Hurricane & Weather Forecast study guide

- 1. On the Hurricane web quest, what happened to wind speed in hurricane Katrina as the pressure dropped? When air pressure decreases, wind speed increases.
- 2. What type of weather change does a cold front bring? Draw the symbol & a diagram of what happens (google it) A cold front brings heavy rain, storms, and cooler temperatures.



3. What type of weather change does a warm front bring? Draw the symbol & a diagram of what happens (google it) A warm front brings steady precipitation and warmer temperatures.



- 4. What happens at a stationary & an occluded front?
- 5. How do you know the direction a front is moving? & what is different about the air on each side of the front? . The side that the symbol is facing, density & temperature
- 6. What type of weather is associated with a High (H) pressure system? Explain why. A high pressure system brings clear weather because dry air is forced toward the ground
- 7. What type of weather is associated with a Low (L) pressure system? Explain why. A low pressure system brings clouds and precipitation because air rises, cools, and condenses



- 8. How does the sun affect weather? Warms the atmosphere, causes evaporation, & warms the ocean surface
- 9. How does relative humidity effect the chance for precipitation? Warmer temperature holds more water vapor than Cooler temperature, so the more water vapor in the air compared to how much it can actually hold gives a greater chance of precipitation
- 10. What is a cumulonimbus cloud? Thunderstorm clouds
- 11. What is temperature? Speed of air molecules
- 12. What are the following weather instruments used for?

Anemometer - wind speed, barometer - air pressure, (hygrometer, psychrometer), relative humidity

- 13. What happens to a hurricane when it moves over land? It gets weaker
- 14. What happens to a hurricane when it moves warm ocean water? Gets stronger
- 15. What happens to a hurricane when it moves cool ocean water? Gets weaker
- 16. What is the difference between westerlies & easterlies (trade winds)? Westerlies blow from the west to east and cause hurricanes to turn away from United States. Trade winds blow hurricanes from east to west toward the US.



- 17. What is the latitude line that divides the trade winds from the Westerlies? 30 degrees N latitude
- List the 5 ingredients for a hurricane. warm ocean water at least 80 degrees, high humidity, converging winds, low wind shear, at least 300 miles from equator
- 19. Identify what causes the deflection of air in the diagram below? Earth's rotation What is it called? Coriolis affect



- 20. Why doesn't a hurricane form near the equator? The Coriolis effect is not strong enough to cause the storm to rotate
- 21. List the order a storm grows to become a hurricane in order from weakest to strongest. tropical disturbance, tropical depression, tropical storm, hurricane (Category 1-5)
- 22. What causes clouds & fog to form? Water vapor cools to the dew point and condenses on particles in the atmosphere

- 23. What affect does altitude have on temperature in the troposphere? Temperature decreases as attitude increases
- 24. Using the Saffir-Simpson scale, what category hurricane occurs when wind speeds reach 115 mph? Category 3

Saffir-Simpson scale
Category 1- 74-95 mph Minimal
Category 2-96-110 mph Moderate
Category 3- 111-130 mph Extensive
Category 4- 131-155 mph Extreme
Category 5- 156+ mph Catastrophic

25. Predict where the hurricane will most likely hit land and justify your answer It will most likely hit Alabama/Mississippi because below the dividing line of 30 degrees the easterlies push hurricanes west.

