Outreach - The Carbon Cycle

Level/age group: P2 - 7	**Duration:** 20 minutes

Learning objectives
By the end of this activity:
- All students will gain an understanding of how carbon ends up in the atmosphere.
- Most students will be able to draw the carbon cycle diagram.
- Some students will be able to calculate how much carbon can be found in a tree.

Starter: What is Carbon? In pairs, the students will discuss what they think carbon is. After a few minutes, we will share some of our ideas and look at some pictures of solid forms of carbon. The leader will then explain the link between carbon and climate change, with optional input from the group.	**Equipment/handouts**: • Carbon solid pictures
Main activity: The Carbon Game Students will work in pairs and become carbon atoms. They will start at one of the 6 stations set around the playground – atmosphere, tree, animal, furniture, firewood, fallen tree. At the station, the will role dice and follow the instructions at their station relating to the number they rolled. They should end up moving around to different stations and most will spend the majority of their time at the atmosphere station. After approximately 5 minutes, the game will end and the group will gather together to discuss where they ended up most and how this activity reflects climate change. A simple carbon cycle diagram will be drawn and in groups, the students can copy this diagram in chalk on concrete.	**Equipment/handouts**: • Station labels and instructions set out • Pegs/rocks • Dice • Carbon Cycle diagram • Chalk
Plenary: Carbon Audit Activity Students will be told how much carbon the 'average' tree stores, relating this to weights of known objects to give a better understanding. A quick carbon audit can be done, where each student counts how many trees they can see around the edge of their playground. Using a whiteboard and pen, they can work in pairs to calculate how much carbon their playground trees hold by a multiplication sum. For a more in depth carbon audit, a more accurate measure of carbon storage in a tree can be predicted by measuring the width of a tree. In pairs, the students can be given the opportunity to do this calculation for a particular tree.	**Equipment/handouts**: • Whiteboards • Pens • Tape measure

Assessment is for Learning techniques: Starter: Discussion in pairs about carbon. Main: Drawing out the carbon cycle in small groups. Plenary: Calculating carbon storage of a tree, working in pairs.	**Differentiation opportunities**: • Younger kids: Run through the carbon game together as a class before starting. • Older kids: Complete the more challenging carbon audit. • G&T: Same as above. • SEN: Run through the carbon game together as a class before starting. • EAL: Pictures are put alongside the key words.

Extension activities:
In small groups, come up with some ways that people can help reverse the effects of climate change and how will doing these help.

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Poor weather alternatives: All the activities can be done in an indoor space.	
Suggestions for preparation:	**Suggestions for follow up**: