

PEATLAND LEARNING RESOURCES



GUIDANCE NOTES

This pack is offered as a FREE resource following the delivery of the schools' education programme element of the Lost Peatlands project (licensed for use by others under the Creative Commons 'Attribution 4.0 International (CC-BY4.0) licence) This learning resource pack suggests ideas for learning activities about the Lost Peatlands project area and offers supporting resources.

The following symbols have been used on resources to indicate their purpose;



Information/Guidance Notes



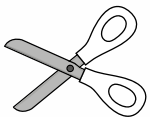
Learner resource



Print resource



Fill in resource



Cut out resource

Further information about the Lost Peatlands project can be found on the project's website here: www.npt.gov.uk/lostpeatlands

Learning resources on peatlands, from project partner Natural Resources Wales, can be found here: <https://naturalresources.wales>

Please be advised that it remains the responsibility of the deliverer using this pack, to assess the suitability of the activities for their learners and undertake any necessary risk assessments.

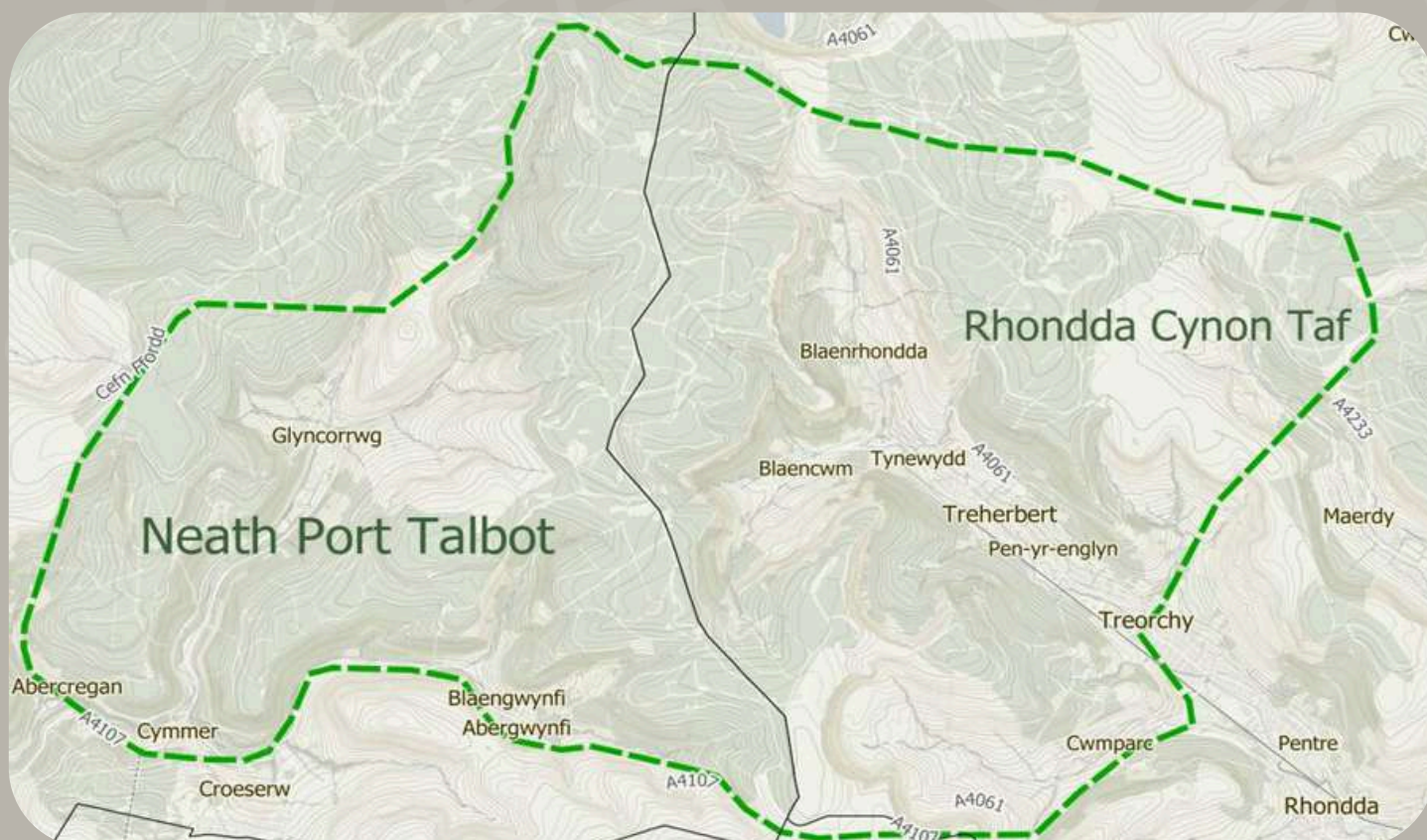
Please source Sphagnum responsibly - retailers should state that their products are sustainably sourced and are from peat free soils.



THE LOST PEATLANDS PROJECT

Introduction

The Lost Peatlands project, a landscape-scale partnership project funded by the National Lottery Heritage Fund, restored approximately 255 hectares of peatland in the Upper Afan (Neath Port Talbot) and Rhondda Fawr (Rhondda Cynon Taf) Valleys and helped local communities to explore and enjoy their natural heritage.

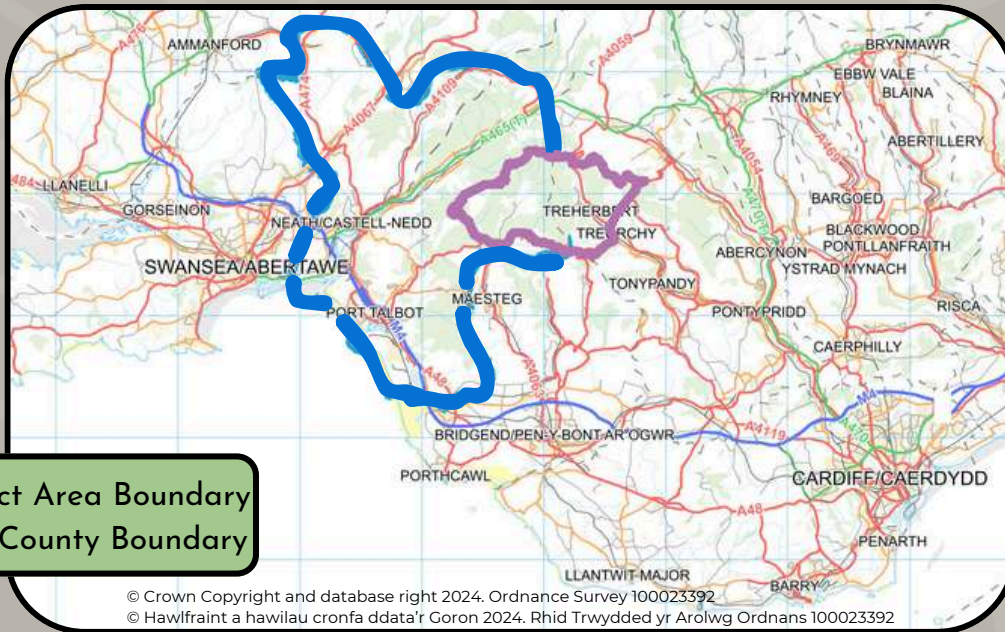


THE LOST PEATLANDS PROJECT

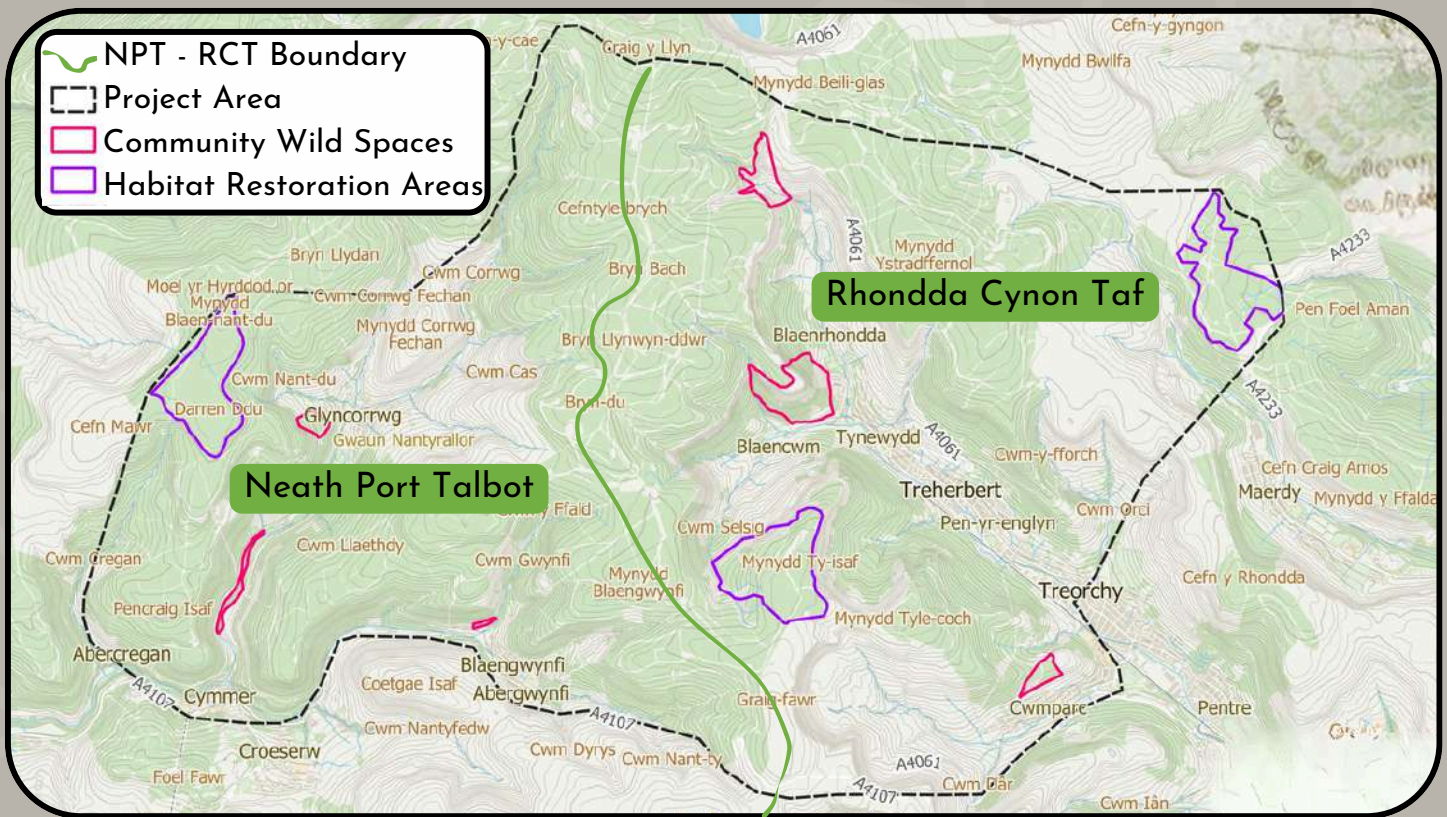
Project Sites

Peatland restoration took place at the project's Habitat Restoration Areas, referred to as Cregan HRA (near Glyncorrwg), Cwm Saerbren HRA (near Blaengwynfi) and Castell Nos HRA (near Aberdare).

Habitat management took place at the project's Community Wild Spaces in Cymmer, Glyncorrwg, Gwynfi, Cwmparc, Blaencwm and Hendrer'r Mynydd.



- Project Area Boundary
- NPT County Boundary



THE LOST PEATLANDS PROJECT

Peatlands Explained

You may know them just as 'bogs' but peatlands are diverse habitats, formed over millennia, that are extremely carbon-rich and support a diverse tapestry of plant and animal species. Peatlands cover just 3% of the world's land surface yet store twice as much carbon as the world's forests (IUCN national committee United Kingdom).

Landscapes that possess an accumulation of peat are called **peatlands**, irrespective of whether or not they have peat-forming conditions or peatland vegetation. However, there is much debate about how deep the peat must be. Peat forming peatlands are also called **mires**.

In the UK, peatlands are generally divided into three groups: blanket bog, raised bog and fens. **Raised bogs** usually start in depressions in lowland areas with domes of peat eventually forming above the surrounding ground. They receive water from precipitation only. **Fens** however, receive water from precipitation and water that comes into contact with underlying rocks. **Blanket bogs** are waterlogged habitats that receive water only from precipitation. Blanket bogs are found in upland areas, that have a cold, temperate climate, high rainfall and low drainage. Blanket bogs can 'cover' large parts of the landscape and are made of a thick layer of acidic peat soil which is formed by partially decayed plant material, mainly Sphagnum moss, that builds up slowly over time. Most peatlands only grow by 0.5 to 1mm a year, meaning that it can take over 1,000 years for 1m of peat to form!

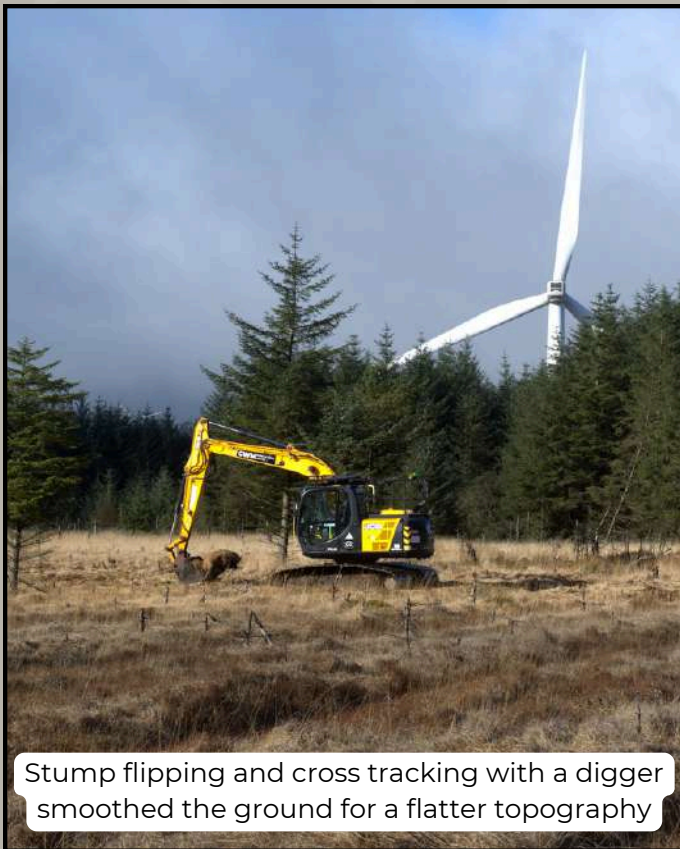
The Lost Peatlands project has restored peatlands at project HRA sites to prevent further damage to and to re-establish blanket peat bog habitat in the uplands of Neath Port Talbot and Rhondda Cynon Taf.



THE LOST PEATLANDS PROJECT

Restoration Explained

Peatland restoration in the Lost Peatlands project area involved rewetting previously afforested land. In order to supply timber, following the Second World War, upland areas were managed for commercial forestry. Drainage channels were put into the landscape to provide drier growing conditions for trees and this led to an undulating landscape. Peatland restoration techniques were used by the project to revert the landscape back to a flatter topography and raise the water table.



THE LOST PEATLANDS PROJECT



Present upland landscape



Coniferous plantation



Drainage channel



After restoration - mosaic of peat dams



After restoration - smoother ground and higher water table



THE LOST PEATLANDS PROJECT

Learning Activity A Changing Landscape

Curriculum Links

Area of Learning and Experience:
Humanities

Statement of What Matters:
Our world is diverse and dynamic, influenced by processes and human actions.

Opportunities for learners:
Locate and give simple explanations for the distinctive features of places, spaces and landforms in my locality and in Wales, as well as in the wider world.

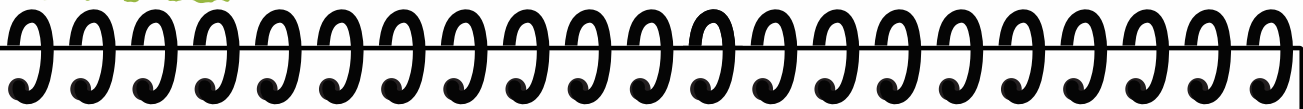
Describe spatial patterns of places, environments and landforms in my locality and in Wales, as well as in the wider world.

Give simple descriptions of how places, environments and landforms have changed over time.



Geography

Question, use and analyse maps, images, and Geographical Information Systems.



Activity Plan

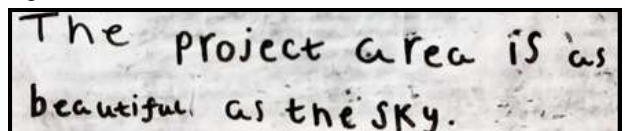
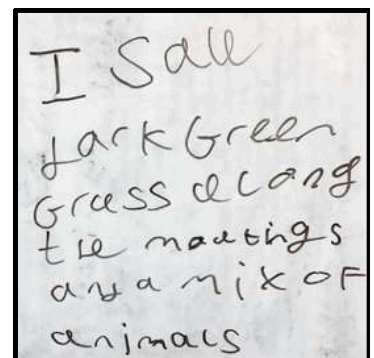
1) DataMapWales has a 'Peatlands of Wales' map layer;

https://datamap.gov.wales/layers/geonode:peatlands_of_wales_scg8

that learners can use to describe where peat is located in Wales. Learners can use the map to locate peat in the Lost Peatlands project area and where their nearest area of peat is.

2) Learners can use the project's website www.npt.gov.uk/lostpeatlands and images from the Lost Peatlands project area (see Gallery) to describe the distinctive features of the project area.

3) Learners can consider how and why the area has changed over time to understand that peat was in the uplands long before people managed the landscape.



FORMATION OF THE LOST PEATLAND BOGS

Learning Activity Make a Lost Peatlands Bog Model

Curriculum Links

Area of Learning and Experience:
Languages, Literacy and Communication.

Statement of What Matters:
Understanding languages is the key to understanding the world around us.

Opportunities for learners:
Listen to, understand and communicate the meaning of what is heard summarising the main points.
Respond to questions and multi-step instructions.



Numeracy
Measuring length

Curriculum Links

Area of Learning and Experience:
Humanities.

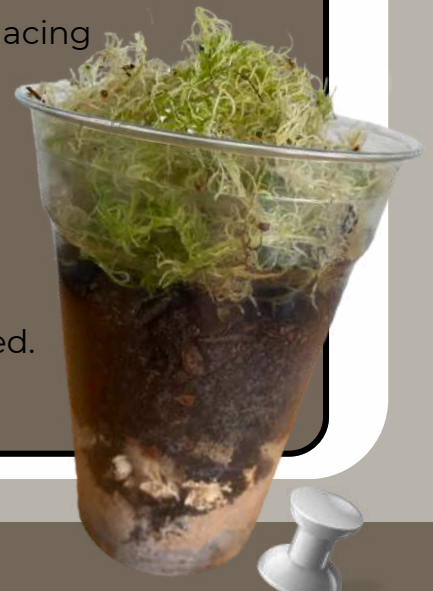
Statement of What Matters:
Our world is diverse and dynamic, influenced by processes and human actions.

Opportunities for learners:
Give simple descriptions of how places, environments and landforms have changed over time.

Describe and give simple explanations about the impact that physical processes have had on landscapes in the past and present.

Bog Model Resources

- **Large clear container** e.g. plastic drinks cup / large yoghurt pot / drinks bottle with the top cut off / food jar
- **Gravel**
- **Play sand** or brown rice / lentils. To avoid this layer mixing with the gravel either ensure the sand is slightly wet or place chosen material in a clear bag and trim off the excess before placing in the container
- **Wood pellets** or small sticks / landscape bark
- **Clay** or plasticine moulded into shape and gently stretched to fit the diameter of the container.
- **Settlement artefact** e.g. coin / lego figure / celtic village picture printed on waterproof paper or laminated.
- **Peat free compost**



FORMATION OF THE LOST PEATLAND BOGS

- **Moss** please ensure sustainably sourced or use cress seeds / green sponges cut up / green wool

Video links

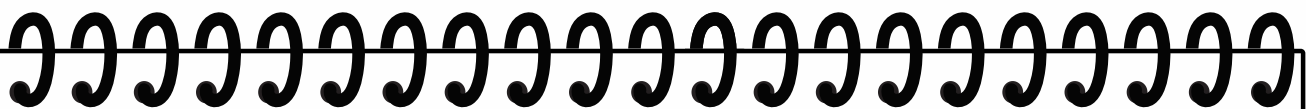


DRAFT



● 'Stages of Peat Formation' cards

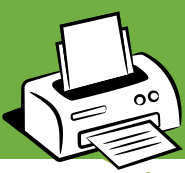
● 'Build a Lost Peatlands Bog Model' worksheet



Activity Plan

- 1) Watch the video "How peat bogs were formed in the Lost Peatlands project area".
- 2) Watch the video again, but this time with pauses to allow learners to write down key words or draw sketches to summarise the main points.
- 3) Allow learners to discuss the main points they noted down before arranging the "Stages of Peat Bog Formation" cards in sequential order.
- 4) Watch the video "How to make a 'Lost Peatlands' peat bog model"
- 5) Either predetermine or discuss as a class, the vessel and materials to use for the model and what depth to use for each layer. Record decisions about each layer on the "Build a Bog Model" sheet.
- 6) Build model.
- 7) Learners write or record an audio narrative to describe how the landscape in the upland areas of the Afan and Rhondda Fawr Valleys has changed over time. Learners should include an explanation of the physical processes involved in the formation of peat bogs in the area. Possible outcomes could be;
 - a label with short sentences or a paragraph to go on the model
 - an instruction sheet for how to make a bog model
 - a design for an interpretation panel to go in the landscape
 - a talk for a guided walk in the landscape
 - a video documentary piece for a children's TV programme





STAGES OF PEAT BOG FORMATION



27,000 years ago, glaciers carried rocks which carved out steep valleys and flat plateaus.



9,000 years ago, glaciers melted depositing nutrient rich sediments.



Plants and trees grew in the nutrient rich sediments.



A wetter climate washed minerals down through the soil which formed a layer that caused the soil to become waterlogged.



Bronze and Iron Age settlements seasonally travelled through the area.



Peat accumulated in the acidic waterlogged soils because the low oxygen levels caused dying moss to be decomposed very slowly (approx. 0.5mm to 1mm per year!).



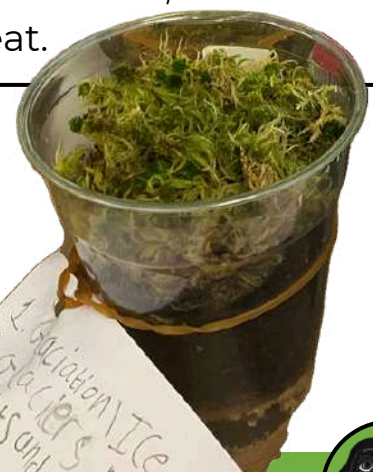
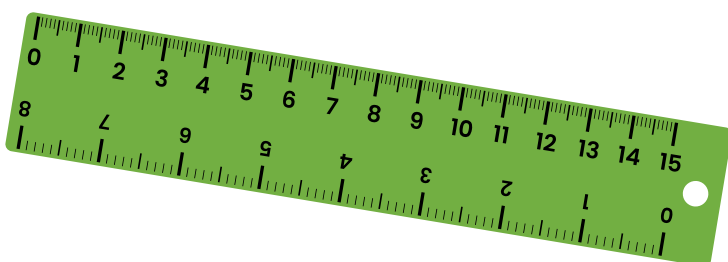
Present Day. In healthy bog habitat, moss soaks up rainwater and as it dies, it decomposes to form peat.





BUILD A LOST PEATLANDS BOG MODEL

Material	Amount	Bog Formation Stage
Gravel	1 cm	27,000 years ago, glaciers carried rocks which carved out steep valleys and flat plateaus.
Sand	1cm	9,000 years ago, glaciers melted depositing nutrient rich sediments.
Wood pellets	1cm	Plants and trees grew in the nutrient rich sediments.
Clay	1/2 cm (0.5 cm)	A wetter climate washed minerals down through the soil which formed a layer that caused the soil to become waterlogged.
Settlement artefact	Coin	Bronze and Iron Age settlements seasonally travelled through the area.
Up to 1 cm from the top	Peat free compost	Peat accumulated in the acidic waterlogged soils because the low oxygen levels caused dying moss to be decomposed very slowly (approx. 0.5mm to 1mm per year!).
Moss	1 cm	Present Day. In healthy bog habitat, moss soaks up rainwater and as it dies, it decomposes to form peat.



1. Glaciation / Ice.
 2. Glaciers melt.
 3. Rain / Sand / Trees
 4. Wetter climate
 5. Bronze Age
 6. Better Peat
 7. Present Day

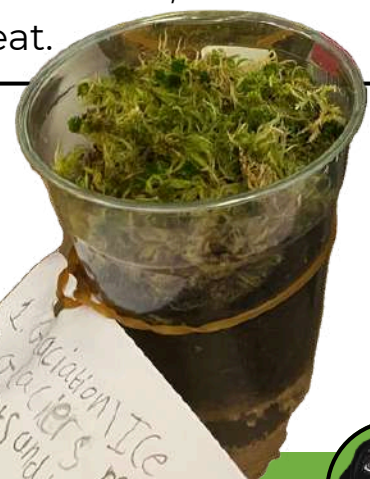
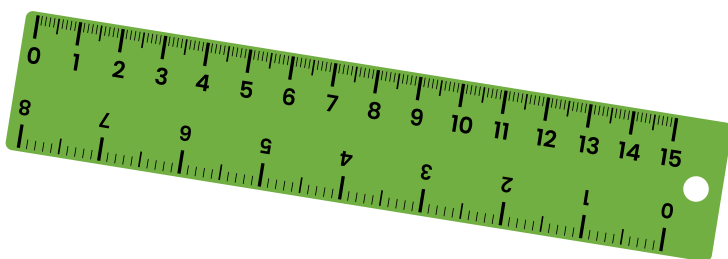




BUILD A LOST PEATLANDS BOG MODEL



Material	Amount	Bog Formation Stage
		27,000 years ago glaciers carried rocks which carved out steep valleys and flat plateaus.
		9,000 years ago, glaciers melted depositing nutrient rich sediments.
		Plants and trees grew in the nutrient rich sediments.
		A wetter climate washed minerals down through the soil which formed a layer that caused the soil to become waterlogged.
		Bronze and Iron Age settlements seasonally travelled through the area.
		Peat accumulated in the acidic waterlogged soils because the low oxygen levels caused dying moss to be decomposed very slowly (approx. 0.5mm to 1mm per year!).
		Present Day. In healthy bog habitat, moss soaks up rainwater and as it dies, it decomposes to form peat.



1. Glaciation Ice.
 2. Glaciers melt
 3. Plants and trees
 4. Wetter climate
 5. Bronze Age
 6. Peat
 7. Present Day



SPHAGNUM AND PEATLAND SPECIES

Learning Activity Exploring Sphagnum and key peatland species

Curriculum Links

Area of Learning and Experience:
Expressive Arts

Statement of What Matters:
Exploring the expressive arts is essential to developing artistic skills and knowledge and enables learners to become curious and creative individuals

Opportunities for learners:
Explore and experiment with and then select appropriate creative techniques, practices, materials, processes, resources, tools and technologies.



Curriculum Links

Area of Learning and Experience:
Science and Technology

Statement of What Matters:
The world around us is full of living things which depend on each other for survival.

Opportunities for learners:
Describe the features of organisms and recognise how they allow them to live, grow and reproduce for survival in their environment.



Literacy
Vocabulary and Collaborative talk



SPHAGNUM AND PEATLAND SPECIES

Curriculum Links

Area of Learning and Experience:

Mathematics and Numeracy

Statement of What Matters:

The number system is used to represent and compare relationships between numbers and quantities.

Geometry focuses on relationships involving space, shape and position, and measurement focuses on quantifying phenomena in the physical world.

Opportunities for learners:

Engage in practical tasks to estimate and round numbers to the nearest 10 and 100.

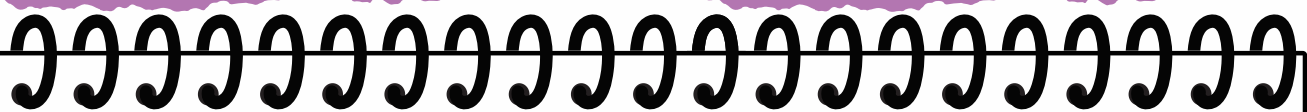
Explore measuring, using measuring equipment.

Estimate and measure capacity, mass, and time, using appropriate standard units.

Video Link



DRAFT



Activity Plan

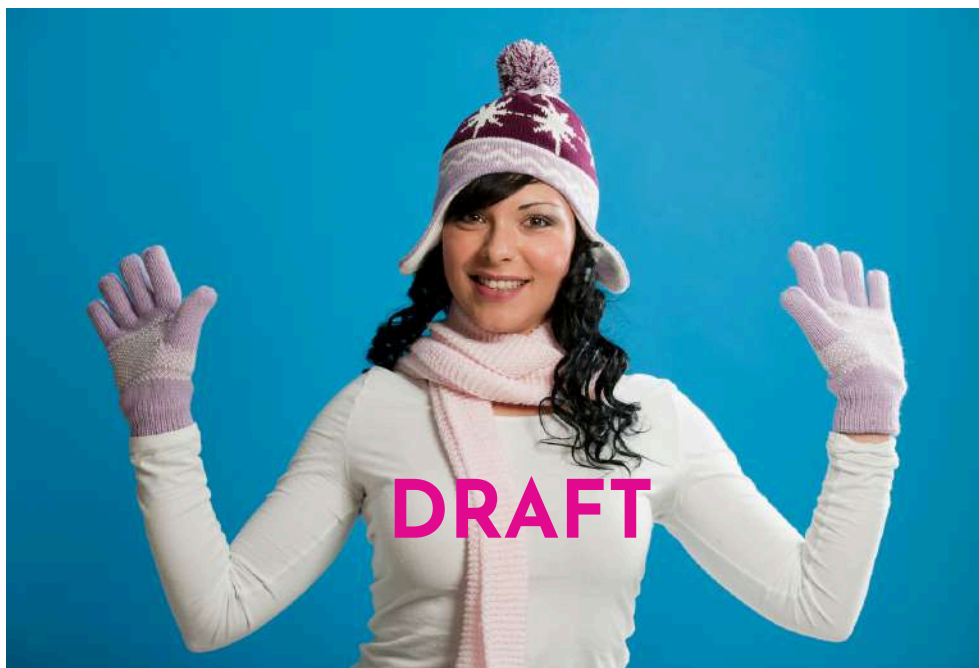
- 1)** There are over 30 species of Sphagnum in the UK. Learners can explore the variety of colours of Sphagnum by taking a laminated “Sphagnum Colour Wheel” outside and finding natural materials to peg to the wheel to match every colour/species of Sphagnum represented. Learners can use different art materials and techniques to produce a picture of a peatland landscape, ideally incorporating the mixing of paint colours to match the tones of each Sphagnum colour and textured materials for 3D Sphagnum.
- 2)** Learners can read the “Sphagnum fact sheets” and watch the video, showing microscopic footage of Sphagnum, to learn how Sphagnum has adapted to survive and become the ‘building block’ of peat bogs. A learner can volunteer to dress up and be labelled with Sphagnum moss adaptations to reinforce learning before all learners complete the “Sphagnum adaptation sheet”. Learners can write a story about the adventures of a Tardigrade living in Sphagnum or design their own microscopic-organism.
- 3)** Learners can go on a sensory walk to experience the world as a peatland creature and record words to describe the experience to generate a piece of typography art. Learners can make their favourite specie from clay, pipe cleaners or other art materials and record sentences to explain how these species are adapted to survive.
- 4)** Learners can explore the water retention properties of Sphagnum by carrying out an investigation.



SPHAGNUM AND PEATLAND SPECIES

Sphagnum Dress Up Resources

- **Green trousers** to represent the stem that gives moss its strength
- **Green long sleeved top** to represent divergent (arm pointing upwards) and pendant (arm pointing downwards) branches
- **Straws** to attach to arm pointing downwards to show that pendant branches help soak up water as the plant has no roots
- **Picture of Sphagnum printed onto card** to attach to arm pointing upwards to show that divergent branches can break off to form a whole new plant
- **Green bobble hat with pom pom** to represent capitulum with cluster of leaves that plant grows from
- **Kitchen roll middle taped to a tissue box painted green with tennis balls/ping pong balls inside (or similar)** to represent capsule that releases spores from the capitulum to grow into other plants (can be held in place by another learner and balls carefully thrown)
- **Green leaves printed onto cardboard** to attach to top and trousers to represent leaves where photosynthesis happens
- **Small clear plastic bags filled with a little water or white leaves printed onto card** to attach to top and trousers to represent leaves with cells designed to store water
- **Pegs/Bulldog clips/String** to attach items to clothing





SPHAGNUM COLOUR WHEEL



Sphagnum pulustra



Sphagnum Capillifolium



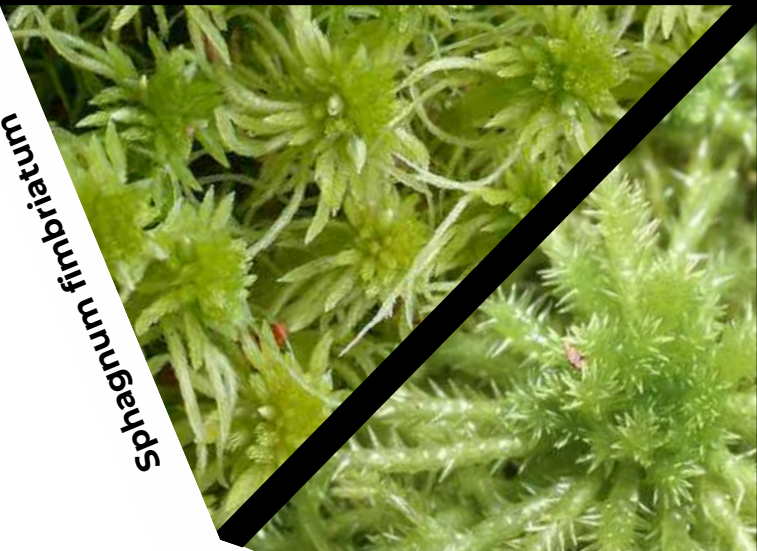
Sphagnum medium



Sphagnum tenellum



Sphagnum fimbriatum



Sphagnum squarrosum

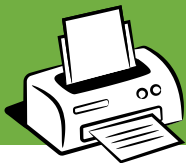


Sphagnum auriculatum



Sphagnum cuspidatum



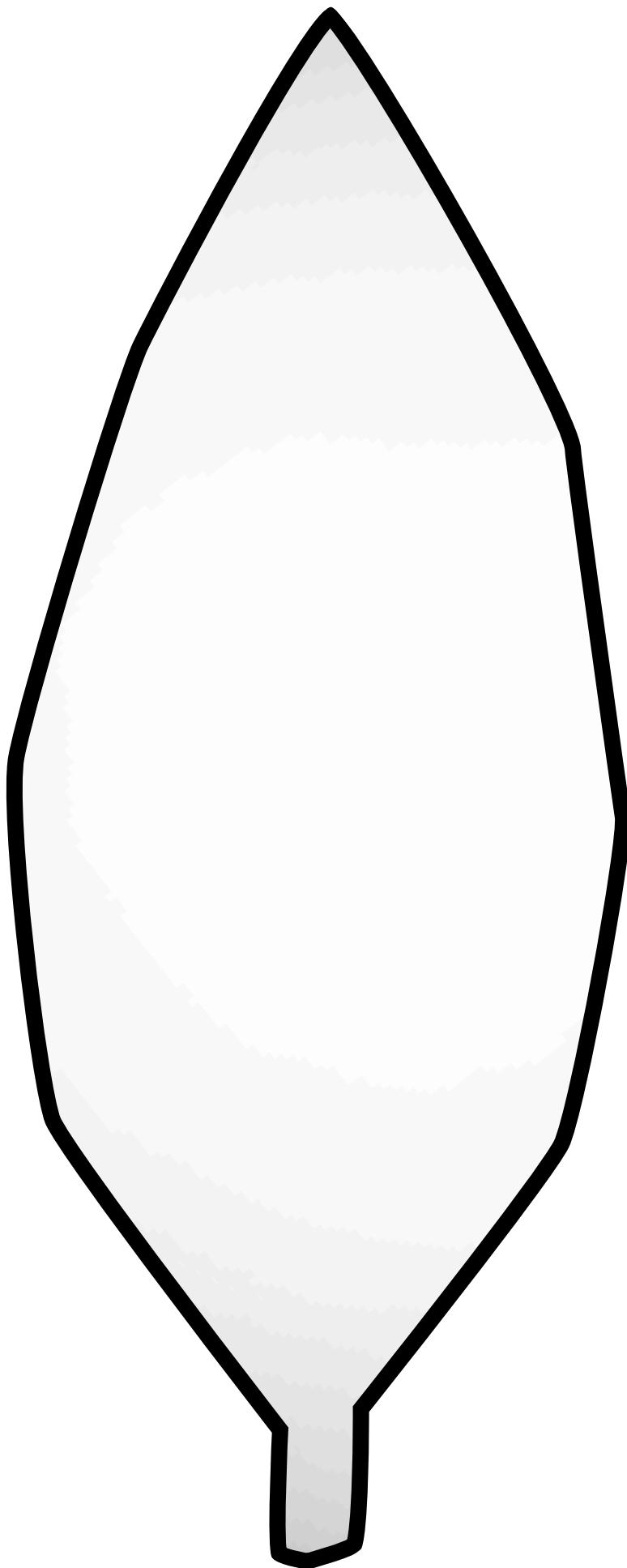


SPHAGNUM DRESS UP





SPHAGNUM DRESS UP





SPHAGNUM DRESS UP





SPHAGNUM FACT FILE

1 Some mosses are luminous (glow in the dark)



2 Sphagnum has been used for many things in the past....

- in wound dressings during the 1st World War
- in hanging baskets.
- in nappies
- in compost
- in shampoo.

3 Approximately one hundred and fifty-five million (155,000,000) years ago during the Mesozoic era, Sphagnum moss began to flourish in the Northern Hemisphere, including in the UK



4 Lower layers of peat form coal.



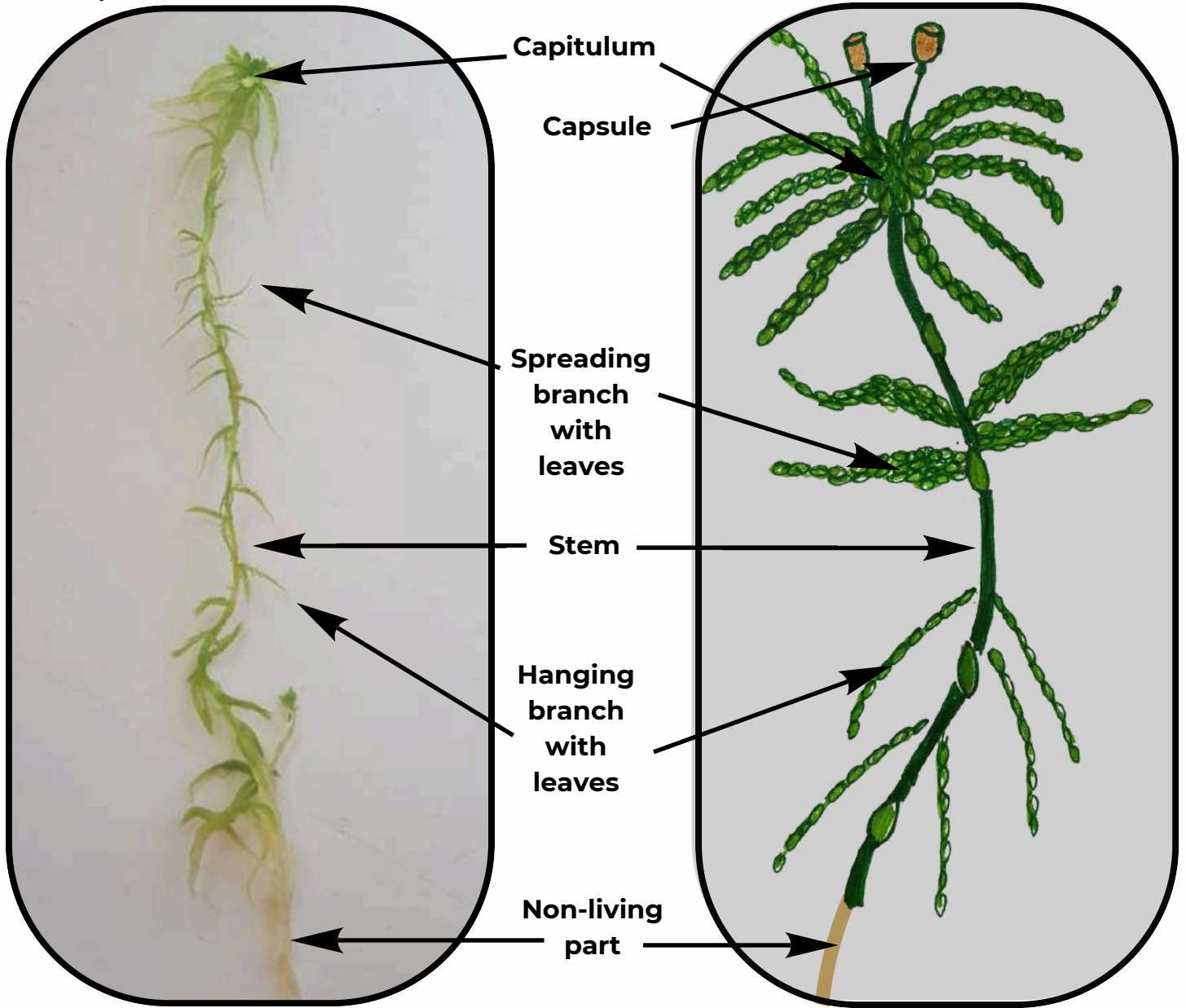
5 'You can boil them, bake them, deep-freeze them, crush them, dehydrate them, or even blast them into space. It doesn't matter-Tardigrades can survive practically anything. These eight-legged aquatic animals may be small, but they're nearly indestructible*' and they live inside Sphagnum stems!

*<https://kids.nationalgeographic.com/animals/invertebrates/facts/tardigrade>





SPHAGNUM ADAPTATIONS EXPLAINED

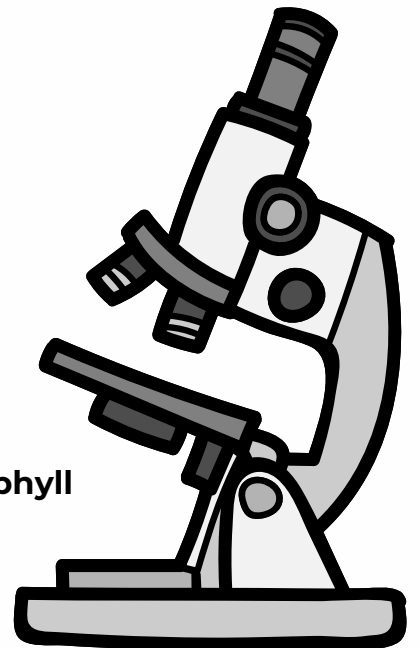


A leaf under a microscope



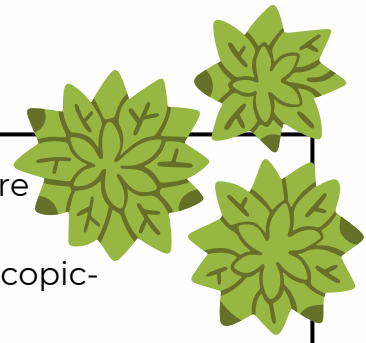
Water filled cell

Green cell with chlorophyll





SPHAGNUM ADAPTATIONS EXPLAINED



<p>Stem</p>	<ul style="list-style-type: none"> • The stem is made up of different layers - the centre layer gives strength. • The outside has cells filled with water that microscopic-organisms live in! • The stem stores food made in the leaves. • At the bottom the plant there are no roots to anchor the plant or suck up water. • The bottom of the stem dies and then very slowly decomposes (rots) and accumulates (builds up) to form peat. This is due to acidic and low oxygen levels in waterlogged peat bogs
<p>Capitulum</p>	<ul style="list-style-type: none"> • The top of the plant is made up of a cluster of branches. • Its shape can help identify which species of sphagnum it is. • Sphagnum plants grow very slowly from the top.
<p>Pendent branches (Hanging branches)</p>	<ul style="list-style-type: none"> • Pendent means to hang down. • These branches grow down the stem. • They are long and thin. • They act like a wick and help water travel to the top of the plant as there are no roots.
<p>Divergent branches (Spreading branches)</p>	<ul style="list-style-type: none"> • Diverge means to go in a different directions or to spread. • These branches grow outwards and upwards from the stem. • They are short and plump. • These branches can break off and grow to form a whole new plant!
<p>Leaves</p>	<ul style="list-style-type: none"> • Leaves cover the living part of the plant and are made of different types of cells. • Some cells are dead and have a pore that allows water to enter so that Sphagnum can store up to 20 times its own weight in water. • Other cells are alive and have green Chlorophyll in them that the plant uses in sunlight with water and carbon dioxide to make sugar (glucose), which they get energy from.
<p>Capsule</p>	<ul style="list-style-type: none"> • The capsule grows from the top of the plant and releases spores which get carried by the wind or water to new areas where they grow into new plants.





SPHAGNUM ADAPTATIONS



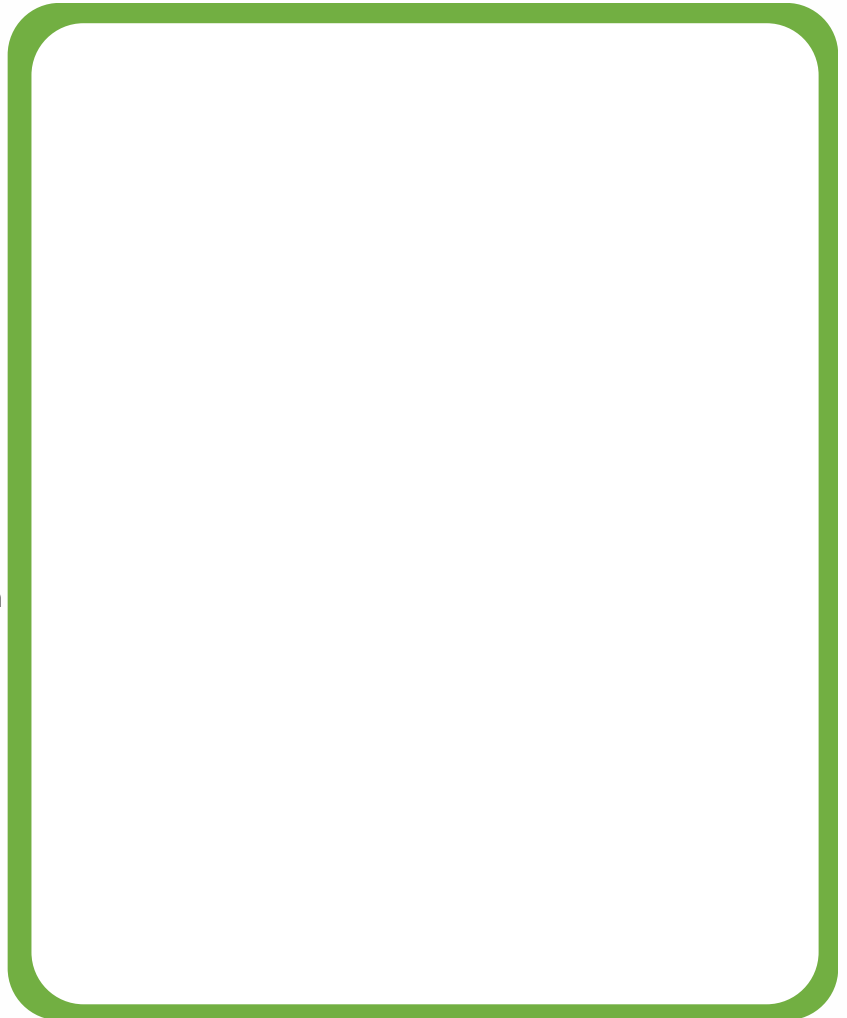
Instructions:

Draw your own diagram of Sphagnum moss

Add labels for the

- Stem
- Capitulum
- Hanging branch
- Spreading branch
- Leaves
- Capsule

Write a sentence or key word in each of the boxes below to show how each part of the Sphagnum is adapted to survive in a wet and boggy environment.



Stem	
Capitulum	
Hanging branch	
Spreading branch	
Leaf	
Capsule	





SPHAGNUM ADAPTATIONS



Instructions:

Draw your own diagram of Sphagnum moss

Add labels for the

- Stem
- Capitulum
- Hanging branch
- Spreading branch
- Leaves
- Capsule

Write the correct sentence in each of the boxes below to show how Sphagnum is adapted to survive in a wet and boggy environment.

- Sucks up water
- Breaks off to form a new plant
- Gives the plant strength
- Releases spores that form new plants
- Where it grows from
- Have green cells that make food/energy and empty cells that hold water

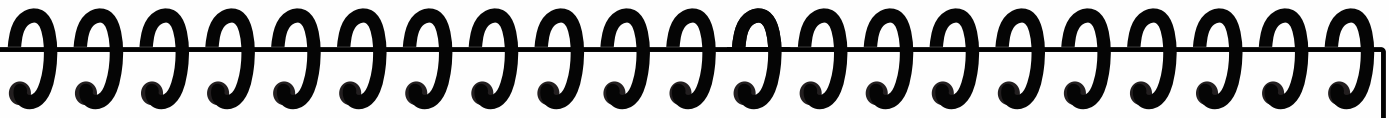


Stem	
Capitulum	
Hanging branch	
Spreading branch	
Leaf	
Capsule	





SPHAGNUM INVESTIGATION



How Spongy is your Moss?

You will need:

Sphagnum moss
Water

Empty container
Measuring jug

Weighing scales
Recording sheet

Instructions:

1. Weigh an empty container and record weight (A)
2. Place a handful of Sphagnum in the empty container, weigh and record weight (B)
3. Calculate the weight of the dry Sphagnum (C)
4. Predict the weight and volume of water the Sphagnum will hold and record below
5. Add water to the container and dry Sphagnum and leave for at least 1 hour
6. Drain excess water from the container taking care not to lose or squeeze the Sphagnum
7. Weigh the container and the wet Sphagnum and record weight (D)
8. Calculate the weight of the wet Sphagnum (E)
9. Squeeze the wet Sphagnum over the measuring jug and record the amount of water in the jug (F)

Results:

Consider how accurate your predictions were.

Consider whether this was a fair test. Could you make the test fairer?

Can you work out, to the nearest whole number, how many times its own weight of water your Sphagnum held? (G)

Predictions:

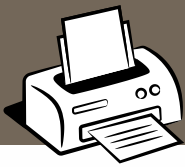
Weight of water moss will hold (g)

Volume of water moss will hold (cm³) remember 1ml = 1cm³

Results Table:

A	B	C	D	E	F	G
Weight of empty container	Weight of container and dry Sphagnum	Weight of dry Sphagnum (B - A)	Weight of container and wet Sphagnum	Weight of wet Sphagnum (D - A)	Volume of water Sphagnum held	How many times its own weight of water Sphagnum held (E ÷ C)
g	g	g	g	g		cm ³





SENSORY WALK CARD

Instructions:

Plan a route for a walk locally or within your setting's grounds. During the walk, stop at appropriate points to read and discuss the information about each specie. Learners undertake the activity listed and then collaborate to record words and/or sentences connected to the sensory experience. The words and/or sentences collected by the end of the walk can be used to form a piece of typography art.



Bat Facts:

- Bats are mammals - which means they give birth to live young, usually one a year.
- Bats live in roosts (a place a bat can find shelter) usually near woodlands, wetlands and gardens. They hibernate (sleep) during winter months and leave their winter roost in April.
- Bats live in colonies (large groups).
- Pipistrelle Bats are only about 5cm long so they can squeeze into small spaces.
- Bats are nocturnal - which means they are awake at night time.
- Pipistrelle Bats can eat around 3,000 insects e.g. moths, in a night and they mainly feed at dusk (early evening)
- Bats use echolocation to find their prey and to find their way around. The sounds they release from their mouths, usually high pitched squeaks and screeches that humans can't hear, bounce off various surfaces and make their way back to them.
- Bats can see!

Bat Activity:

- Learners take it in turns to use a stethoscope (ensure to clean ear pieces between each use) to listen to sounds that can't be heard just with their own ears.
- Learners place the stethoscope on trees, move it through long grass and brush it against plants and flowers. Learners can try listening to a leaf being scrunched, a stick being snapped and a woodlouse crawling.
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the sounds they heard.





SENSORY WALK CARD



(c) Dan Carrington

Nightjar Facts:

- Nightjars are birds.
- Nightjars are nocturnal - which means they are awake at night time.
- Nightjars are also crepuscular - which means they are most active at dusk (early evening) and at dawn (early morning) when they eat lots of moths!
- Nightjars live in open areas of woodland, on moorland and heathland. They nest on the ground so are at risk of being eaten or having their eggs (usually 2) eaten by other animals e.g. foxes.
- Nightjars are therefore camouflaged - their feathers look like tree bark!
- Nightjars visit the UK, including the Lost Peatlands project area, from May to September to breed (have their chicks). They then migrate (fly) to Africa in October and stay there until April.
- Birds use calls and songs to communicate (talk) with each other. Male nightjars make a “churring” sound.

Nightjar Activity:

- On their own, learners keep very still and quiet to listen to the sounds of the environment they are in.
- Learners write words or draw pictures on a piece of paper to show what they can hear.
- Learners can make a sound map by putting their words or pictures on the paper to show what direction they heard the sound? e.g. they write ‘ME’ or draw a picture of themselves in the middle of the paper. If they hear a bird chirping in front of them, they record this at the top of the paper (north). If they hear a car behind them, they record this at the bottom of the paper (south). If using the compass points make sure learners are orientated before starting.
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the sounds they heard.





SENSORY WALK CARD



Small Pearl-bordered Butterfly Facts:

- This butterfly has 4 wings with black dots and a V pattern. The underside of the wing has a pearl pattern and gives the butterfly its name.
- Butterflies lay eggs that hatch into caterpillars.
- The caterpillars of this butterfly eat plants call Dog Violet and Marsh Violet which grow in wet grassland and moorland habitats.
- Butterflies bask (lie in the sun) to help them be more active.
- Butterflies have a long tongue called a proboscis (pro-boss-kiss) that works like a straw to get nectar from plants to eat.
- Butterflies sense most smells through their antennae, which are densely (very closely) covered with chemoreceptors.
- Butterflies use their antennae to smell nectar and pheromones (perfume given off by male butterflies wanting to attract a female).

Small Pearl-bordered Butterfly Activity:

- Learners use natural materials to make a “perfume” they think somebody else would like to smell.
- Learners should ideally use materials they find lying on the ground and should avoid materials that are dangerous, poisonous or rare.
- To release the smells from the natural materials, learners should rip up, scrunch or squash each material before adding it to their cup.
- A splash of water added to the cup can intensify the smell.
- Learners should share their “perfumes” upon completion.
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the smells.





SENSORY WALK CARD



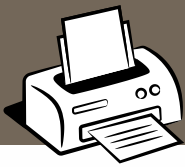
Adder Facts:

- Adders have a zig zag pattern on their backs which provides camouflage and acts as a warning signal, particularly to birds who like to eat them.
- Adders are the only venomous snake in the UK but they are not aggressive and only bite to defend themselves if they feel threatened.
- Adders live in nests in woodland and scrub habitat and eat mice, lizards, young birds, frogs and newts.
- Adders are reptiles - which means they have scaly, dry skin and lay soft shelled eggs. However, female Adders keep their eggs inside their bodies and incubate them (keep them warm) until they give birth to 6 - 20 live young.
- Snakes bask (lie in the sun) to help them be more active. They hibernate in the winter.
- Snakes have mechanoreceptors (sensory nerves) spaced throughout the skin of the body which are connected to their spinal cord. These enable snakes to feel vibrations through the ground. These vibrations move through the body and along the spinal nerves to the brain, where they are recognised as sounds.

Adder Activity:

- Learners find natural materials that feel different and place them in a clean egg box.
- Learners should ideally use materials they find lying on the ground and should avoid materials that are dangerous, poisonous or rare.
- Learners can either find 6 different textures or 3 examples of opposite textures or properties e.g. prickly and tickly, hard and soft, rough and smooth
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the textures they felt.





SENSORY WALK CARD



Green Tiger Beetle Facts:

- Green Tiger Beetles are large, metallic (shiny), green insects, with purple-bronze legs and large, creamy spots on their wings.
- Green Tiger Beetles are very hard to find because they have long legs that make them agile (find it easy to change position) and are excellent runners - they are one of the UK's fastest insects.
- Green Tiger Beetles are usually seen on bright, sunny days on bare ground in heathland, moorland and sandy grassland habitats when the sun is reflected on their shiny backs.
- Green Tiger Beetles prefer bare ground because it gets warm in the sun and the warmth helps them to move quicker and helps their larvae (young) to grow in their burrows.
- Green Tiger Beetles have a ferocious set of jaws and exceptional eyesight which they use to catch prey as they lie in wait in their burrows for other insects to pass by. But when Green Tiger Beetles run fast the world becomes a blur.

Green Tiger Beetle Activity:

- Learners use a magnifying glass to look at nature close up.
- Learners use a mirror to see what nature looks like in reflection.
- Learners use a 'nature frame' to focus their attention on a specific landscape/object.
- Learners consider what patterns, colours and shapes they saw by looking at the world in detail.
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the reflections, patterns, colours and shapes they saw.





NATURE FRAME



I



CUT OUT INSIDE OF DOTTED LINE

Nature

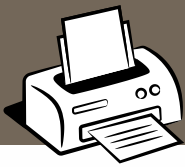


LOST PEATLANDS
PROJECT
PROSIECT ADFER
MAWNDIROEDD



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SENSORY WALK CARD



(c) Peter Timming

Water Vole Facts:

- Water Voles are mammals - which means they give birth to live young. They have up to 5 young in a litter and 3 - 4 litters a year.
- Water Voles have chestnut-brown fur, a blunt, rounded nose, small ears, and a furry tail.
- Water Voles live in wet habitats - along rivers and around marshes, moorland and peatbogs.
- Water Voles are very hard to find but they do leave “signs” that they have been there.
- Brown signs: Water Vole droppings are brown, have rounded ends and don't smell. Water Voles leave piles of droppings, called latrines (toilets), outside their burrows to mark their territories. Water Voles scent mark their territories by rubbing their hind feet (the back ones) on the scent glands on their chests and then stamp their feet on their droppings.
- Green signs: Water Voles like to sit and eat in the same place. They leave piles of nibbled grass and stems, with a 45 degree angle, at the water's edge.

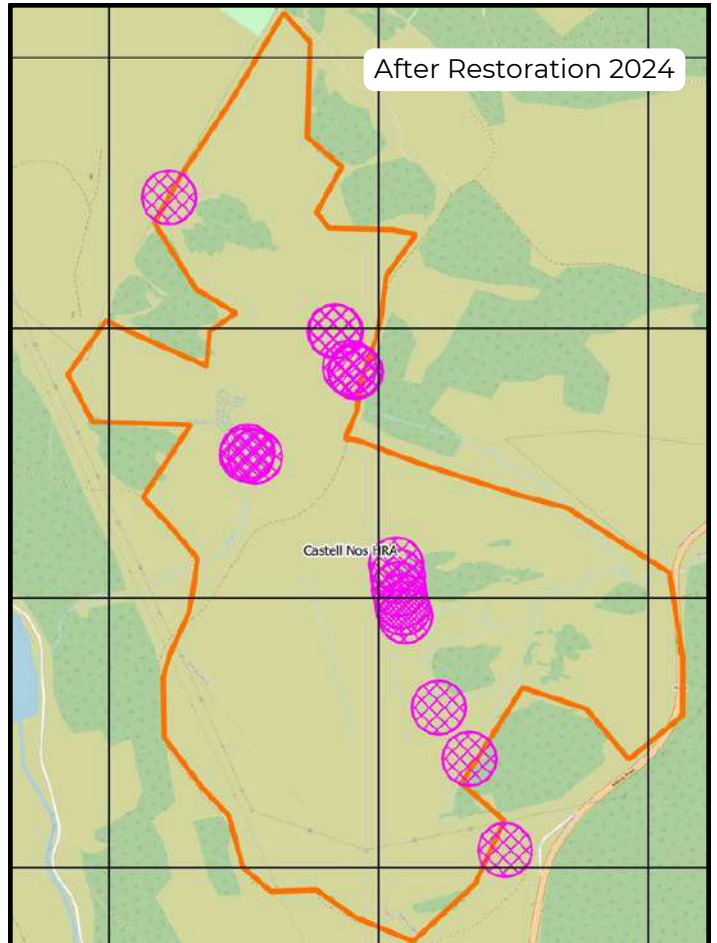
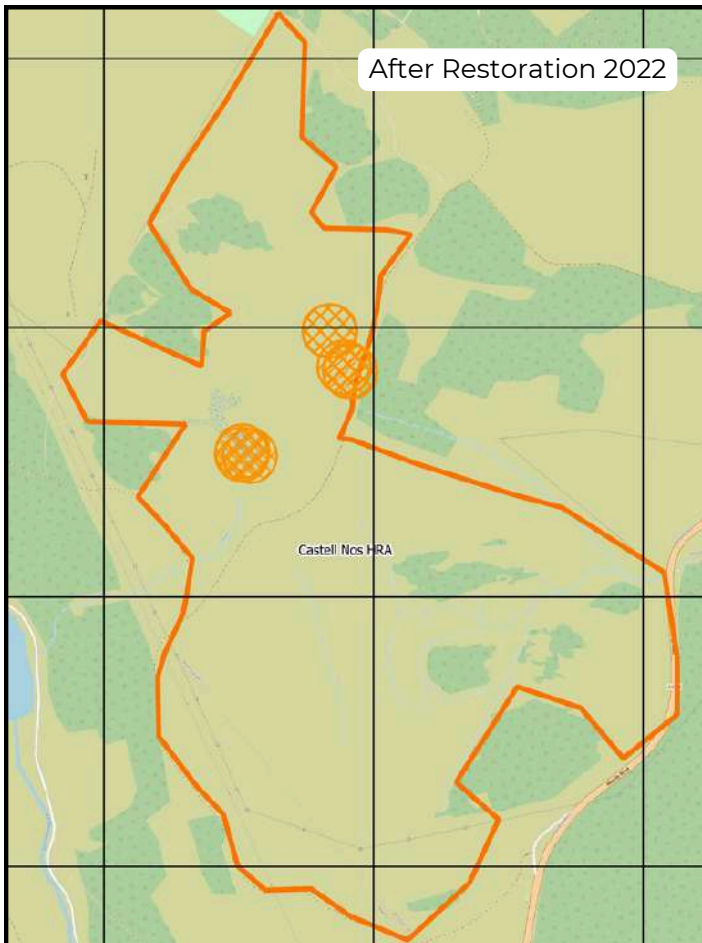
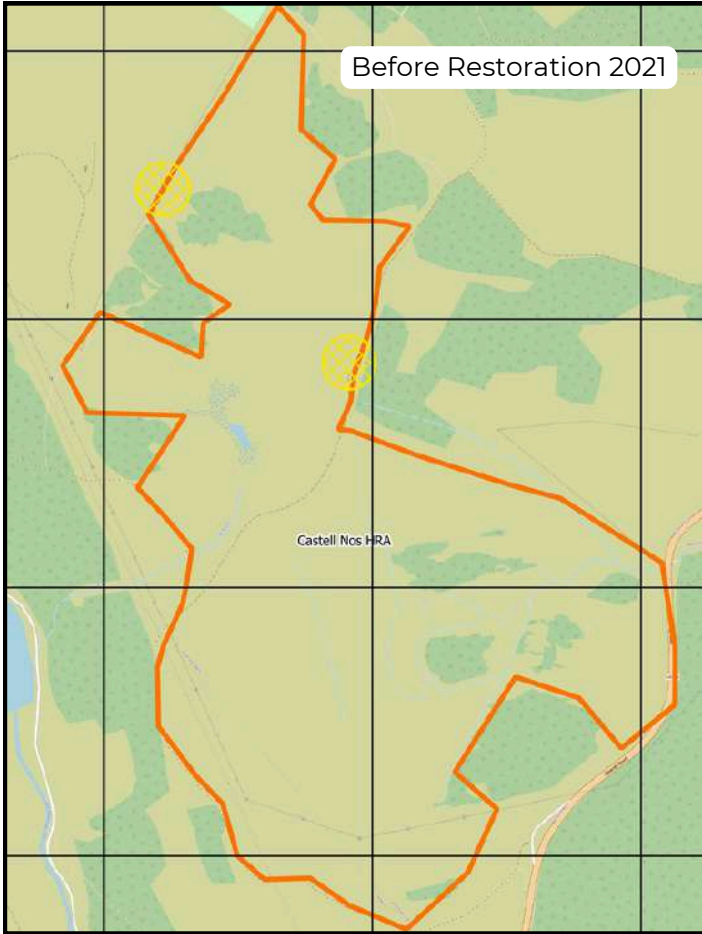
Water Vole Activity:

- Learners collect as many different natural materials as they can that are brown and green to complete an “Artist's Palette”. An artist's palette is a piece of card with two lines of double sided tape stuck to it.
- Learners should ideally use materials they find lying on the ground and should avoid materials that are dangerous, poisonous or rare.
- Learners arrange their materials on two separate lines (one green line and one brown line). Learners can also try to arrange their materials by shade from light to dark. Learners may find it easier to remove the cover from one piece of double side tape at a time and should take care not to drop litter.
- As a group, learners discuss and write down words, similes and imaginative sentences to describe the materials and colours used.





LOCATION OF WATER VOLE – CASTELL NOS HRA





GALLERY - PROJECT SITE LOCATIONS

Blaenrhondda CWS **Castell Nos HRA**

Glyncorrwg CWS

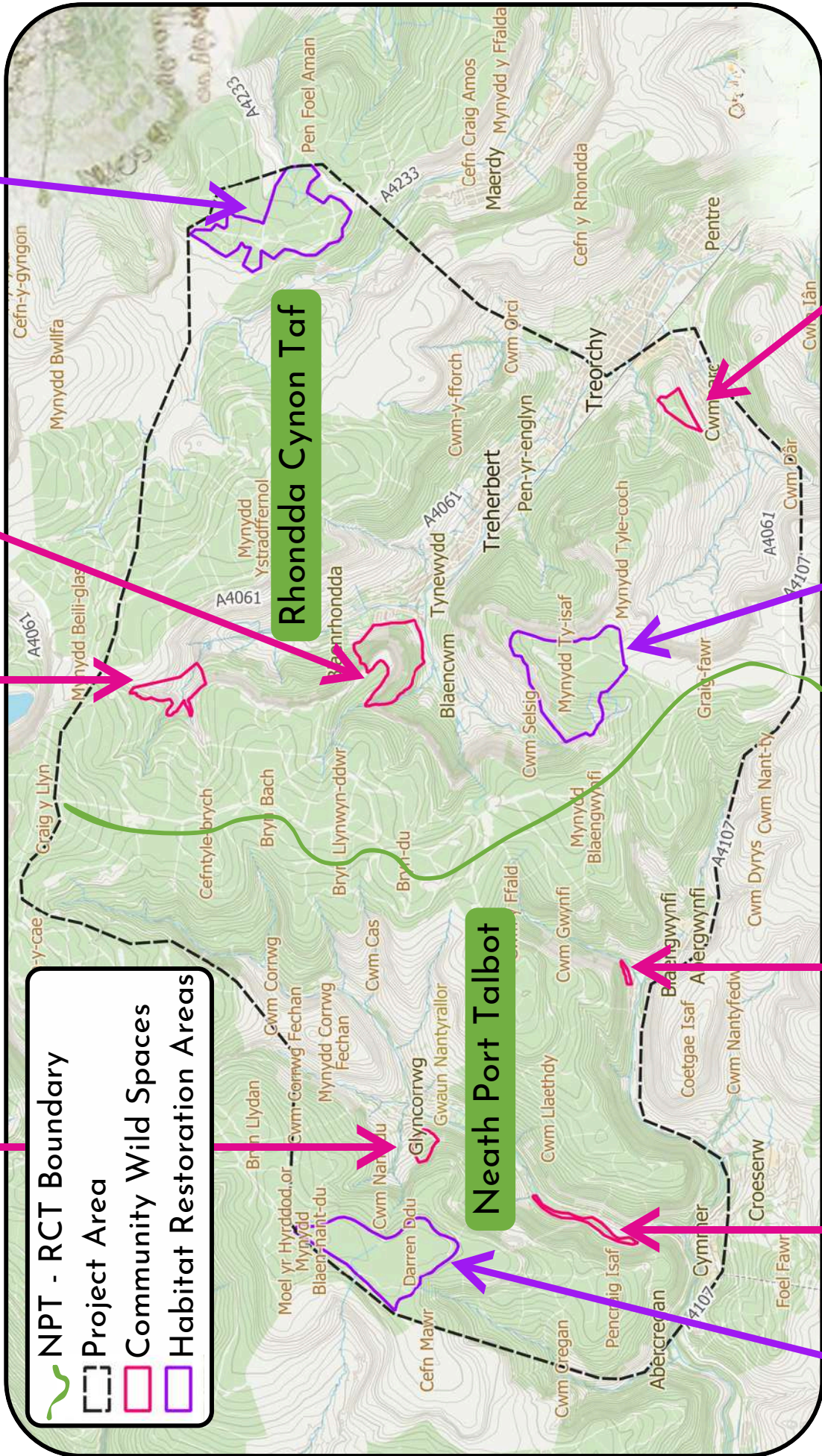
Cwmparc CWS

Cwm Saerbren HRA

Gwynfi CWS

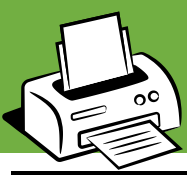
Cregan HRA

Cymmer CWS



- NPT - RCT Boundary
- Project Area
- Community Wild Spaces
- Habitat Restoration Areas





GALLERY – PROJECT HRA SITES

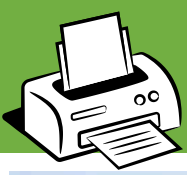


Castell Nos:



Castell Nos: Mink monitoring raft on pool





GALLERY - PROJECT HRA SITES

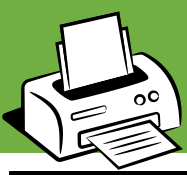


Castell Nos: Aerial View



Castell Nos: After restoration - peat dams blocking drainage channels





GALLERY - PROJECT HRA SITES



Cregan: Before restoration



Cregan: Before restoration





GALLERY - PROJECT HRA SITES

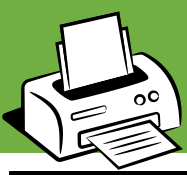


Cregan: After restoration



Cregan: After restoration





GALLERY - PROJECT HRA SITES



Cwm Saerbren: Before Restoration - Purple Moor Grass (*Molinia*)



Cwm Saerbren: After restoration





GALLERY – PROJECT CWS SITES



Blaenrhondda: View towards Tynewydd



Head of the Rhondda Fawr Valley RCT: View South over Tynewydd towards Treherbert





GALLERY – PROJECT CWS SITES

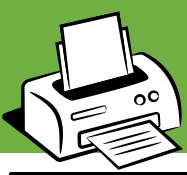


Hendre'r Mynydd RCT: View across to Pen y Cymoedd Windfarm & Pen Pych Mountain (left)



Cwmparc RCT:





GALLERY – PROJECT CWS SITES



Gwynfi NPT: View across valley from forestry track



Cymmer: Nantewlaeth Colliery was located here 1919-1948





GALLERY – PROJECT CWS SITES

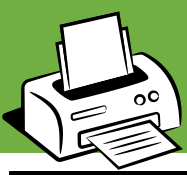


Glyncorrwg: View across valley



Glyncorrwg: Grazing area





GALLERY – PROJECT SITES

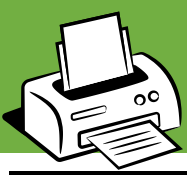


Pen Pych Mountain RCT: View across to the Rhigos Road



Castell Nos RCT: Bog pool

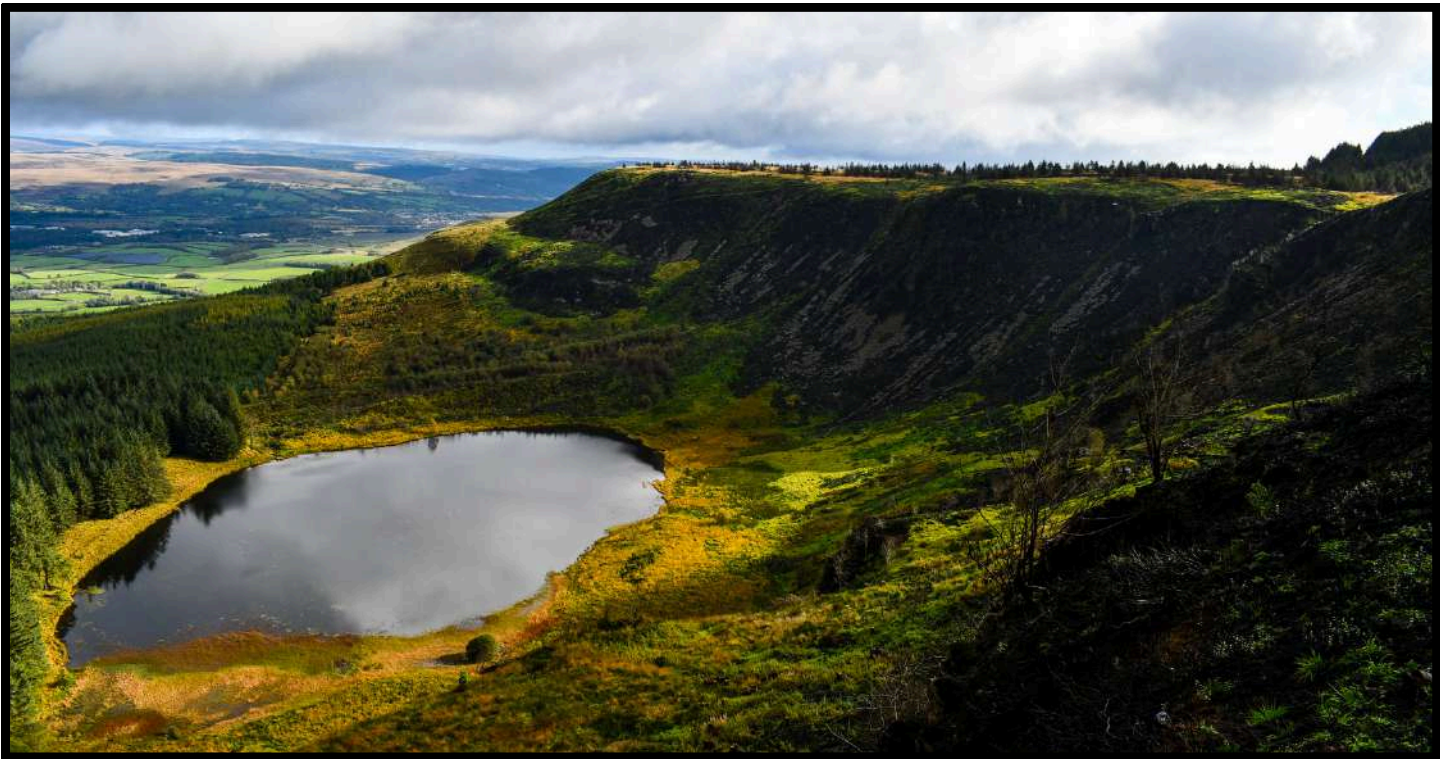




GALLERY – PROJECT SITES

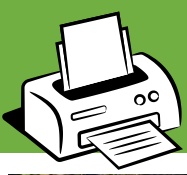


Cwmparc RCT: Valley landscape created by ice



Llyn Fawr RCT:





GALLERY - PEATLAND RESTORATION

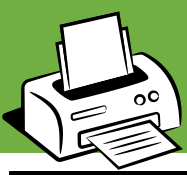


Drainage channel:



Drainage channel:





GALLERY - PEATLAND RESTORATION

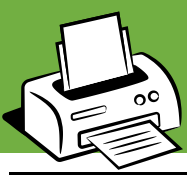


Timber dams: Blocking drainage channels and eroded areas



Contractors: Stump flipping





GALLERY - HERITAGE



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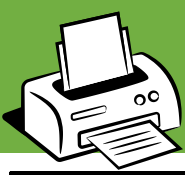


Hendre'r Mynydd RCT: Remains of a Late Iron Age Hut Settlement 800BCE-50AD

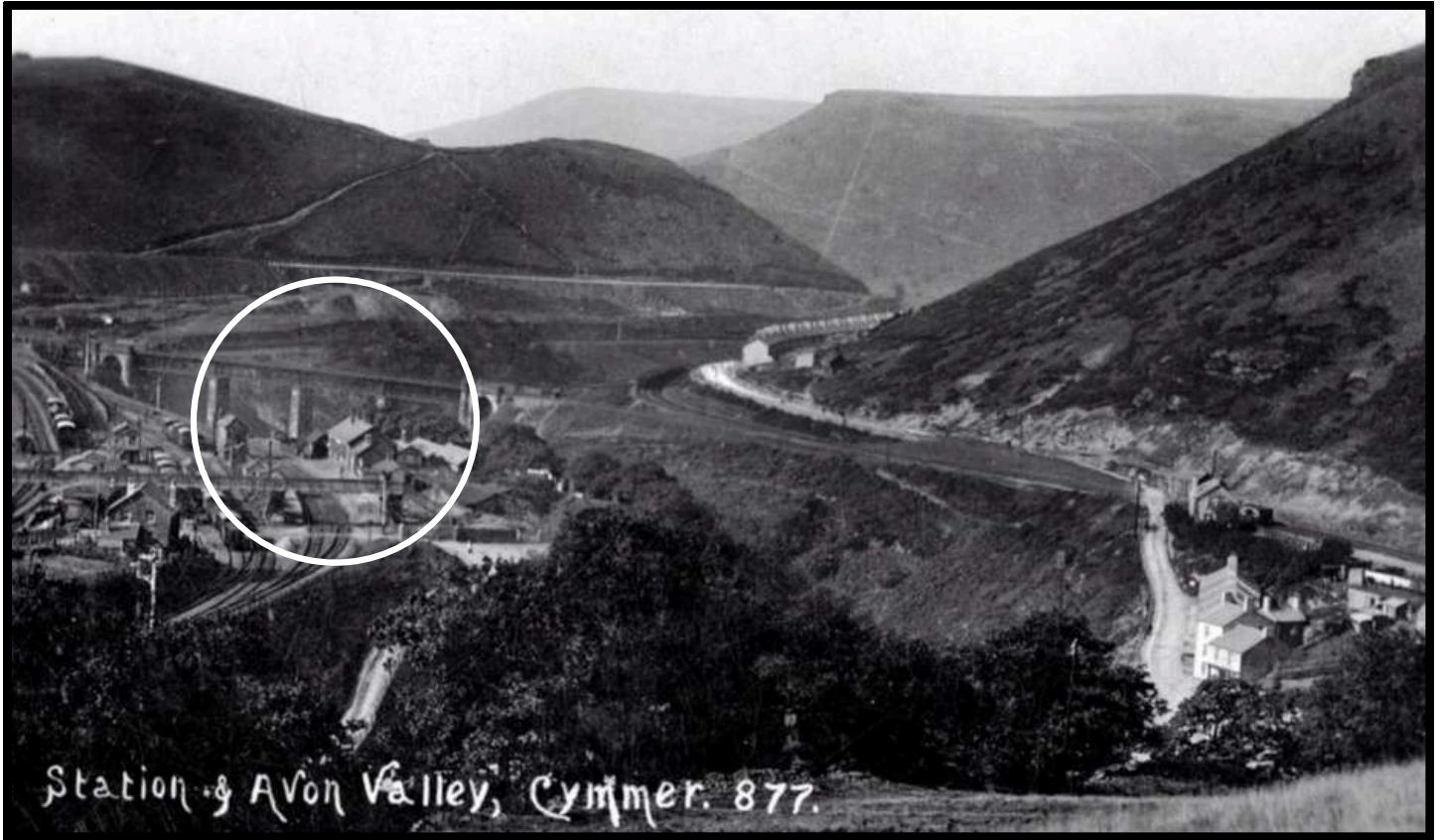


Cymmer Afan Station NPT: View towards Glyncorrwg taken in 1965. Railway was used to transport coal and then passengers, but all services stopped by 1970. (South Wales Mineral Railway line, engineered by Brunel and opened 1863 passing over viaduct built 1878 - left). (Great Western Lynfi Valley line - centre) (Rhondda and Swansea Bay Railway line and Cymmer Afan Station now 'The Refreshment Rooms' - right)





GALLERY - HERITAGE



Cymmer Afan Station NPT: View West taken in 1940 showing Station and Viaduct



Late Mesolithic Oak Post, Maerdy RCT : 4250BCE





GALLERY - HERITAGE



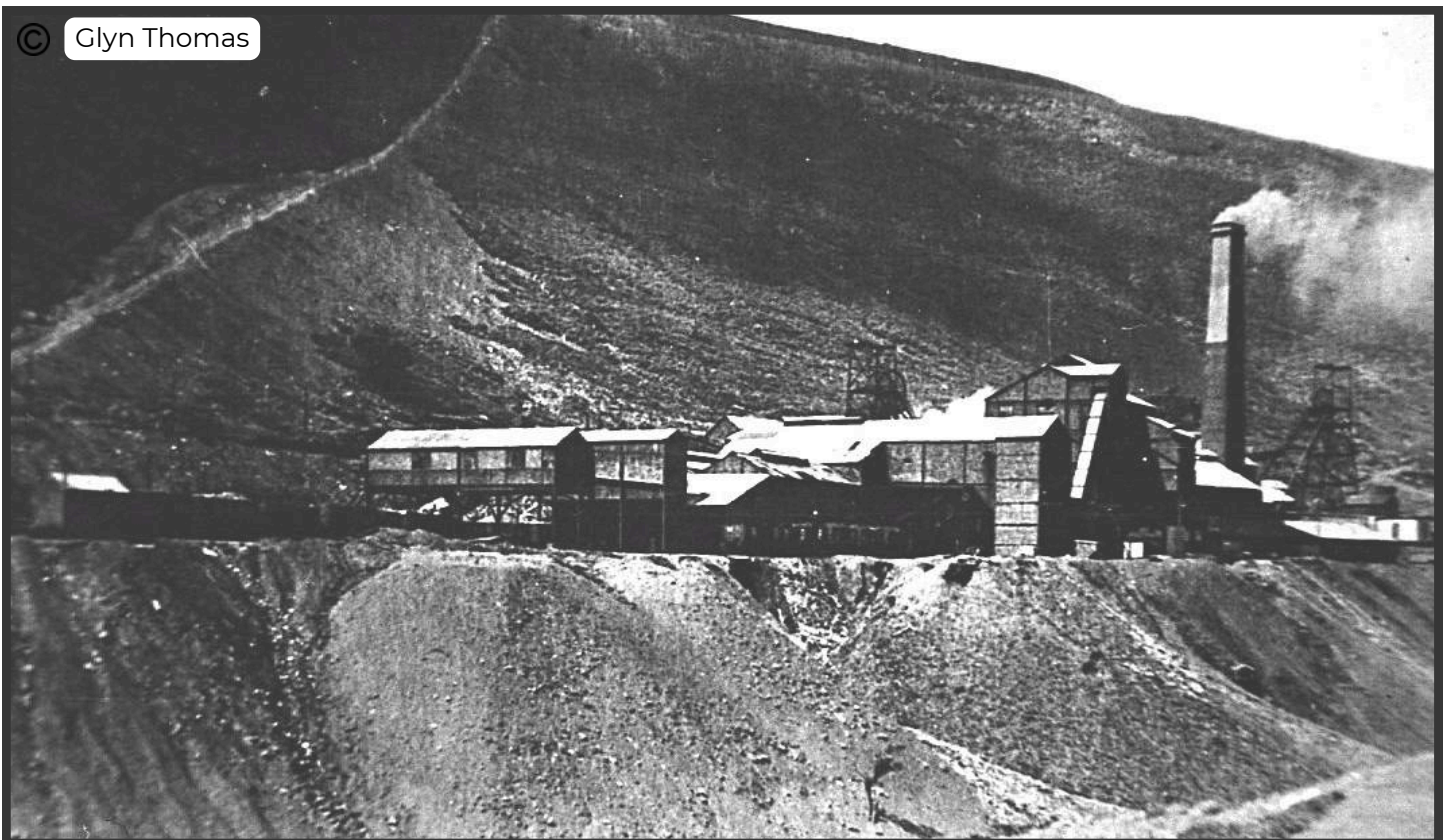
© Rhondda Cynon Taf Council



Fernhill Colliery, Blaenrhondda RCT: Opened 1872 and closed 1978. View towards Pen Pych Mountain 1965



© Glyn Thomas



Nantewlaeth Colliery, Cymmer NPT: Sunk in 1919 and closed 1948

