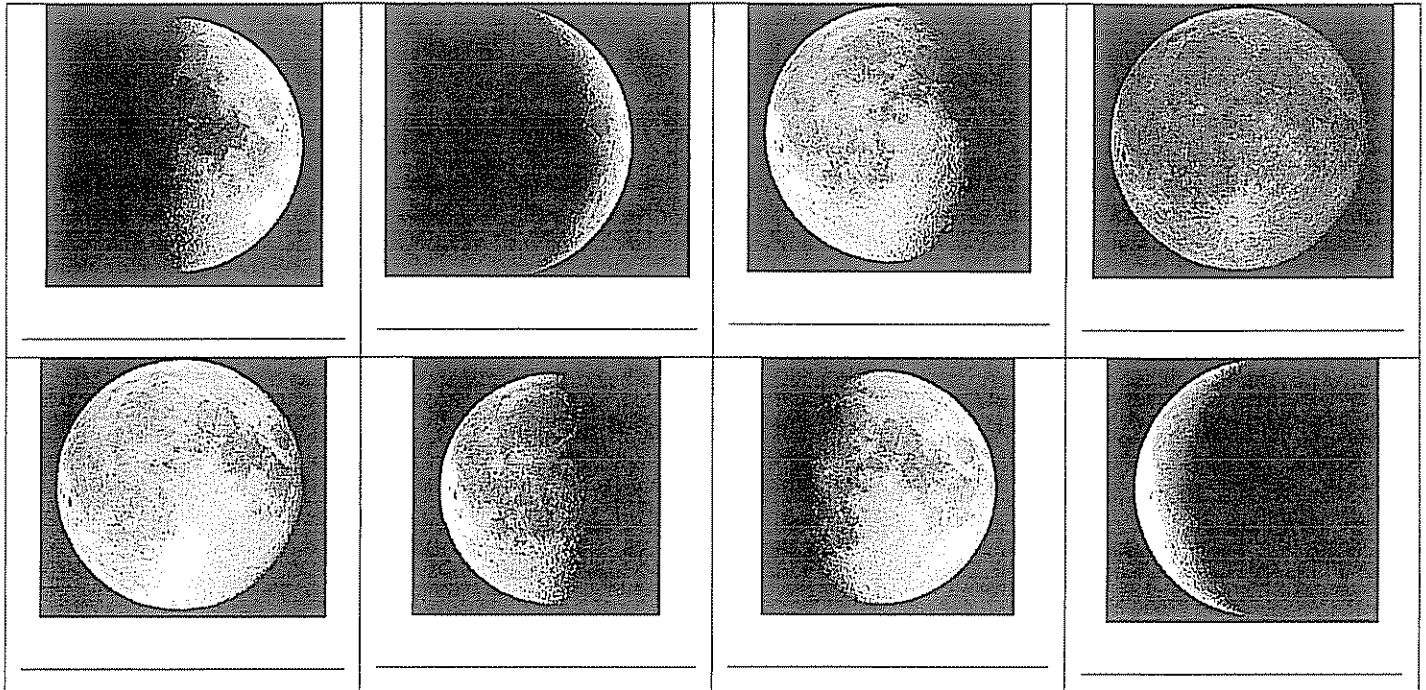
C. Structure of the Sun & Earth: Be able to label & describe the layers of the Sun & Earth. For practice, complete the crossword.

- | |
|--|
| <p>Across</p> <p>1 Cooler, dark regions on the sun's photosphere</p> <p>3. The hottest part of the Sun</p> <p>4. Giant storms on the sun's surface</p> <p>5. The middle, dense layer of Earth 7 the most common element in the sun</p> <p>9 The thickest layer of the sun where light takes millions of years to pass through</p> <p>10 The sun's inner atmosphere</p> <p>11. The process by which two or more nuclei fuse & produce energy</p> |
| <p>Down</p> <p>2 The surface of the Sun</p> <p>3 A region of the sun where hot & cooler gases circulate</p> <p>6. The outermost layer of Earth</p> <p>8. The sun's outer atmosphere</p> |

D. Distances in Space: Know the following: astronomical units, light-minutes, light-years.

E. The Planets: Know the appearance, relative size, position from the Sun, & a few facts of each planet.

F. Our Moon: Label each moon phase below. They are NOT in order.



G. Eclipses: Complete the chart below

	Lunar Eclipse	Solar Eclipse
Description		
Picture: Draw the Earth, Moon, & Sun positions as seen from space. Include the shadow in your drawing.		
What moon phase is it?		
Who sees it?		

Why don't we see eclipses once a month?

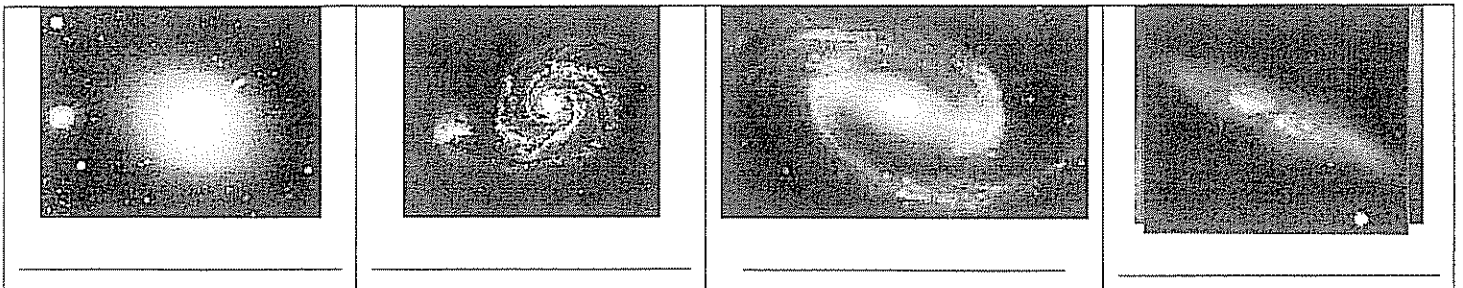
H. Small Bodies: Know the difference between comets, asteroids, meteors, meteoroids & meteorites. Below, write the answer to each question, then find the answers in the word search.

1. The hottest planet in the solar system: _____
2. A meteor that strikes the Earth's surface: _____
3. A small body made of ice, rock & dust that orbits the sun: _____
4. The outermost of the gas giants: _____
5. The largest moon in the solar system: _____
6. This planet is tilted 95° on its side: _____
7. Once a planet, then a dwarf planet, now a KBO: _____
8. A region of space between Mars & Jupiter that cuts the solar system in half: _____
9. Our moon's real name: _____
10. The North Star: _____
11. Pluto's largest moon: _____
12. Besides Earth, the most studied planet: _____
13. Closest planet to the sun: _____
14. A small irregular-shaped body made of rock & metal that orbits the sun: _____
15. The largest & fastest spinning planet: _____
16. The largest known asteroid in our solar system: _____
17. Planet #10? : _____
18. A huge spherical region that encapsulates our entire solar system: _____
19. A small rocky object orbiting the sun: _____
20. The only planet with liquid water: _____
21. A "shooting star": _____
22. The second largest planet in the solar system: _____
23. A region of space outside of Pluto: _____

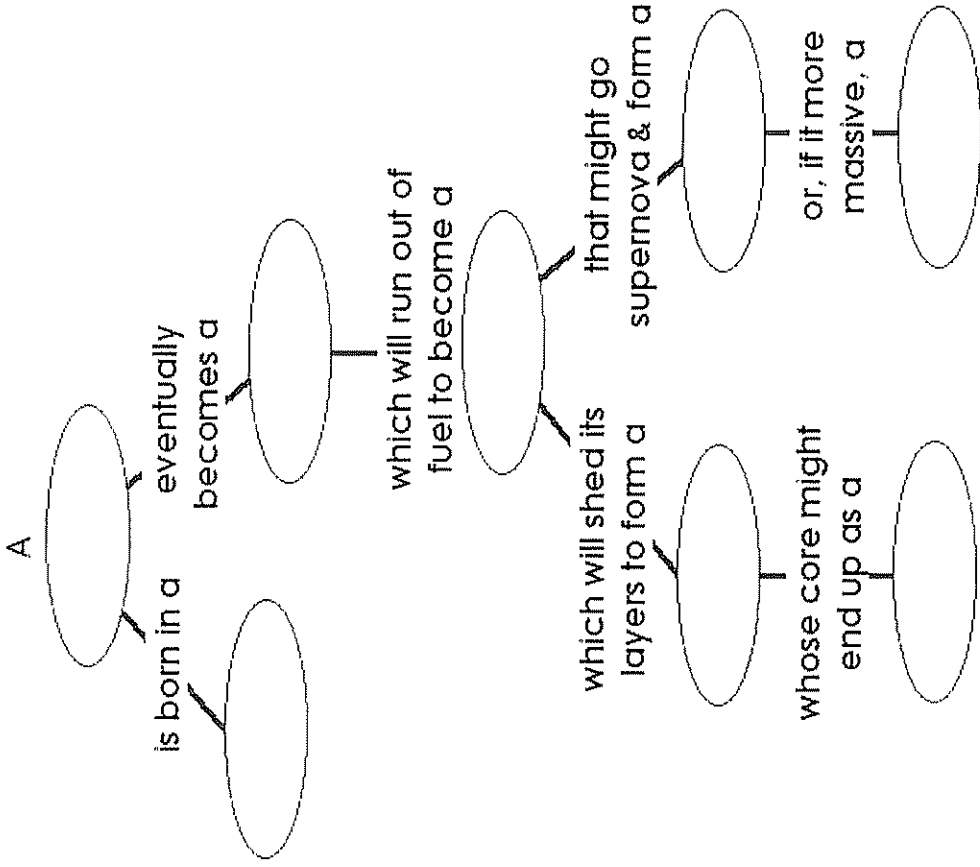
S M Y G J F S E I P G A A S Z V G G Y D P K J L X
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I. Color & Brightness of Stars: Know how star color relates to temperature & luminosity. Know the difference between apparent magnitude, absolute magnitude, luminosity & brightness.

J. Types of Galaxies: Label each galaxy below.

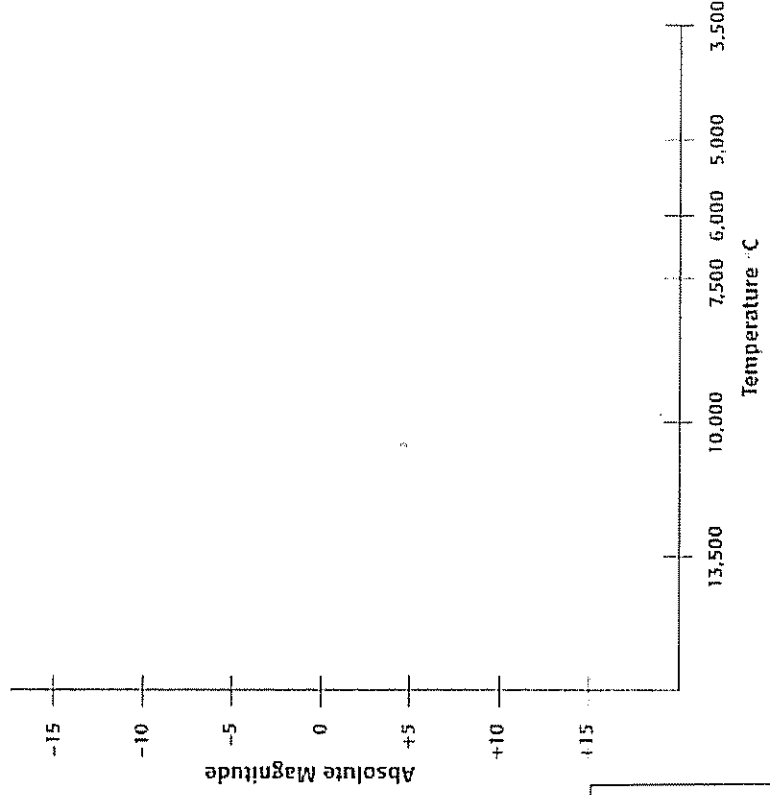


K. Life Cycle of Stars: Complete the concept map below using the following words: Black Hole, Main-Sequence Star, Nebula, Neutron Star, Planetary Nebula, Protostar, Red Giant, White Dwarf.



L. HR Diagram: An H-R diagram shows the relationship between a star's surface temperature & its absolute magnitude. Follow the instructions below to create your own H-R diagram on the next page. You may want to use colored pencils or crayons. Remember that a star's brightness increases as you move toward the top of the H-R diagram.

1. Our sun is an average star. It should be located at about the center of the diagram. Draw & label the **sun**.
2. Draw & label a **red dwarf** star. Red dwarf stars are dim & have a low temperature.
3. Draw & label a **white dwarf** star. White dwarf stars are dim & have a high temperature.
4. Draw & label a **blue star**. Blue stars are very hot & bright.
5. Draw and label a **red giant**. Red giants are cool & bright.
6. Most stars can be plotted along the main sequence of an H-R diagram. These stars range from very bright, very hot stars to dim, cool stars. Indicate & label on your diagram where the main sequence should go.
7. Imagine that you've discovered a new star in the sky. Your measurements show that it has a temperature of 10,000°C & an absolute magnitude of +10. What type of star do you think it is? _____



M. Big Bang Theory

Describe the Big Bang Theory. What is the evidence scientists have to support this theory?