

PLAY, LEARN AND HAVE FUN!

Environmental Games and Activities for Rangers and Schools



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A Collection of Environmental Games

This is a collection of dozens of tried and tested games with an environmental theme. Most of the games included can be played anywhere. You will just need to keep in mind the age and maturity of the group and adjust accordingly. All the games can be fun for any type of group, as long as they are presented appropriately.

Here's some simple steps to making sure that they work and that everyone (including you) has fun-

- 1) Set-up the game first and then explain how it works.
- 2) Keep explanation and rules to a minimum.
- 3) Pay special attention to any safety considerations. Explain and stress safety rules.
- 4) Keep your goal in mind; what do you want the participants to get out of the game? (Many of these games focus on awareness of nature around us.)
- 5) Get kids to feel comfortable outside.
- 6) Spend time after games asking kids if they had fun?
- 7) What did they learn?

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1,2,3 Where are you?

Age Group: 5- 11 years

Ideal Numbers: Any class size but be aware of limits with hiding places

Location: Outdoors in area to be used for rest of activities

Equipment Required: None

Amount of Time: 15 minutes or more, depending on engagement of children

Reasons for Playing: Great for establishing boundaries and familiarising young people and adults with a site

How to Play: After describing and demonstrating the boundaries of the working area to a group divide the group in to two teams. One team are the hidiers, the other are the seekers. Ensure there are sufficient adults in each team. The hidiers go off in one big group to find one big hiding place. The seekers stay at the base and count to 100. After 100 the seekers shout all together '1,2,3 Where are you?' The hidiers then reply '1,2,3 We're over here!'

It is important to stress that they must reply!

The seekers locate the hidiers by repeating these calls and homing in on the hiding place- using their ears.

Repeat the game by swapping teams and roles.

As the group get used to the game you can allow them to hide in smaller groups within the teams or even on their own as long as the boundaries are well defined and recognised.

This enables them to build up confidence and feel secure outside in the woodland/ park etc while having fun and enjoying exploration.

Robbers game

There are lots of robberies in the woods. The squirrel hides some nuts and the other animals steal, or the squirrel cannot find his hide out any more and is starving. The game involves the group being split into squirrels and robbers. The squirrels hide their nuts in the playing field (approx. 50x50m depending on the area available). The robbers are allowed to watch the squirrels from the edge of the playing field (or at a distance of 5 meters). In each round, the squirrels and robbers must spread out and collect a certain

amount of nuts, which is different in each round, (depending on the size of the area and the difficulty level required, each round lasts from a few seconds up to 1-2 minutes). The players who do not manage this are out of the game.

Viking Runes

Age Group: 8- 14 years

Ideal Numbers: Any class size

Location: Outdoors in area to be used for rest of activities

Equipment Required: Runic alphabet, Rune trail, Pencils, Card

Amount of Time: 30 minutes +

Reasons for Playing: Great for establishing boundaries and encouraging use of space. Also provides lots of ups and downs throughout activity allowing running around and bursts of energy as well as quieter reflective work.

How to Play: Set up the rune trail around the site before the group arrive. The cards should have a rune on one side and an English letter on the other. (NB: This activity can be delivered using any kind of code-morse, numbers, hieroglyphics!) After describing and demonstrating the boundaries of the working area to the group divide them in to smaller groups- pairs, fives etc. Each group must make their way around the site finding all of the cards and writing down the code on a special sheet (card/ notebook- as you decide). The cards must be left hanging so that all of the groups can find them.

While the groups are looking for the letters you can hang a number of messages around the base site, written in runes (or other code).

When the groups have found all of the letters they will return to the base and choose a message to translate using their new code. All of the messages should be instructions for an activity. It may be four separate things or four parts of the same instruction depending on age and ability of the groups.

Examples could be: 1. Use sticks to write your name in Viking runes. 2. Make a picture frame on the ground. 3. Find three leaves and four hazel nuts .
4. Create a Viking picture in the frame. (all of above written in runes)

You can choose whether all of the groups do all of the activities or whether they stay working on only one or two. This will depend on how engaged they are and how the time goes.

At the end of the activity try to review the children's experiences by asking questions or getting them to show you something they made. This will add value to the experience they have had and ensure that it stays with them for much longer, also allowing you to see how well it worked.

Meet A Tree

You will need:

Blindfolds

A carefully selected area with trees in it. Ensure there are no obvious hazards for blindfolded children such as water, nettles, brambles, holes, thorns.

Also ensure that there are enough, reasonably sized trees fairly well spaced, and that the trunks, or part of them, are fairly accessible, i.e. not covered in scrub. A beech hanger is ideal.

The activity:

The original 'earth game'. Have the children in pairs or threes. If possible, or if the kids are younger, I recommend an adult per 'pair' for younger children. One blindfold per pair. It is easier to demonstrate this game than explain it. One child wears the blindfold, and the other leads them by a circuitous route to a tree. The blindfolded child feels, smells, even tastes the tree until they think they really know it, and all its shapes and features. They are then led away, the blindfold is removed, and they find 'their' tree. Then the next child has a go. Keep swapping and trying different trees. You could try this in different areas with

different types of tree and see if it is easier or harder.

Be sure to mention blindfold safety, in leading partners carefully. If necessary set boundaries, keeping dangerous areas out of bounds. This is a good way to talk about different types of trees, who lives off them, what types of trees are not found here, etc.

Journey Sticks

You will need:

Different coloured wool of about 1m in length

The activity:

1. Children to find for themselves a 50cm – 1m long stick
2. Tell them to collect objects around the wood as you lead them around. These objects will remind them about places in the woodland
3. Children then collect feathers, dried flower heads, grass bark, leaves etc. attaching them to their stick as they go by using the wool to wrap around them

At the end of the walk, the children use the objects to tell about their journey.

Alternatively, you could encourage them to remember where they found particular objects by getting individuals to lead the rest of the group to the spot.

Observation Space

You will need:

Circles of string (about 2 ft diameter) or hoops

The activity:

1. Give a string circle or hoop to a small group of children and tell them to take it and place it in a special part of the wood. Look at what is growing in the circle, are there any special objects like feathers, pine cones etc?
2. The children report back to the rest of the group what they have seen in their circle
3. Next week, the children return to their circles and look for changes.

Camouflage is everything

Animals can camouflage themselves and their markings are often relevant to their surroundings. We want to test out if we can also camouflage ourselves. A couple of volunteers have the task of camouflaging themselves (dead leaves, earth, leaves and twigs). The group leader or the group judges the best camouflage at the end.

Kim's Game/Eagle eyes

You will need:

Suitable objects for the game e.g. feather, acorn, pinecone, moss, leaf, stone (avoid wildflowers which children should not be encouraged to pick)

Playing the game:

Variation 1

1. Cover the objects with something natural, like large leaves
2. Remove the covering for about 30 seconds before replacing it
3. Ask the children to go off and find similar objects

Variation 2

1. Choose objects that the children can touch and therefore examine texture. Pick objects which are hard, soft, tickly, bendy etc.
2. and 3. as above

Variation 3

1. Show 6 or 7 pictures of birds or other animals that can be found in the woodland
2. Cover them up

Ask how many the children can remember

Variation 4

In a square area of the woods (5m²) the group has 1 minute to remember the contents of the square. The group then turns their back to the area and a couple of things are changed (an extra leaf, a pine cone turned around, a stone moved or added etc). Can the group name all of the things which are changed within 1-2 minutes?

Feely Bag

You will need:

A large bag

A number of objects found in the woodland e.g. acorn, stick, pinecone, feather

The activity:

1. Once the children are familiar with objects they may find around the wood, get one child to choose an item from the bag without taking it out
2. They describe the object to the rest of the group which has to guess what it is
3. The correct guesser gets the next go.

Nature Matchbox

You will need:

A matchbox for each child

Playing the game:

Each child to fill their matchbox with as many different natural objects as possible (not living ones of course!) Who can get the most different objects?

Identifying Trees

You will need:

Leaf cards copied from the sheet at the end of the booklet and laminated showing leaves found in the particular locality.

Playing the game:

1. Go through the cards with the children, naming the leaves and drawing attention to their different shapes
2. Give a card to a pair of children and ask them to find the tree the leaf came from
3. Swap over cards so the children become familiar with each species.

Do they notice any other distinguishing features of the trees?

Once you have played this game a few times and the children are familiar with the names of the trees, without using the cards get pairs or small groups of children to lead the rest of the group to an example of one of the species they are familiar with. Get the group to decide if they have made a correct choice – this can always be checked with reference to the cards.

Mirror walk

You will need:

A small plastic mirror for each child

The activity:

1. Explain to the children how they are going to use a mirror to view the wood through the eyes of different animals. They need to be careful they don't bump into anything because they will be looking through the mirror!

2. Get the children to suggest a bird's name. A bird views the world from above while flying high so hold your mirror high above you and look up into it as you walk around.
3. Do the children know what is special about a rabbit's vision? They have a much larger range in order to spot a predator creeping up on them. If the children hold their mirrors to the side of their nose facing them and they will be able to see both forwards and backwards at the same time.
4. Get the children to make a journey across the woodland floor with their mirrors, pretending to be a little wood mouse.
5. What view does a beetle get? Hold the mirror in front of your facing upwards and the children will get an interesting viewpoint of the woodland canopy.

Woodland Sounds

You will need:

blank postcards or pieces of card for each child, pencils.

This activity is best in winter or spring.

Listen to the sounds of birds etc as you walk through the wood. In order to encourage the children to listen carefully get them to draw the sounds they hear.

Eg, short jagged zigzags for a wren's call, long swirling marks for a pigeon cooing and more complex up and down marks for a robin's song.

Discuss how best to record the sounds.

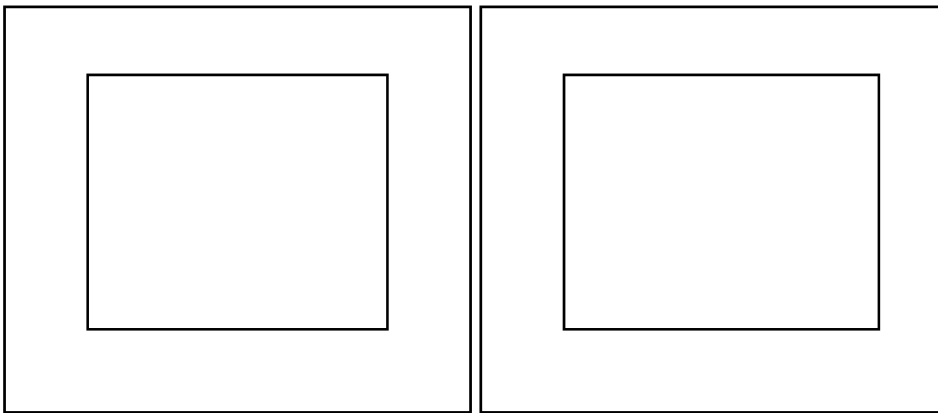
Try to interpret these 'graphic scores' using instruments in the classroom.

Perform your woodland symphony!

Leaf Slides

You will need:

Card slide mount for each child made from the template below. Fold down centre line.



Collect a favourite leaf of a tree or fern or grass from the ground and mount it in your slide holder.

-Have a slide show by holding them up one at a time in a circle.

-make them into a mobile

-hang them against a window

Sounds and Colours

no materials needed

Stop anywhere along the trail and have everyone stand very still (or sit) and close their eyes. The challenge is to see how many different sounds they hear and count them out on their hands.

After about a minute, discuss what sounds people noticed. What sounds were heard that you would not hear in the city? What sounds were the same? Would we have been able to hear these sounds if we had not been perfectly still? This helps focus on things happening in nature.

You can do a similar activity focusing on colours. Start by asking everyone to call out the first two colours that they see. Then, have each person look at one section of the forest, and without moving their heads, count how many different colours they see. Remember that different shades count as different colours. How many people lost count because there are so many colours? What was the one colour that they were surprised to find?

Rainbow Chips

You will need:

coloured pieces of paper
(cut up paint samples work well)

The activity:

Give each child several chips of the "rainbow." The object is simply to find the colours somewhere in nature. This is a good game for younger children. For older groups, have them find the colour of their shirt, pants, someone else's eyes, etc. in the forest.

Scavenger Hunt

You will need:

scavenger hunt list

The activity:

Give everybody a scavenger hunt list – put the lists on index cards and laminate with contact paper to protect and reuse them. Ideas for hunt: a feather, three seeds, something smooth, something that smells, something beautiful, something round, a sign that an animal lives here, five signs that man has been here (litter), etc. Remind everyone to collect only things that can be put back (except for the litter – emphasize putting litter in the garbage at the end).

Modelling Hedgehogs

You will need:

Water to create mud if the ground is hard and wash hands afterwards.

Playing the game:

Children to create their own hedgehog using materials found in the woodland. Clay soil is especially good for modelling and the hedgehogs can have spines made from twigs.

You could also model other things, for example **funny faces stuck to a tree trunk**. Create the features with all sorts of natural objects. These can be left for others to discover since they are only made of found materials and will soon weather.

The Shortest Path

In a square playing field with around 10-30 trees, each tree must be visited with as few steps as possible. Who can find the best and shortest path between the trees and who can jump the furthest? Which trees have already been visited? A piece of paper is hung on each tree and the player makes a mark on the paper or the players must collect a band from each tree. One referee concentrates on counting the steps and the second referee checks if all trees have been visited.

Animal Consequences

Age Group: 10 or over

Ideal Numbers: 10-20

Location: indoors

Equipment Required: Paper and pencils

Amount of Time: 15 mins

Reason for playing; reinforcing discussion around adaptation

How to Play:

Everybody sits in a circle, and has a piece of paper and a pencil.

Players fold their paper into four, so that the folds run widthways.

On the top panel they draw an animals head - a bird, a lion, a crocodile, etc.

Make the two lines of the neck just over onto the second panel.

Players fold over their handiwork so that it cannot be seen, and pass to the person on their left.

Players then draw the top part of an animals' body, and again pass on the piece of paper.

The legs of the body and then the feet are also added in this way. Then pass on the completed animal to the player on the left.

Players open out the 'mystery animal' and decide where they think it lives (has it got webbed feet? A tail suitable for helping to climb trees?). What it eats (has it a slender beak or a long tongue for drinking nectar? Sharp teeth for meat eating?). What it might get eaten by? (Try linking all the creations in an imaginary food web!). Give each animal a suitable name.

Fox-Rabbit-Leaf

Age Group: 6 and over

Ideal Numbers: 15 - 50

Equipment Required: Scarves or pieces of cloth; pencil and paper, watch

Amount of Time: 15 mins+

Reason for playing: starting point to discuss 'balances' in nature

How to Play:

Players are divided into 3 roughly even groups - one group are foxes, one rabbits, and one are the leaves.

The foxes stand to form a circle. The rabbits each have a scarf or piece of cloth to tuck in their belt or waistband for their 'tail' - they stand inside the circle.

The leaves stand outside the circle - they cannot move.

Decide in advance on a length of time for each 'round' and how many rounds you will play (perhaps 6 rounds of 2-3 minutes each).

At a given signal, the round commences. The rabbits must try to get past the foxes to 'tag' the leaves - they can catch as many leaves as they are able.

The foxes try to catch the rabbits by pulling their tails; the rabbits are safe when they are in a crouching position, but they cannot move or tag a leaf when they are in a crouching position, but they cannot move or tag a leaf when they are crouching. The foxes can only catch one rabbit in any round.

When their time is up, call the end of that round.

Any rabbit caught by the foxes become foxes as well.

If the fox fails to catch a rabbit within any round it 'dies' and becomes a leaf.

If the rabbit fails to get food, it also becomes a leaf.

When the rabbit gets food, the food joins them as a rabbit.

Special Notes;

At the end of each round, note how many there are in each group. When the game is over, discuss how the numbers varied - if there are too many rabbits there isn't enough food, so some of the rabbits die; it is also easier for the foxes to get rabbits, so the number of foxes temporarily increases.

However, if there are too many foxes, they can't all get rabbits, so some die - therefore it becomes easier for the rabbits to get food, and their numbers increase!

Sound Map

A thrilling chorus of natural sounds delights the players in the Sound Map Game. Children love this activity - they become completely absorbed and sit surprisingly still while making their sound maps.

To play, begin by showing the group a 4 X 6 index card with an X in the center. Tell the players the card is a map, and that the X shows where they're sitting. When they hear a sound, they should make a mark on the card that aptly describes the sound. The mark's location should indicate as accurately as possible the direction and distance of the sound. The marks should be interpretive, not literal; the players don't have to draw pictures of plants and animals, just a few lines indicating wind, or a musical note indicating a songbird. In other words, they should spend little time drawing and most of the time listening.

Tell the players to keep their eyes closed while they listen. Explain that cupping their hands behind their ears provides a reflective surface for catching sounds, creating a shape like the sensitive ears of a fox or kangaroo. To hear sounds behind them, they needn't turn their heads, but just cup their hands in front of their ears.

Select a site where the group is likely to hear a variety of sounds - meadows, streams, and forests are fine. It's important to have everyone find a special "listening place" quickly, so that some aren't walking around while others are already listening. I usually give the group one minute to find a spot and tell them to stay in the same spot until the end of the game. Giving the players enough time to disperse fairly widely will ensure a diversity of sound maps and greater interest in sharing.

How long you should play depends on the group's age, attention span, and how well-supplied the environment is with sounds. A good basic guideline is 10 minutes for adults, 5-10 minutes for children. I like to call the group back together by imitating a natural sound or blowing a crow or duck call. As the players assemble, ask them to share their maps with a partner.

It's sometime hard to find a site that's protected from the sounds of cars and machinery, but these noisy areas are ideal for teaching lessons about noise pollution. Have the children make two sound maps, the first one near a busy street and the second in a quiet, natural spot. After the game, ask them where they felt more comfortable. This is a fine way to build children's conscious appreciation of natural areas.

After the children have drawn their maps and shared them, you can ask questions such as:

- How many different sounds did you hear?
- Which sounds did you like best? Why?
- Which sounds did you like least? Why?
- Which sounds had you never heard before? Do you know what made the sounds?

* from *Sharing Nature with Children II*, formerly *Sharing the Joy of Nature*, (c) 1989 by Joseph Cornell

Knots

Do you know some knots?

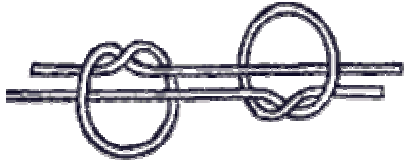
Try to copy the knot with a rope.



Sheet Bend or Weaver's Knot—a knot that doesn't slip or fasten two ropes together



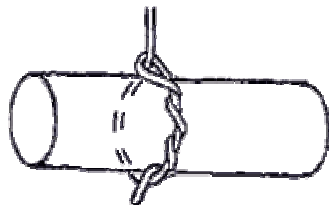
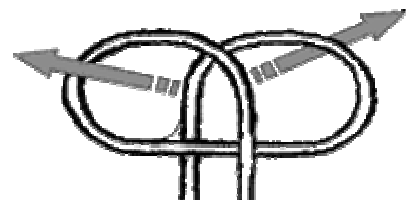
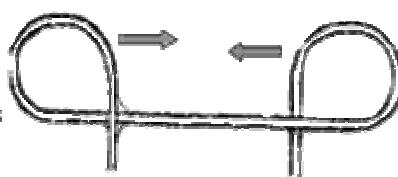
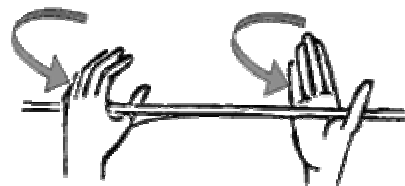
Reef Knot—for fastening ropes



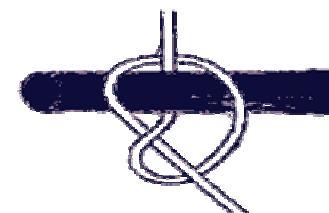
Fisherman's Knot or True Lover's Knot—for fastening ropes.



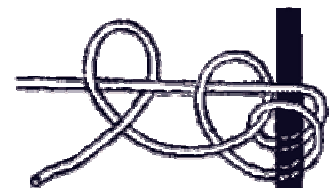
Clove Hitch—for fastening a rope to a stave. The overhand method of tying is shown below.



Timber Hitch



Rope Ladder Knot



Round turn and Two Half Hitches or Anchor Cable Knot.



Bowline

Unnature Trail

This game is played to introduce the concepts of protective coloration and adaptation, as well as to enhance children's observational skills. A benefit of this increased visual awareness is that children become much more careful about littering outdoors.

Look for a trail going through an area where you can see the ground and where there isn't a lot of tall grass or thick shrubs. (A forest where there are both small and large trees, leaf litter, rotting logs, and some plants is ideal.) Choose a 65- to 100-foot section of the trail making sure that it is wide enough for two people to pass. Along the trail you'll place 16 to 24 man-made objects. Some of them should stand out, like brightly colored balloons or fluorescent pink cockroaches. Others should blend with their surroundings, and therefore be more difficult to pick out. Keep the number of objects you've planted secret.

The children walk over the section of trail one at a time, with intervals between them, trying to spot (but not pick up) as many of the objects as they can. When they reach the end of the trail, they whisper in your ear how many they saw. Tell each child the total number of objects, or, if you prefer, the fraction or per cent of the total that they've found. Encourage the children to walk the trail again, looking for any objects they've missed. If you want to make it easier for the players, place a marker (like a red bandanna) near the objects that are the hardest to find.

In setting up, I've found it's helpful to use rope to mark the side of the trail where the objects are hidden. Then place the objects no further than four feet beyond the rope (make sure to tell the players this). You can, however, hide the objects at different heights, and in places where they can be seen only if you turn and look backwards. This helps the children break out of the habit of looking only straight ahead. If you have a large group, be sure to make the trail long enough so that everyone can be on the trail at once. It's also helpful to ask half the group to begin along the middle of the trail, and then come back and finish the first half. This way no one has to wait in line too long.

To challenge older children, and keep them interested, it's important to have some objects that are placed in plain view, but are still difficult to find. One of my favorites is a 3 X 4 inch camping mirror. When its top edge is tilted toward you, the mirror reflects only the forest litter, making it blend in perfectly with its surroundings. (Lay a small branch over the top of the mirror to cover its edge and to hold it upright.) Often I've had as many as fifteen people kneeling and standing right in front of the mirror, gazing intently, but not seeing it, until I've touched the mirror. Objects like rusty chains, nails, rubber bands, and clothes pegs work well, too.

To allow everyone to see where the objects were hidden, go to the beginning of the trail, and start walking along the rope, and have the players (who are standing further back) point out the objects as you go by each one. As you pick up the objects, have a designated player collect them, and another player to count out the number of objects found as you go along.

End the game with a discussion of the ways camouflage coloration helps animals. Then go on a search for small camouflaged animals (insects, spiders, etc.).

* from Sharing Nature with Children, (c) 1998 by Joseph Cornell



Owls & Crows

This is an excellent game for reviewing newly learned concepts. Divide the group into two equal teams, the Owls and the Crows. Have the teams line up facing each other about four feet apart, place a rope between them. About 15 feet behind each team, place a bandanna which designates Home Base. The leader makes a statement aloud, and if the statement is true the Owls chase the Crows, trying to catch them before they reach their Home Base. If the statement is false, the Crows chase the Owls. Anyone caught must join the other team. Before you begin, practice by giving a few easy statements, and asking the players to just point to where they'll run.

Since the players will be continually changing sides, it's helpful to mark clearly the way to run if the statement's true or false. You can use a blue bandanna to signify the true direction - "true blue" and a red one to show false. Or you can use signs or natural features and say something like "true tree" or "false fence."

If the answer isn't obvious to the players, or they forget which way to run, you'll get some of the Owls and Crows running toward each other, and others running back to their Home Bases. During the pandemonium, the leader should remain silent and neutral. When the action has calmed down, he can reveal the correct answer.

Your statements, however, should be as precise and accurate as possible for the age and experience of the players. For example, if you say the sun rises in the east, would that be true? For younger children it might be. But older students probably know that it is the earth's rotation that makes it appear that the sun is rising.

Here are some sample statements: Sensory: "The wind is coming from behind the Crows." Conceptual: "A deciduous tree keeps its leaves all year long." Observational: (after showing them a leaf) "The leaf had five points and five veins." Identification: "This seed comes from an oak tree." Other statements you might want to use are: warm air rises; habitat ... means where a plant or animal lives; birds have teeth; and, ducks, turtles and squirrels are warm-blooded.

Pyramid of Life

This game requires at least six players. Give each child a slip of paper and have him secretly write on it the name of a plant or animal that lives in the area. The players are going to build a pyramid, just as they might do in gym class; but don't tell them this until after you've collected all the slips of paper.

Now the fun begins: "From what source does the earth get its energy? ... From the sun! ... Right. What form of life is the first to make use of that energy? ... Plants! ... Right again. Now we're going to build a pyramid." A few groans may be heard when the "plant children" realize their fate.

"The plants will be on the bottom, because all animals depend on them directly or indirectly for food. All the plants kneel down here on all fours, close together in a line. Now, as I read off the animals from the slips of paper, tell me whether they are plant-eaters or meat-eaters. All the plant-eaters (herbivores) stand in a line behind the plants. All the meat-eaters (carnivores) stand in another line behind the herbivores.

There will nearly always be more children in the upper-level groups than in the supporting plant levels; it's a lot more fun to be a bear or mountain lion than it is to be a dandelion or a muskrat. Humility, alas, seldom stimulates the imagination. With so many tops and so few bottoms, it will be impossible to build a stable pyramid. Some of the predators will just have to forfeit their exalted status. Challenge the children to reconstruct their own pyramid into one that will easily support all its members. (Tell them the bigger children can change to plants if they wish.) Clearly, the higher up in the food chain, the fewer the number of animals there are. Demonstrate the importance of plants by pretending to pull one of them out of the pyramid.

Another way to play the Pyramid Game is to hand out to each player a card with the name of a plant or animal written on it. It's more fun if you choose interesting and amusing plant and animal names-like baby blue eyes, Virginia spring beauty, common horsetail, and hog-nosed snake. If possible, have all the animals and plants be from the same habitat. Writing down the names on the cards also allows you to fix the ratio of plants, herbivores, and predators. Along with the name of a plant or animal, write on each card a Roman numeral (plants, I; herbivores, II; predators, III; and a large predator, IV.) For a group of twenty-six players a suggested ratio (plants to top predator) is, 14 - 7 - 4 - 1. You can use the cards in this pack for this activity.

Shuffle the cards and pass one card to each player. If any players aren't sure what row to go to, they can look to see what Roman numeral they have. Here's how to play: "I'd like everyone who can make food from the sun, air, water and trace minerals to come forward and kneel in a long line.... Would all the plants please introduce themselves?.... (The plant players respond with their fun plant names like, black-eyed Susan!, ...Northern lady fern!,.... touch-me-not!, amidst great laughter.) Now, herbivores, come and stand behind the plants. Tell us who you are.... If you're a predator, make a third row and identify yourselves.... Is there anyone who lives at the very top of the food chain? Yes? Please tell us who you are? ... A bald eagle, then come and be the fourth row. Now that you have everyone in place, pretend that you are going to build a pyramid. (I say only pretend because its a little risky to build one with this many people.)

Explain to the group that there is a model in science that says that every time you go from one level to a higher one (i.e., plants to herbivores), only 1/10 of the biomass is retained. So for example, if you have one thousand pounds of plants, you'd have one hundred pounds of herbivores, ten of predators, and one of the top predator.

Now tell the group: "I've noticed that the plants are having trouble with some insects, so I'm going to spray with a pesticide. These bandannas that I'm placing on your head-one per plant-signify a particle of poison.... Now I'd like the herbivores to reach down and eat the plants. You do this by taking the plant's bandanna and putting it on the top of your head. Keep eating until all the plants are eaten.

"Poisons like herbicides and pesticides are dangerous to animals because when they're digested the poison stays in the animal's tissue. Let's now have the predators eat the herbivores...." (By now the players see where the game is going and are greatly anticipating what will happen when all the bandannas reach the fourth row.) "Now would the bald eagle eat the animals in the third row?" (The players laugh as the bald eagle-player now wears a large pile of bandannas as a hat.) "As we go higher up the food chain, more and more poison concentrates in the tissues of the animals. This process is called biological magnification. Birds like eagles, peregrine falcons, and pelicans and other animals, too, have been greatly harmed by poisons in the environment....Where do you, as a human, fit into the food chain?"

Mouse Hunt

Age Group: 8-12

Ideal Numbers: 8-20

Equipment Required: Small bells/wind chime. Outdoor play area with trees and bushes

Amount of Time: 15 mins

Reason for playing: discussion of how animals hunt

How to Play:

One person is needed to be the mouse - this is the least active role in the game, and requires somebody who will be observant.

The mouse has a 'home' somewhere central to the play area, and which should be clearly defined (a fallen tree, small clearing, area staked out with string to show the boundaries, etc). The mouse cannot move outside it's home. The remaining players are all foxes. Their task will be to try and catch the mouse - however, please note that only one fox will be able to 'eat' the mouse - there is not enough for everyone.

Small bells or/and wind chimes are placed or hung in various locations around the mouse's home, where they are not easily visible to the mouse.

Explain that before a fox can catch a mouse, one of these bells must be rung. This explanation should be suitably ambiguous ; some foxes will attempt to sneak up to bell, ring it and then rush in and 'eat' the mouse - others may realise that it is to their advantage to move in as close as possible without being seen, then wait for someone else to ring the bell for them!

The mouse closes its eyes and counts up to 100, while the foxes run and hide.

Once the mouse reaches 100 it should call 'ready', and the foxes may begin creeping up on their prey.

Any fox who is spotted by the mouse must give up the hunt and sit out the rest of the game as an observer.

Foxes should try to be the first to reach and 'eat' the mouse.

Play several times, with different mice - then discuss what varied techniques can players think of?

The Web of Life Game

Age group: 6 upwards

Location; Inside or outside.

Ideal numbers: 15-20

Equipment required: ball of string

Amount of time: 10 mins

Reason for playing: to show how the natural world is interlinked, discussion of food-webs.

How to Play:

All stand in a circle.

One person starts with the ball of string - they choose to be an animal or plant (in the wild or on a farm etc) for example a greenfly.

Somebody across the circle is asked to think of something which the greenfly is connected to/eats or is eaten by - for example a ladybird.

The greenfly keeps hold of the end of the string, and throws the ball across the circle to the ladybird.

The ladybird has to find someone else in the circle who can make a connection to them - possibly a blue tit. They keep hold of the string, and throw the ball - so that gradually a 'web' is created linking everybody in the circle. Keep the string taut, people may have to pull back slightly on it

Then explain that something has happened to affect one of the players in the circle - it may be that somebody has decided to chop down a particular tree, spray the greenfly or take some other 'action'.

The player affected is asked to 'die' sitting down or falling and pulling one end of the string.

Ask the players if any of them felt that 'tug' on the string - two other players should have done. See how they will be affected by what has happened - these players 'die', and so more feel the tug.

Continue until all the circle has felt the string 'tug'.

Some living things on a farm - apple tree, strawberries, bee, clover, cow, farmer, sheep, kale, greenfly, ladybird, wheat, oats.

Another way of doing this - go to a natural area and choose species from there.

You can use things such as sunshine, air, soil and water - these will be linked to almost everything else.

Millipede

Time: 1-5 mins+

Numbers: up to 40

Equipment: none

Location: Any space, ideal on a path or ride

Very good for travelling from one place to another. Get the children to line up in front of you in single file. Ensure a fairly sensible one is in front. Get another adult, if available, to keep an eye on the lads at the back. Ask them to raise their hands in the air, and then put them down on the shoulders of the person in front. Then take the hands of the leader, and ask them all to close their eyes (and mouths!) whilst you lead off, walking backwards and leading the 'millipede' along. Sometimes this breaks down after a few seconds, sometimes they get very good at it. If so you can lead them over more and more challenging terrain - over logs, around trees, through puddles or whatever. Eventually you get to wherever you are going, or they fall over.

Try to stop before it gets at all rowdy!

Emphasise how hard it is to do it right, and how important it is to co-operate and not push or pull, using the senses other than eyes to feel your way. If they do peek (and little ones always will) then it doesn't really matter. A big round of applause for everyone if they do well - as of course they always do. You can also talk about a real millipede or caterpillar or whatever, and how it feels its way along.

Bat & Moth

Time: 30 mins

Numbers: 15-20

Equipment: at least one blindfold

Location: Anywhere

Stand the children in a circle. Talk about how bats see their food (echolocation). What do bats eat? Often moths. Choose someone to be a bat (I usually choose the one who knew that bats use echolocation) and another child to be the moth. The first two should be sensible children so that the others get an idea of how it works. Blindfold the bat, but not the moth. The bat goes around saying 'bat!'. Every time the bat says this the moth must reply 'moth!'. Thus a sort of echolocation can be done. The bat must tag the moth, to eat it. The others in the circle must gently guide the players back into the circle if they hit the edges, and not let them run out. This is both a very good model of the process and an enjoyable game. However, it will take a little effort to make sure it works safely.

Possible problems:

The bat must keep saying 'bat' or it becomes blind man's buff. Some children can't cope with saying 'bat' at the same time as hunting in the dark. Might be worth practicing without the blindfold.

The moth must always reply immediately, and loudly. Cheats get eaten!

If it drags on and the bat is obviously not going to get the moth, everyone takes a step in to restrict the area.

If the circle is too big or too widely spaced, the bat can escape, and the players can get up enough speed to do some damage! Best to keep the circle small and very closely spaced.

To make sure everyone has a go in the time allotted, you can have more than one moth or more than one bat, or both. Choose your 'opponents' carefully to make sure that one will not squash the other!

The Great Circle

Time: 30 mins

Numbers: any

Equipment: none

Location: a diverse countryside environment where picking flowers and leaves etc is not going to do any harm. A clear area is also needed. A meadow ready to be mown, or which has just been cut but not cleared, adjacent to an already mown area, is ideal. This is best done in an area you know well and

are confident will not be harmed, e.g. at the back of the school field. Note also that it is not a good idea to play this game too often in the same place because of the potential to cause damage. This game can be done in a much more relaxed and spontaneous manner than described here. It will very much depend on the group you have, and how much license you have to rampage around the surrounding area!

Choose a thing which everyone can find, such as a certain leaf or a flower. Start with an easy one. Make sure everyone gets as close a match to the thing you chose as possible. This improves identification skills. When everyone has one, stand in a circle on a reasonably flat, clear area. Kneel down and place the item on the ground in front of you. Everyone else does the same, and places their thing there too, so they are all in a circle. The first circle should be tight, so make the things touch each other. It can be more effective if the things point along the radii of the circle, but there is no reason why they should not be at right angles to them. Then choose another thing, and do the same, creating another circle just outside the last one, and so on until you run out of ideas, things or time. Then admire your work and leave it for passers by to wonder at.

Make sure the children understand why it is permitted to pick wild things here, and that it might not be permitted elsewhere. Make sure that it *is* permitted. If you are not the land manager you should ask permission before you do this. Also make sure that what you do will not leave a mess behind you. You can, of course, do this with non-natural things. If you include man-made things, such as litter or things you have brought with you (contents of pencil cases, items of clothing) make sure that you clear it all up afterwards. Can be a good way to collect litter!

If you give the children a bit more license to choose their own things, make sure there is nothing dangerous which they might find.

Choose things which provide a contrast, e.g. a bright green bracken leaf and then a dry stick. Only use flowers sparingly. You could even use individual petals. Stones, sand, and earth are also good.

Food Chain

Duration: 20 mins+

Numbers: up to 30

Equipment: a ball of string

Location: Any, preferably an identifiable habitat such as a woodland or beach

This game is a kind of dramatised story which the leader tells and the group acts out. It's good when the group is a bit tired and needs to stay still for a while - don't try it first when they want to run about.

Talk about the place where you are, and the sort of animals and plants which are there. (Also possible to talk about a pond or other specific ecosystem with older kids.) Stand in a circle. Ask, where does all the energy come from? (A: the sun) Get the bright spark who knows that one to hold one end of the string and stand in the middle. Explain that the string represents energy. Then attach a chain of plants and animals to the chain in a spiral around the sun, bringing children in from the outside circle as they give an answer. If you only allow those outside the web to give answers this ensures that everyone gets a turn. Often talk through the chain as you build it. Use examples of animals which are right there where you are, to try to limit those who like to list off loads of higher carnivores from tropical habitats. When everyone is in the chain you can try eliminating a few key members to see what happens. I do this by keeping one person back, the little shy one usually, to be the 'Alien' from outside the ecosystem. The alien doesn't understand about ecosystems. They want to do an experiment and take one bit away. The alien chooses a person to fire his/her magic gun at, and that person dies horribly. Make sure the alien chooses someone near the bottom of the chain - they get another shot if not. All those who depend upon the person 'zapped' then die in turn, until everyone - or most of them - is on the floor! The consequences are so dire that the alien quickly fires the magic gun at the original victim again and the balance of things is restored as each one gets up and 'comes back to life' in turn.

It is also possible to do this without string but just holding hands, or just standing in a line. But the string is a lot easier, and kids might be embarrassed at having to hold hands for so long.

Animal Movement

Duration: 15-20mins

Numbers: 15

Equipment: Pond-dipping or minibeast stuff.

Requires captured creatures in a container easily examined, e.g. a white tray or a plastic tank.

Location: Anywhere where pond-dipping or minibeast hunting is appropriate.

A game to play after you have done some pond-dipping or minibeast hunting, and when you are discussing the various animals you have caught. Particularly suited for younger children, or pre-school. Sit around in a circle and have a look and talk about the creatures you have captured. Look at the different ways they move. This is particularly good for pond creatures. Make sure they have enough water to show their movements clearly. Take turns to do an impression of the creature, imitating the way it moves. Everyone else has to guess 'who you are'.

Who am I?

You will need; pictures of animals or plants, tape or safety pins

Tape or safety pins a picture on each person's back (best to have animals of a certain group). The object is to find out what you are by asking yes or no questions. This is a good game to encourage mingling, so everybody is allowed to ask each other person only one question at a time, then they have to move on to someone else.

Try using animals found in the area and then challenge everyone to try to find their animal sometime during the day, or talk about why it might be hard to find their creature. Or use exotic animals and discuss why those animals are not found in this sort of habitat.

Animal Parts/Charades

Animal parts is for groups of four or five. Tell each group the name of an animal they will portray, or have them choose their own creature. The object is to act out the animal with each person in the group portraying a different body part, i.e., a wing, the head, the beak. The other groups get a chance to guess what the animal is.

Charades is another fun way to learn about animals. This can have many variations. Each person can act out an animal by himself or herself, or stay in groups. They can come up with their own, or you can give them cards with the name of an animal. To make it more challenging, write something that animal would do on the card, i.e., a squirrel gathering acorns, birds making a nest, coyotes howling at the moon, etc.

Blind Eagle

You will need; blindfold

The eagle is blindfolded and sits cross-legged with the "treasure" (a rock or piece of wood) placed in front of him/her. The starting line for everyone else is about 20 feet away from the eagle, and their object is to steal the treasure without being heard by the eagle. If the eagle hears someone, he/she points to them and they are out for that round. It's best if you stand next to the eagle to judge if the eagle really hears someone. The eagle is not allowed to wave his hands around; the pointing has to be specific and the stealers are not allowed to run.

This game can lead to a discussion on animal adaptations. Who is best suited for stealing the treasure? Why? Who was not suited? What would have made stealing easier?

Sparrowhawk

You will need; beanbags or similar

Choose a person to be the sparrowhawk.

All the rest of the group space out and stand still as trees. On the shout of 'go' bird (beanbag) is thrown at random from one tree to another. The sparrowhawk tries to catch it.

If the sparrowhawk catches the bird it replaces the tree.

Try using more than one 'bird'.

Noah's Ark

You will need; index cards, writing utensil

Find your mate amid the herd of cavorting beasts and birds on Noah's Ark.

Count no. of players in group, then make list of animals half as long as no. of players

Write the name of each animal on two cards, adjusting for an odd no. with third mate in 1 group if necessary.

Shuffle the cards, pass them out.

Each child reads card and becomes the animal on it, keeping it secret.

Collect cards.

On signal, all players act out sounds, shapes, movements of animals with intention of attracting mates; it's pretty hilarious. They can make all the noise they want, but talking is prohibited – each animal must attract mate just by authenticity of behavior.

End in laughter, good icebreaker.

Apple World

See apple as the world. Useful assembly on sustainability.

You will need; an apple, knife

Cut apple into quarters

$\frac{3}{4}$ earth's surface is water; $\frac{1}{4}$ is land

Cut land into $\frac{1}{2}$ -- only $\frac{1}{2}$ land ($\frac{1}{8}$ total earth) is habitable; the rest is desert, mountains, frozen icecaps, and other region that can't be inhabited by humans.

Take piece of habitable land and cut into four – only $\frac{1}{4}$ habitable land (or $\frac{1}{32}$ of whole earth) is where all the food comes from.

While asking "What would happen if this arable land were damaged or destroyed?", eat that part of the apple.

Take a small shaving off 1 of the water quarters.

Less than 1% of the earth's water is fresh and drinkable; most of this is in the atmosphere, clouds, and underground.

While asking what would happen if water were polluted or wasted, eat the sliver.

Leads to discussion about taking care of resources.

Stats about water on earth:

Oceans	97.2% of total
All icecaps/glaciers	2%
Groundwater	.62%
Freshwater lakes	.009%
Inland seas/salt lakes	.008%
Atmosphere	.001%
All rivers	.0001%

All the water available for human use:

Groundwater	.62%
Freshwater lakes	.009%
Rivers	<u>.0001%</u>
	.6291%

Treasure Hunt

Have each child identify at least 3 pieces of litter.

Use the chart below to find out how long each piece would take to decompose and explain why it is good idea for them to place it in a bin.

Cigarette butts	1-5 years
Paper Airplane	1-5 months
Aluminum cans and tabs	80-100 years
Plastic 6-pack holders	450 years
Orange and banana peels	up to 2 years
Plastic Bags	10-20 years
Nylon Fabric	30-40 years
Leather	up to 50 years
Tin Cans	100 years
Wool Socks	1-5 years
Glass Bottles	Unknown
Styrofoam	NEVER

Build a Tree

Location; indoor or outdoor

Group; Class

Age; 8-10

Aim; to create a 'model' of the parts of a tree to understand its workings.

No equipment required.

1. Everyone sit in a wide circle
2. Choose one person to be the **heartwood**. They stand in the middle to support the tree. The heartwood is actually dead and preserved by strong resins.
When you call 'heartwood' they shout back 'standing straight and strong'.
3. Choose a second person as the **main root**. They lie at the base of the heartwood. This reaches deep into the earth to get water and anchor the tree.
When you shout 'main root' they reply 'holding fast'.
4. 2-4 children lie with their backs with their feet towards the heartwood. These are the **lateral roots**. These draw up water through their tiny root hairs. They must 'slurp' when you shout 'lateral roots'.
5. Circle the heartwood and roots with 4 or 5 children holding hands and facing inwards. They are the **sapwood**. They draw water up from the roots and pump it up through tubes to the highest branches. They shout 'wheee' when you shout 'sapwood'.
6. Circle the sapwood with another ring. This is the **phloem** that carries the sugary foods made by the leaves to all parts of the tree. The children pretend to make food by stretching their arms and fluttering their fingers like the leaves. They shout 'Whoooo' when you shout 'phloem, bring the food down'.
7. Finally create another circle facing outwards to protect the tree. They are the **bark**. In response to you saying 'get tough bark' they put out their elbows and clench fists and snarl.
8. Call out each in turn, starting with the heartwood.

Fox and hare

The group is split into 2 groups who stand across from each other on a line at a distance of 5 meters. Behind each group, at a distance of 30 meters, is the finishing line. A statement is read out loud. If the statement is true, the hares chase the foxes. If the statement is false, the foxes chase the hares. Whoever makes it over the finishing line has saved themselves and remains in the game. Whoever does not make it is out of the game (or must change sides).

Guessing animals

An animal card is fixed to the back of each player with a peg. Each player must now guess his own animal by asking the others questions. These questions can only be answered with yes or no. Each member of the group can only be asked once.

Forest materials

Different materials are placed in a large box. Using a hole in the box, the player must touch and feel to find out which materials are inside. (Chestnut leaves, acorn leaves, pined needles, pine cone, fir cone, birch bark, pine bark, lichens, roots, twigs ...)

Camera and photographer

The team members split into pairs. One is the camera, one is the photographer. The camera closes their eyes and is led quite close to an object by the photographer. Upon command the camera may now look at the object for 3-4 seconds and remember the picture. Several objects are then "photographed". Then the roles are swapped. At the end, everyone tells the group which picture he took.

Build a Nest

1. Discuss why birds build nest during the Spring. Where do they usually locate their nests? Explain what type of materials they generally use – twigs to build up the outside (the structure), moss and animal fur to line the nest (to protect the eggs and help keep them warm)
2. Explain that the children are going to work in pairs to build a nest but, to make this task more difficult, they have the choice of either building their nest in a tree or using just tweezers (like a beak) to find and position materials.

On regrouping, take a tour of the nests to decide which is most habitable.

Keeping Warm

You will need:

A thermometer

Hot water

Small containers e.g. film canisters (you could even cover these in fur and give them faces to look like dormice!).

The activity:

1. Explain how some animals e.g. dormice, hedgehogs avoid the winter when there is little food available and it is very cold by hibernating.
2. In small group, the children will be given a 'dormouse' to build a nest for to keep them as warm as possible
3. Fill the film canisters with hot water and take a temperature reading
4. The children build a nest for their creature using woodland materials.

About an hour later, get the children to find their dormice. Measure the temperature of each mouse to see whose nest kept theirs the warmest.

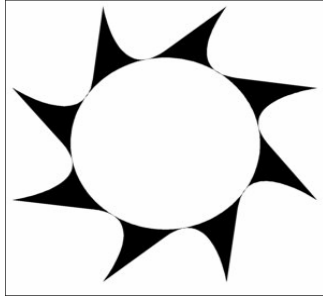
Minibeast Mime

You will need:

Cards with examples of minibeasts on them.

Playing the game:

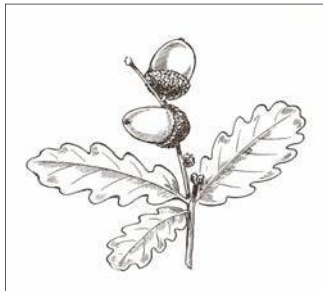
1. This game works best if the children have already had the opportunity to view the behaviour of different minibeasts found in the woodland setting.
2. Group the children in small groups of two, three or four and distribute the cards.
3. The children then work on pretending to be that creature using EVERYONE in their group.
4. They then show their mime to the rest of the group who have to guess what they are!









Woodland Web Game Cards

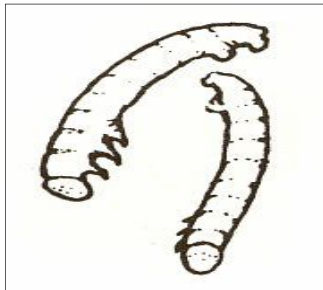
You can use these game cards to create any number of games indoors or out.

In order to get the idea across that there have to be considerably more producers than consumers in a balanced community you should ideally have three times as many cards of the level below.











In other words there should be three 

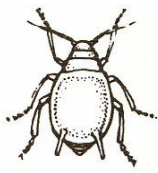
for every  three  for every  and three  for every 



You could photocopy the pictures onto different coloured cards, laminate them and put them onto ribbons. The children place these round their neck and try to complete as many food webs as possible. When you shout 'change' everyone has to find a different place in the food chain.



  BADGER	  FOX	  SPARROW- HAWK	  TAWNY OWL
--	---	---	---



APHID



BLACKBIRD



RABBIT



CATERPILLAR



GREY SQUIRREL



EARTHWORM



BEE



HEDGE SPARROW



CHAFFINCH



SNAIL



OAK GALL WASP



JAY



LONGHORN BEETLE



BANK VOLE



WOOD MOUSE



WOOD-LOUSE



ELM BARK BEETLE



SPECKLED WOOD BUTTERFLY



OAK ACORNS



BRAMBLE FLOWERS



ELDER BERRIES



BLACK BERRIES



TOADSTOOL



HAWTHORN BERRIES



BRACKET FUNGUS



MOSS



GOAT WILLOW FLOWERS



ROSE HIPS



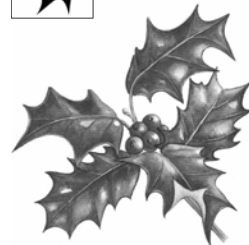
HAZEL NUTS



PINE CONE



BLUEBELL



HOLLY BERRIES



WILD CHERRIES



SWEET CHESTNUTS



ELM BARK



COW PARSLEY



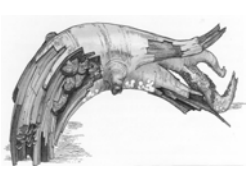
BEECH TREE



SYCAMORE LEAVES



DEAD LEAVES



DEAD WOOD



ALDER
CONES



FOXGLOVE



WOOD
SORREL



OAK LEAVES



LARCH
CONES



WILLOW
LEAVES



BLUE TIT



SPIDER



TOAD



THRUSH



FROG



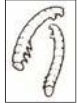
GROUND
BEETLE



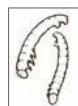
SHREW



HEDGEHOG



LADYBIRD



BAT



CENTIPEDE



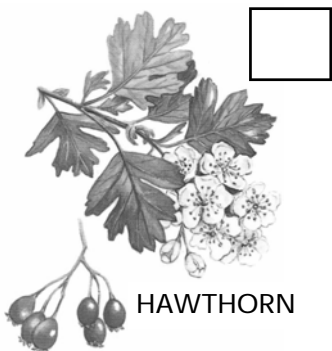
WREN

A Tree Trail through Your Wood

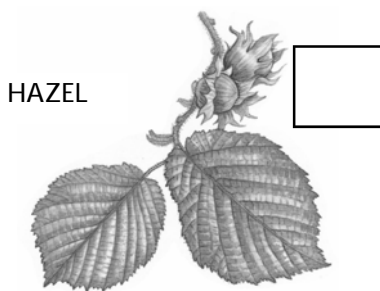
These broadleaved trees are all typical of the ones that you will spot in your local wood.

Put a tick in the box when you spot each sort of tree.

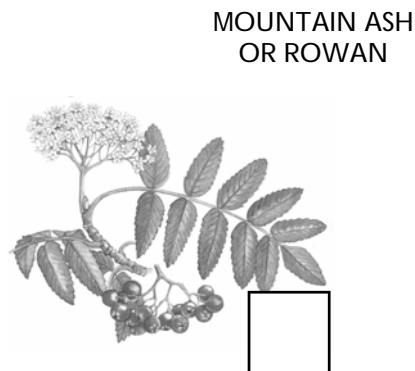
Which is the most common tree in your wood?



HAWTHORN

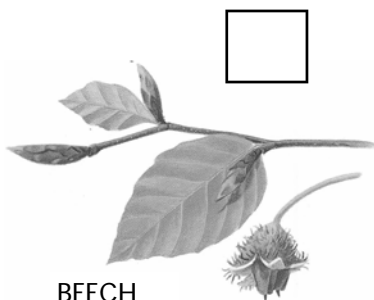


HAZEL



MOUNTAIN ASH
OR ROWAN

WILD CHERRY



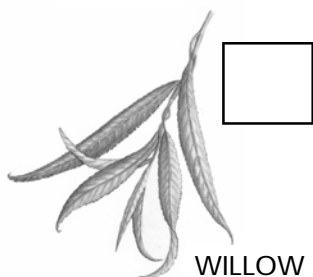
BEECH



ASH



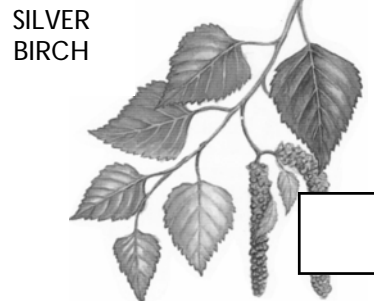
FIELD
MAPLE



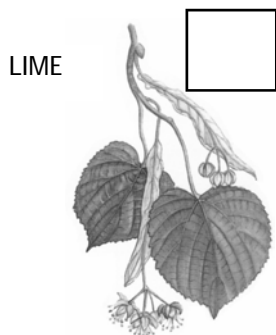
WILLOW



ALDER



SILVER
BIRCH



LIME



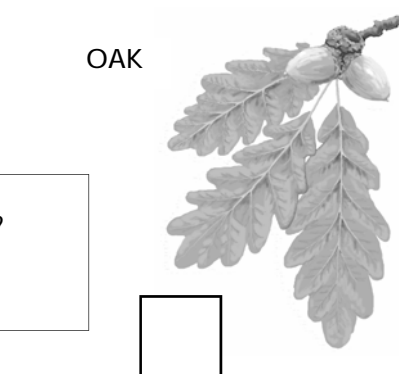
ELDER



ELM



SYCAMORE



OAK

Two of these trees are not native to the woodlands in South Yorkshire. Which are they?





ASH



BEECH



HOLLY



SYCAMORE



OAK



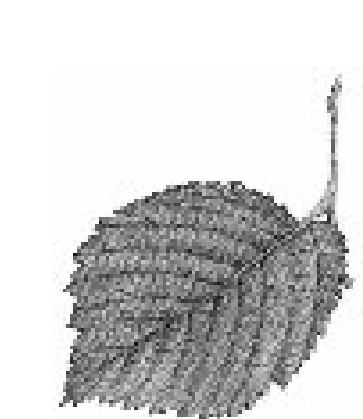
**SILVER
BIRCH**



HAWTHORN



**HORSE
CHESTNUT**



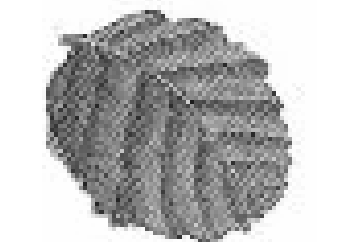
ELM



LIME



ROWAN



ALDER