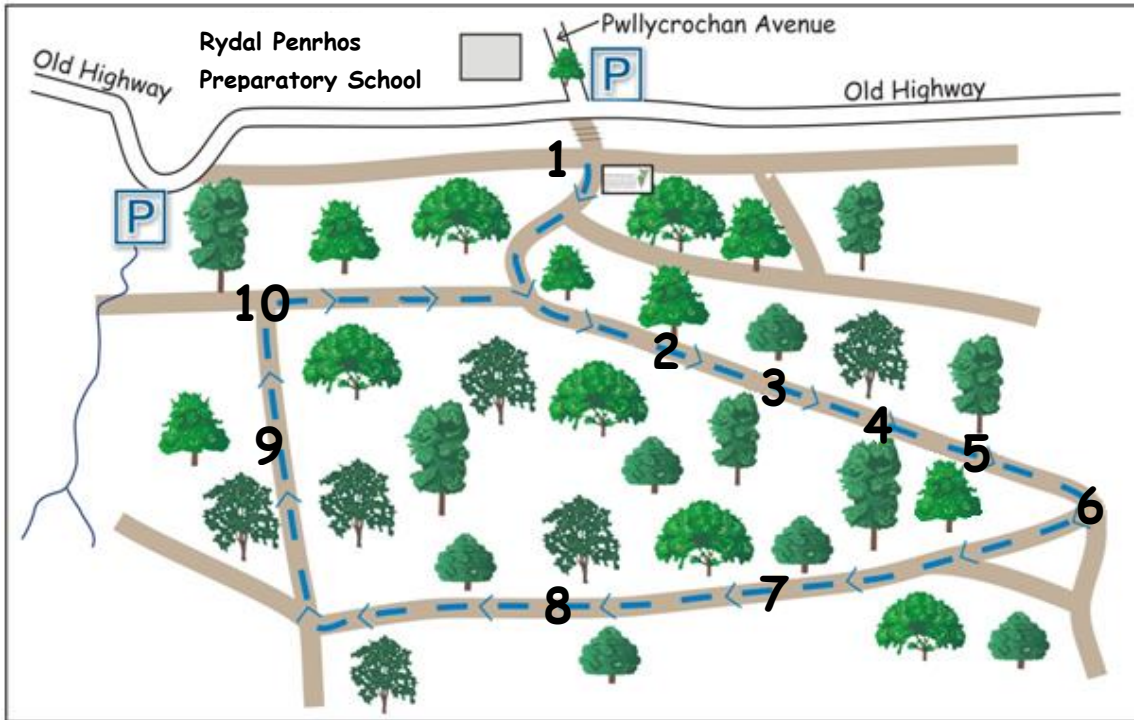





Use these notes as an aid to delivering the woodland *Discovery Trail*. There is also plenty of useful information in the background information document.



-1-

- Pwllcrochan estate was owned by Lord and Lady Erskine from 1821. They built the mansion that is now Rydal Penrhos school and made additions to the woodland, planting exotic trees and shrubs. They kept game birds such as grouse and quail and had a handful of woodsmen to look after the estate. Today the woodland is managed by Conwy County Borough Council to promote public use and to retain and encourage a rich biodiversity. 
- Ancient woodland refers to woodland that has existed continuously since at least the 1600's, long before the town of Colwyn Bay existed. It is important as it can provide the sole habitat for many species of plant and animal. It is an irreplaceable resource so needs to be preserved.

-2-

- Try to get the group sitting as quietly as possible as there will be a higher chance of seeing more wildlife.
- You may see or hear: cars, houses, trees, squirrels, birds, people
- The evergreen tree growing here is a scots pine. Its leaves are needle shaped to prevent water loss. Evergreens usually live in very dry and cold places, for example high up in the mountains, so it is important they conserve water. The leaves are also very tough and waxy so leaf-eating animals generally cannot eat them.

-3-

- There are 18 species of bat in the UK, and 12 breeding species in Wales.
- Bat species that may be seen here are the common pipistrelle and noctule. All bat species in the UK are legally protected.
- Common pipistrelle- one of the most common species in the UK, small bat, lives in a wide range of habitats (farmland, woodland, suburban, urban), roosts in buildings. Estimation of 2,430,000 individuals in the UK. Weighing around 5 grams (less than a £1 coin). A single pipistrelle can eat 3,000 tiny insects in just one night!
- Noctule- Although its one of the UK's largest bats, it's still smaller than the palm of your hand. It flies very high and fast. Lives mainly in trees, often roosting in woodpecker or rot holes in trunks and branches. Estimation of 50,000 individuals in the UK of which 4,750 are in Wales.
- Different tree species have varying leaf canopies due to their density and thickness. Here the trees cause dense shade due to the thick canopy. More mature trees often cause a denser canopy as they cover a bigger surface area. Leaf shape is also important as beech for example will let less light through than the compound leaves (leaves made up of a number of leaflets) of an ash tree.



-4-

- Each part of the flower has an important function in the plant's life cycle
 - stamen- male part of the flower, makes pollen, a fine yellow powder that is needed to fertilize the stigma.
 - petals- brightly coloured to attract insects, which then pick up pollen and carry it to the next flower they visit
 - stigma- female part of the flower, the pollen lands here during pollination
 - roots- take up water and nutrients from the soil, and act as an anchor point
 - stem- carries water and nutrients to different parts of the plant
 - leaves- use light from the sun and carbon dioxide from the air to make food for the plant (photosynthesis)
- The amount of light reaching the ground here has increased as tree thinning work has been carried out. Dense areas of woodland have been cleared to encourage the growth of flowers, grasses and saplings. This provides a slightly different habitat for animals such as butterflies to thrive. It also provides a mixed age structure in the woodland.
- You may see: bluebells, ferns, red campion, sticky weed



- A deciduous tree is one that sheds its leaves every autumn, and grows them back again in the spring. Most broadleaved trees are deciduous.
- There are many broadleaved trees on the trail. The main ones are: beech, ash, sycamore, rowan, oak, sweet chestnut, horse chestnut and hazel.
- This is an area with an open canopy so lots of light can reach the woodland floor. This provides another different habitat for plants and animals.
- Seed dispersal is really important for new plants including trees to spread and grow. Plants have evolved all sorts of ingenious ways to move their seeds around to give them a better chance of dispersal.
 - windblown- some seeds are very light or have developed little wings to help them blow further e.g. silver birch has catkin-like clusters that crumble in the wind and sycamore has 'helicopters'.
 - hooked- other seeds have tiny hooks and attach themselves to the fur of passing animals or clothes of people e.g. burdock which has large, purple balls of seeds with a long hook on the end.
 - edible- some seeds are brightly coloured to attract birds and animals to eat them. The seeds are then passed out in the animals' droppings and can grow in a new place. The droppings also provide valuable nutrients for the germinating seed e.g. bramble and blackthorn fruit
 - gravity- the simplest method of dispersal is to simply drop off the tree when the fruit is ripe and roll away. Some fruits are hard so can roll some distance, whereas other fruits are soft and may break open upon hitting the ground, causing the seeds to be scattered. Some seeds then travel further by animals or water e.g. apple.



- There are many ways in which man has affected the environment, both within the woodland and outside. Visible impacts in the woodland include benches, signs, bins, steps and paths. But there are also more subtle influences such as the habitat piles and path edges. Some of these things were put in place to encourage people's enjoyment of the countryside and others were to help manage the woodland habitats.
- People have also affected the environment in a much larger way - for example in the building of the town and the roads. This means that the once single block of woodland, forming part of an estate is now separated into several sections. This is why it is even more important to protect and preserve the current woodland, so that the wildlife doesn't disappear.
- There are solutions to help minimise the negative impact of human disturbance to the area - this includes good access and paths to reduce erosion, bins to prevent the impact of litter in the environment and information and education on the wildlife, history and management of the woods.



- These are very simplified methods of estimating the age of a tree.
- In fact there are many variables that affect growth. The position of the tree determines how fast a tree grows. For example a tree in open parkland would increase in girth much more rapidly than a tree in woodland. Tree species also has an impact as they naturally grow at different rates. The weather also has a significant effect.
- Growth rings - one light coloured ring + 1 dark coloured ring = 1 year's growth
- The width of a ring can tell you if the climate that year was good or bad for tree growth.
A wide ring means lots of growth so the temperature and amount of rainfall must have been good.
A thin ring means hardly any growth so the temperature and/or rainfall were not ideal.
- You can also look for other marks or scars on the wood. They may have been left by insects or disease. The shape of the rings may also vary; this can tell you if the tree was leaning.



- Pwllcrochan is mainly broadleaved containing more than 140 tree, shrub and other plant species. It is important to be able to identify plants and animals so that we can classify them into groups with similar characteristics. We gain some understanding of the natural world and it enables us to compare species diversity across the world. Each country may have its own common name for a plant or animal but the two-part Latin name is under a worldwide standard classification system. For example the scientific name for primrose is *Primula vulgaris* and beech is *Fagus sylvatica*.
- Trees can be identified by many factors including: tree shape, leaf shape, bark, seeds, nuts and flowers.



- Deadwood provides another habitat for fungi, insects and other invertebrates which in turn are food for many birds and small mammals. Habitat piles are created from stacks of deadwood during the felling works in the winter months. Natural deadwood is also left if it is not causing any danger.
- Minibeasts is a name that is used to describe the wide variety of invertebrates in our environment. They can survive in a huge variety of habitats worldwide, but generally prefer dark and moist places. Some minibeasts will eat almost anything (decomposing plant material, sap and other minibeasts) whereas others are more selective.
- You may see: centipedes, slugs and snails (in the fallen leaves on the woodland floor), beetles and ants (they leave small holes in leaves), woodlice and spiders (under rotting logs or rocks), caterpillars of tiny moths and flies (they make winding trails on leaves where they burrow inside the leaves and eat the green tissue), butterflies and bees (near bright flowers) and earthworms (in the moist soil).



- There are many creative tasks that can be done with a woodland theme. Creating a piece of environmental art encourages children to get hands on and explore the different colours, textures and shapes in nature around them.

Answers

What does the name Pwllcrochan mean? **Cauldron Pool**

1
DISCOVERY TEAM
YITHI DARGAMFYRDD

How big was the estate in Victorian times? **950 football pitches**

How many ancient woodland indicators can be found in Pwllcrochan? **Over ten**

2
DISCOVERY TEAM
YITHI DARGAMFYRDD

What evergreen tree do you see decorated in December? **Christmas tree**

Can you name 2 creatures that might live here? **Bat and Owl**

3
DISCOVERY TEAM
YITHI DARGAMFYRDD

Dead leaves	Brambles	Shrubs	Grasses/Flowers	Other
lots	lots	few	none	

1. Stigma
2. Stamen
3. Petals
4. Stem
5. Leaves
6. Roots

4
DISCOVERY TEAM
YITHI DARGAMFYRDD

Dead leaves	Brambles	Shrubs	Grasses/Flowers	Other
few	few	few	lots	

J	X	I	A	K	X	R	B	Z	Q	J	E
N	A	H	C	O	R	C	Y	L	L	W	P
Y	O	S	W	Y	E	X	B	I	N	L	B
C	Q	J	M	O	O	R	H	S	U	M	S
P	E	D	U	A	X	J	F	U	T	B	N
E	N	Z	A	K	B	D	Y	O	M	A	J
R	T	Q	C	Y	Q	H	Y	X	C	T	J
U	I	A	M	Z	W	E	Y	Z	E	O	R
T	P	J	F	T	O	T	G	B	Q	N	S
A	E	R	E	W	O	L	F	J	X	O	C
N	D	A	K	J	E	J	F	V	T	O	Z
B	E	W	D	J	S	G	V	S	R	E	B

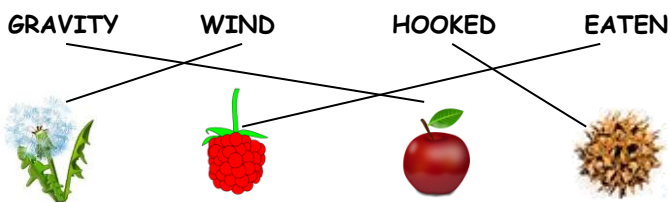
BAT CENTIPEDE FLOWER MUSHROOM
NATURE OAK PWLLYCROCHAN

Can you name two different deciduous trees? **Oak, Beech, Ash, Sweet Chestnut, Horse Chestnut**

5
DISCOVERY TEAM
YITHI DARGAMFYRDD

Dead leaves	Brambles	Shrubs	Grasses/Flowers	Other
none	few	lots	lots	

Where did most plants grow? Why?
Open canopy as there is more sunlight.



6
DISCOVERY TEAM
YITHI DARGAMFYRDD

Name three manmade things you can see that has affected the environment. **Buildings, roads, turbines, benches**

Which was here first, Colwyn Bay or Pwllcrochan woodland? **Pwllcrochan woods**

7
DISCOVERY TEAM
YITHI DARGAMFYRDD

Circumference = $50\text{cm} \div 1.25 = 40$ years old

Is your tree older or younger than you? **Older**

9
DISCOVERY TEAM
YITHI DARGAMFYRDD

What minibeasts do you think might live here? **Worms, slugs, woodlice, spiders**