HOW SAFE IS WILD SWIMMING IN THE WYE VALLEY?

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 consider what wild swimming is and where it takes place in the local area and Wye Valley. They interrogate claims made that wild swimming has a positive impact on our mental and physical health and well-being. Learners explore water pollution and possible causes in the Wye Valley. They sample and test local river or lake water to check its cleanliness and write a Tweet/X to tell others about their findings. Learners look more closely as to how rivers and lakes become polluted. Through research they develop advice for others who wish to swim in local rivers or lakes. Learners explore plastic and chemical pollution. They look more closely at fertiliser and sewage pollution so that they can role play within a class debate on how we can minimise pollution of the river Wye.

CURRICULUM FOR WALES

Areas explored:

- Expressive Arts
- 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.
Access to Find out what every symbol means on an OS Explorer map - OS GetOutside.
Means of taking water samples – small clean plastic bottles.
Means of testing water for nitrates, ammonia and phosphates – simple testing strips for water in fish tanks will suffice.

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 WILD SWIMMING?

Explain to learners that in this task they will consider what wild swimming is and where it takes place in the local area and Wye Valley. They will interrogate claims made that wild swimming has a positive impact on our mental and physical health and well-being.

Screen 3

Ask learners to discuss the questions posed.

Focus questions

- What do you think wild swimming is? Why do you think that?
- Where does wild swimming happen? How do you know?
- Who goes wild swimming? What makes you think that?
- Have you been wild swimming? Why? When and where did this happen?
- How safe is wild swimming? Why do you think that?
- What might be the dangers of wild swimming?

Screen 4

Show the video clip of wild swimming on the river Wye: Wild Swimming on the River Wye (just over one minute). Ask learners to discuss the questions posed.

Focus questions

- How has your opinion of wild swimming changed? Why?
- What do you think wild swimming is now? Why do you think that?

Screen 5

Explain to learners that wild swimming (or open-water swimming) is simply swimming – or just taking a dip in natural, unchlorinated water. It can take place in any weather, during any season and allows people to swim in the face of breathtaking views and landscapes.

Screen 6

Explain to learners that wild swimming can take place in a river, lake or the sea and can be done in any weather, during any season and involve long swims and short dips, lots of gear or no gear. Ask learners to discuss the questions posed.

Focus questions

- What differences might there be wild swimming in different weather conditions? Why do you think that?
- What do you think are the pros and cons of swimming in summer and in winter?
- What gear do you think might be needed? Why? How do you know?

Screen 7

Inform learners that they are going to look for evidence of wild swimming in the local area. Ask them to discuss the questions posed.

Focus questions

- Where do you think wild swimming could happen locally? Why?
- Where do you know wild swimming happens locally? How do you know?
- What might you see as evidence of wild swimming? Why?
- Using the map, where exactly do you think there will be wild swimming locally? List these places.

Screen 8

Take learners outside to search for evidence of wild swimming in the local area.

Screen 9

Invite learners to consider what they found out and discuss the questions posed.

Focus questions

- What evidence did you find of wild swimming?
- Where did you find people wild swimming locally? Why do you think they were swimming there?
- What 'gear' were they wearing or using? Why do you think they were wearing or using this 'gear'?
- How safe did it look? Why do you think that?

Screen 10

Explain to learners that the 'Wye Explorer' website lists a range of 'gear' that might be useful for wild swimming. These are given onscreen. Ask learners to discuss the questions posed.

Focus questions

- What do you think 'Wye Explorer' is? Why do you think that?
- Which of these items would always be essential? Why do you think that?
- In what situation might you need each of these items? How do you know?

Screen 11

Explain to learners that humans have been swimming in the wild for centuries and doing it for sport saw a big boost at the onset of the Covid19 pandemic. However, it is also enjoying a resurgence because of its affordability and positive impact on our mental and physical health and well-being.

Focus questions

- Do you think wild swimming is easily affordable? Why do you think that?
- What do you think the phrase 'mental and physical health and well-being' means? Why do you think that?
- Why might wild swimming have a positive impact on our 'mental and physical health and well-being'?

Screen 12

Explain to learners that the Wye Explorer website lists some mental and physical benefits of wild swimming. Ask learners to access the webpage: Wild Wye Swimming - Wye Explorer and read the statements in the 'What Are the List Of Mental Pluses?' and 'What About the Body?' sections. Then, discuss the questions posed.

Focus questions

- Which of the statements could be scientifically proven? Why do you think that?
- What sort of evidence would be needed? How do you know?

Screen 13

Inform learners they are going to carry out research to find evidence that supports or does not support the statements they read from screen 12, on the webpage: Wild Wye Swimming - Wye Explorer. Ask them to discuss the questions posed.

Focus questions

- Where will you search for information and why?
- What search techniques might you need to use? Why do you think that?
- How will you evaluate the reliability of the information you find? Why do it like this?
- How will you link to your sources of evidence within the document? Why do it like this? How else could you do it?

Ask learners to create a two-page document that shows their findings and provides links to their sources of evidence.

Screen 14

Ask learners to share their two-page document with other learners and discuss in this group the questions posed.

Focus questions

- What search techniques were the most effective? Why?
- What evidence did you find for each statement?
- How well did this evidence support or not support the ideas in each statement? Why do you think that?
- How did you evaluate the reliability of the information you found? Why did you do it like that?
- How did you link your sources of evidence within the document? Why did you do it like this? How else could you have done it?

Screen 15

Ask learners to access Wild Wye Swimming - Wye Explorer again, scroll down and locate the 'Wye Basin Swim Map'. Then, to discuss the questions posed.

Focus questions

- Where is the nearest 'swim spot' to where you live?
- How far away is it? How do you know? How could you get there?
- What does the website tell you about this place?
- How many 'swim spots' are there in the Welsh part of the Wye Valley National Landscape?
- Which other 'swim spots' are nearby?

Screen 16

Invite learners to try the quiz about tips for safe wild swimming.

TASK 2

HOW CLEAN IS WATER IN THE WYE VALLEY?

Explain to learners that in this task they will explore water pollution and possible causes in the Wye Valley. They will sample local river or lake water to check its cleanliness and write a Tweet/X to tell others about their findings.

Screen 3

Explain to learners that probably the greatest health and safety issue facing wild swimmers is the quality of the water they swim in and that many rivers are affected by 'pollution'. Ask learners to discuss the questions posed.

Focus questions

- What do you think pollution is?
- Where have you seen pollution? What did it look like?
- Where was the pollution from? How do you know?
- What different types of pollution have you seen or heard about? What are they?

Screens 4-5

Invite learners to give some synonyms for pollution and type them in the box. The screen, on click, then gives them a few synonyms that they can compare with their own.

Screen 6

This screen gives a photograph of pollution. Ask learners to describe what they can see and type it in the box.

Screen 7

The image is given again, but this time learners are reminded of the synonyms from screen 5 and asked to think back to their own synonyms before reviewing their description of the image to improve it.

Screens 8-9

The first screen gives another image of pollution and asks learners to describe it. The next screen asks learners to compare their description with that of another pair. Then, to review their own description to improve it.

Screen 10

Here pollution is defined and the term 'pollutants' is introduced. Ask learners to discuss the question posed and list their ideas.

Focus question

- Which pollutants do you think might cause river pollution?

Screen 11

Ask learners to access and read this newspaper article: Concerns over pollution in Wales' rivers - BBC News. Then, to discuss the questions posed.

Focus questions

- What are the main concerns people have about the river Wye?
- What has been done to tackle the issues?
- What is making it difficult to keep the river free of pollution?
- What are the challenges ahead for the people responsible for reducing pollution?

Screen 12

This screen defines the two types of river (riverine) pollution as rubbish and chemical, explaining what each is and how it gets into rivers.

Screen 13

Invite learners to look at the map of Wye Valley National Landscape and discuss the questions posed.

Focus questions

- Where do you think you would find the most pollution? Why?
- Where do you think you would find most rubbish pollution? What types of rubbish do you think you would find? Why?
- Where do you think you would find the most chemical pollution? What types of chemical pollution do you think you would find? Why?

Screen 14

This screen introduces the Blue Flag programme and describes what it is. It also says that there is no equivalent official programme for rivers yet, but many agencies are working to improve river quality.

Screen 15

Here the role of Natural Resources Wales in sampling and testing water is given.

Screen 16

Invite learners to access the webpage: Water Watch Wales. Then, follow the instructions onscreen to find the local rivers where they know wild swimming happens. Then, to discuss the questions posed.

Focus questions

- What is the water quality of these wild swimming rivers?
- Where is the closest high quality river to school?
- Where is the closest bad quality river to school?
- What do you think makes river quality good?
- What do you think makes river quality bad?
- Why do you think that only part of each river is classified?

Screen 17

Ask learners to stay on the webpage: Water Watch Wales and follow the instructions onscreen to find the local lakes where they know wild swimming happens. Then, to discuss the questions posed.

Focus questions

- What is the water quality of these wild swimming lakes?
- Why do you think so few lakes in Wales are high quality? Where are these lakes?
- Where are the poor quality lakes in Wales? Why do you think they are poor quality?

Screen 18

This screen gives details of the assessments made to check whether water is fit for bathing.

Screen 19

Inform learners that they are going to a local river or lake to check the bathing water quality. Invite them to plan what they are going to do by discussing the questions posed.

Focus questions

- What water samples will you need to take?
- Where will you take your water samples from? Why?
- How will you denote and record your sampling position?
- What analyses will you need to do on your water samples?
- How else are you going to test the quality of the water? What will you look for? How will you record what you see or smell?

N.B. *They will not be able to test for bacteria as this requires a commercial laboratory.*

Screen 20

Take learners outside to get their water samples and make their observations.

Screen 21

Invite learners to carry out their analyses of the water samples. Then, to discuss the questions posed.

Focus questions

- What did you find out about the water quality of your local river/lake?
- How confident are you of your results? Why?

Invite learners to write a Tweet/X to tell others about the bathing quality cleanliness of the local river/lake water. They only have 280 characters.

TASK 3

HOW DO POLLUTANTS GET INTO RIVERS/LAKES?

Explain to learners that they are going to look more closely as to how rivers and lakes become polluted. Through research they will develop advice for others who wish to swim in local rivers or lakes.

Screen 3

Explain to learners that when testing for bathing quality in rivers/lakes you need to observe any potential source of pollution, e.g. near streams, rivers, stormwater outlets, farms, etc. Ask learners to discuss the questions posed.

Focus questions

- Why do you think a stream or river flowing into the river/lake might carry pollutants?
- What types of pollutants might a stream or river carry? Why?
- Why do you think a stormwater outlet might carry pollutants?
- What types of pollutants might a stormwater outlet carry? Why?

Screen 4

Show the animation and ask learners to discuss the questions posed.

Focus questions

- What pollutants do you think are in the runoff from each area? Why?

Screen 5

Explain to learners that they are going to do some online research to find out the pollutants that come from each type of runoff – industrial, agricultural, residential and roads.

Invite them to think about...

- Which search engine or AI will you use? Why?
- What are the key search terms/prompts to use? What do you want to find out?
- What type of websites will be the best to look at, why?

Then, to make a mind map to show their findings.

Screen 6

Explain to learners that the more it rains, the more runoff there will be into rivers. Invite them to read the first part of the article from Dŵr Cymru - Combined storm overflows (CSOs). Then, to discuss the questions posed.

Focus questions

- What happens when there is too much rain? Why?
- Why do you think new houses have separate pipes for sewerage and rainwater?
- What do you think are the disadvantages of CSOs? Why?

Screen 7

Explain to learners that Dŵr Cymru has developed a Storm overflow map giving near real-time information about storm overflow activity. Ask learners to access the map and select 'view the map in a new window'. Then, to discuss the questions posed.

Focus questions

- Where is the nearest place to school where the storm overflow is currently operating? How long has it been operating for?
- Find the nearest river to your school. When did the storm overflow last discharge sewage into the river and for how long?
- How do you think this information is helpful to swimmers?
- How do you think these storm overflow data will change due to climate change? Why?

Screen 8

Explain to learners that there has been much press recently about storm overflow sewage in river and seawater. Invite them to create a Sway to answer the question:

- What advice would you give to someone who wanted to swim in a local river/ lake?

To support their thinking, ask learners to discuss the questions posed.

Focus questions

- Do you need to do any more research on this topic? If so, what do you need to find out?
- What information will you give in your Sway? How will you give this information?
- What images will you use for your Sway? Why?

Screen 9

This screen gives instructions for using Sway.

- Login to your Hwb account and access Office 365. Find and open Sway or go to https://sway.office.com/.
- Click Create new.
- A Sway card will appear, now add a title to your Sway.
- Click Background image. Sway will begin to search for images relating to your title. These will be displayed on the right-hand side. Click the category that suits your title. Choose an image and drag and drop on to your title card. You can search for videos in the same way.
- Now click Play... Sway will use algorithms based in graphic design to suggest the appearance.
- Practise changing the graphic design.
- Click on + to add other images with text to include what you have found out about swimming in a local river or lake.
- Share your Sway with the class.

Screen 10

Ask the class to feedback on:

Two things in the Sway they thought were good and why.

One thing that could be better in the Sway and why.

TASK 4

HOW CAN WE MINIMISE RIVER/LAKE SEA POLLUTION?

Explain to learners that they will be exploring plastic and chemical pollution. They will look more closely at fertiliser and sewage pollution so that they can role play withing a class debate on how we can minimise pollution of the river Wye.

Screen 3

Show the video How did we get to a world full of plastic? - BBC (about 2 minutes). Then, ask learners to discuss the questions posed.

Focus questions

- How are plastics made?
- Why are plastics so important in our lives?
- What would your world look like without plastics?

Screen 4

Share the facts about plastic pollution and the length of time some items take to decompose. Then, ask learners to discuss the question posed.

Focus question

- Why do you think different plastic items take different times to decompose?

Screen 5

Explain to learners that as plastic decomposes it breaks down into smaller particles called microplastics. Invite them to research online to find out more about microplastics and to answer the questions posed.

Focus questions

- Where do microplastics come from?
- How big are microplastics?
- Where are microplastics found?
- What harm can microplastics do?
- How could we remove microplastics from rivers/lakes?

Invite learners to make a digital poster to show their findings.

Screen 6

Ask learners to discuss with a partner changes that could be made to minimise plastic pollution by...

- you
- your family
- your school?

Then, to list five changes that could be made to minimise plastic pollution.

Invite learners to try to implement all these changes and report back after a week as to how successful they have been.

Screen 7

This slide introduces chemical pollution and gives three types that will be explored in the following screens - fertiliser on farms, sewage outflow, industrial waste.

Screen 8

Explain to learners that fertilisers contain nitrogen and phosphorus-based chemicals. In rivers/lakes these chemicals promote the growth of algal blooms (eutrophication), which can be toxic to wildlife and harmful to humans. Blue-green algal blooms discolour the water, form scums, produce unpleasant tastes and odours and reduce the water quality. Decomposing algae can cause depletion of oxygen and so cause fish to die. Ask them to discuss the questions posed.

Focus questions

- Why do fish die if there isn't enough oxygen in water?
- Have you heard of blue-green algal blooms before? If so, where?
- Severe blue-green algal blooms occur annually in the river Wye. What do you think a warning sign should say? Why?
- What is currently being blamed for the algal blooms in the river Wye? How do you know this?

Screen 9

Explain to learners that sewage pollution can also cause huge algal blooms as it contains about 40% more nitrogen-based chemicals than agricultural runoff pollution.

Sewage also contains bacteria that can be harmful, e.g. E.coli and Streptococci. Causes of sewage pollution are given onscreen. Ask learners to discuss the questions posed.

Focus questions

- What do you think are the main reasons for sewage pollution in the Wye Valley? Why?

Screen 10

Explain to learners that there are many groups who protest against pollution of the river Wye, e.g. wild swimmers, local angling groups, environmental groups. These groups blame others for the pollution and/or their lack of action, such as:

- local farmers
- Dŵr Cymru/Welsh Water
- Natural Resources Wales
- Welsh and English Governments.

Inform learners that they are going to research online to look into the issue. Then, find out more about one of the protest groups or one of the groups who they believe are to blame.

Once they have their information, they will play the role of this group in a class debate to decide how pollution can be minimised in the river Wye.

Screen 11

Before researching, ask groups of learners to discuss the questions posed.

Focus questions

- What do you already know about the group you are role playing?
- What do you think they believe?
- What do they do to promote their beliefs or evidence?
- What types of people do you think are in the group? Why?

Screen 12

Remind learners that to carry out internet searches they need to consider:

Before researching...

- What search terms could you use? Which are the best? Why?
- What type of sites will be the best to look at, why?

When assessing information/data...

- How do you know the information/data is reliable? How could you find out?
- Could the information/data be biased? Why do you think that?

Then, to carry out their research and prepare to debate.

Screen 13

Hold the class debate on: How can we minimise pollution of the river Wye?

Screen 14

Explain to learners that you want them to use the reflection triangle to consider how they prepared for and took part in the debate.

Invite learners to drag and drop the terms provided to show their thoughts and to consider what other strategies they used and to record their ideas.