Sixth Grade Science **Name_____**

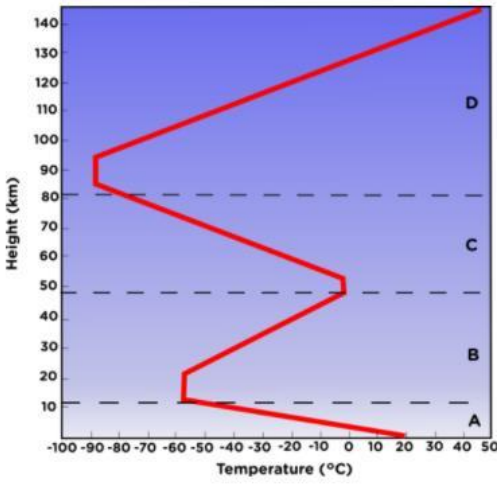
Unit #3 Study Guide

1. Why is the ozone layer so important?
   It protects us from harmful UV rays.

2. Why is it difficult to breathe at high altitudes?
   There is less oxygen at higher altitudes.

3. If you wanted to fly through a cloud, which atmospheric layer would you fly through?
   Troposphere

4.



Analyze the above chart to identify the following layers of the atmosphere.

Layer A – 0-10 km: **Troposphere**.
Layer A Characteristic: **Weather Layer**
Layer B – 10-50 km: **Stratosphere_**.
Layer B Characteristic: **Ozone Layer**
Layer C – 50-80 km: **Mesosphere**.
Layer C Characteristic: **Meteors Burn**
Layer D – 80-140 km: **Thermosphere**
. Layer D Characteristic: **Hottest Layer**
Layer E – higher than 140 km: **Exosphere**.
Layer E Characteristic: **Thinnest layer**

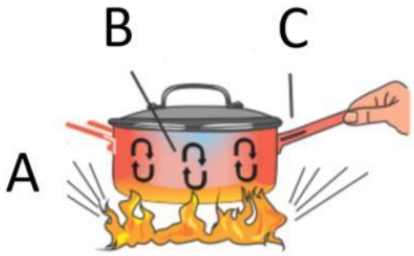
5. A pot is heated on a stove. Which heat transfer process causes the metal handle of the pot to also become hot?
Conduction

6. Angel stands in a swimming pool and notices that the water around his feet is a lot cooler than the water near the surface. Which process causes this difference in temperature? **Convection**

7. The transfer of thermal energy by movement of particles through gases and liquids is **Convection**

8. The transfer of thermal energy by direct contact is **conduction**

9. Label the letters on the diagram as a type of heat transfer, either conduction, convection or radiation.

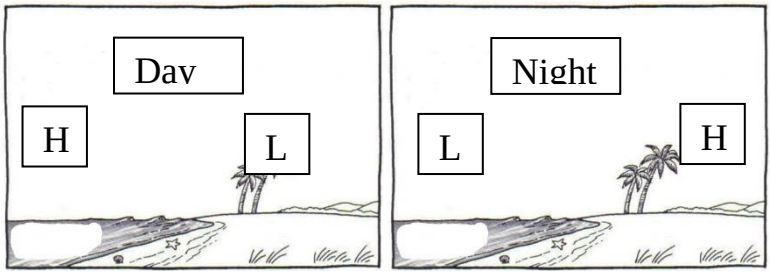


A=Radiation
B=Convection
C=Conduction

10. Heat transfer always moves from a **Hot** substance to a **Cold** substance.

11. Label the following with arrows, high and low pressure, a sun or moon to indicate time of day, and label the water and land as warm or cool.

Sea Breeze Land Breeze



12. Warm air **rises** because it is **less** dense.
Cold air **sinks** because it is **more** dense.

13. This photograph shows a beach on a partly sunny day. **Heat** from the sun causes water to **evaporate** from the ocean.

14. Which is the best explanation for how air masses move across the United States?

The prevailing **westerlies** move air masses from west to **east** across the United States but may be deflected by the jet stream.

15. Complete the table by filling in the global wind that occurs at each latitude.

Latitude	Global Wind
0-30	**Polar Easterly**
30-60	**Prevailing Westerly**
60-90	**Trade Winds**

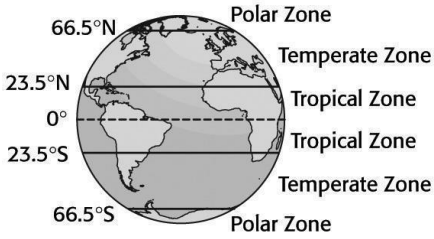
16. Which global winds have the greatest impact on the weather in the US? **Prevailing Westerly**

17. Differences in air ___**pressure**_____ affect the movement of air because air always moves from areas of ____**high**____ pressure to areas of ___**low**____ pressure.

18. The curving of air to the right in the Northern Hemisphere is caused by Earth's __**rotation**__ and is called the _____**Coriolis**____ Effect.

19. Wind is the movement of air from areas of __**high**_____ pressure to areas of _**low**_____ pressure.

20. Use the picture to help you match the climate zone with the amount of sunlight it receives.



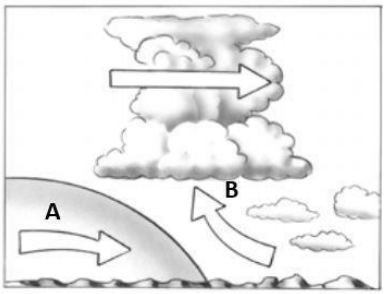
Climate Zone — Amount of Sunlight

A. Polar Zone- __**C**__Most sunlight

B. Temperate Zone- _**A**___Least sunlight

C. Tropical Zone- _**B**___Medium sunlight

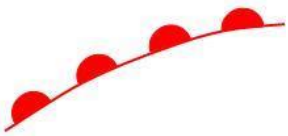
21. The air mass on the left formed over a polar region and the air mass on the right formed over a tropical region. **Which type of front is at the front of air mass A**?



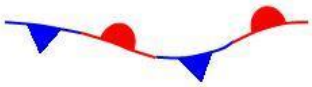
Cold Front

22. Label each of the following with the type of weather front it symbolizes.

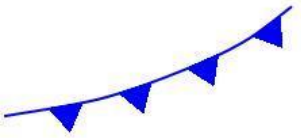
A. **Warm Front**



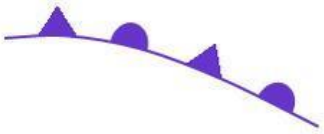
B. **Stationary Front**



C. **Cold Front**



D. **Occluded Front**



23. Where do hurricanes originate (start at)? **Warm, tropical waters**

24. A dry, cold air mass would be called **continental polar**.

25. The boundary between cold and warm air masses is called a/an **front**_.

26. When a warm air mass gently slides on top of a cold air mass, and you have drizzly rain followed by beautiful sunny weather, what front is it? **Warm front**

27. A/an **air mass** is a large body of air that has the same properties as the Earth's surface over which it develops and has the same density and moisture content.

28. What type of weather will most likely result from a low-pressure weather system?
Cloudy and Stormy