

# Plants

KS2

## Aspects to be covered:

- ⤴ Effect of light, air, water, temperature on plant growth
- ⤴ Soil anchors most plants and provides minerals for plant growth via roots
- ⤴ Roots take up water and dissolved nutrients and transport it via stem to leaves and flowers
- ⤴ Plant life cycle – seeds, germination, growth and flowering, pollination, seeds and seed dispersal
- ⤴ Parts of flowers – stigma, stamen, sepal, petal ...(?is this needed at this stage)
- ⤴ Adaptation of plants to different habitats such as grass, wood, water
- ⤴ need for management to protect variety of plants on MG

## Activities could take place:

- ⤴ In copse
- ⤴ By ponds and in wetland (not pond dipping but will fish some plants out)
- ⤴ On open grassland – gives most scope for more detailed study of plants themselves

## Copse

Few flowers out now – what were they? (bluebells, primroses) Why are they early?

Need for light.

Trees- tall grow up for light, deciduous shed leaves (not yew) in winter. Leaves decay with help of insects and fungi and help to form soil which 'feeds' trees.

Investigate leaf litter and / or mirror walk under trees.

Coppiced hazel – regrowth; managed for poles etc by man

## Ponds and wetland

Usually we think of ducks, fish and insects but ponds and wet muddy areas have plants adapted to wet conditions.

By pond edge – water mint and flag iris

In pond – floating - pond fringe or bog bean; submerged – hornwort (oxygenator)

In wet flush – identify watermint, water cress, figwort, willow herb, brooklime, marsh marigold (king cup), flag iris...

## Grassland

What plants need to grow - light/sun/temperature, air, water/drainage, soil/minerals/nutrients.

How do plants get or use these – parts of plant.

Water mostly from soil via roots (plus dissolved minerals).

From roots via stems to buds, leaves and flowers.

Most plants need well drained soil and air round roots as well as water (compare pond)

Air/light/sun on leaves – photosynthesis.(simply) and open v shade

Examine a common plant which will be pulled up but use this action to explain the need for protection of wild flowers on the site.

Parts of plant as far as needed.

How many different sorts of flowers can you find (do not pick) - flower recording form (possibly adult could record.)

Pollination and seeds – bees and other insects (possibly use sweep nets to look at variety) if time.

# Copse

The activities here will focus on

- ▲ plants need **light** to grow
- ▲ rotting leaves and wood break down to form **soil** which provide 'food' for the plants and trees to grow

There are few flowers now in the copse (maybe look at the red campion and seeds in open bit of copse)

What was flowering earlier in the year? --- **bluebells and primroses**

Why did they flower early? ---before leaves came out

Why? ---for **light** too dark now for most flowers

**The trees shed** (drop)their leaves in winter – they are **deciduous** trees.

Spend a few minutes looking at **different leaves** – let them pick / collect single leaves. They should find hazel, ash, lime, hawthorn (warn about thorns).....look at different shapes and veins and let them feel if rough or smooth. Can they identify?

What happens to the leaves when they fall off ? ----rot down and eventually form soil. How do they rot? ---worms and woodlice etc and fungi.

With trowels collect a bit of leaf litter and put in clear pot (one between 2 or 3) to examine and smell, They can also look under small logs etc and at decaying wood.

The trees take up water and food / nutrients from the soil as they grow.

The trees grow up tall and quite straight for the **light**

## **Mirror Walk**

hold the mirrors horizontally on the chest and look into it to see the tree tops and the sky. Walk along the board walk 1 or 2 sides. May be best to do it in twos or half at a time.

Have a look at the coppiced hazels along the stream bank. They can be cut right down and grow up again – **coppiced** – hence the name **copse**?

How tall are the hazels? (select one near the barrier) How long ago do they think it was cut down? --about 8years ago.

What did people use the hazel for? ---hurdles (explain) and wattle and daub in old houses.

If you have time left look at yew tree – poisonous 'berries' and let them look at ducks etc round moat.

They may ask about the saplings with red and white markers on them – not to be cut, left to grow into trees as old ones will die eventually. How long do trees live?.....

## Ponds and wetland

The activities here will focus on :

- ▲ all plants need **water** to grow
- ▲ some plants can **grow in water** (whereas most need soil and air )
- ▲ **leaf shapes** – two main groups of leaf shapes (monocots and dicots ie parallel veined leaves and branching veined leaves)

By one of the ponds - all plants need water to grow – get them to name other sorts of wet places ---bogs, streams, rivers.... we will look at our wetland in field 1.

You are going to investigate plants that grow in and on the edge of ponds and in wet muddy places.

**Where** do the pond plants actually live?

**Bank          Water Surface      Submerged**

Look at the different plants around the **pond edge** and identify some:

**Flag iris, rushes, water mint, willow, pendulous sedge** – all these like to grow in wet soil. Adult (or children if they have a camera) take photos.

Compare flag iris leaves with those of water mint – how are they different?

Some plants have **parallel veins** and others **branching veins** and usually rounder leaves. Two different groups of plants. Which of the other ones they have looked at are like flag iris? (rush and sedge)

Use the yellow rakes and/or net to 'fish out some **floating plants** – mainly pond fringe in Pond 2 and put them in the white trays with some water as there will probably be insects on them. Bog bean in pond 1 floats but also roots in the bank.

Let the children see what is there then explain that floating plants need light and air but get their 'food' through their roots which hang down in the water.

Also find some hornwort which grows under the surface – **submerged**

It gets some light through the water and gives out oxygen into the water which makes the water better for the creatures which live in it.

Each child draw a different one of these plants in/by the pond – adults can help with labelling etc. and collect drawings to take back.

Go to wet flush and find 6? labelled plants: (willow herb, watermint, flag iris, figwort, brooklime, king cup, water cress...depending on what is there)

Write down their names and one fact about each plant (possibly adult do the recording from what children say).

# Grassland

The focus here will be on :

- ✦ parts of plant.
- ✦ what plants need to grow - light/sun/temperature, air, water/drainage, soil/minerals/ nutrients.
- ✦ How plants get or use these

*Examine a common plant which will be pulled up* but use this action to explain the need for protection of wild flowers on the site. **Parts of plant** as far as needed – roots, stem, leaves, flowers.

What do plants need to grow?

**Water** mostly from soil via roots (plus dissolved minerals from soil for 'food'). From roots via stems to buds, leaves and flowers.

Most plants need **well drained soil** and **air** round roots as well as water (compare pond).

*Pour some water on the ground from a bottle and see how fast it disappears*

**Air/light/sun** on leaves – photosynthesis (simply) --- plants take in carbon dioxide from the air and use the energy from sunlight to turn it into sugars (you put on weight when you eat sugar!) which help them to grow. They give out oxygen. Which of the 3 sites you are looking at today get the most light? ---this grassland in the open. So lots of different flowers and grasses grow here.

Explain again about not picking / pulling up plants but explain what they can do

*in pairs pick one of each of as many grasses as they can find (do not pull up by roots*

*Make a colour palette by sticking different coloured flower petals and leaves to the card (remove double sided tape). Don't pick whole flowers or pull up.*

*How many different sorts of flowers can you find (do not pick).* use flower recording form – possibly adult could record.

**Recording form for flowers – adult could write in names – one sheet per group.**

Colour	Short or tall	A lot or just a few		Name or describe
		Lots	Few	

Pollination and seeds – bees and other insects (*possibly use sweep nets*) – *if time*