

Outdoor Education Worksheets

SCIENCE OUTDOORS



You will need:

- First Aid Kit
- Appropriate clothing for whole group (sunny/wet weather)
- Charged mobile phones and appropriate numbers of adult helpers in case of group splitting up
- Bin bag and gloves for clearing any unforeseen litter from your working area

Unnature Trail

- Box of un-natural materials
- Clipboards, pencils, paper
- Rope
- Tarpaulin

A House for Julio

- Collecting bags
- Animal toy

Woodland Detectives

- Wildlife ID sheets
- Pooters, Magnifiers
- Paper roll or flip chart sheets
- Marker pens

General

- Scissors
- String
- Cleaning wipes
- Clipboards

Keep it safe:

- When handling natural materials warn children about splinters. Examine a piece of wood from the floor together to see how the grain lies and explain what a splinter is. If someone gets a splinter it's not a disaster! You should have tweezers in your first aid kit for really big ones. Small ones will work their own way out.
- There may be litter in the woodland in spite of our best efforts so warn children and staff to look at what they are picking up and to let you know if they come across a big piece of rubbish. We can supply gloves and bin bags for you to take out with you in case you need to dispose of some rubbish.
- Explain the boundaries of your working area to the group before you begin. Sometimes it helps to do a boundary walk all together so everyone is clear about where they are allowed to go. Once everyone is clear the children can enjoy a great deal of freedom in exploring their site for the day.
- Trips, slips and tumbles! The outdoors is a bumpy place. You should expect at least a few tumbles each session. This is part of the exploration and children learning to manoeuvre on uneven ground, leap across ditches and pick themselves up after a tree root jumps out on them. Give a general warning to watch where they're walking and then let them roam.

In case of emergencies you can also contact our main office on: 01423 541000 for assistance.

The OS grid reference for our grounds in case of calling emergency services is: SE 32909 54249

UN-NATURE TRAIL-(and extension activities) Approx 75 minutes

Materials

- Box of un-natural materials
- Clipboards, pencils, paper
- Rope
- Tarpaulin

This activity needs to be set up in advance of the group starting. One staff member could set up the trail while the rest of the group explores the site and sets up some agreed boundaries for the day's activities.

You will need to set up a rope, winding through the trees from a defined start point to a defined end point. You can suspend the rope at knee height or leave it lying on the floor.

Allocate one side of the rope as the viewing side and the other as the evidence side (as if it were a police 'do not cross' line).

Along the length of the evidence side place the various items from the box. Try not to hide them underneath things, however feel free to put a 2p piece on top of a brown leaf or a green necklace hanging in a leafy branch to increase the challenge. Some of them will be very obvious and easy to spot, others will be harder. Arrange the items all the way along the length of the rope and vary the height they are at, the distance from the rope and how you group them together. If there are pieces of litter in the wood don't worry about them, they will probably get 'spotted' but that's fine- they can be incorporated into the final tally.

Take lots of photographs of the following activities as many of the diagrams and shapes the students produce can be used back in the classroom for further discussion.

1. You are going to invite the children on a special kind of trail through the woods. They've all heard of 'nature trails', well this one will be an 'un-nature trail'. Their challenge will be to spot as many 'un-natural' items as they can.
2. Group the children in twos or threes. Larger groups will tend to leave one or two children excluded from the group discussion. Give each group a clipboard and a pencil.
3. Lead the groups, one at a time to the starting point of the trail. Explain the rule about keeping to the viewing side of the rope and give them a time limit, within which they will be expected to walk the length of the rope and spot as many items as they can. They should write down each item that they see on their clipboard. Give each group about 30 seconds to get going before taking the next group to the start.
4. This staggered work will lead some students to finish before others and some to be waiting for their turn for longer. For those waiting at either end ask them to collect one item (per student) from the forest floor- 'a natural item' which they like for some reason (colour, feel, weight, shape etc).

5. When all of the children have finished gather everyone together around a tarpaulin laid out at the end of the trail. Now ask each child to go and collect 1 item each from the un-nature trail. Send them in groups but give them a ten second limit so that this doesn't take too long!

6. Now you can see how eagle eyed the students were. Either ask the students to tell you what they saw or, alternatively, use your own list to check against and go through the trail, item by item. Take some time to discuss which items were hardest to spot, which were easiest and identify any that nobody saw.

7. At this stage you may have some discussions emerging about what they consider to be 'natural' and what is 'un-natural'. For instance- a wooden spoon may be considered natural by some (made of wood) and 'un-natural' by others (the wood doesn't grow in that shape). Likewise a necklace made of seashells. Discuss how you would define natural and un-natural. For environmental purposes it might be considered that anything man-made (and therefore not naturally occurring in the woodland in that state) is un-natural.

Now you are thinking about properties, classifications and definitions of materials you can develop into two further activities if you have time.



Extension Activity 1- Thinking Spiral

1. Place an item in the middle of the tarpaulin- it may be natural or un-natural. State one characteristic of the item i.e.- "This cup is yellow."

2. The person to your right now places an item next to it- it may be the one they brought from the trail or the one they collected at the start or end of the trail activity. The item has to share a characteristic with your item- it could be a *yellow* leaf or a *smooth* rock or a *plastic* key ring. They also state the quality of their item (it can be different to the previous one as long as they both share it). i.e.- "This rock is smooth and the cup is smooth". The next person now does the same thing, they may have a grey purse- the rock is grey, the purse is grey- so they put it next to the previous item. "This purse is grey and the rock is grey." This continues around the circle until everyone has placed both items. They should be laid in an opening spiral from the centre outwards. If anyone has trouble finding a way to link one of their items to the previous one encourage the whole class to suggest shared qualities between the two things.

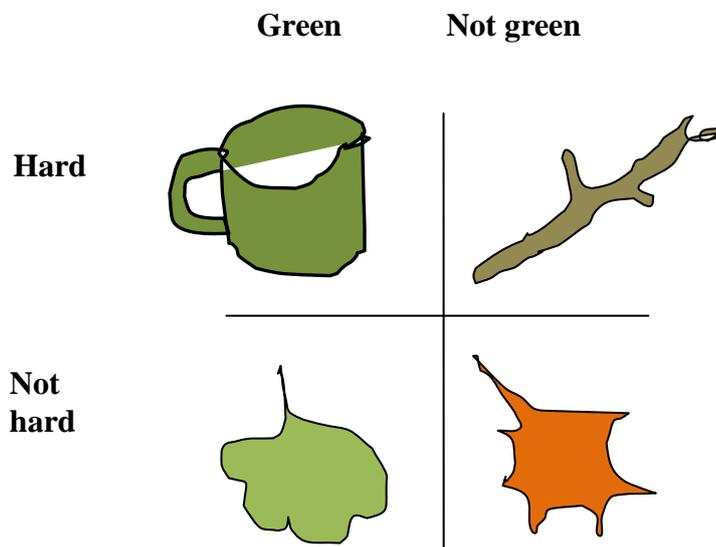
3. To finish your thinking spiral see if you can all go through it, item by item, and remember the qualities linking each item.

Extension Activity 2- Carroll Diagrams

1. Each group finds two sticks as long as their arms- finger tips to shoulder. They find a space and lay their sticks in a cross on the floor. They now have the boxes needed to make a classification diagram.

2. Ask the students to take all of their items- natural and un-natural and group them together in one of the squares of the diagram. They must now choose TWO qualities by which they can separate the items. For instance, they may choose hard and green. On the left side of the diagram they should label a row as 'green' and a row as 'NOT green'. On the top of the diagram they should label a column as 'hard' and a column as 'NOT hard'. They should now allocate each item separately in to one of the four boxes of the diagram, according to labels on the rows and columns.

3. When all the groups have finished labelling and allocating ask them to turn the labels over so they can't be seen from above. Do a tour of the diagrams with all the groups and see if people can guess which qualities or characteristics are being classified in each diagram.



A HOUSE FOR JULIO- Approx 30-45 minutes

Materials

- Collecting bags
- Hedgehog toy or similar

1. Divide the children into groups of 2 or 3. Some children may prefer to work on their own which is also fine if you can accommodate it.

2. Introduce the children to a couple of characters, it may be the hedgehog toy (Julio), or it could be a character you have been working with in school from a story the children are already familiar with. Explain that Julio or friend, needs to find a new place to live as the wind blew down their last place. (If you prefer to stick to realistic homes and burrows when using animal characters you can incorporate this into this exercise too).

3. The challenge for the groups is to build Julio a new home using only natural materials found on the forest floor. They need to consider building styles but also the qualities of the materials they find. They may be good for insulation, for structural support or for making a waterproof roof.

4. Each group will be given a collecting bag and set off to find materials and build their house. Give them lots of time to explore the woodland and to find a suitable spot to build. Using the toys helps to give them an idea of the size and scale of the building required, even so keep an eye out for anyone attempting a child sized den. This is also great as an extension activity but can take a bit longer and may be harder to gather sufficient materials for!

5. After each group has had about 20 -25 minutes building time ask them to put the finishing touches to the house as Julio is about to do a grand tour. As he arrives at each house the group will be asked to act as estate agents and explain why their house is the best choice for him. Encourage them to talk about why they chose to use certain materials and building techniques and how these make the house warmer, drier, more stable etc.

6. Julio can choose a house if you like, or maybe he will prefer to think about it and get back to them. As a short extension the children can make a small creature to live in their house with a bit of string and using sticks and leaves. This can be a useful memory aid when transported back to the classroom as the dens will be left in the woodland.



WOODLAND DETECTIVES- Approx 30-45 minutes.

Materials

- Wildlife ID sheets
- Pooters
- Magnifying glasses
- Paper roll or flip chart sheets
- Marker pens

1. Explain to the group that they need to find out exactly what lives in the woods. They won't be able to do this by seeing all of the animals that live there, because the animals are clever and they won't show themselves while people are in the wood- but there are other ways to find out about them.

2. Take the group to a few items you have found from earlier on eg:

- animal poo
- a feather
- a nibbled pine cone
- a leaf with tracks in
- a wasp gall (an oak apple)
- a bone or piece of fur
- holes or burrows
- a leaf with nibble edges
- close cropped green shoots
- claw marks or footprints
- trails on tree bark

3. Use these things to encourage them to think about what one clue might mean and that if one clue means the presence of one animal, what might also be there (e.g. the predators or prey of this animal).

4. Let the children loose with pooters, magnifying glasses, collecting pots and identification sheets. Give them up to 20 minutes to do their detective work in the woodland and bring back the information they have found.

N.B. *Make sure the children are very clear on how to handle wildlife. If they are handling live animals they need to be extremely gentle and remember that animals should not be left in sunlight under magnifying surfaces or closed in pots for more than a few minutes.*

5. Tell the children that you will be using their evidence to piece together a jigsaw puzzle of what lives in the woodland. Using a piece of the paper roll ask individual children to draw a picture of the animal they found evidence of. After all of the animals are shown on the paper ask other children to start to add arrows which show how they are connected- what eats what? Do any of them live alongside each other?

6. The illustrated paper can be collected and taken back to the classroom as evidence of the tracking and to show the conclusions of your investigation in the woodland.