Investigating Forests and Climate
Lesson Plan

Lesson Plan

Theme: Forests & Climate

Resource: Lesson Plan

Green School Step:
Step 3 – Action Plan
Step 5 – Curriculum Link

Curriculum Links:
Living Things
Environmental awareness and care

Global Goals/SDG Links:
Goal 3 - Good Health & Wellbeing
Goal 6 - Clean Water & Sanitation
Goal 7 - Affordable and Clean Energy
Goal 11 - Sustainable Cities and Communities
Goal 12 - Responsible consumption and production
Goal13 - Climate Action
Goal 14- Life below water
Goal 15 - Life on Land

Skills: Research; Observing; Recording;

Aim: To introduce important students to the role of trees and forests in the water cycle.

Background Information:
This lesson plan introduces teachers/facilitators to the connection between Forests & Climate. The background information will equip you with an understanding of how trees are part of the carbon cycle and an important resource for reducing the extent and effect of climate change. The power point presentation poses 10 questions about Forests and Climate. The slides are kept simple with a lot of background information in the notes. The teacher can decide how much information is appropriate for the class. For older students the background information document can be used for class discussions.

1. Use the PowerPoint presentation to explain the importance of forests in preventing extreme climate change.
2. Follow the instructions for the experiment below

Experiment 1:
What are trees made of?

Resources:

- ✓ **What are trees made of worksheet** per group
- ✓ Clipboards
- ✓ Pencils
- ✓ Tablet/Camera to record work
- ✓ Tree Swatches to identify your tree
- ✓ Measuring tape

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Methodology:

1. Go to a big tree in the school grounds, forest or park. Ask students what they think the volume of this tree is i.e. how much space it takes up?
2. Ask students where the tree got it's mass. They might say it got it from the soil, ask them why there isn't an equivalent sized hole in the ground?
3. Discuss with students what trees are made of. Explain that through photosynthesis, trees use sunlight to combine carbon dioxide (CO_2) from the atmosphere with water and nutrients from the ground to form carbohydrates which make up the tree's biomass. CO_2 is taken in at a certain rate and builds the mass of the tree over time.
4. Biomass is a measure of the dry mass of woody and leaf matter in kg
5. The carbon content of a tree is approximately 50% of its biomass (dry mass). The other 50% is made up of hydrogen, oxygen, nitrogen and other elements.
6. Divide Students into groups of 3.
7. Give equipment to each group and get them to pick a tree in the school grounds and fill in the worksheet.

Links to follow workshop with:

Green Schools & Climate Action: https://greenschoolsireland.org/resources/theme_category/climate-action/

LEAF Theme – Forests & Climate: https://leafireland.org/resources/theme_category/forests-climate/

LEAF International Resources on Climate: https://www.leaf.global/our-resources

European colonisers killed so many Native Americans that it changed the global climate, researchers say https://edition.cnn.com/2019/02/01/world/european-colonization-climate-change-trnd/index.html

Forests and Climate: https://www.greenfacts.org/en/forests/l-2/3-climate-change.htm