



MEADOWLAND GRASSES

An educational resource

WHAT IS A MEADOW?

- ✓ A meadow is bigger than a lawn and much smaller than savannah or prairie grasslands. An area as big as an agricultural field could be a meadow, but often they are smaller.
- ✓ A meadow contain grasses and wild flowers.



MEADOWS IN DANGER

There were once natural wildflower meadows in every parish in Britain, but today only 2% of the meadows that existed in the 1930s remain.

They have disappeared for various reasons:

- ★ Ploughed up for agricultural fields
- ★ Sprayed with pesticides and/or insecticides
- ★ Built upon
- ★ Used for playing fields or other leisure purposes
- ★ Allowed to become covered in scrub and bushes

MEADOWS: GRAZING AND MOWING



Tractor
mowing
our
meadow

- Historically, meadow grasses have been eaten by livestock (cows and sheep); either by grazing or, after being cut, for winter hay.
- Meadows depend up on being grazed or mowed, otherwise they would become covered in shrubs and trees.
- Some meadows owned by Suffolk Wildlife Trust are grazed by sheep or ponies, which are allowed onto the meadow at certain times of the year.
- Bredfield Jubilee Meadow and Orchard, is mowed once or twice a year, by a tractor.
- Today, a meadow is a habitat that is created through a relationship between nature, humans and (sometimes) beasts.

GOING BACK A LONG TIME IN HISTORY

Open areas of grassland have existed here for millennia. When humans first came to settle and live in Britain, the land wasn't totally covered in forest. There were large open areas of grassland, grazed by creatures such as Aurochs (a gigantic cow, now extinct).

So, areas resembling modern meadows have an extremely long history in the nature of Britain.



Cave
painting
of an
Auroch

WHY SO MUCH GRASS IN A MEADOW?



- In any wild environment there will be competition between different species of plant.
- In forests, trees compete for light. Some trees grow very tall and have wide canopies, to try to gain most light for themselves.
- Competition for space also takes place in meadows.
- Grasses are usually quite good at competing for space and that is why you see so much grass in a meadow.

GRASSES PLAY AN IMPORTANT PART IN PREVENTING GLOBAL WARMING

- One of the causes of global warming is the presence of excessive amounts of carbon dioxide in the atmosphere. It is a 'greenhouse gas'.
- It comes from such things as: burning fossil fuels, car exhausts and manufacturing concrete.

All plants – including grasses* – absorb carbon dioxide from the air (and give off beneficial oxygen).

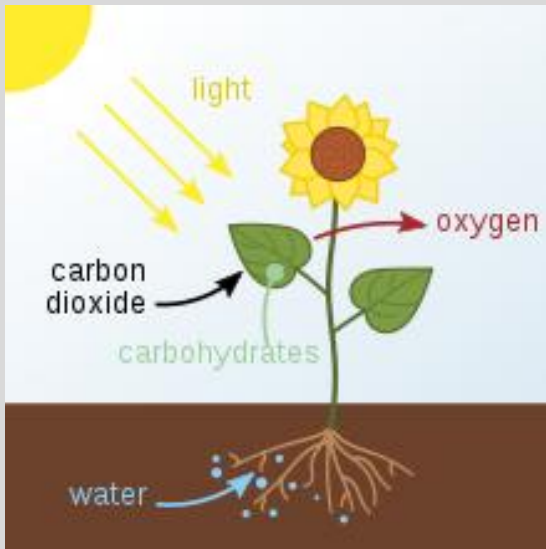
To understand how this happens, we need to look at how plants feed and how the process of photosynthesis works.

* But trees are much better than grasses at this.

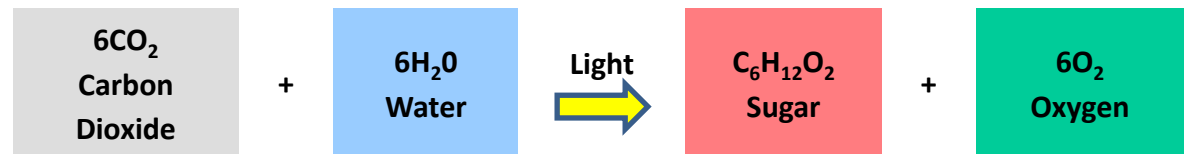


HOW DO PLANTS FEED?

They absorb **water through the roots**; and **carbon dioxide through pores in the leaves**. Then, **light from the sun** enters through the **chlorophyll*** in the leaves and (through a process called **photosynthesis**) this creates a reaction that produces **sugar** (which is food for the plant) and **oxygen** (which is released in the air).



If you'd like to see this as an equation, it looks like this:



* It is chlorophyll that makes leaves green

HOW WILDLIFE DEPENDS ON GRASSES

Grasses provide food and sheltering places for many animals:

- ✓ Lots of insects - including grasshoppers and caterpillars - feed on grasses. One of the insects feeding in the meadow are froghoppers. You probably won't see them, but you'll see the foam in which they lay eggs: 'Cuckoo Spit'.
- ✓ Mammals - such as rabbit and deer – enter the meadow to graze on the grass.
- ✓ Birds come to eat the insects and seeds in the grassy meadow. If Bredfield's meadow was a bit larger and visited less, birds such as Meadow Pipit or Skylark would build nests low in the grass.

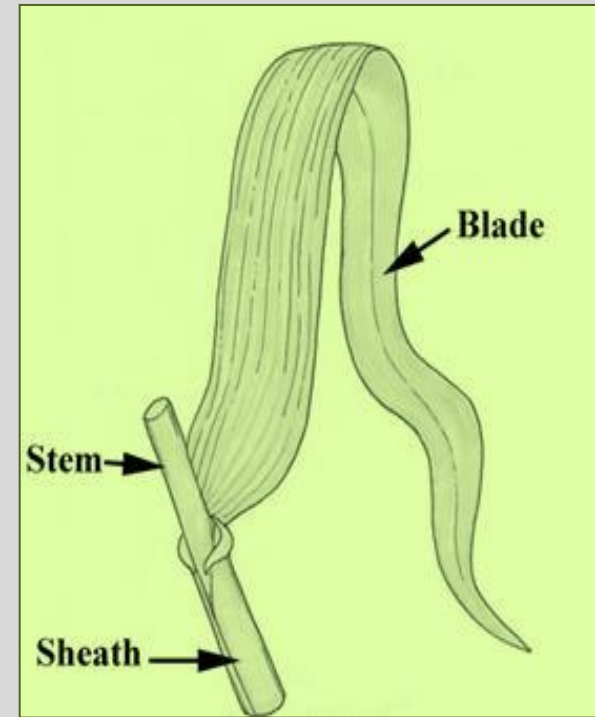


Grasses are ecologically important; a crucial part of the circle of life.

THE STRUCTURE OF A GRASS

Grass leaves grow up around the **stem** of a leaf, as a **sheath**, and then branch off to form a **blade**.

Blades of grass differ in shape and size from species to species.



Yorkshire Fog grass

As they grow taller a seed head will appear at the top of the grass. Seeds from the grass will be dispersed – by the wind or on the fur of mammals – and spread the species to other areas.

DIFFERENT SPECIES OF GRASS IN THE MEADOW

16 species of grass have been identified in the Bredfield meadow. A list is provided below.

The common English name is given on the left side. The scientific (Latin) name is given on the right side. The first part of the scientific name is the **family** to which the grass belong, and the second part indicates the **species**.



Creeping Bent
Meadow Foxtail
False Oatgrass
False Brome
Soft Brome
Crested Dog's Tail
Cocksfoot
Common Couch
Tall Fescue
Red Fescue
Yorkshire Fog
Meadow Barley
Perennial Rye Grass
Timothy
Annual Meadow Grass
Rough-stemmed Meadow Grass

Agrostis stolonifera
Alopecurus pratensis
Arrhenatherum elatius
Brachypodium sylvaticum
Bromus hordeaceus
Cynosurus cristatus
Dactylis glomerata
Elytrigia repens
Festuca arundinacea
Festuca rubra
Holcus lanata
Hordeum secalinum
Lolium perenne
Phleum pratense
Poa annua
Poa trivialis

WORKSHEET

Answer the questions below. Most will require you to do some research.

1. Explain, in your own words, what it means to say that “a meadow is a habitat that is created through a relationship between nature, humans and (sometimes) beasts”.
2. Why do think that Bredfield Jubilee Meadow and Orchard, like many other meadows, is mowed rather than allowed to be grazed by sheep or ponies?
3. Carbon dioxide is one, of several, greenhouse gases. Explain what a ‘greenhouse gas’ is. Research and find out what the other ‘greenhouse gases’ are.
4. Why are leaves green in colour?
5. The word ‘Photosynthesis’ begin with ‘photo’, as does ‘photography’. What do ‘Photosynthesis’ and ‘Photography’ have in common?
6. You will find spiders and dragonflies in a meadow. What do spiders and dragonflies eat?
7. When grass grows in a garden flowerbed (rather than in the lawn) is often call a ‘weed’. In your own words, can you define what a ‘weed’ is? Would everyone agree what plants are ‘weeds’ and which are not?
8. Grasses have interesting names. Two grasses in the meadow are: ‘Crested Dog’s Tail’ and ‘Yorkshire Fog’. Why do think these grasses go by these names?