**18-Weather and environment**

**WEATHER**

Weather is a certain state of the atmosphere - it is hot or cold, wet or dry, calm or stormy, clear or cloudy.

The typical **English** weather is windy and rainy, summers are not very hot and winters not very cold (because of the warming effect of the Gulf Stream). The climate can change from minute to minute.

The climate of the **USA** is varied because of its size. Generally, we can say that the climate is mostly mild, but there are extremes in Alaska (arctic climate), Florida and Hawaii (tropical). There are also semi-arid areas in the west, and arid conditions in the southwest.

The USA faces danger mainly from earthquakes, volcanoes and forest fires, while those living on the Gulf and Atlantic coasts must be aware of hurricanes and tornadoes. (In November 2012 there was strong superstorm Sandy that caused floods and chaos in many parts of the country.)

Climate is quite varied in **Australia** - because of its size it has many different climates. The climate in the north is tropical, where it is always hot and there are only 2 seasons – Rainy and Dry. But the days in the desert are scorching hot and the nights are freezing cold. The south is cooler with 4 seasons. Compared to Europe, the winters are very mild, even in the coldest part of Australia, Tasmania, temperatures rarely drop below zero; summers are very hot.

**The Czech Republic** has a moderate continental climate. The year is divided into four seasons spring, summer, autumn and winter.

**Spring** begins on 21st March. The days get longer and the night is shorter. Spring and summer are the most beautiful seasons of the year. Nature wakes up after the winter, people fall in love and we have summer holidays. The weather in spring especially in April is unpredictable and very changeable.

**Summer** begins on 21st June. The temperatures rise above 25 °C. Early in the morning the sky is bright and clear and no wind blows. If the rain comes it is usually in a form of storm or shower. The storm is signalizing by the thunder, lightning and heavy downpour. Summer is also the time of strawberries, blueberries, blackberries and it is a time of the harvest of corn.

On 23rd September the summer is over and **autumn** comes. The nights are longer and days get shorter. It is a time of harvest. The trees and grass are changing the leaves get yellow, brown and fall. Birds set off the journey to the south. The days are cloudy and it often rains.

**Winter** comes on 21st December. The night is longest in the year. Typical winter weather brings snowfalls. The temperatures sometimes drop 20 degrees below zero. The roads become icy and slippery and it is very dangerous to go by car.

**ENVIRONMENT**

Scientists predict a terrifying future for our planet. By 2100 the sea levels will rise, coastlines disappear and Amsterdam and New York will be underwater. Moreover, 100 million people will become homeless, only because of global warming.

**The greenhouse effect**

All life on our planet depends on a thin layer of gases, called the atmosphere. Like a transparent blanket, the atmosphere keeps the surface of the Earth warm. Without it the average temperature on Earth would be around minus 18°C. With this atmospheric blanket the average temperature is actually around plus 14 degrees Celsius.

The energy from the Sun, in the form of ultraviolet radiation', goes through the atmosphere and warms the surface of the Earth. In a similar way, the energy is reflected back out into space as infrared radiation, and absorbed by the gas molecules, which trap the heat inside, like in a greenhouse. This is called the greenhouse effect. The main greenhouse gases that absorb the heat in this way are water vapour, carbon dioxide, and methane.

**Global warming**

In the 18th and 19th centuries people discovered that burning coal, oil or gas, commonly referred to as fossil fuels, release energy which could be used to power industry. However, burning more and more fossil fuels to generate heat and electricity for all motor vehicles produce a large number of emissions, e.g. carbon dioxide (CO2).

Normally, CO2 is absorbed in the processes of photosynthesis by green plants like trees and phytoplankton in the seas. Since more forests are being cut down in the tropical rainforests, less carbon dioxide can be absorbed.

All these facts increase the level of carbon dioxide in the atmosphere. The layer of greenhouse gasses has thickened (in the last 150 years by about a third). As a result, more heat gets trapped and the temperature of the planet rises.

**Climate change**

Scientists claim that the increase in overall global temperature is changing the climate. Global warming doesn't necessarily mean that the weather will be warmer. In fact, the weather will become more unpredictable. That could mean hurricanes and floods in some places and drought in others.

Ice is melting worldwide, especially at the Earth’s poles. The global warming has influence to lots of animals, too. Some butterflies, foxes, and alpine plants have moved farther north or to higher and cooler areas.

**Solutions**

Scientists claim that there is a need to cut down the carbon emissions across the world. Maybe the filters reducing the quantity of carbon dioxide could help. It is important to realize, that big producers of carbon emissions, particularly carbon dioxide, are cars, too. Nowadays, there is an effort of car factories to create a car, producing no carbon emissions. But according to the research, these hybrid electric vehicles, plug-in hybrids and all-electric cars generate more carbon emissions during their production than conventional cars.

We must use more **renewable sources of energy**, e.g. winter energy by winter turbines producing clean energy without emissions or solar energy by solar panels.

**Greenpeace**

Greenpeace is an international non-governmental environmental organization with offices in more than forty countries all over the world.

It focuses its campaigning on world issues such as global warming, deforestation, overfishing, and anti-nuclear issues. Greenpeace uses direct action, lobbying and research to achieve its goals. The organization relies on 2.9 million individual supporters and foundation grants.

**scorching –** nesnesitelně

**layer** – vrstva

**transparent blanket** – průhledná pokrývka

**ultraviolet radiation** – ultrafialové záření

**to reflect back** – odrážet zpátky

**infrared radiation** –infračervené záření

**water vapou** – vodní pára

**carbon dioxide** – oxid uhličitý CO2

**methane** – methan

**drought** – období sucha

**unpredictable** – nepředvídatelný

**deforestation** - odlesňování

**renewable sources of energy** – znovuobnovitelné zdroje energie