CLIMATE CHANGE – LLŶN NATIONAL LANDSCAPE

SUPPORT MATERIALS

If you need further support on specific aspects of outdoor learning these materials can enhance the engaging experiences you are providing. They can support you as you design, plan and implement your curriculum. Outdoor learning is a great way to develop learners' integral skills (creativity and innovation, critical thinking and problem-solving, personal effectiveness, planning and organising). You will want to focus on why learning matters and ensure you are meeting your learners' needs.
These materials show a path that could be taken through the activity. This is not meant to be prescriptive. You should adapt your approach depending on your learners' needs and interests and your local area.

OVERVIEW

Learners design a digital poster about their ideas around climate change. Following research, they design and produce a second poster to show their learning, comparing the two through peer evaluation. Learners explore how the climate is changing and some of the global impacts of climate change. They apply this learning to view how climate change is affecting Llŷn National Landscape and its impact on developing countries. Learners go into Llŷn National Landscape to consider how climate change might affect it. They explore Pen Llŷn a'r Sarnau Seagrass Ocean Rescue to discover why Pen Llŷn a'r Sarnau has been designated as a Special Area of Conservation (SAC) and how conserving seagrass helps to mitigate climate change. Then, they try to implement measures in their everyday lives to slow down climate change.

CURRICULUM FOR WALES

Areas explored:

- Health and Well-being
- Humanities
- Languages, Literacy and Communication
- Mathematics and Numeracy
- Science and Technology

Activity also incorporates aspects of cross-curricular skills outlined in the LNF and DCF.

RESOURCES

Internet enabled device and internet access.
Access to Find out what every symbol means on an OS Explorer map - OS GetOutside.

DOING THE ACTIVITY

- Most tasks require learners to work in pairs or groups.
- Encourage learners to share their ideas, and through open questioning, explain and justify their ideas when possible. Focus questions have been suggested to guide learners through the tasks.
- Some tasks might be more effective if pairs or groups of learners have access to an internet enabled device.
- When taking learners outdoors, it is essential that the Countryside Code is adhered to and any relevant risk assessments have been carried out with risks mitigated.

TASK 1

WHAT IS CLIMATE CHANGE?

Explain to learners that in this task they will design a digital poster about their ideas around climate change. Following research, they will design and produce a second poster to show their learning.

Screen 3

Explain to groups of learners that you want them to draw a mind map about their ideas around climate change, by discussing the questions posed.

Focus questions

- What does 'climate change' mean?
- How do you know about climate change?
- What is causing climate change?
- What are the short-term effects of climate change?
- What are the possible long-term effects of climate change?
- What details about climate change do you know? How can you add these details to your mind map?

Screen 4

Explain to learners that they are going to do a 'market place' activity. Here half of each group stay with their mind map to explain it to others and the other half walk around the class to view the other groups' mind maps.

When they are back in their group, ask them to discuss:

- What interesting ideas did you get from others' mind maps?
- How could your mind map be improved? Why would these ideas improve it?

Then, to make any improvements to their mind map.

Screen 5

Explain to learners that they are going to design and produce a digital poster showing their ideas about climate change using their mind map. Ask learners to discuss the questions posed.

Focus questions

- What makes a good poster? Why do you think that?
- What words are important to include? Why?
- What images are important to include? Why?
- What are the key messages you want the poster to convey? Why?
- How will you make use of colour in your poster? Why?

Then, to make their poster.

Screen 6

Explain to learners that global temperatures have been recorded from the surface of the Earth since 1880. Invite them to access the webpage and look at the graph: Global Temperature - Vital Signs – Climate Change: Vital Signs of the Planet. Then, discuss the questions posed.

Focus questions

- What is the trend in the graph?
- What is the total increase in global temperatures since 1880?
- Why do you think there are no readings before 1880?
- Why do you think the global temperature has increased since 1880?

Screen 7

Explain to learners that as a class, they are going to research to find out more about climate change. Each group will research one question and report back to the class in a two-minute presentation. Once this is completed, each group will design and produce another poster explaining climate change.

Climate change questions:

- What causes climate change?
- What are the short-term effects of climate change?
- What are the possible long-term effects of climate change?
- Why is climate change a problem for humans?
- Why is climate change a problem to other animals and plants?

Ask learners to carry out their research.

Screen 8

This screen asks learners to present the answer to their question about climate change.

Screens 9-10

Invite learners to create a second digital poster to explain climate change.
Remembering the features that good posters should have.

Then, to ask another group to review their two posters, one of their ideas and the other one about the class research. Invite them to give feedback on:

- What features of a good poster can be seen?
- How well does each poster explain climate change?
- What evidence is there that the group has learned more about climate change?
- How could the group improve their second poster?

TASK 2

HOW IS CLIMATE CHANGE AFFECTING LLŶN NATIONAL LANDSCAPE?

Explain to learners that in this task they will explore how the climate is changing and some of the global impacts of climate change. They will use this learning to see how climate change is affecting Llŷn National Landscape. Then, look at the impact of climate change on developing countries.

Screen 3

This screen gives ways in which the climate is changing. Ask learners to discuss the questions posed.

Focus questions

- How might each of these changes affect Llŷn National Landscape and the people who live there? Why?

Screen 4

This screen gives some of the many global impacts of climate change. Ask learners to discuss the questions posed.

Focus questions

- How might each of these global impacts affect your daily life? Why?

Screen 5

Explain to learners that according to Friends of the Earth Cymru...

- The effects of climate change, such as higher sea levels and more frequent storms, increase the risk of flooding and extreme weather in Wales.
- 25% less summer rain is falling in Wales than a hundred years ago. A further 15% reduction is likely by the middle of the century.
- The temperature of Wales is over 1°C higher on average than it was 100 years ago.
- Higher temperatures are affecting Welsh habitats, including plants and wildlife.

Screen 6

Invite learners to think about flooding in Llŷn National Landscape, look at the map and make a list of areas that they think are or will be prone to flooding in the box.

Screen 7

Ask learners to access the webpage: Climate Central

Then, to find Llŷn National Landscape and manipulate the tool to show the year 2050 and land that is 1 metre above sea level. Then, change the altitude of the land to 2 metres and 3 metres above sea level.

They can then check how well they predicted the flooding risk.

Screen 8

Explain to learners that flooding usually happens on low-lying land. The rate of rising sea levels is over 5mm per year. Ask learners to discuss the questions posed.

Focus questions

- How many years will it take for sea levels to rise by 1m? How did you work it out?
- The rate of sea level rising is accelerating. What does this mean?
- If global warming remains at its current rate, it is predicted that sea levels will rise by up to 3m over the next 2,000 years. What's the average increase in sea level over these years?

Screen 9

This screen gives some global impacts of climate change, as seen earlier. Ask learners to discuss the questions posed.

Focus questions

- How might each of these impacts affect the daily lives of people in less developed countries? Why?

Screen 10

Explain to learners that climate change will increase the risk of different problems around the world. Though developed countries produce most greenhouse gas emissions, developing countries are predicted to see most of the severe effects. With fewer resources to adapt to these changes, the impact on people in developing countries is expected to be higher.

Screen 11

Explain to learners that each group will be allocated a scenario about life in a developing country. Ask learners to read the scenario and discuss the questions posed.

Focus questions

- What problems do the people already have in their life?
- What might become more difficult because of climate change?
- What could be done to support these people?

Then, to report back to the class, describing the scenario and the conclusions their group has reached.

TASK 3

HOW IS LLŶN NATIONAL LANDSCAPE RESPONDING TO CLIMATE CHANGE?

Inform the learners that they are going to go into Llŷn National Landscape to consider how climate change might affect it. They will review how Pen Llŷn a'r Sarnau Seagrass Ocean Rescue are working to conserve seagrass and try to implement measures in their everyday lives to slow down climate change.

Screen 3

Explain to learners that you will be taking them to Llŷn National Landscape to explore how climate change might affect the land and the organisms that live there. Invite them to look at the map of Llŷn National Landscape and find the area they are going to visit. Then, to discuss the questions posed.

Focus questions

- From the information on the map, how would you describe the area?
- What are the dimensions of the area?
- What features can you see on the map that you should be able to see when you visit?
- What is the land like in the area?
- What plants might you see there?

Ask learners to sketch a scaled map to show the area and label it with important features and the types of plants they might find. They will take the map with them when they visit.

Screen 4

Explain to learners that when they are in Llŷn National Landscape, they will:

- use their map to try and orientate themselves
- amend the map to improve it
- think about what might happen to the area with:
    - higher temperatures
    - less summer rain
    - flooding.

Back in school, they will draw a diagram or a picture to show what the area might look like in 50 years' time due to climate change.

Screen 5

Visit Llŷn National Landscape with their sketch maps.

Screen 6

Invite learners to draw a diagram or a picture to show what the area might look like in 50 years' time due to climate change.

Screen 7

Ask learners to read the text on screen and access the webpage: Where is it? - Pen Llŷn a'r Sarnau to see the area covered by Pen Llŷn a'r Sarnau. Ask learners to discuss the questions posed.

Focus questions

- What do you know about the area covered by Pen Llŷn a'r Sarnau?
- Have you been to this area? When? Why?
- Why do you think Pen Llŷn a'r Sarnau has been designated as a Special Area of Conservation?

Screen 8

Ask learners to access the webpage: Seagrass Ocean Rescue - Pen Llŷn a'r Sarnau and read the section 'Underwater Meadows'. Then, to discuss the questions posed.

Focus questions

- What is seagrass?
- Why is seagrass important for other organisms?
- Why do you think conserving seagrass will help us to mitigate climate change?

Screen 9

Show the video: Seagrass Ocean Rescue Champions. Ask learners to discuss the questions posed.

Focus questions

- How is the Seagrass Ocean Rescue project encouraging young people to take part?
- What is the role of the young people involved?
- How might Sea Grass Ocean Rescue Champions' actions help to slow down climate change?

Screen 10

Invite learners to think about what they can do to help to slow down climate change and discuss the questions posed.

Focus questions

- Thinking of your own life, what can you do? Suggest three things.
- How might these ideas help to slow down climate change?

Invite learners to try to implement these three things over the next month. Then, report back to the class to tell them:

- Why they decided to do each of these things.
- How easy or difficult each one was to do.
- If they had any problems, what did they do?