

Understanding Weather Video Questions

Watch the “Understanding Weather” video and answer the following questions.

1. Define the terms “weather” and “climate”, what is the difference between the two terms?
2. List the two most abundant gases in the atmosphere.
3. What layer of the atmosphere is associated with “weather events”, how thick is this layer and how does it related to the surface of the continents and oceans?
4. Briefly discuss the science of meteorology? Why is it important to study and understand weather processes?
5. What is the function of weather / atmospheric processes on Earth? What is the ultimate driving force?
6. Which portions of the Earth receive the most solar heating?
7. What process(es) of heat flow/transfer is (are) used to equalize atmospheric temperature?
8. Define “air mass”. How is it characterized?
9. List and define the four types of air masses associated with North America.
10. Define weather front. List, discuss, and sketch the four types of fronts.
11. How do cold and warm air masses relate to one another at frontal boundaries?
12. List and discuss the four variables that control weather and atmospheric processes.

13. Define insolation.
14. In terms of vertical air motion, describe/sketch what happens to warm air and cold air in the atmosphere.
15. How does atmospheric temperature relate to pressure. What are they mathematical relationships to one another?
16. Discuss the vertical distribution of air pressure as it relates to altitude in the atmosphere.
17. Describe / sketch vertical motion of air in (a) low pressure systems, (b) high pressure systems.
18. What causes horizontal air flow or wind? What influences the direction of wind?
19. Define humidity. What is the difference between relative humidity and absolute humidity?
20. Do clouds involve water in a liquid or vapor state?
21. What are the three primary cloud morphology types? List an sketch.
22. What causes lightening? How about thunder?
23. Hurricanes: are they associated with low pressure or high pressure? Does the air sink or rise in the eye?
Sketch a diagram showing a hurricane of cross-section view.
24. What are storm surges and what causes them?
25. What type of cloud is associated with tornados?
26. What geographic areas of the U.S. are most prone to tornados? What times of year?
27. Why is atmospheric observation and weather prediction important. List all the reasons why it is important to understand atmospheric phenomena.