

Weather and climate (including hurricanes) assignment



**ASSIGN
BUSTER**

Shanequa Miller Weather and climate are two similar but different things.

Weather is the short term properties of the troposphere at a given place and time. We see everyday how weather works. Climate is the average long term weather of an area. The earth's climate has warmed and cooled since long before we came onto the scene. Climate lasts longer than weather. Weather can come and go quickly when climate will only change a little at a time.

Does weather impact our climate and environment? That's a question that makes me wonder.

I don't know the answer to this question, but will attempt to answer it.

Relative humidity may be defined as the ratio of the water vapor density (mass per unit volume) to the saturation water vapor density, usually expressed in percent:
$$\text{Relative Humidity (RH)} = \frac{\text{Actual Vapor Density}}{\text{Saturation Vapor Density}} \times 100\%$$
 Relative humidity can be expressed by partial vapor and air pressure, density of the vapor and air, or by the actual mass of the vapor and air.

Relative humidity is usually expressed in per cent and abbreviated by ? or RH. Precipitation is when moisture in clouds condenses and become too heavy to stay in the air so they fall to earth as precipitation in the forms of hail, snow, sleet, rain, freezing rain. Rain develops when the growing cloud droplets become too heavy and fall to earth. Hail is when a large frozen raindrop which falls through certain layers of the cloud and liquid freezes onto them forming ice pellets that will grow bigger as the hail falls. Freezing rain can cause major damage to an area.

Freezing rain is usually found at the narrow band on the cold side of a warm front where the surface temperature is just below freezing. Global climate change is a change in the long term weather patterns that characterize the regions of the world. Global climate change can really affect our world because we depend on certain climates to support a specific food or animal that we as humans need to survive or we need to protect. Human activities are a big contributor to global climate change and can be very hazardous. Global climate change involves green house gases and global warming.

There are many factors that affect climate, including: latitude, ocean currents, and topography. Latitude is the distance from the equator. Latitude determines north or south of the equator, not elevation above sea level. Latitude can be above the equator known as northern latitude or below the equator known as southern latitude. On the earth the lines of latitude are circles of different sizes. The longest line is the equator which has latitude of 0 when the north and south poles have latitude of 90 degrees. Ocean currents are currents that affect the climate greatly.

Ocean currents affect the climate because of the water density, the warm and cold currents, and because air masses redistribute heat received from the sun. Cold currents flow from polar areas towards the equator while warm currents driven by the winds and earth's rotation flow away from the equator. Ocean currents affect our climate greatly especially since they are like air currents and redistribute heat. Topography can greatly affect an area by keeping rains, wind, shade, etc from coming and supporting certain animals and plants at the area.

An example is a city because it absorbs and holds heat, and buildings block the sun. Also because of the cars and factories putting carbon dioxide in the air then that city's climate will be totally different from the surrounding climate in the country. The earth's climate has warmed and cooled for millions of years, since long before we appeared on the scene. There's no doubt that the climate is growing warmer currently; indications of that change are all around us. But does weather impact? Weather determines if it's going to be hot, cold, what kind of storms we're going to have, etc... Therefore it does affect our climate.