

AUTUMN ANTICS

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INTRODUCTION

Seeds, snails, fungi and more

During the autumn months the trees change colour, seeds are being dispersed and there is a lessening of visible wildlife activity. In the case of the honey bee, all males die and the queen stops laying eggs so there are no new bees. However, a few will survive the winter ready to start over in spring. Encourage the children to look for these signs of autumn.

Autumn is a great time to explore and investigate colour and patterns. With art in mind, conkers, fallen acorns and seed cases can be collected and used to create patterns and collages on grand scales. Research the work of Andy Goldworthy for inspiration. Look out for lichen and moss which stay colourful all year round. Lichen is a good pollution indicator and so offers interesting links to science topics and opportunities to practice observation and hone recording skills.

As an introduction to the importance of seeds, take a collection of fruits (apples, grapes, kiwi fruit, tomatoes, peaches, melon) and ask the children to dissect them in search of seed(s). Collect and count them (estimate in the case of the kiwi!) Then discuss how these seeds would normally be distributed.

SEPTEMBER

Grasshoppers

Listen out for buzzing sounds coming from the grasses on the meadow as Grasshopper rub their legs against their bodies. **SG p3**

Mallard drakes

Notice that the male Mallard ducks now look like the females, with all-over brown 'eclipse' plumage see. **SG p2**

Conkers

Watch out for the spiky cases which split releasing the beautiful Horse Chestnut seed. Voles, mice and the Grey Squirrel eat them.

OCTOBER

Acorns

These may be found wedged into the bark of trees where the Great Spotted Woodpecker has been feeding on them.

Dog rose hips

Bright red berries that are valuable food for mice and voles.

Painted Lady

Having spent the summer feeding on nectar, whilst the caterpillars feed on thistles and stinging nettles, these adults migrate to Africa each Autumn. **SG p3**

NOVEMBER

Ivy flowers

The nectar from Ivy is welcomed late in the year by bees and other insects when there is little other food available.

Song thrush

One of the few birds still to be singing in repeated phrases: "I told you, I told you, I told you!" **SG p9**

Coral Spot

Found on dead, deciduous tree branches, these little pinkish/orange blobs are easily identifiable. **SG p15**

RESOURCES

www.treecouncil.org.uk is a good place to start looking for ideas.

Take part in Seed Collection Sunday or find out more about National Tree Week.

Could your school plant some trees in the grounds?

PARACHUTE SEED TEST

AIM

To test the effectiveness of parachutes as a means of seed dispersal.

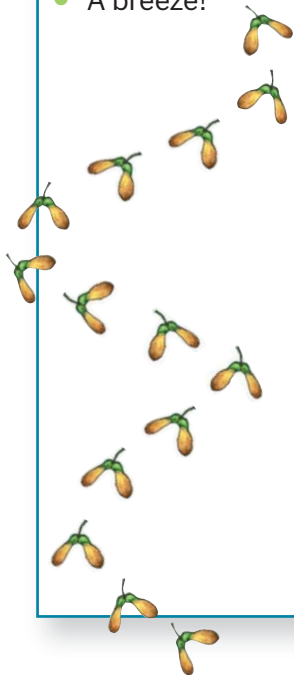
Time needed
20 minutes

Age group
6 years +

Location
Outdoors

What you will need

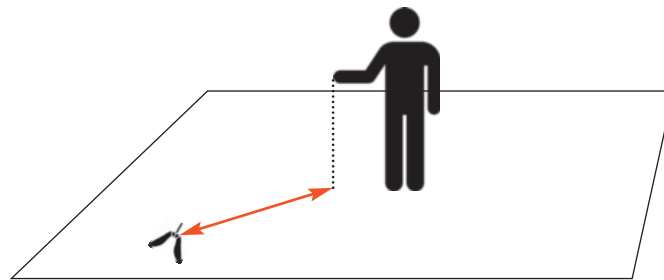
- Seeds with hairs such as dandelion or thistle, or wings such as Ash or Sycamore
- Scissors
- Tape measures
- Pencils and paper for recording
- Large white sheet (optional but useful)
- A breeze!



What to do

Children need to collect and identify some seeds with hairs or wings. To make this an investigative piece of work try trimming the hairs off some of them, using scissors or fingernails. Sycamore and Ash have wind-dispersed seed that use propellers rather than parachutes. A similar technique can be used for these – try some where the wings have been trimmed.

Lay out a large white sheet, and drop the seeds one at a time from an outstretched arm. For each one, record the type of seed and how far it travels. The measurement should be along the ground in a straight line across the floor, from under the outstretched arm to wherever the seed lands.



By using the data collected calculate the average (mean) distance for with and without a complete parachute (or with and without complete wings). Which design is the most effective? Encourage the children to discuss why seeds need to disperse. This is particularly obvious with trees.

What would happen if the seeds dropped straight down and landed under the tree – would they have enough light to grow? Competition for light and other resources can then be discussed in more detail with older children.

Put a sock in it

It is possible to recreate animal dispersal methods. Put an old white sock over children's shoes and then walk across grassland, or through woodland. On returning to the start, children can see if they have picked up any seeds on their socks. Which ones stick best? Do some of them look like Velcro with little hooks, or have some got caught because they have sharp points?

SEED EXPLOSION

SEED MAZE

Imagine you are trying to break out of your protective case, like a seed has to do in order to germinate. Can you find a way out of this maze? Start in the middle.

Seeds need to be scattered because they would be too close together if they all germinated at the base of the plant.



SEED TESTS

On Holt Island, there is a very large Ash tree. In one way it is like the Sycamore, Maple, Lime, Hornbeam and Elm.






1. What do they all have in common?
2. Why is this important?
3. Find out which seeds on Holt Island have:

Hard dry fruits/nuts	Wings
Feathery hairs	Little hooks

If you don't know their names draw the seed shapes and look them up in the SPOTTER GUIDE, or in other books.

4. Find out which birds eat which berries or nuts:
 Berries are eaten by
- Nuts are eaten by

5. Can you find out about these seeds and complete this table?

	What are the seeds commonly called?	What use do humans have for them?	Which animals use them and what for?
wild rose 			
black thorn 			
oak 			
horse chestnut 			
hawthorn 			

WRITE A POEM

Do you know what an acrostic poem is? It is a made-up poem. You think of a word first that describes the subject of your poem. It is called the topic word. Each line of the poem starts with a letter of the topic word and must relate to the topic word. Here's an example of an acrostic poem called SUN:



Shines brightly
Up in the sky
Nice and warm on my skin

Before you start gather some ideas to use in the poem, write a quick list of ten things you have noticed about autumn on Holt Island.

Now, can you add any adjectives to better describe your observations?

For example, if you have written piles of dead leaves, you might add 'rustly'.

Can you add any emotions or describe how you felt when you saw the island in autumn? Maybe the dead leaves made you feel sad 😞? maybe the bright red berries cheered you up 😊?

Using your ideas from above, write the acrostic poem below:

1
2
3
4
5
6
7
8
9
10

A
 U
 T
 U
 M
 N

FABULOUS FUNGI

There are more than three times as many species of fungus in Britain as there are wild flowers, and they are a vital part of the natural scheme of things. Fungi and moulds play their part in breaking down organic waste so that it gets washed away by rain, and sinks into the soil as compost for flowers and trees, and food for worms.

If fungi, insects, slugs and bacteria did not exist, fallen leaves would pile up and fallen tree-trunks would make woods impenetrable. Nothing new would grow because there would be no fresh nutrition in the soil.

How do mushrooms and toadstools help?

Firstly, there is no difference between a mushroom and a toadstool! They are both forms of fungi, but the term mushroom has generally been applied to those that can be eaten. They both help in breaking down organic material.

The part of the fungus visible above the ground in the grass, or on rotting logs and tree stumps, is the fruiting body of a much bigger underground living structure. It is just like seeing a flower head of a plant but not being able to see its roots.

A tree or a flower has the most important part of its structure above ground, where the chlorophyll in its leaves turns sunlight into food and roots take water from the soil. The fungus equivalents of the stem, trunk, roots and leaves are hidden from view and are called jointly the **mycelium**.

The mycelium takes nutrients from any organic matter by breaking up leaf litter and dead wood, or as a parasite — usually harmless — on living trees. Fungi rely on other plants to make their food.

Fungi come in many shapes and sizes other than the familiar stalks with caps of mushrooms and toadstalls. Young puffballs are delicious when cooked but, as their name suggests, they look like balls. Beefsteak fungus grows as a shelf-like structure on old oak trees, and has pores (small holes) underneath rather than thin gills. It is also tasty.

Honey fungus looks like string and is found on trees with its mycelium under the bark.

Children should **NOT** be allowed to eat any berries or fungus found on Holt Island. Whilst very few are poisonous, many can cause upset tummies.

In literature, especially in fairy tales, you can find many illustrations of the red-and-white-spotted Fly Agaric toadstool. Disney's film *Fantasia* has a dancing mushroom sequence featuring this species. There are images of Fly Agaric dating back to 3,500 BC painted in caves at Tassili, Algeria.

A classroom activity could be to research illustrations of mushrooms and toadstools through various periods of history and in different styles of art.

RESOURCES

Fungus Fred Goes Foraging by Maggie Hadley provides a great introduction to fungus and the following page is based on this book. The whole book is downloadable from www.fungi4schools.org
www.countrysideinfo.co.uk/fungi/concl.htm has excellent pictures and is very informative.



BE A FUNGUS DETECTIVE

On the back of this page you will find your Fungus Detective worksheet to fill in as you conduct your fungus investigation. But first you must look at your 'briefing notes' here so you are prepared.

There are nine main groups, or types, of fungus and we have shown you the outline shapes.



gill fungus



bolete type



bracket type



club fungus



stinkhorn



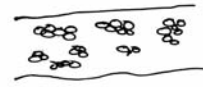
trumpet type



puffball type

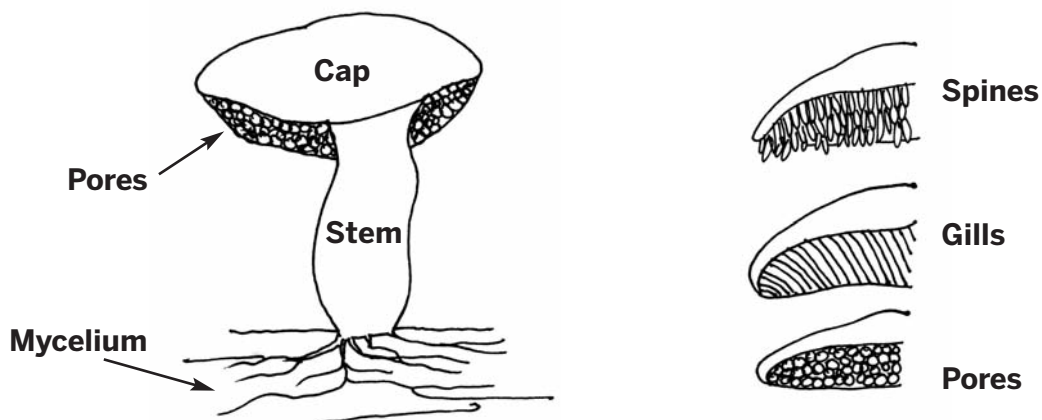


cup fungi



blobs on wood

You also need to be familiar with the parts of the fungus before you can complete your Fungus Detective form. Look at the drawings here so you can spot the cap, and identify whether your fungus has gills, pores or spines under the cap.



FUNGUS DETECTIVE WORKSHEET

Walk round the Island, or through The Thicket, and look carefully on the ground under trees, and on the trees themselves, or on fallen logs and spot as many different types of fungus as you can. Fill in the worksheet for each as accurately as you can. Remember, a detective is only as good as his notes!

Draw the outline shape of the fungus and write on it the colours of the parts: the **cap**, **stem** and **gills**.

Draw the outline shape of the fungus and write on it the colours of the parts: the **cap**, **stem** and **gills**.

Measure the **height** from the cap to the stem base.

Measure the **height** from the cap to the stem base.

Has the fungus got:
 gills, **pores** or **spines**?

Has the fungus got:
 gills, **pores** or **spines**?

Describe the **habitat** - where was the fungus growing?

Describe the **habitat** - where was the fungus growing?

Which of the 9 main **groups** does it belong to?

Which of the 9 main **groups** does it belong to?

At home, use a book to try and find the **name** of the fungus.
.....

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.....

WHAT IS LICHEN?

A lichen is a partnership between a fungus and an algae which work together to live in places that they may not be able to survive on their own! The algae part of the lichen provides food to the fungus using photosynthesis. Lichens can sometimes look a little like mosses but mosses are made up of slender, green stems with tiny, transparent, green leaves. Lichens can also look like splashes of paint, can have scalloped edges, wrinkled sheets; lacy patterns, bushy tufts or untidy strands of black or green 'hair' — but they **never have** leaves.

Lichens and pollution

If the air is very badly polluted from chimneys with a gas called sulphur dioxide there may be no lichens present, although green algae may still be found. If the air is clean, shrubby, hairy and leaf-like lichens become abundant.

Can you tell anything about the quality of the air in St Ives? You can also look up to the rooftops of the older houses in the town to see if any have lichen on the tiles. It grows very slowly and the newer buildings will not have any. The gravestones in the churchyard are the best place to look because you can tell how old the lichens are from the dates engraved on the stones. Some lichens can grow for a 1,000 years.

RESOURCES

www.cymru.org.uk/vtc/ngfl/science/phil_edwards_lichen/lichens.swf has some good lesson plans looking at the science/pollution of lichen.



LICHEN SURVEY

Conduct a survey as you walk to Holt Island to see what type of lichen you can find. Look on the trunk and branches of older trees and shrubs, and on walls. Take a magnifying glass with you to help see their different features. Examine each one closely if you can, and then tick the chart according to its appearance.

Lichen characteristics	LICHEN 1	LICHEN 2	LICHEN 3
Orange, yellow or black?			
Leafy surface?			
Shrubby surface?			
Granular surface?			
White, frost-like surface?			
Ridged surface?			
Rough surface?			
Smooth surface?			
Veined surface?			
Other observations			

Try to identify each one. It is not easy as there are many species (about 19,000 worldwide!) Check the library for an identification guide with pictures you can compare with those you have seen, or use the internet.

Draw some examples of lichen.

An example of a foliose
(leafy) lichen

An example of crustose
(encrusting) lichen

An example of fruticose
(shrubby) lichen

ANIMAL ID

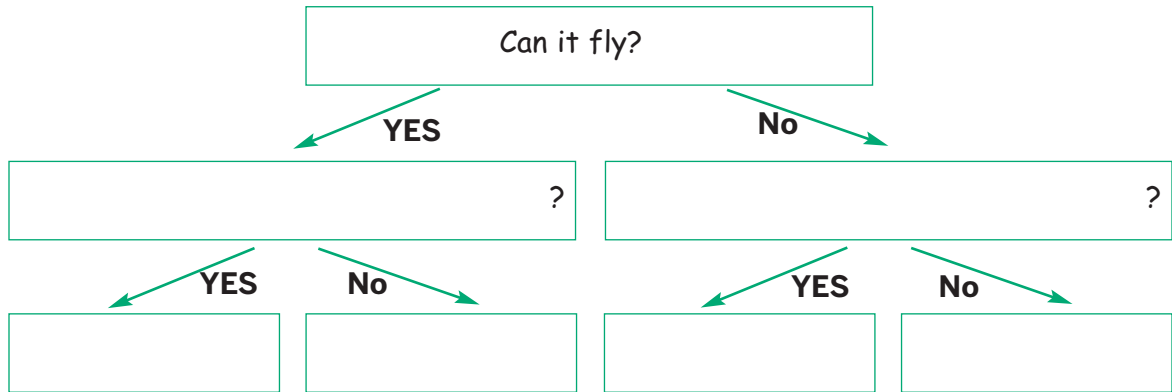
Here are four different animals.



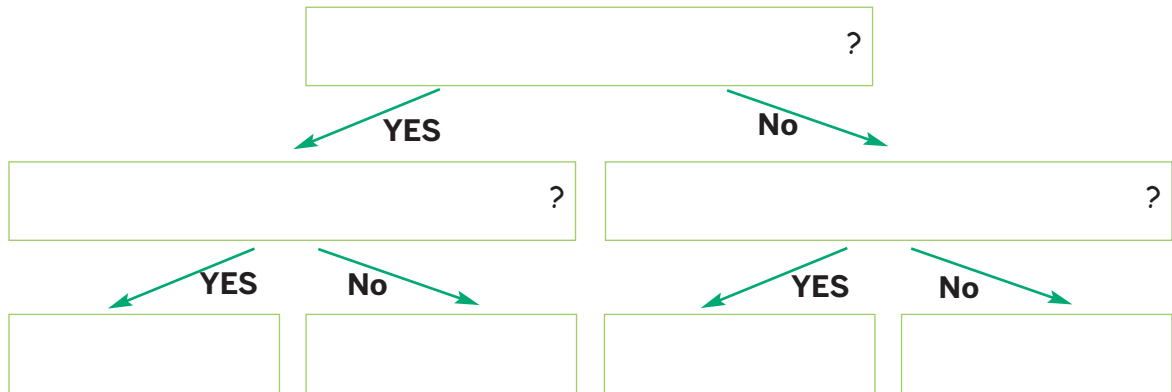
Can you think of some questions to create a key to identify these four animals? Your questions should have yes/no answers and should focus on the difference between the four creatures. Here's an example of what the first question might be to start you off: Can it fly?

Fill in the question boxes on the key.

Write the animal names in the correct boxes at the bottom of the key. Test your key on your friends. Does it always work?



Now make up keys to identify different animals that your research has shown live on Holt Island.



SNAILS, SLUGS AND SLIME

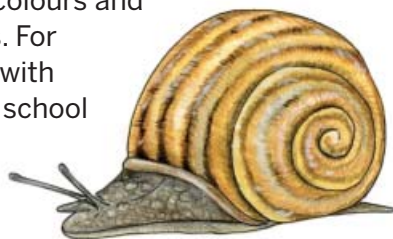
Slugs are known for leaving a trail of slime, which gives them suction to cling onto vertical surfaces. They can also cover their bodies with a layer of slime that tastes unpleasant to predators. Their eyes are at the end of the long tentacles while shorter ones are used for feeling. Slugs are just like snails but without the shell.

Snails can be seen in a variety of colours and shapes and found in a range of locations, from hedgerows and woodland to ponds and lakes.

Studying snails and slugs can encourage good observation skills and, as they do not move so fast, identification tends to be easier compared to say that of butterflies or birds. This means that studying snails or slugs and collecting and collating data it is quite easy. Slugs are slightly less appealing to children, so these activities will concentrate on snails!

Banded Snails

The most common snail that children can spot is the Banded Snail (see SG page 3). The shells are various shades from yellow to pink to brown, and can have one band round the middle or up to five bands, or even no band at all. Banded Snails are a favourite food of the Song Thrush (see SG page 9) and their various shell colours and patterns camouflage them against different backgrounds. For example, darker shells are found in woodlands but snails with lighter, yellow shells are found on grassland. There is one school of thought that shell colour affects how sensitive a snail will be to temperature, with dark-shelled snails being found further north.



The importance of snails

What would happen to snail populations if Song Thrushes continue to decline? Ask the children to think about the knock-on effect to humans. Link back to the food-webs in the Summer Surprises section.

In the classroom

It is possible to study snails in the classroom by collecting some snails and putting them into a container with a few twigs, a rock and some leaf litter. Keep it moist!

Snail questions

How does a snail eat? Snails feed in one of two ways. Usually the snail uses its radula, or tongue. This has around 14,000 minute saw-like teeth all over its surface and is used to 'scrape' away at the surface of the foodstuff. The snail also has a horny jaw. It sometimes uses this to bite pieces out of a leaf in much the same way as a caterpillar eats.

Which leaves are preferred? Snails do not like prickly leaves, but it is a good experiment to add one to show children that snails will choose alternatives.

How does a snail move? Snails have a large fleshy foot containing muscles which expand and contract to move the snail along. The slime that slugs and snails produce enables them to go over uneven, sharp ground as the slime protects the soft body.

SNAILS, SLUGS AND SLIME continued

What happens when the snail is touched? It will probably respond by retreating back into its shell. It can seal off the entrance using the same slimy mucus that creates the snail trail. This is how snails protect themselves against predators and dry weather. This is also how they sleep, or hibernate, through the winter.

Can snails adapt?

One of Darwin's first observations on his travels was that finches had different-shaped beaks for eating different seeds. This led him to believe that, over time, creatures could adapt to their surroundings – snails are no different.

On Holt Island, study the snails found in shady areas such as under the trees, compared to those found in the grassy meadow. Back at school continue the snail hunt on the playground and around the playing field to include a sandy area if you have one. It may be useful to use a thermometer to measure the temperature in each location, and to photograph some of the snails in situ.

Use the sheet to record the findings. Do the results show enough to prove or disprove the theory that there are different colours for different locations?

Having collected data, discuss what changes would be necessary for snails to survive if the habitat changed, for example if all the trees were cut down.

Follow this activity with a study of the snails in a pond. Why is the Ramshorn Snail so flat? How do snails breathe? Do the ones in water have gills?

Art projects

For an art activity, ask the children to draw a snail that would fit in well in an area made solely of concrete buildings, and one in an area that was always wet.

Research *The Snail* by Matisse.

Can the children take inspiration from him and their own observations to create an autumnal snail picture?



RESOURCES

www.tate.org.uk/imap/pages/animated/cutout/matisse/snail.htm has a great website showing how Matisse created his masterpiece.

www.kiddyhouse.com/Snails has a good background to snails and related activities.

www.edu.dudley.gov.uk/primary/ICT/year%20group/Year%20Five%20Page.htm uses ICT to teach about animal classification.

SNAIL WORKSHEET

Using your observation skills find a snail or a slug and make a detailed drawing of it. A slug is really a snail without a shell, although some slugs have a little 'saddle' on their back which is like a shell.

Label the **antennae, eyes, foot, lip and shell**

Describe exactly what the conditions were like when you found the snail you have drawn above. (Consider if it was open, sheltered or shady, wet or dry. Was the surface smooth? Was the day hot or cold?)

.....

.....

.....

.....

.....

Continue your search and see if you can find any more slugs or snails. Try at least four different places and fill in the details for each location and the snails you find.

	Location 1	Location 2	Location 3	Location 4
Describe the location				
Temperature				
Number of snails				
Size of snail				
Colour of shell				
Number of bands				
Colour of lip				
Is there a snail inside?				

NATURE IS ART

Experimenting with natural forms encourages both observation and creativity. Nature can be extremely ordered. A sunflower head, for example, is extremely precise and the coloration of a butterfly's wings is symmetrical, whilst spiders' webs are delicate variations on a circular structure. But add different flowers and colours and the picture becomes quite chaotic.



Andy Goldsworthy is an artist who uses natural objects in his compositions and shows how the study of patterns in nature can create works of art.

Andy works outdoors and tends to focus on either one colour, for example red, or one shape, for example round, or one item, for example twigs and leaves from one particular tree. He then arranges the selected items into effective patterns – his work has appeared in a number of books and has even featured on a series of stamps in 1995. Here are some examples:



The key factor in each of Andy's works is that nothing unnatural is used. If items need pinning, then thorns or pine needles are used, or alternatively the materials are woven or plaited together.

Think like Andy

Discuss Andy's approach to his pictures and show the children these examples. Then, on Holt Island, ask the class to collect a range of natural items to reflect autumn. Encourage the children to think in advance whether they are going to collect items of only one colour, or only one item but of any colour, or whether they are going to collect a huge range of natural material. Ask the children to collaborate in small groups to make some large-scale art pieces and leave them for other visitors to see. Don't forget to photograph the finished works of art!

Remember! Limit the impact! Do not break branches or remove a whole plant. Picking one or two petals or leaves from each flower is fine – do not strip a flower completely. Leave some for the next visitors to admire! Do not destroy animal habitats.

RESOURCES

www.forestry.gov.uk/thameschase provides some lesson plans plus curriculum links for various outdoor activities.

www.morning-earth.org/artistnaturalists/an_goldsworthy.html has a brief interview with the artist Andy Goldsworthy and examples of his work.






ANSWERS

SEED EXPLOSION

1. Seeds with wings 2. For seed distribution on the wind

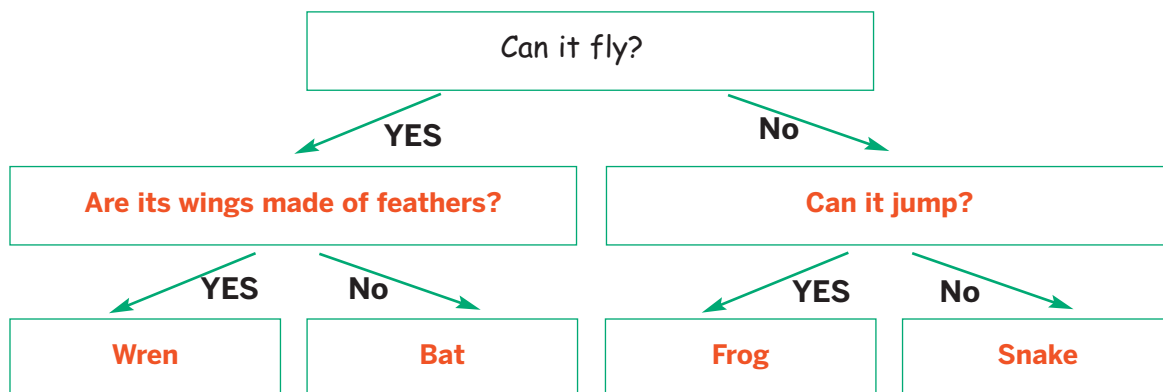
3.	Hard dry fruits/nuts Hazel	Wings Ash, Sycamore
	Feathery hairs Dandelion	Little Old Man's Beard

4. Berries are eaten by Blackbirds Nuts are eaten by Nuthatch

5.	What are the seeds commonly called?	What use do humans have for them?	Which animals use them and what for?
wild rose 	rose hips	making syrup and flavouring ice cream	birds will eat as a last resort in a hard winter
black thorn 	sloe berries	alcoholic drinks	good habitat for birds and hiding place for weasels
oak 	acorns	ground to make coffee and flour	jays and squirrels for food
horse chestnut 	conkers	games of conkers!	squirrels for food
hawthorn 	haws	used in medicines	blackbirds for food

ANIMAL ID

Possible answers



Teacher's Page