



WebQuest
Introductory Level

Make the Earth Cool Again





TITLE OF WEBQUEST: Make the Earth Cool Again

LEVEL OF WEBQUEST: Introductory Level

INTRODUCTION

Our planet is getting warmer. All human activities like driving cars, using electricity for lights, computers, cell phones, refrigerators, heating or cooling system release gases into the atmosphere called greenhouse gases, which slowly warm the planet making things hotter than natural, creating climate change, melting of ice, rising of sea levels, extreme temperatures and weather events, frequent storms, water shortage, drought, and loss of biodiversity.

Some of these changes are already happening. Many animals like penguins, koalas, polar bears and seals are at risk of extinction due to climate change. Unless we make some radical changes to climate change, global temperature will continue to rise causing severe damage to humans, animals and plants.

In this WebQuest “Make Earth Cool Again” you will gain knowledge about what global warming is, how it affects humans and the whole eco-system and what we can do to make Earth a comfortable planet to live in.





TASKS

It is the year 2030. The old “greenhouse gases” that used to make Earth a nice and warm place to live in are now way too high and they are threatening the planet’s balance causing powerful heat waves, massive storms and devastating floods. The entire human population and the whole eco-system are in danger. Imagine yourself to be the superhero on a mission to save the planet. Your mission is to make a garden lampshade with your classmates to see what’s beneath the soil, appreciate the natural world, and begin your journey to becoming more environmentally friendly. Follow the WebQuest below to find out more about the greenhouse gases, their effect on the planet, and how to make a garden lampshade!

PROCESS

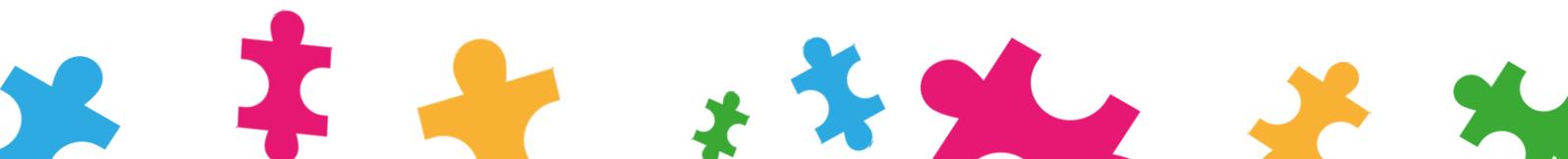
Step 1: Who are the “greenhouse gases”?

First of all, it’s important to know who the enemy is and why it is a threat to you and Planet Earth. Once you know your enemy, you have the power to fight it! The Earth’s atmosphere is made up of gases. Some of these gases are known as greenhouse gases – mainly water vapour and carbon dioxide (CO₂) that naturally cycle between the Earth’s atmosphere and the oceans. They trap the heat from the sun and warm the Earth. Without greenhouse gases our planet would freeze and life as we know it would not be possible.



To find out more about the greenhouse gases, click on the following links:

- The main greenhouse gases - <https://www.hanisauland.de/node/114064>
- The greenhouse effect - <https://youtu.be/5ijfVTLZFVE>
- Natural greenhouse effect explained - <https://youtu.be/sg9EhvQjDwQ>





- Why carbon is important - https://youtu.be/9Mwuf1_fU5g

Step 2: What are they doing to planet Earth?

So, if the greenhouse gases are good and vital to life on Earth, what caused them to become evil and dangerous for humans, animals and plants? Over the last century, humans have burned coal, oil, and gasoline in their cars, trucks, planes, trains, power plants, and factories. Burning such fossil fuels produces CO₂ as a waste product. Putting so much new CO₂ into the air has made Earth warmer. Just as not enough greenhouse gas makes Earth too cold, too much greenhouse gas makes Earth too warm. If we continue this way, we will cause even more warming. These gases can also cause air pollution, usually known as smog. Smog looks like smoky fog and it's difficult to see and can be very bad for our health and it is very important to keep track of it.



You can find more information about air pollution and the effect of greenhouse gases on planet Earth here:

- What is air pollution? - <https://www.zdf.de/kinder/logo/was-bedeutet-schlechte-luft-100.html>
- Climate change explained - <https://youtu.be/E1ZCOFT8z24>

And what happens if the Earth gets too warm? Glaciers will melt into the ocean causing the death of many arctic animals we know such as penguins, polar bears and seals. Melting ice will flow into the water causing the rise of the global sea level. But that's not the only reason. As Earth warms, the ocean is warming too, and water expands as it gets warmer. So warm water takes more space in the ocean, making sea levels higher. This means that many cities near the coast may not exist further into the future!





Read more about climate change and the effects of greenhouse gases on our eco-system:

- Rising sea levels - https://youtu.be/F47brH3_IWs
- Effect of climate change on biodiversity - <https://youtu.be/hyzNI5K0BzU>

Step 3: How can you fight the greenhouse gases?

Now that you have seen some of the effects of the greenhouse gases on our planet, you will have to find a way to fight them and save the Earth. Be aware that greenhouse gases can be invisible so you will have to be smart to fight them. Here's one secret: did you know that plants and trees help remove the greenhouse CO₂ from the air?

Save the trees!

Every year millions of trees are cut down to produce newspaper, magazines and anything else made of paper. You should be recycling paper, but it's better if you use less and buy product that uses less packaging material.



Cutting down trees affect plants and animals that live in these habitats. Habitat is the area where a plant or an animal lives. By saving trees you will also contribute to save animals. They need your help!





You can also help the planet by planting a tree or grow your own vegetables and fruits. If you grow some of your own food, you will also prevent more CO₂ from entering the air from the fossil-fuel burning trucks, planes and ships that will transport your food from far away.



Click on the links below to find out more about how you can help save the earth:

- How to be more environmentally friendly - <https://youtu.be/HTAGliXvZXg>
- Renewable energy for the environment - <https://youtu.be/LKn1RztgS0c>

Step 4: Activity Time!

It's time to complete your mission! In this activity, you can make a garden on a lampshade together with your classmates. See what's happening beneath the soil! When you turn the light on, you can see what's in the soil. Remember to use the special bulb and turn your lamp off before you go to sleep!

- How to make a garden lampshade <https://climatekids.nasa.gov/garden-lampshade/>





EVALUATION

Please answer the following questions:

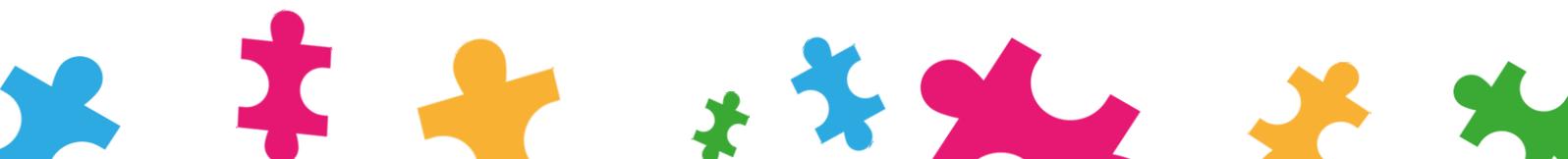
- What did you learn about global warming and climate change?
- Why do we need greenhouse gases?
- Why is it important that we reduce the amount of greenhouse gases that we emit?
- Why is it important to save the trees?
- What are the aspects you enjoyed about the activity?

CONCLUSION

In this WebQuest you have gained knowledge about global warming and the negative effects of rising temperatures on the environment. You know that the Earth is made of greenhouse gases that work to trap the heat close to Earth and make the world enjoyable for us, however, too many greenhouse gases can cause too much warming. You have found out that global warming is caused by a growing concentration of greenhouse gases deriving from human activities that burn fossil fuel like powering factories, driving cars and buses etc, which make Earth warm up much faster than normal causing glaciers to melt and the level of the oceans to rise. If this keeps happening, Earth won't be as enjoyable as it used to be for humans, animals and plants. And humans, animals and plants depend on each other and it's important that we keep the balance!

Congratulations! You can make the difference now!







GRETA

Challenge-based Learning in Primary Schools for Climate Change Awareness



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