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8th Science CBA 4 Study Guide 2015-16 – Answer Key

Unit 08: Climatic Interactions

Define the following

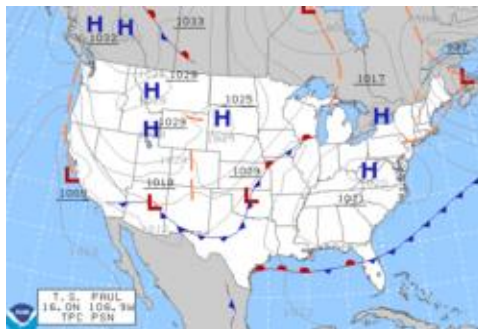
1. Convection – The energy on Earth comes from the Sun, which heats up Earth's surface and all things on it. Matter that absorbs heat energy tends to rise, and matter that loses heat energy tends to fall. This constant churning of hot and cold is called convection.
2. Ocean Currents – Ocean currents are driven by wind at the surface, but deeper currents are influenced by temperature and salinity differences. Warm water is less dense than cold water, and water with more salt is denser than ocean water with less salt. Ocean currents are important in regulating weather patterns around the globe
3. Thermal Energy – The ocean keeps the planet's overall temperature moderate, not too hot and not too cold, because the oceans store and transfer more heat than the continents.
4. Wind – Wind is caused in part by the differences in thermal energy absorption at Earth's poles and equator. Warmer air has less pressure than cooler air. Differences in air pressure cause movement of air, which is wind. High pressure air pushes low pressure air.
5. How do oceans play a role in the formation of weather systems including hurricanes?

The ocean plays an important role in shaping our climate and weather patterns. Warm ocean waters provide the energy to fuel storm systems that provide fresh water vital to all living things. Understanding and predicting precipitation is critical to farmers who decide which crops to plant, and how deep, based in part on soil moisture levels. Crop and food prices may increase when weather that is too wet or too dry adversely affects crops.

6. Why does the Earth have wind and ocean currents?
Wind is the flow of air between areas of high and low pressure. If Earth did not rotate, air in the atmosphere would basically circulate in a simple back-and-forth pattern between the poles (high pressure areas) and the equator (a low pressure area). The direction of surface currents would then align with this general wind pattern. But because Earth rotates, circulating air is deflected toward the right in the Northern Hemisphere and toward the left in the Southern Hemisphere, resulting in curved paths. This deflection is called the Coriolis Effect.

Name: _____

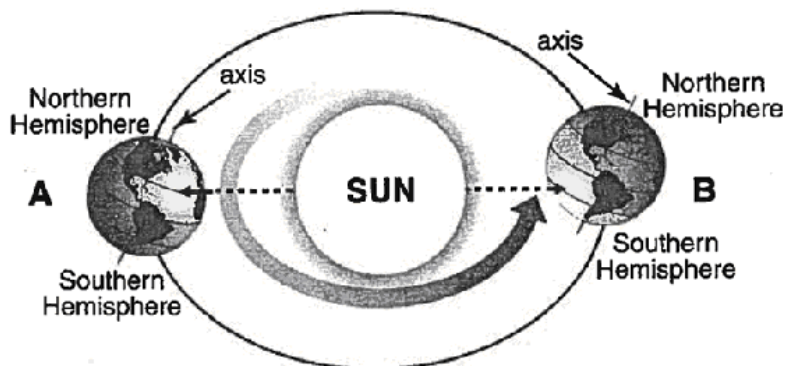
7. Why does the Earth have weather?
Weather is driven by air pressure (temperature and moisture) differences between one place and another.
8. How do global patterns of atmospheric movement affect local weather?
Earth's orbit around the sun and its rotation on a tilted axis results in some parts of Earth to receive more solar radiation than others. This uneven heating produces global circulation patterns.
9. How do weather maps show how global patterns of atmospheric movement affect local weather?
Weather maps use symbols to represent areas of high and low pressure



Unit 9: Earth Cycles

10. On which date does North America usually experience
The longest period of daylight _____ June 21st-Summer
The shortest period of daylight _____ December 21st-Winter

11.



Examine the diagram above. In position B,
What season is Earth's Southern Hemisphere experiencing?
_____ Summer

What season is Earth's Northern Hemisphere experiencing? _____ Winter

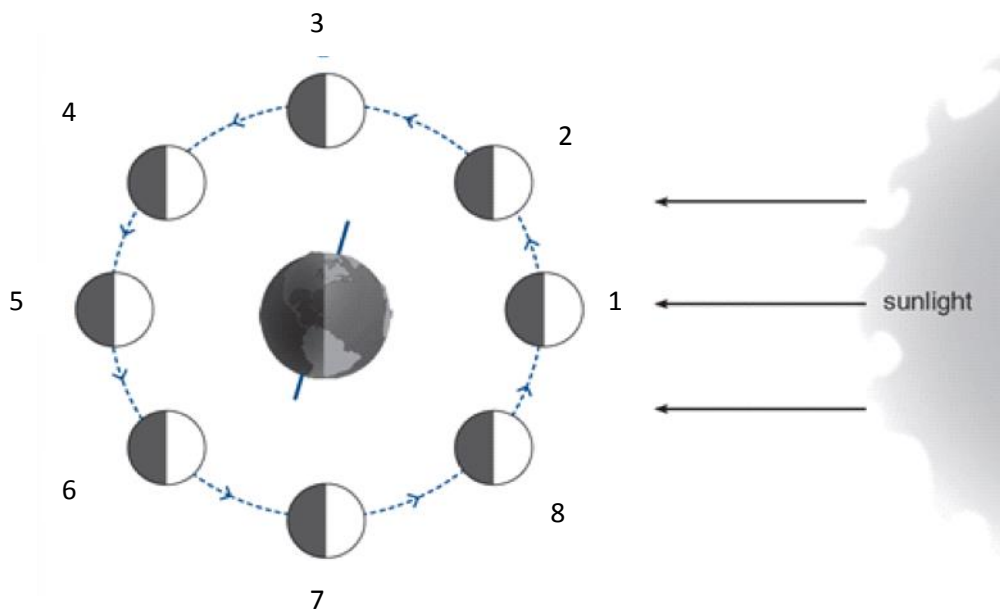
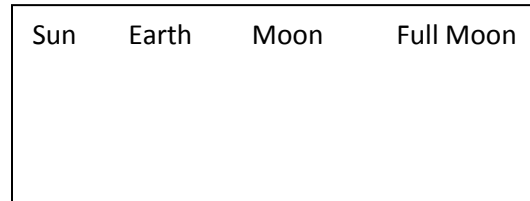
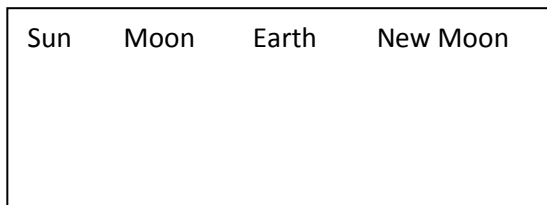
What causes day and night? _____ Earth's rotation on its axis

What causes the seasons? _____ Earth's revolution & tilt

12. What creates the daily tides cycle? Earth & moon's gravity

Name: _____

13. What creates the Spring Tides? **Sun, moon, & Earth are aligned (180 degree)**
14. Spring Tides occur at what moon phases? **New & Full moon**
15. What creates the Neap Tides? **Sun, moon, & Earth are at right angle (90 degree)**
16. Neap Tides occur at what moon phases? **1st & last quarter**
17. Why is the Moon's surface visible to an observer on Earth? **Sunlight is being reflected**
18. A 1st Quarter Moon is observed in McAllen, TX, on February 14. Approximately when will the next 1st Quarter be observed in McAllen? **March 14th**
19. Draw the diagram of the following,
- a. Solar Eclipse
- b. Lunar Eclipse

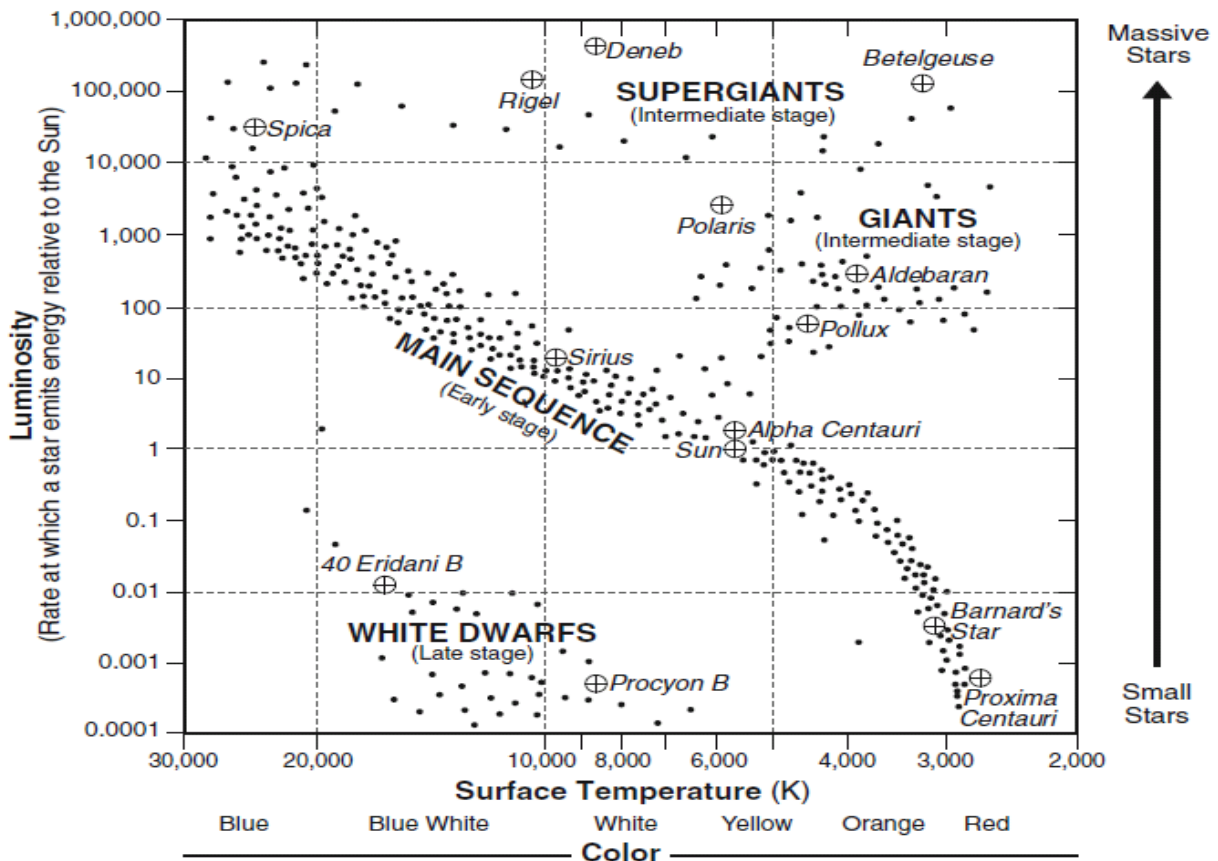


20. Label the Moon Phases on the diagram above.
- 1. New 2. Waxing crescent 3. 1st quarter 4. Waxing gibbous**
5. Full moon 6. Waning gibbous 7. Last quarter 8. Waning crescent
21. Label on the Diagram Neap Tides (tides with lower than normal tides) using the letter N and Spring Tides (tides with higher than normal tides) using the letter S.
22. What moon phases create a Spring Tide? **New & full moon**

Name: _____

23. What moon phases create a Neap Tide? **1st and 3rd (last) quarter**
24. Draw the correct order of the Sun, Moon and Earth during the Full Moon
Sun Earth Moon
25. Draw the correct order of the Sun, Moon, and Earth during a New Moon.
Sun Moon Earth

Unit 11 Universe



1. Which group of stars are hot, but dim? **White Dwarf**
2. Which has a hotter surface temperature, a Supergiant or a White Dwarf? **White Dwarf**
3. What color is *Rigel* and what does the color of star tells you? **Blue White. The temperature tells you that how hot is the star.**
4. Why does our Sun appear brighter than any other star in the galaxy? **It is closer**
5. What are all galaxies made of? **Stars and solar system**