Read the passage and answer the questions that follow.

#### The Water Cycle, Weather, and Climate

By Janine G. Wilson



in climates all over the world. This cycle, known as the water cycle, is never-ending and is powered by the center of our solar system, the Sun.

As radiant energy from the Sun heats the Earth's surface, molecules of water found near the surface of oceans increase in motion, spread apart, and evaporate into the atmosphere as water vapor. As the warm water vapor rises into the upper atmosphere, it cools, and the molecules slow down and move closer together,

condensing into water. Millions of water droplets come together with dust particles to form clouds. As the clouds fill and get heavy, they release the water as precipitation. Depending on atmospheric temperatures and weather, precipitation falls as rain, snow, sleet, or hail.

The water cycle affects humidity and air pressure. Humidity increases because		
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The Sun is not just causing water to move in the water cycle. As the Sun heats the water in the oceans, the density of the water also changes due to evaporation because it becomes saltier at the surface. Saltier water sinks as less dense, cooler water rises. Because the Earth is tilted on an axis, the equator receives direct sunlight, which heats the water, causing more evaporation.

The change in temperature also causes more circulation, moving warmer water toward the poles, where it cools. Consequently, the heating at the equator causes warm air to rise and circulate toward the poles. Differences in temperature along the equator and the salinity and density of our oceans cause circulation of air and water. These physical changes affect weather and climate on our planet.



- b) The Northern U.S. and Canada become dryer and warmer, while the opposite happens in the Gulf Coast of the U.S. and Southeast.
- c) It changes the jet stream, causing global impacts.
- d) Trade winds weaken, and warm water is pushed back east.
- e) Trade winds become stronger, pushing from east to west toward the Asian coastline.
- f) It affects weather worldwide.

- 3) What specific weather conditions does high humidity lead to?
  - a) A high pressure
  - b) Dry, heavy air with low pressure
  - c) Increased temperatures with a high pressure system
  - d) A low pressure system with increased precipitation

