



# ECO<sub>2</sub> Smart Schools COP30 #ECO2COP30

## Lesson 1- The Global Importance of Trees and Biodiversity

This lesson is aimed at students aged 11+ years and confident English speakers. This document should be used in conjunction with the Lesson 1 PowerPoint slides. With the exception of a pen and paper or exercise book, no other resources are required for this lesson. However, you can print out the optional 'Lesson 1 Sentence Starters' if appropriate for your class. Please upload any work you complete this lesson to our 'Padlets' (links at the end of this document), so we can share our learning with schools around the world.

### Where in the world is your school?

Slide 2: Follow the link in the PowerPoint, and the consequent instructions to add your school to the world map, have a look and see if any other schools have been added yet and where they are learning from.

### COP30- Deforestation

Slide 3: This slide is an introduction to COP30 and one of its focuses- deforestation. Read through this slide and ensure students understand the key words, as they will be used throughout this series of lessons.

### Why are trees important?

Slides 4-6: This task can be done as a class on a whiteboard, or you could ask students do it individually in their books/ on a piece of paper. Make a mind map with as many reasons as students can think of as to why trees are important.

Throughout the lesson, encourage students to add to their individual mind map, or to put their hands up with ideas to add to the class mind map. You could also have a student who is responsible for adding ideas to the class mind map on the board throughout the lesson.

To ensure students have thought thoroughly about their reasons, discuss the some possible social, economic and environmental benefits and how they could be important to people personally and to society as a whole. Get a few ideas from different students and encourage them to add each other's ideas to the mind map.

### How do trees impact people?

Slides 7-13: Firstly, ask the students if they have any ideas about how trees impact people that have not yet been shared, which can be added to their mind maps. Throughout the next slides, discuss with students the impact trees have on our lives and how they have shaped our culture/ society. Firstly, discuss why people need trees. Shelter, food and fuel are necessary for human survival and are the reason society has been able to evolve.



Discuss how our use of trees has changed from basic needs to what we use trees for now. How has this changed over time and why? Are trees as useful/ necessary for survival as they were thousands of years ago? Ask students to explain their thoughts and opinions.

Trees have also shaped cultures throughout the world. There are lots of examples throughout the world, a few are included on these slides; can students think of any related to their culture or religion, or any others they might know? How important do your students think this is as an impact when looking at the importance of trees and why?

Ask students to think about a tree that they like or see regularly, it could be a tree they see on their way to school, in their local park, on their street or in your school grounds. Ask them to think about the characteristics of this tree (the colours, the smoothness of the bark, the shape, the texture of the leaves, how it changes throughout the year) and to describe it to a partner. What could the different characteristics represent? What significance could it hold?

Trees and nature also have an impact on our physical and mental health. Ask students how they would feel sitting in a forest compared to sitting by a busy road, ask why they think trees can have an impact on the things listed.

For many people around the world, forests are their homes. There are many indigenous tribes who rely solely on the forests around them for food, shelter and resources. Indigenous tribes often have great knowledge about the ecosystem including how to best look after it and live sustainably within it.

### **How do trees impact the environment?**

Slides 14-17: Ask the students to share any ideas about how trees are important for the environment, encourage them to add these to their mind map. Discuss the ideas on the next few slides and add any new ideas.

### **How do trees impact the environment? Climate Change**

Slides 18-21: The process of photosynthesis is essential for regulating our climate. Your students may have already learned about this process, but if they haven't, take this opportunity to explain it to them. Plants make their own food in the form of glucose (sugar); to do this, they absorb carbon dioxide, water and sunlight from their environment. Carbon, hydrogen and oxygen are converted into glucose using the sun's light energy (absorbed by chlorophyll in the plants cells), the glucose is used as energy for the plant or stored for the plant to use later. During this process, excess oxygen is released back into the air.

The Enhanced Greenhouse Effect is when there are too many greenhouse gases in our atmosphere trapping in heat (by preventing it from escaping into space). This is different to the greenhouse effect, which is necessary for life on Earth- some greenhouse gases in our atmosphere are good and keep our climate at a liveable temperature- too many greenhouse gases are causing our Earth to become warmer and warmer over time. Ask students how we are adding greenhouse gases to the environment.



Make sure students understand both of these processes, then ask how they are linked. Students should recognise that trees absorbing carbon dioxide (a greenhouse gas) and storing carbon, means that it is not going into our atmosphere and trapping in heat. It is storing the carbon and releasing oxygen, which is not a greenhouse gas. Trees and forests are therefore hugely important in reducing climate change.

### **How do trees impact the environment? Opinion Line**

Slides 22-27: Ask students to think briefly about the environmental impacts you have just discussed; which do they think are most important? Encourage them to think logically about which have the most severe/ long-term/ long-reaching impacts. Create an imaginary line across the room in whatever makes the most sense for your space (e.g. the front of the room is extremely important, the back of the room is not very important). For each impact, ask students to pick somewhere to stand on the line (they do not have to be one extreme or the other and should generally be somewhere in between). After the students have chosen a spot, ask a few students at different points on the line to explain why they chose to stand where they did- encourage an open discussion of opinions.

### **How do trees impact the economy**

Slides 28-30: Trees are perhaps most valued for their economic benefits, which students can often find difficult to understand past the selling of wood as a resource. Give students the sentence starters to finish or ask them to write them down and finish them with how the benefits we have looked at so far impact the economy. Ask them to write down any more ideas they may have.

There are some basic answers on the next 2 slides, use these to help students if they are stuck, but also try to hear some different answers from students as their answers may be more developed.

### **How do trees support life on Earth?**

Slides 31-32: Use these slides to get across to students that trees are vital for supporting our ecosystems and life on Earth in general. Many species rely on trees for survival, if these species were to die, our ecosystems would collapse and our life on Earth would not be possible.

### **Keystone species**

Slides 33-38: Look at the species on each slide and ask the students to guess which ones are keystone species in their ecosystems.

### **How do trees support life on Earth?**

Slide 39: Ask students to reflect on where they live. In the UK, we have a temperate forest biome however, it looks very different to many other temperate forests around the world, as we have removed many keystone species and cut down most of our old growth forests. If you live in the UK, you could discuss how our environment is different to other temperate forests which might have wolves, bears, etc. and the negative impacts we have had on our ecosystem. You could also ask what would happen if we took away certain other species (e.g. oak tree, rabbits, bees) with students using ideas from the previous task. If you do not live in the UK, talk about your biome, which are some of the important species and what would happen if you took them out of your ecosystem?



## A world without trees

Slide 40: Ask students to reflect on their learning today and why trees are important to us personally and to the planet as a whole. Ask students to choose what to write between a short story, a poem or a speech about what the world would be like without trees.

## Next Lesson and Sharing Our Learning

Slides 41-42: The next lesson will look more at deforestation on our planet. If possible, please take a picture of a tree which is important to you (you could do this as a class or ask the students to do this individually), if you are also able to measure the circumference of your tree with a tape measure, we will be able to work out how much carbon it stores in the next lesson!

- [Add your school to our world map](#)
  - Share pictures of your mind maps with us on our COP30 board
  - Share your stories, poems and speeches with us on our COP30 board
- [COP30 Board](#)