

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

The Environment

In many countries the weather changes in four seasons a year. It is usually warm in spring, hot in summer, cool in autumn and very cold in winter. We have special clothes for the various types of weather. Winter clothes keep us warm, summer clothes keep us cool. On the beach or by the lake we may wear our swimsuits. If we go walking in the summer we probably wear shorts and a T-shirt and sandals. We wear waterproof clothes when it is rain outside. We can also take an umbrella, the raincoat and Wellington boots. In winter if we go skiing or tobogganing we wear many extra clothes to keep us warm. We may have special clothes like ski-suits.

When the sun shines through raindrops, you can see a rainbow.



What types of weather do we know?

It is **sunny, windy, cloudy, stormy, snowy, foggy, rainy...** What is weather actually? Can you characterize it? – Weather is all around. It is wind in your hair or sun on your skin. Lots of things we do depend on weather. Weather also affects how we feel. A rainy day might make us quiet; a sunny day might make us happy. What makes weather?

The lower layers of the atmosphere never stop moving. This means that air conditions are always changing. They create **weather variations** – wind and rain, frost, sunshine, fog and snow. The Earth atmosphere is the mixture of gases. Sunshine makes it move. The Earth's rotation complicates it. It influences all air currents. Tiny drops of water gather together and make **clouds**. There are different types of clouds. When clouds have more water than the air can hold up, the water falls to the Earth as rain or snow. **Winds** are very important too. Wind is simply air moving from areas of high pressure to areas of low pressure. Wind is moving air - although we cannot see it we can feel it. Winds bring us rain or dry air.

Sometimes there are very big problems with the weather. There are some **natural disasters** we can meet on our planet.

The very big problem of the recent world there can be **floods**. Floods are generally caused by long heavy rains or the snow melting in the spring. The floods damage houses, roads, bridges and kill people and animals that don't run away.



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Other parts of the world suffer from water and people need to live in the deserts, just like the Aboriginals in Australia. Long dry hot season is very dangerous all over the world because of the **fire**. Fires sometimes could be caused by someone's inattention. Wind helps to expand the fire and everybody and everything is in danger.

Tornadoes and hurricanes are whirling storms of wind. These are caused by pressure changes in the atmosphere. We can often meet this phenomenon in the area of Caribbean Sea.

Hurricanes form over the warm ocean water and begin as a system of thunderstorms. As the storm gets the moisture from the water and the heat from the air, it becomes more and more powerful and begins to rotate in a counter-clockwise direction. This produces very strong wind, up to 320 kph, what destroys everything on the way. This wind can cause damage more than two hundred kms away. When a hurricane crosses land, it brings with it a large wall of the water called a storm surge - sometimes 6 meters high. Storm surges cause severe flooding and often kill more people and cause more damage than the high winds of the hurricane. Hurricane season in the USA runs from June 1st – November 30th, since 1953 the US Weather Service has been naming hurricanes – usually by woman's name.



The name *hurricane* is used for storms around North America; other parts of the world call them *typhoon*.



The movement of lithospheric boards causes **earthquakes and explosions of volcanoes**.

In the course of earthquakes - the land is shaking and crashing, buildings fall down and everybody is in danger. The earthquake under the ocean can cause a big tidal wave that floods the coast.



On the other hand, the volcanoes produce a lot of dust, smoke and lava which pours out and burns everything what is on the land's surface.

During this year we have looked at a lot of problems that the weather brings. Sometimes on the radio or television you can hear of a new weather record.

The first real weather station was the Radcliff Observatory in Oxford, England. A weather observatory on the Great Blue Hill in Milton, Massachusetts, began keeping weather records on the 1st February 1885. It is still in operation and it is the longest serving operational weather station in the USA.

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The changing weather is caused by several kinds of pollution. Civilization has brought to people many advantages but its products pollute and damage the planet and the environment we live in. The pollution takes many forms. It is caused by industry, motors, consumption and modern agriculture.

The air pollution is the biggest problem mainly in large cities and in the areas with the concentrated industrial production. Emissions range from smoke and dust - produced by coal-fired power stations and factories which burn fossil fuels, to the car and lorry exhausts.



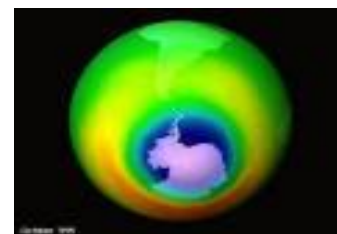
The industry sends emissions into the air. They mix there. They are carried for hundreds of kilometers by the wind. That is why emissions are not dangerous only for the country which produces them. Gases fall back to the Earth through the rain. Such rain is called "the acid rain" and slowly kills trees and animals.



Trees are important for us because they produce oxygen needed for breathing. A big danger nowadays there is the destruction of the rainforests. People cut them down to provide land, paper, wood, minerals etc. But rainforests are like umbrellas. There live millions of animals and flowers under the trees. And they are destroyed too. It means a lot of them will become extinct very early.

The air pollution also causes the *greenhouse effect* and the *global warming* as its aftereffect. The Earth's temperature raises, arctic icecaps melt and areas near the sea level are more and more often flood.

Other problems are caused by the *ozone hole*. Ozone forms a layer in the upper atmosphere which protects the Earth from ultraviolet rays which can cause skin cancer and other illnesses. This layer is destroyed mainly by Freon and other gases and it means that we are not protected from UV rays. The biggest ozone hole has formed over Antarctica and Australia.



The water is polluted by the households, industrial processes by pesticides and other chemicals used in agriculture, by waste and ships - mainly by tankers which crashed and oil run out.



The modern agriculture uses special chemicals for better growing of plants.



The land is full of nitrogen oxide and plants growing there are poisoned. The consumption causes more wastes and scraps. The wastes also soak through the land to the water. The land and water contain poisons from them. The polluted water causes serious illnesses.

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We should find new technologies for saving the water, reduce chemical fertilizers and control industrial processes.

Wildlife becomes destroyed too. Plenty of animals are killed for different reasons. For example for scientific research, for their fur or skin, some of them are in danger because their environments are in danger.

Another problem is **energy**. The majority of the world's energy comes from fossils fuels. But what happens when people use their reserves?

There are several solutions for each problem.

- Industrial countries should control their level of pollution. (Kyoto's protocol)
- Each motor should have the catalyzer.
- People should recycle their wastes.
- Agriculture shouldn't use chemicals.
- Governments in rainforest countries should work together, protect these areas and plant new forests.
- There are many ecological organizations (e.g. Greenpeace) which try to help animals. They believe in their rights and try to stop hunting and cruelty.
- And energy? First of all people should try to use alternative sources of energy such as wind energy, solar, water, tidal wave and geothermal energy

