**AICE Environmental Management Guided Reading: The Structure of the Atmosphere and Weather**

This is not like your usual guided reading. Before starting, do the following:

**Read** this article: <https://www.pbs.org/wgbh/nova/article/global-weather-machine/>

**Watch** this PBS Nova Special Episode: <https://www.pbs.org/wgbh/nova/video/decoding-the-weather-machine/>

Now, using information from the film, the article, your textbook, and other book and internet resources, answer the following questions. This assignment is due Monday,   
April 6, 2020 and is worth 40 points**. Include a list of sources after your responses**.

1. Layers of the atmosphere:   
 a. Describe each one in terms of composition, temperature and variations in air density   
 b. Tell what happens in each layer   
 c. How do the layers compare to one another?   
 d. Include an accurate comparative diagram.  
 e. What evidence lets us know these are the layers and their properties?

2. How is the troposphere responsible for weather? Describe the following types of weather, including a brief explanation of how they are formed.  
 a. Rainstorms (including thunder and lightning)  
 b. Hurricanes  
 c. Temperate frontal depressions  
 d. Anticyclones  
 e. Tornadoes  
 f. Snowstorms

3. Air currents:  
 a. How do air currents move about the Earth?   
 b. Describe the major current bands including global and local wind systems.  
 c. How does land, relief, and water vapor affect air movements?  
 d. How do air currents differ in pressure?

4. Describe the following climate zones of the Earth. Include both climate information (temperature, humidity, weather, etc.) as well as what types of biomes you might find in those zones.  
 a. Equatorial  
 b. Tropical Desert  
 c. Savannah  
 d. Monsoon  
 e. Warm Temperate Climates  
 f. Sub-Arctic  
 g. Arctic