

WORLD SCOUT ENVIRONMENT BADGE
PROGRAMME ACTIVITY RESOURCE



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Catch the Carbon Dioxide

Aim 3

Scouts are working towards a world where the risk of harmful substances to people and the environment are minimised.

Educational objectives

Be aware of harmful substances in the local environment.

Explain ways to reduce the risk of harmful substances to people, plants and animals.

Age range

Under 11

Summary

A fun, activity to introduce climate change

Aim

To learn the basic science behind climate change.

Equipment

Blindfolds

Preparation

None

Duration

Fifteen to thirty minutes

Setting

Scout meeting place

Background

Our planet is surrounded by a blanket of gases. This is our atmosphere. As the sun shines on the earth it sends us heat. Some of this is absorbed by the earth's surface and some of it bounces back into the atmosphere. The reflected heat is trapped by the atmosphere and this keeps our planet warm. This is known as the greenhouse effect.

The blanket of gases is getting thicker as we release greenhouse gases by burning fossil fuels for energy and as we cut down forests for timber and agriculture. Greenhouse gases are carbon dioxide (CO₂), methane and nitrous oxide. As the blanket gets thicker, the temperature rises. As a result of this, our climate is starting to change.

Step by step guide to activity

1. Split the group into two teams. One team are trees and one team are carbon dioxide molecules. There should be more carbon dioxide molecules than trees.
2. Ask the trees to find a place to grow with plenty of space in between each tree. Once the tree has chosen its place to grow it cannot move, only its branches (arms). As they are growing the trees need to catch carbon dioxide. They do this with their branches and leaves. Ask the trees to practice catching carbon dioxide (they should wave their arms around).
3. The carbon dioxide molecules are found floating around in the air. They can move very quickly but they can't see where they are going (put blindfolds on the carbon dioxide molecules). The carbon dioxide molecules have to move from one side of the playing area to the other without getting caught. The trees have to try and catch them with their branches. A carbon dioxide molecule is caught if a tree touches it and the molecule then becomes a tree.
4. Continue the game until nearly all the carbon dioxide is gone then stop and announce that humans have discovered this forest and want to chop down the trees so they can grow crops on the soil. The trees get burnt and the carbon dioxide is released. Choose three quarters of the trees and turn them into carbon dioxide molecules. After a while the land becomes useless for growing crops so they decide to build a town there instead. In the town there are lots of cars and factories. These burn fuel which releases more carbon dioxide into the atmosphere. Choose half of the remaining trees and turn them into carbon dioxide molecules.

5. The scenario can then be changed so that Scouts come along and plant more trees (turn some of the carbon dioxide molecules into trees).

Evaluation

1. Discuss the game afterwards using the ideas below.

In the game, what effect does the number of trees have on the number of carbon dioxide molecules?

Does this also happen in real life?

Halfway through the game humans came along and chopped down lots of the trees. What effects did this have (think about immediate and long term)?

What effect did the planting of trees by the Scouts have on the carbon dioxide molecules?

Why does it matter how much carbon dioxide there is in the atmosphere? Explain the greenhouse effect.

How can we reduce the amount of carbon dioxide in the atmosphere?

Further activities

1. Ask the Scouts to think about how their daily actions might affect climate change. What can they do to reduce the amount of greenhouse gases they produce?

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