


Session title	Climate Champions	
Key question	How are wetlands affected by climate change & how do they help lessen the impact?	
Session description	Explore the causes of climate change and the impact this is having on wetlands. Investigate the role of wetlands in helping to 'prevent' climate change. What role does photosynthesis play and what can we do to help?	
Key Stage	KS3	
Duration	Minimum 1 hour	

Curriculum links	<b>KS3 Science</b> <ul style="list-style-type: none"> <li>▪ The production of carbon dioxide by human activity and the impact on climate</li> <li>▪ The carbon cycle</li> <li>▪ Earth as a source of limited resources and the efficacy of recycling</li> <li>▪ Plants making carbohydrates in their leaves by photosynthesis and gaining mineral nutrients and water from the soil via their roots</li> <li>▪ The role of leaf stomata in gas exchange in plants</li> <li>▪ The reactants in, and products of, photosynthesis, and a word summary for photosynthesis</li> <li>▪ The dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere</li> <li>▪ The adaptations of leaves for photosynthesis.</li> <li>▪ How organisms affect, and are affected by, their environment, including the accumulation of toxic materials.</li> </ul>		
	<b>KS3 Geography</b> <ul style="list-style-type: none"> <li>▪ Understand the key processes in physical geography relating to: geological timescales and plate tectonics; rocks, weathering and soils; weather and climate, including the change in climate from the Ice Age to the present; and glaciation, hydrology and coasts</li> <li>▪ Understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems</li> </ul>		
Learning outcomes	<b>All learners</b>		<b>More able learners</b>
	<ul style="list-style-type: none"> <li>▪ Understand the processes causing climate change</li> <li>▪ Know some of the impacts of climate change on wetlands</li> <li>▪ Know that wetlands store carbon dioxide</li> <li>▪ Know that plants absorb carbon dioxide and that this can help mitigate the effects of climate change</li> <li>▪ Know some of the steps they can take to reduce their impact</li> </ul>		<ul style="list-style-type: none"> <li>▪ Able to name carbon dioxide as a greenhouse gas</li> <li>▪ Understand the processes behind these impacts</li> <li>▪ Understand the processes leading to carbon storage</li> <li>▪ Understand the process of photosynthesis</li> <li>▪ Understand how these steps reduce the amount of carbon dioxide being emitted into the atmosphere</li> </ul>
Key vocabulary	<ul style="list-style-type: none"> <li>▪ Climate change</li> <li>▪ Photosynthesis</li> <li>▪ Stomata</li> <li>▪ Carbon Dioxide (CO<sub>2</sub>)</li> <li>▪ Mitigation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Greenhouse gases</li> <li>▪ Emissions</li> <li>▪ Pollution</li> <li>▪ Atmosphere</li> <li>▪ Carbon sink</li> </ul>	<ul style="list-style-type: none"> <li>▪ Drought</li> <li>▪ Evaporation</li> <li>▪ Biodiversity</li> <li>▪ Decomposition</li> </ul>

Session Outline	Time
Introduction	5 mins
A quick introduction to the session title and what will be covered.	
Section 1: What is climate change?	10 mins
Learners investigate and explain what climate is and how it can change, through interacting with a giant floor map and associated demonstrations.	
Section 2: The impact of climate change on wetlands	5 mins
Learners look at the impacts extreme heat (drought) and intensive rainfall can have on wetland environments and their wildlife.	
Section 3: The role of wetlands in mitigating the effects of climate change	25 mins
Learners take on the role of water, carbon dioxide, oxygen and carbohydrate to model how plants absorb carbon dioxide and give out oxygen (through the process of photosynthesis to make simple sugars). Learners experience samples of wetland moss, peaty soil, bog oak samples and coal, to understand how carbon becomes locked up in the waterlogged ground.	
Section 4: What can we as individuals do to help?	10 mins
Learners explore how we can all make small changes to our lives to help reduce the impacts of climate change.	
Plenary	5 mins
We refer back to the title question, reviewing what we have learnt. There will also be time for learners to ask any remaining questions they may have.	