



# Capture the Carbon Game



## Instructions

### You will need

Outdoor, open space  
Small PE cones  
Chalk, rope or sticks



### How to play

This game is most fun when played at a fast pace. Keep the game and teams moving quickly. Ask pupils to assess and manage the risks involved in playing a fast physical game with many players in the allocated space.

1. After watching the selected *Year in the Life of a ....* film [https://www.youtube.com/watch?v=UnP8L4qYLFY&list=PLbKmvYIO9ziwg\\_Gdp2mUdyUeiL9jjTw2U](https://www.youtube.com/watch?v=UnP8L4qYLFY&list=PLbKmvYIO9ziwg_Gdp2mUdyUeiL9jjTw2U) pupils recap on the annual cycle of a deciduous tree.
2. Choose a wide open space and discuss boundaries. Can be played on tarmac or grass.
3. In groups of 4 or 5, pupils mark out 2D outlines of trees on the ground in the playing area. Do not add leaves to the trees. The outlines should depict roots, trunk and branches only. Each tree outline should be 2m or more in height/length. If playing on tarmac, chalk can be used to mark the outlines. If playing on grass, outlines can be marked out using rope and sticks.
4. Divide the class into two groups: **Carbon** team and the **Capture** team. The game is a race between the two teams adding carbon to the atmosphere and capturing it in the living trees.
5. Give the Carbon team a large supply of cones (stored to one side of the playing area). Upright cones represent the carbon in the atmosphere. Their job is to get as much carbon into the atmosphere as possible. They can carry only one cone at a time.
6. Ask the Capture team to stand at a tree – make sure that there is at least one member of the Capture team at each tree. They cannot go more than 2m from the tree. Their job is to move the carbon into the tree taking the cones from the atmosphere and turning over and placing the cones on branches to represent leaves or on the trunk or root of the tree. They can carry only one cone at a time.
7. **Begin the game.** An adult or pupil tells the story of the life of the tree beginning 'It is Spring. The days are getting longer, the rain is watering the plants and the trees. Leaves are beginning to form on the tree branches.' The Carbon team place upright cones in the spaces between and around the trees. The Capture team take the cones and place them on the tree turned over on the branches, trunk and roots. Some must be placed as leaves. 'The tree is growing, taking in sunlight and carbon dioxide, making food for itself so it can grow. The carbon dioxide is captured in the

body of the tree.’ Teams continue to add carbon to the atmosphere and to capture it in the living tree.

8. ‘It is summer, the days are long, warm and the sun is shining. The trees are covered in leaves.’ Capture team must add as many leaves as possible.
9. ‘It is autumn, the days are shorter, the wind and autumn storms blow the leaves from the trees.’ The Carbon team take any leaf cones and place them upturned on the ground around the tree. One person from each tree group is given the role of earthworm. ‘For the earthworms, the fallen dead leaves are food. The earthworms come up from the ground, pull the leaves below ground. Eat them and poop out soil. The carbon in the leaves is now trapped in the soil. Earthworms move the leaves (upturned cones) below ground level and turn over (the carbon is captured)
10. It’s winter. The daylight hours are short. The air and the soil are cold. The trees are dormant – alive but no longer growing.’ Carbon (in the form of upturned cones continues to be added to the atmosphere (where does the CO<sub>2</sub> come from, is there likely to be more or less CO<sub>2</sub> added to the atmosphere in the winter?)
11. Play another round/another year.

## Development and Discussion

Can pupils suggest ways to improve the game or to add more elements of the carbon story?

If you have selected particular species of tree and you know the fruit (conker, apple.....) add these to the story

What happens when trees are chopped down? What are they used for? What happens to the carbon they have captured?

What if tree evergreen?

When and where should we plant new trees?