
SYNOPSIS:

We can't see it but we can see what it does. We can't hold it, but we can feel it. It is the wind- the essential, ever-present, yet mysterious force that flows around the world and through every part of our lives. Without wind our world could not survive, as we know it.

This program shows just how important the wind is to our lives and to our existence on Earth. It examines all kinds of winds – from the most soothing zephyrs to the most destructive hurricanes. This program explains what wind is, where it comes from, how we use it, and how it shapes our lives and the world around us.

CURRICULUM UNITS:

Aeronautics
Earth Science
General Science
Geology
Meteorology
Physical Science

CAREER OPPORTUNITIES:

Aeronautical Engineer
Aviator
Cartographer
Geophysicist
Meteorologist

PROGRAM OVERVIEW:

The wind is a crucial element to life on Earth. The wind distributes plant life by scattering spores, pollen, and seeds. It also helps to energize the ocean and distribute heat and nutrients.

This program defines wind as air in motion and then explains what makes air move. Students see an example of two local winds – an offshore breeze and an onshore breeze – and how these winds are formed. Then they see the same principles at work on a planetary scale with the trade winds and prevailing winds, and how the spin of the earth affects these winds.

There is emphasis on the connection between the wind and the ocean. The most obvious connection is waves made by the wind

Students learn that without wind, most of the Earth would be uninhabitable, the tropics would grow too hot and the rest of the planet would freeze. They see how the Earth's atmosphere sustains life because of the planet's winds. Our atmosphere is special, compared to that on other planets, because it moves; that it, it circulates in such a way that warmth and moisture are distributed all over the planet.

ISSUES AND CRITICAL THINKING:

1. After viewing this program:
What is wind?
What does Earth have that nearby planets like Mars and Venus do not have?
How does the wind help plants to spread their spores, pollen and seeds?
What is the connection between the wind and the oceans?
Name two types of dangerous or extreme winds.
2. The program illustrates several forms of recreation that depend on the wind such as sailing, and gliding. Ask your students to make a list of other activities and sports that rely on the wind.
3. Use a model airplane to show how its design, especially that of its wings, takes advantage of the wind.
4. If there is an area nearby where rocks are exposed, take the class there and ask students to find examples of rocks that have been marked or smoothed by the wind.

GLOSSARY:

ATMOSPHERE- the layer of gasses surrounding our planet; the layer of air that surrounds the Earth.

CARBON DIOXIDE- a gas that is made up of carbon and oxygen. Carbon dioxide has no color or odor, and is part of the air we breathe.

CYCLONE- a type of atmospheric disturbance characterized by rotating winds 10 to 60 miles per hour which can be up to 1,000 miles in diameter.

GRAVITY- the force that pulls things toward the center of the earth. Gravity is the force that causes objects to fall when they are dropped. It also pulls them back when they are thrown upward. In addition, gravity causes objects to have weight.

HURRICANE- a severe storm with wind speeds in excess of 74 miles an hour, originating in the tropical regions of the Atlantic Ocean or Caribbean Sea traveling north, northwest, or northeast from its point of origin. Heavy rains typically accompany hurricanes.

NITROGEN- a gas that has no color and no smell. It makes up almost four-fifths of the air on earth.

OXYGEN- a gas that has no color and no smell. Oxygen makes up about one-fifth of the air. People, animals and plants must have oxygen to live. Also a chemical element.

TORNADO- a violent windstorm with whirling wind accompanied by a funnel-shaped cloud that moves in a narrow path across land.

TYPHOON- a severe tropical hurricane occurring in the Western Pacific or China Sea.

The Wonders of Earth Science



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METEOROLOGY: THE MYSTERY OF THE WIND



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