ROCKS AND CAVES IN GOWER 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 find out about how fossils are formed, making a fossil replica and use GPS coordinates to record its position so others can search for it. They consider fossil hunting rules and the types of fossils they might find, before carrying out a fossil hunt on the Gower. They learn about archaeology and some important archaeological finds on the Gower. Finally, they consider whether archaeological find should be displayed near where they were discovered or not.

CURRICULUM FOR WALES

Areas explored:

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

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

RESOURCES

Internet enabled device and internet access.
Means of making a fossil replica:

- modelling clay
- small objects to use as 'fossils', e.g. shells, leaves, etc.
- container to hold the mould, e.g. yoghurt pot
- plaster of Paris
- water
- mixing bowl and stick/spoon
- cooking oil.

Means of using GPS coordinates, e.g. smart phones, tablets, etc.
Means of doing a fossil hunt, e.g. Tide times – to see when it is safe to fossil hunt, sturdy plastic bags to put fossils in, old newspaper to wrap up delicate finds, smart phone, camera, safety glasses and geological hammer (optional), notebook.

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.
- 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 ARE FOSSILS AND HOW ARE THEY FORMED?

Explain to learners that in this task they will find out about how fossils are formed and carry out a fossil hunt.

Screen 3

Ask learners to observe the image and complete the sentences onscreen in as many ways as they can. Then, to share some of their responses with others.

Screen 4

Ask learners to discuss the questions posed.

Focus questions

- Have you ever seen or found a fossil?
- Where were you?
- What did it look like?
- What do you think caused it?
- Do you think fossils can be found anywhere, or are they only in certain places? Why?

Screen 5

Explain to learners that most activities need some guidelines so that everyone can enjoy them. Invite learners to complete the table with their ideas for 'rules' of fossil hunting.

Screen 6

This screen gives learners some rules for fossil hunting. Ask learners to think about the questions posed.

Focus questions

- If you went on a fossil hunt, which of these 'rules' do you think would be the most important? Why?

Screen 7

Explain to learners that they are going to make a fossil replica, and that making a fossil replica from plaster is similar to the fossilisation process. The instructions are given onscreen.

Screen 8

Invite learners to complete the missing words in the sentence onscreen, using internet research to help if required. Then, to discuss the questions posed.

Focus questions

- Which aspects of the two processes are different?
- Which aspects of the two processes are the same?

Screen 9

Inform learners that they are going to go outside to choose a good location to bury their fossil and record the GPS coordinates of where they have buried it. Ask learners to discuss the questions posed.

Focus questions

- Where have you heard about GPS or coordinates before?
- What are GPS coordinates used for? How do you know?
- How can you use a smart phone or tablet to find and record GPS coordinates? If you don't know how to do this, research online to find out. Then, try the methods to check that they work.

Notes for using GPS

Android

1. Make sure your Android's GPS is turned on. Your GPS significantly improves the accuracy of your coordinates, and helps you easily find your current location on a map.
2. You can check your GPS from your Quick Settings panel by swiping down from the top of your screen, and tapping the cog-and-box icon in top-right. Open the Google Maps app on your Android. The Maps icon looks like a red location pin on a tiny map. You will find it on your Apps menu.
3. Tap the crosshair icon. It's located on a white button in the lower-right corner of your screen. This button will mark your current location on the map with a blue dot, and automatically move you to it.
4. Tap and hold the blue dot. This will drop a red pin on your location on the map. Your current GPS coordinates will come up in the search field at the top of your screen.

Apple

1. You can ask 'Siri' for your coordinates – as long as Location Services is on.
2. Enable Compass in your Settings.
3. Tap on Location.
4. Enable your location preference and toggle on the switch next to Precise Location.
5. Go to the Compass app, where it will show your current location and the current GPS coordinates.

Screen 10

Take learners outside to choose a good location to bury their fossil and record the coordinates.

Screen 11

Ask learners to challenge another pair to try to find their fossil using the GPS coordinates.

Screen 12

Explain to learners that they are going to go on a fossil hunt in Gower National Landscape. Tell them that fossils can be found in many places. Most are found on beaches or in quarries.

Invite learners to research online to find the types of fossils they are likely to find, so that they will be able to spot them easily.

Then, to make a small field notebook with a list of the common types of fossil and their descriptions. They could include a diagram and sizes.

Screen 13

Take learners outside to look for fossils, check their notebook to name each fossil and record its coordinates.

Screen 14

Ask learners to use one or more of the sentence starters to reflect on the task.

TASK 2

HOW DO WE KNOW ABOUT ANCIENT HISTORY?

Explain to learners that in this task they will learn about archaeology and some important archaeological finds on the Gower.

Screen 3

Invite learners to look at the image and discuss with the questions posed.

Focus questions

- What do you think this is?
- Where might something like this be found?
- How old do you think this might be? Why?

Screen 4

Ask learners to choose one of these reports:

Carving found in Gower cave could be oldest rock art - BBC News

Mysterious medieval cemetery unearthed in Wales - BBC News

Welsh History Month: The legends around the ancient monument of Arthur's Stone - Wales Online

Inform them that they are going to use Microsoft Forms to create 10 questions for another pair based on their chosen news report. Ask learners to discuss the questions posed.

Focus questions

- What type of questions will you create (e.g. short answer, multiple choice, longer answer, etc.)? Why?

Then, to create their questions and ask another pair who has chosen the same report to try them.

Screen 5

Invite learners to try to complete the onscreen sentences with the words given to show their understanding of archaeology.

Screen 6

Show the video: Obama touches bones of ancient ancestor (about one and a half minutes). Then, to discuss the questions posed.

Focus questions

- What did you learn about Lucy from the video?
- Why do you think Lucy was found in Ethiopia?
- What else do you want to know about Lucy?

Finally, to carry out some internet research to answer the questions in the QuADS grid on the next screen. Learners can add other questions to the grid.

Screen 7

This screen gives the QuADS grid.

Screen 8

Explain to learners that they are going to use their research findings to make an infographic about Lucy. Ask them to discuss the questions posed.

Focus questions

- What makes a good infographic? Why do you think that?
- What information do you need to include? Why?
- What is the best way to present this information? Why do you think that?

Then, to make their infographic to share with the class. They could access Best infographic tools for information on free online infographic tools.

TASK 3

WHERE DO ARCHAEOLOGICAL FINDINGS 'BELONG'?

Explain to learners that they will consider whether archaeological find should be displayed near where they were discovered or not.

Screen 3

Show the video: BBC Wales - The Slate, Red Lady of Paviland Cave (about two minutes). Explain that the Red Lady is estimated to be from about 31,000 BCE. At that time, the Gower landscape would have looked very different. It would have been possible to walk from north Africa all the way to England and then over the Bristol Channel into south Wales.

Screen 4

This screen gives information about how the Red Lady's bones were found and where they are housed – at Oxford University. Explain that after 200 years at Oxford University, some people argue that the bones should be returned 'home' to Wales.

Invite learners to read the article about this campaign: Red Lady of Paviland: Campaign to return 33,000-year-old human skeleton to Swansea - ITV News Wales

Screen 5

This screen gives arguments for and against the Red Lady's bones being returned to Wales. Ask learners to consider the arguments and discuss the questions posed.

Focus questions

- Which of these arguments do you think are the most important? Why?
- Which do you think don't matter as much? Why? Prioritise the arguments in 'order of importance'.
- What other arguments do you think should be included? Why?
- Do you think the Red Lady of Paviland should return to Wales? Why?

Then, to write a one-page summary giving their position and reasons for it.