

# Climate changes

Have you ever heard about climate change? I am sure you have. Nowadays we can hear a lot about global warming and climate change all over the world. We can observe many effects of global climate change on the environment. The most visible are shrunken glaciers, plant and animal species have shifted to different territories and trees are flowering sooner.

What is a climate change?

Climate change is a significant variation of average weather conditions which are getting warmer, wetter, or drier for over several decades or more.

What causes climate change?

A variety of factors, natural or human, can influence the earth's climate system.

Natural causes include the sun's intensity, volcanic eruptions, and changes in naturally occurring greenhouse gas concentrations. According to NASA, "These natural causes are still in play today, but their influence is too small or they occur too slowly to explain the rapid warming seen in recent decades."

Humans, more specifically, the greenhouse gas emissions we release are the biggest cause of rapidly changing climate on the Earth. Greenhouse gases play an important role in keeping the planet warm enough to inhabit. But the amount of these gases in the atmosphere has increased in last decades. The burning of fossil fuels like coal, oil, and gas for electricity, heat, and transportation is the first source of human-generated emissions. Next big source is deforestation. Other source is agriculture, especially using fertilizers, which are sources of nitrous oxide emissions and cattle, buffalo, sheep, and goats are leading methane emitters.

Though our planet's forests and oceans absorb greenhouse gases from the atmosphere through photosynthesis and other processes, these natural carbon sinks can't keep up with our rising emissions.

Can we change this? Is it still time for change? I believe yes, so let's start with ourselves.

## We must all step up and now!

Mgr. Slavomíra Chrienová

# Climate changes in the world

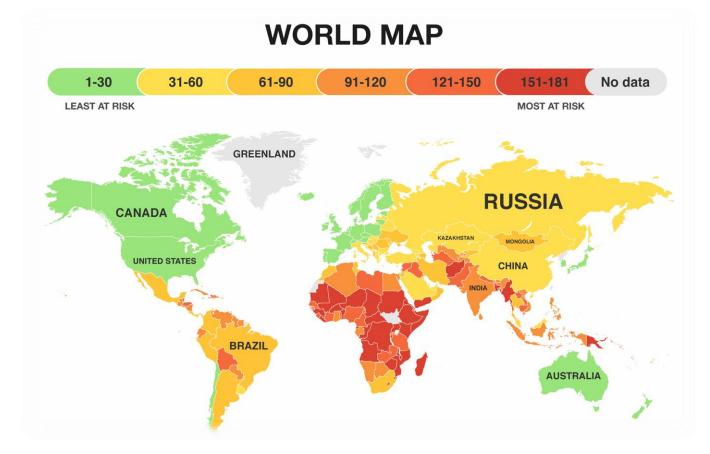
#### How do we know climate changes are real?



• The Earth's climate has changed before, but this time it is different.



- These changes are bigger and they are happening faster.
- According to this world map Africa is most at risk.



#### Global Temperature Rise

• Since 1975, global warming has increased about 0.15 - 0.20 °C per decade.









## Shrinking Ice Sheets

Shrinking Ice Sheets may also change the ocean's circulation.







Flowing meltwater from the Greenland ice sheet

## Sea Level Rise

- Because of shrinking Ice sheets global sea-level rise. •
- Global sea level rose about 20 centimetres in the last century.





Republic of Maldives: Vulnerable to sea level rise

### Glacial Retreat

It is when the snow disappears from the mountains due to warming





The disappearing snowcap of Mount Kilimanjaro, from space.

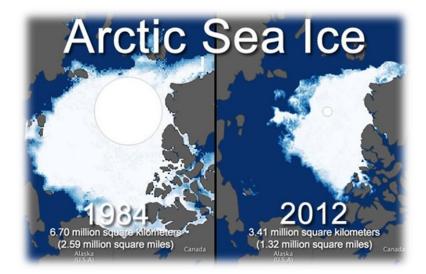






## Declining Arctic Sea Ice

• The Arctic Ocean melts faster than it refreezes in the winter.







#### Ocean Acidification

• The acidity of surface ocean waters has increased by 30%.





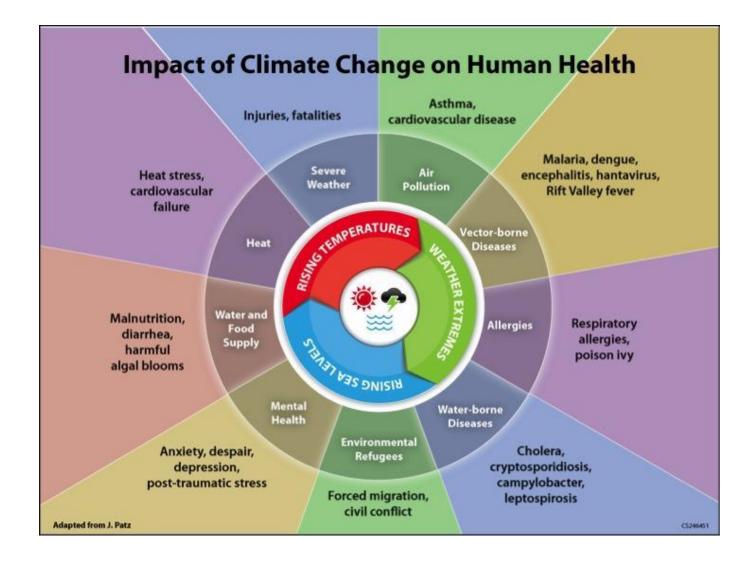




## Extreme Events

• Extreme events, caused by global temperature rise, can be, for example: short heat, cold, heavy rain or drought.



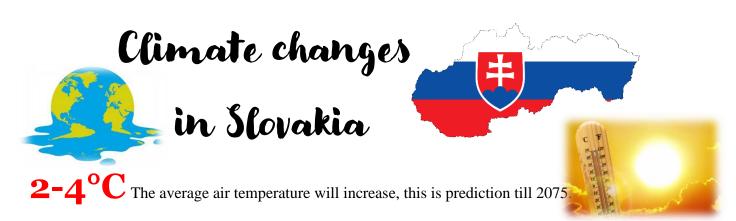


#### How can we help our enviroment?

- 1. Use Reusable Bags
- 2. Print as Little as Necessary
- 3. Recycle
- 4. Use a Reusable Beverage Containers
- 6. Save Electricity
- 7. Save Water...



Annamária Packová, 9.B





The areas regularly affected **by drought**:



More **frequent fires**:



There is a risk of immediate extinction of approximately 20-30% of plant and animal species.







Growth of animal species, which in our country have not been yet, for example **scorpions**, various species of **insects**.



The extension of the growing season begins the spring season earlier and earlier, for example **Some animal migration will accelerate, peppers will grow longer** (from April to November).

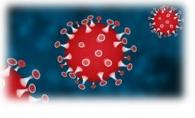


**Palm trees** will also be able to grow in Slovakia and nothing will happened to them in the winter.



In warmer climates many **infectious diseases** will spread out.













5,6% the rainfall and the snowfall will decrease in the whole country.











Up to 5% There will be a decrease in air humidity in Slovakia.







The availability of **natural water** resources will decrease.









Slovakia will have a higher intensity and frequency of **extreme** and **dangerous weather events**.



Michaela Krupová, 9.B



## PLASTIC

- The plastics decompose from 500 to 1000 years
- The average Slovak uses **466** plastic bags a year
- In Europe we separate only 30% of plastic waste, 39% is burnt and 31% is exported to stock









## Plastics in the oceans

- By **2050**, there will be more plastics than fish in the oceans
- More than 150 tons of plastics float in the oceans
- 4,8 to 12 million tons of plastic waste are added to the oceans every year



Floating island







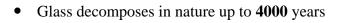


## PAPER

GLASS

- After biowaste, paper is the largest item by weight in our waste
- Paper can be recycled **5** to **8** times
- Each ton of recycled paper saves about 17 trees





• Recycling 1 glass bottle saves as much energy as

we would consume during  $\mathbf{25}$  minutes behind the computer











- Aluminium can decompose in nature for **500** years
- Aluminium and steel can be recycled indefinitely
- We need **670** aulminium cans to make **one** bike









## SEPARATING IN OUR SCHOOL

- In our school we separate plastics, paper, beverage cartons, metal and glass
- In every class there are separation containers



• We collect paper several times a year: this September we collected **21 310** kilograms



• We have a lot of posters and bulletin boards

about separating in the classes and halls





## SEPARATING IN OUR CLASS

- The most of us are separating at their home and also they are involved in the collection of paper
- This is how they separate:

name	Lucinová	Remiarová	Packová	Kopčeková	Cibulová	Nevolná	Mráz	Bellák
plastic	yes	yes	yes	yes	yes	yes	yes	yes
glass	no	no	no	no	no	no	no	no
metal	yes	no	no	no	no	no	yes	yes
paper	yes	yes	yes	yes	yes	yes	yes	yes

## SEPARATING IN OUR TOWN

#### Year 2019:

• In Krupina were collected: 64 tons of glass



65 tons of plastics
32 tons of paper
8 tons of metal
34 tons of biodegradable
waste
76 tons of construction
waste
20 tons of e-waste





- In avarage, the year usage of waste per one inhabitant is **490,11** kilograms
- The level of municipal waste sorting in the town of Krupina in 2019 was 46,09 %
- Municipal waste is collected every week and plastics once a month





#### Differences between online and live project meeting

Hi, my name is Nino and I was lucky enough to go to Slovakia for Erasmus+ project meeting before the Covid pandemic.

My group and I had fun time in Slovakia. We visited the country for the first time, met some new people, experienced some new things. And this is the main difference - when you are able to go somewhere in person, a whole new world opens for you. You see and learn new things, experience everything, even when it comes to being nervous because you have to speak in front of unknown people. And when you are connected by Zoom it's not the same thing. Yes, they can show you the pictures and videos of their town, castles, botanic gardens... but it's not a real experience for me. The only thing that is easier is presenting because I am not as nervous when we use technology as I would be if I went there again. The thing that I am sorry about the most is the fact that my new friends couldn't visit my country and enjoy its attractions.

Nino Besednik, 8.a

Hi! I am Rania. I am a pupil of 8.a in Primary School Krapinske Toplice.

Two years ago I became a part of Erasmus+ project. My partner Nino and me, as well as the rest of the team, worked so hard on our presentations

hoping that we wouldn't embarrass ourselves. In the end we did pretty good. All the presentations were good.

I liked it so much better when we had real meetings, not over Zoom. It was a bit odd seeing everyone on the screen.

I think that in real meetings we would have learned more things and it would have been more interesting for us, but also more fun. Over Zoom it was more boring not the presentations and our work in general, but the atmosphere that was more quiet. I really miss seeing everyone. It would have been so much fun and so much more interesting if our project partners had come here so that we could show them around and have fun together as we had in Slovakia.

Rania Gerdin, 8.a

## PLANTING TREES IN KRAPINSKE TOPLICE





On the Earth Day in April 2021 the teachers and the pupils planted an alley of columnar hornbeam instead of the old plant trees that were ill and dangerous for the environment near our school in Krapinske Toplice.









## Dan planeta Zemlje

22 APRIL 2021

# više reciklirati kako bi Zemlja ostala sačuvana

Dan Zemlje se obilježava kako bi ljudi mogli probuditi svoju savjest i ne bacati uokolo smeće i zagađivati Zemlju, već je uljepšati

# Neka bude više cvijeća, a manje smeća

Made with PosterMyWall.com





## Virtual meetings

Unexpected situation with coronavirus pandemic didn't allow us to meet personally again in Krapinske Toplice in April 2020. Because we couldn't meet face to face we had to make our meetings virtually. We had three virtual meetings.

Neočakávaná situácia s pandémiou korona vírusu nám neumožnila stretnúť sa osobne v Krapinských Topliciach v apríli 2020. Pretože sme sa nemohli stretnúť tvárou v tvár, museli sme sa stretnúť virtuálne. Virtuálne sme sa stretli trikrát.

## In November 2020 ...

... we met virtually via Zoom Application. At first it was a friendly meeting. We were talking about our families, school life – about distance study, about Covid situation in Croatia and Slovakia and especially in our towns.

V novembri 2020 sme sa stretli virtuálne pomocou Zoom aplikácie. Najprv na priateľskom mítingu. Rozprávali sme sa o našich rodinách, o škole – o dištančnom vzdelávaní, o aktuálnej Covid situácii v Chorvátsku a na Slovensku, osobitne v našich mestách.

### In February 2021 ...

A few weeks later, in February, we met virtually for the second time to talk about recycling, waste, global warming, climate changes in Slovakia and in Croatia. The pupils presented their Power Point presentations and documents in Word. This meeting was divided into two days, the first day the pupils from Slovakia presented their works and the next day the pupils from Croatia continued.

O pár týždňov neskôr, vo februári, sme sa stretli virtuálne po druhýkrát, hovorili sme o recyklácii, triedení odpadu, globálnom otepľovaní, zmenách klímy na Slovensku a v Chorvátsku. Žiaci prezentovali svoje práce v Power Pointe a dokumenty vo Worde. Toto stretnutie bolo rozdelené do dvoch dní, prvý deň prezentovali svoje práce žiaci zo Slovenska a ďalší deň pokračovali žiaci z Chorvátska.

## In May 2021 ...

It was our final meeting where the pupils presented the Dictionary of environmental terminology in three languages: English, Croatian and Slovak. They designed the pictures for five topics and later they found the equivalent words to the pictures. The final product was published in the form of printed book and given to the pupils as a present. It was also published for studying purposes in both schools.

Bolo to naše posledné stretnutie, kde žiaci predstavili Slovník pojmov z oblasti životného prostredia v troch jazykoch: anglickom, chorvátskom a slovenskom. Navrhli vhodné obrázky pre 5 tém a potom k nim našli zodpovedajúce slová. Výsledný produkt bol publikovaný vo forme tlačenej knihy a darovaný žiakom ako darček. Tiež bol vydaný pre študijné účely v oboch školách.

# **The Environment Picture Dictionary**

sample pages from the dictionary (ukážky stránok zo slovníka) 4





-

🖴 sklo

plastika

plast

#### forest 🚟 forest animals 1 šuma - 20 šumske životinje les lesné zvieratá Be birds ptice bear vtáky medvjed medved 👬 hawk deer 📰 jastreb 🔳 jelen 📁 jastrab 💼 jeleň globalno zatopljenje globálne otepľovanie 💥 melting the ice caps otapanje ledenjaka roztápanie ľadovcov sea level rise 💥 porast razine mora 📰 zvyšovanie morskej hladiny 📠 🐺 arctic sea ice decline 📰 smanjivanje arktičkog leda pokles ľadu z Arktidy 💥 ocean acidification 📰 zakiseljavanje oceana 📾 okyslenie oceánu extreme weather XX ekstremni vremenski 1 uvjeti 📾 extrémne počasie municipal waste biowaste konunalni otvad -≖ biootpad ■ bioodpad komunálny odpaď bottle ž 👪 plastic bag 🛨 plastična vrećica боса -¥ trash can 📻 flaša 🎞 koš za smeće 💼 sáčok 💼 kôš S. S.



garbage truck

kamion za smeće

smetiarske auto

\*\*

-

-

plechovka

#### Protected animals in Croatia zaštićene životinje u Hrvatskoj







AGENCIJA ZA MOBILNOST I PROGRAME EU