

Session title	Climate Change Champions	
Key Question	How are wetlands affected by climate change and 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 suitability	KS3	
Duration	1 hour	

Curriculum links	Curriculum for Wales Science and Technology Being curious and searching for answers is essential to understanding and predicting phenomena ▪ Progression step 4 ○ I can explain how the impact of our actions contribute to the changes in the environment and biodiversity. ▪ Progression step 5 ○ I can evaluate contemporary issues that affect the planet and biodiversity. The world around us is full of living things which depend on each other for survival ▪ Progression step 4 ○ I can describe the interdependence of organisms in ecosystems and explain how this affects their chances of survival. ○ I can explain the threats to the development and health of organisms and describe how the effects of these are reduced by natural defences, preventions and treatments. ▪ Progression step 5 ○ I can explain how variation of organisms within a changing environment leads to natural selection which drives evolution. ○ I can evaluate the factors which affect the development and health of organisms. ○ I can explain how prevention and treatment can support natural defence systems and enhance the health of organisms. Humanities Our natural world is diverse and dynamic, influenced by processes and human actions ▪ Progression step 4 ○ I can understand and explain how human actions affect the physical processes that shape places, spaces, environments and landforms over time. ○ I can understand and explain the range of factors that affect the interrelationships between humans and physical processes. ○ I can describe and explain the distinctive features of places, spaces and landscapes at a variety of scales, in my locality and in Wales, as well as in the wider world, along with the processes at work in them. ○ I can describe and explain why spatial patterns of places, environments and landforms may change over time in my locality and in Wales, as well as in the wider world. ○ I can describe and explain how places, spaces, environments and landforms have changed over time and outline the processes that cause these changes in the natural world. ▪ Progression step 5 ○ I can explain and analyse the wide range of interrelationships and interdependencies between the human actions and physical processes that shape places, spaces, environments and landforms over time.
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	○ I can evaluate the extent to which economic, social, political, cultural, religious and non-religious beliefs, practices and actions have led to changes to the natural world. ○ I can give comprehensive explanations for the distinctive features of places, spaces and landscapes at a variety of scales in my locality and in Wales, as well as in the wider world, along with the processes at work in them. ○ I can give comprehensive explanations for the spatial patterns of places, environments and landforms at a range of scales and predict how patterns and trends may continue or change in the future in my locality and in Wales, as well as in the wider world. ○ I can give comprehensive explanations and analysis of how and why places, spaces, environments and landforms have changed over time. Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action ▪ Progression step 4 ○ I have an understanding of my own and others' environmental, economic and social responsibilities in creating a sustainable future. ○ I can analyse and explain the impact of decisions made by individuals, local, national or global governance, and non-governmental organisations on people, their rights and the environment ▪ Progression step 5 ○ I have built a detailed understanding of what it is to be an ethical, informed citizen and can critically evaluate my role as one, recognising my responsibilities and those of others towards society, the environment and creating a sustainable future. ○ I can explain the importance of the role played by groups, governments, businesses and non-governmental organisations in the creation of a sustainable future, and how they impact on people and their rights and on the environment.		
Learning outcomes	All learners		More able learners
	▪ Understand the processes causing climate change ▪ Know some of the impacts of climate change on wetlands ▪ Know that wetlands store carbon ▪ Understand the process of photosynthesis ▪ Understand how they can take steps to reduce the amount of carbon dioxide being emitted into the atmosphere		▪ Able to name carbon dioxide as a greenhouse gas ▪ Understand the processes behind these impacts ▪ Understand the processes leading to carbon storage
Key vocabulary	▪ Climate change ▪ Mitigation ▪ Photosynthesis ▪ Stomata ▪ Carbon Dioxide (CO₂)	▪ Greenhouse gases ▪ Emissions ▪ Pollution ▪ Atmosphere ▪ Carbon sink	▪ Drought ▪ Evaporation ▪ Biodiversity ▪ Decomposition

Session Outline	Time
Introduction	5 mins
A quick introduction to the session title and what will be covered	
Section 1: Who lives where?	15 mins
Learners visit the living collection to discover 4 bird species that live in different climates.	
Section 2: What is climate and what impact is climate change on wetlands and other places?	5 mins
Learners return to the Water Lab to investigate what climate is using a large floor map – mapping where the different birds that they encountered (and others) live around the world. Learners move on to looking at what causes climate change through a simple activity using blankets to model the build-up of greenhouse gasses in the atmosphere. Learners study the water cycle and look at the impacts extreme heat (drought) and intensive rainfall can have on wetland environments, our wetlands, their wildlife and our local communities	
Section 3: The role of wetlands in mitigating the effects of climate change	10 mins
Learners take on the role of water, carbon dioxide, oxygen and sugars to model how plants absorb carbon dioxide and give out oxygen (through the process of photosynthesis) helping to reduce the impacts of climate change	
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	