



Geoscientists study...

AIR

You may have noticed that clouds take many different shapes. They are composed of tiny water droplets that have condensed from the invisible water vapor in the air. Some clouds are fluffy and white, others are dark and produce high winds, lightning, and thunder. Each year a few exceptionally powerful storms produce tornadoes. Tornadoes are both awesome to watch and terrifying to experience. However, plain old air is one of your very best friends, and you can live only a few minutes without it. The atmosphere lets sunshine through



Did you know?

On April 3, 1974, 148 twisters touched down in 13 states.

and protects you from harmful radiation, acting as a blanket to keep us warm. How can we keep air clean? Geoscientists are working hard to find answers so that you can

continue to breathe easily. Perhaps some day you, too, can try to answer this question!

Some geoscientists study the motions of air in the lower level of the atmosphere where weather occurs. They also investigate cloud formations, lightning and extreme weather, including hurricanes and tornadoes. The information they collect from satellites, radars, and powerful computers is used to keep you informed. If you are lucky, you may see a weather balloon carrying instruments into the atmosphere to observe air pressure, temperature, water vapor, and wind speed and direction. Weather is so important to agriculture, transportation, recreation, and your health and safety, that many government agencies and private companies hire these geoscientists. What do we call them? **Atmospheric Scientists and Meteorologists**



Did you know?

Cars cause air pollution which contributes to acid rain and global warming.

Some geoscientists try to understand what controls the chemical composition of Earth's atmosphere. They have discovered that the amount of ozone in

much of the upper atmosphere has decreased over the last 30 years. And because of the unusual conditions found over the North and South poles during each region's winter season, great reductions ("holes") appear for some weeks in early spring. This thinning of the ozone in the upper atmosphere allows more ultraviolet radiation from the Sun to reach Earth's surface, which can damage the cells of your skin. These geoscientists also learned that pollution from vehicles and factories may be carried thousands of miles by wind and can form acid rain, which can seriously damage plants, animals, buildings, and cars. Finally, the burning of fossil fuels and wood may create dangerous local smog problems and increase the amount of carbon dioxide, CO₂, in our atmosphere. CO₂ traps some heat from Earth that would otherwise escape back into space. This is essential to keep us from freezing, but what if too much CO₂ traps too much heat? Will this warm our planet? Will our weather or climate change? These are very serious questions, and these geoscientists are working to find answers. What do we call these geoscientists?

Atmospheric chemists

