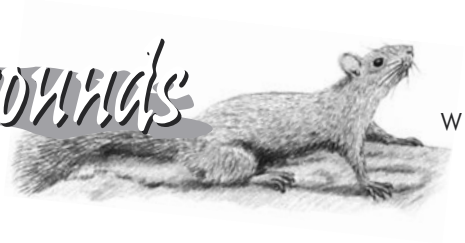
Your School Grounds



Why not take responsibility for some environmental improvements to the school grounds?

These worksheets will lead you through the process of surveying your school grounds from a variety of different angles; litter, graffiti and vandalism, considering how different members of your community see your school grounds, and from an ecological point of view, surveying the plants and animals within the school grounds.

We hope that you will then be able to adopt an area of the school grounds and work together to improve and maintain it. Use your own map of the school grounds or take a copy of the actual plan to design your own school grounds or an area of the site. Could the class agree on common ideas? What could realistically be achieved? Who would need consulting? Who will be responsible for up keep of a new scheme or development on school grounds? How can you meet the needs of school pupils and the wider community? What are the priorities for environmental development to the school grounds?

Here are a few ideas to get you started.

- Encouraging longer grass or sowing wildflower seeds can make a big difference to the suitability of an area for supporting invertebrates, small mammals and birds. Leaving an unmown strip around the edge of football and playing fields creates a wildlife haven and also means less work for the grounds people who look after the site.
- Look at the boundaries of the school – are there any hedgerows present or dry-stone walls? These provide good hiding places for wildlife. If you have a metal fence surrounding the school hedge lines could be planted using young hawthorn and blackthorn trees and a mixture of other native trees. Bulbs can be planted to come up in spring or autumn time depending on the flower and can add colour and provide a vital source of early or late nectar for insects.
- Ponds or damp areas need only be as big as a sink bowl to attract pond animals and provide a whole different habitat area without being large enough to constitute a serious health and safety problem.

For more ideas look at the following websites:-

www.ltl.org.uk
www.bornfree.org.uk

If you form a small group to develop your ideas you could enter for an **award** under the **South Yorkshire Police Lifestyle Project**. There are fabulous prizes to be won!

Why not take responsibility for some environmental improvements to the school grounds?

Citizenship; Unit 18, Developing your school grounds

3	**Knowledge, skills and understanding**
a., b.	**Developing skills of participation and responsible action**

These worksheets aim to help children familiarise themselves with their surrounding environment by focusing on their own school grounds.

The worksheets will allow first hand practical experience (fieldwork) and the development of skills of enquiry and communication. The analysis of survey results should promote discussion and prompt questioning and environmental understanding of what can be found in the school grounds, how useful the habitats are for local wildlife, and what improvements could be implemented in the future.

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A variety of environmental ideas are presented below and you may have your own views and ideas to put forwards.

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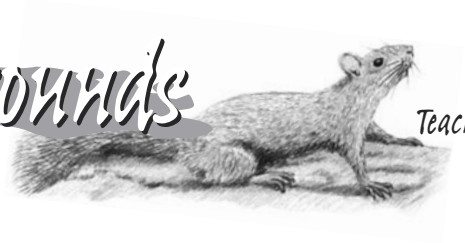


Why not take responsibility for some environmental improvements to the school grounds?

Use your own map of the school grounds or take a copy of the actual plan to design your own school grounds or an area of the site. How could you put these ideas into practice? Could the class agree on common ideas? What could realistically be achieved? Who would need consulting? Who will be responsible for up keep of a new scheme or development on school grounds? How can you meet the needs of school pupils and the wider community? What are the priorities for environmental development to the school grounds? There are some useful **websites** that could give help you. The section on 'Creating a Wildlife Garden' in **www.bornfree.org.uk** is especially helpful.

Who can help you to put these ideas into practice?

Environment Weeks take place each year in March and any events run at this time can receive free publicity from Sheffield City Council. Groups who are involved can get support materials such as free bin bags and gloves to help with clean up activities.

The South Yorkshire Police run the **Lifestyle Project** every year. Young people who are making a positive contribution to their community and environment can access support for their projects and gain recognition for the work they have done. It is a brilliant project for people aged 9 – 18 in teams of 2 –5 people with an adult mentor. The 2004 winners get a dream holiday and the next 9 runners up have a long weekend in Paris visiting Euro Disney and Park Asterix. For more details about the Lifestyle Project contact P.C. Marsh on **nigel.marsh@southyorks.pnm.police.uk**

In order to take these ideas forward you could create a school environmental group to discuss topical issues, locally, nationally and globally, creating a sense of ownership and responsibility for their surroundings.

Websites:

The following websites give useful local information on environmental issues-

www.letssortitsheffield.org.uk
www.onyxsheffield.co.uk
www.eco-schools.org.uk *(Tidy Britain Group)*
www.encams.org.uk
www.ltl.org.uk *(Learning Through Landscapes)*
www.groundwork.org

Publication:

Transforming your school grounds; a DIY pack for Barnsley schools.
This is a superb resource which is in all Barnsley schools and is available from on loan from Barnsley MBC on 01226 772142.

Help and Advice on Planting and Funding:

is available from South Yorkshire Forest. Ring Maria Wilding on 0114 2571199.

Physical Survey

Construct a map of your school grounds from memory. Include buildings, car park, roads and playing fields, tarmac etc. See what you can remember.

If you have a copy of an actual plan of your school grounds compare your map with the actual plan. Are there any differences?

Now go outside and make a key to your map. Invent your own key. For example

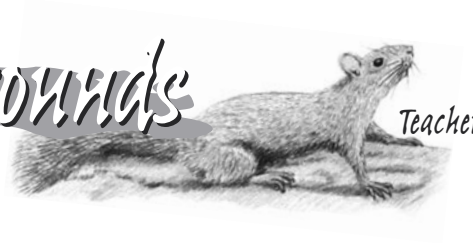
Tree: 

Grass: 

Write notes down; observe for signs of wildlife and mark it on your map, mark out areas where people like to play/hang out.

What did you talk about/discuss while you were surveying your grounds?

Did you come across any problems? Can any of these problems be improved?



Physical Survey

Equipment needed

Pencils, graph paper, clipboards, compass, tape measure/ trundle wheel

Introduce the session by having a mind mapping session, producing a key word list of words associated with school grounds.

This activity can be done individually, in pairs or in small groups.

The idea of drawing a map from memory and then comparing to an actual map will help develop map skills and allow comparison of scale and perspective.

Topics for Discussion

On site prompt the students to look at where children play, take note of collections of litter, graffiti, boundaries. Look out for any wildlife, Make note of different habitats, different habitats support different plants and animals.

Discuss the different maps and have a group discussion about findings.

Further Work

The activity could be extended using an Ordinance Survey map, compass or even GPS (Global Positioning Systems). The children could think about and note aspect and weather conditions. Is it sunny/ windy in certain areas? Note prevailing winds, position of the sun.

Which direction will the wind carry noise and who may be affected.

They could also note land use surrounding the school or any environmental issues that may affect the school grounds- change of land use, proximity of shops/ local facilities, transport routes. Discussion about what local residents may feel about the school. Split into groups and present different opinions (drama/role play) e.g local shopkeepers, residents, dog walkers, parents. Think about other peoples views.

Extend to design own school grounds or area of school grounds. How could you put these ideas into practice? How could the class agree on common ideas? What could realistically be achieved? Who would need consulting? How can you meet the needs? How can you decide on priorities for developments to the school grounds?

Physical Survey

Construct a map of your school grounds from memory. Include buildings, car park, roads and playing fields, tarmac etc. See what you can remember.

Start with the basic shape of the school buildings and add other features around this base.

If you have a copy of an actual plan of your school grounds compare your map with the actual plan. Are there any differences?

Large scale plans and aerial views of your own school grounds can be provided by South Yorkshire Forest if you contact the education officer.

Now go outside and make a key to your map. Invent your own key.

Students could amend their maps or use the actual copy of the plans if their own is too far removed from what is actually there to work from once they go outside.

Write notes down; observe for signs of wildlife and mark it on your map, mark out areas where people like to play/hang out.

What did you talk about/discuss while you were surveying your grounds?

Litter, use of space, equipment, habitats for wildlife?

Did you come across any problems? Can any of these problems be improved?

Vandalism, wildlife improvements/habitats

Litter Survey

The following worksheet is a questionnaire. Try and complete the questions.

Answer in the classroom:

1. Is there a litter problem in your school?

   (please circle one of the numbers)

BIG problem 5 4 3 2 1 0 No Problem

2. How many litter bins are in your school grounds? _____

3. Do you have a recycling scheme? _____

4. How much time and money do you think is spent on clearing up litter?

_____

_____

Now that you have had a chance to think about the litter in your school grounds lets look at what litter is outside! Are you ready to litter pick?! Take a note of the number of litter bins too.

Now that you have found what litter is lying around, try and answer some of the following questions:

5. What time of day did you pick up the litter? _____

6. What is the most commonly dropped item of litter? _____

7. Do the litter bins look like they are being used? _____

8. Now you have completed your litter survey answer Question No. 1 again. How do your answers compare?

_____

_____

_____

_____

_____

Spend 15 minutes in small groups to discuss your answers and come up with 5 solutions to the problem of litter at your school. Or discuss why you think your school grounds are free from litter.

Present your findings somewhere in the school.

Write a small article for your school paper or local paper about your results.

Litter Survey (Tally Chart)

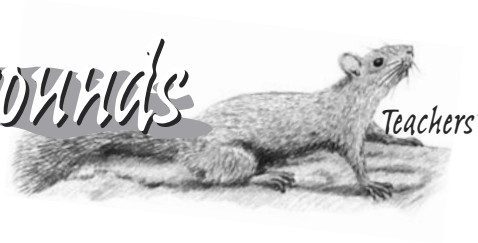
Crisp Packet	
Drinks Can	
Drink Carton	
Chewing Gum	
Chewing Gum Wrapper	
Sweet Wrapper	
Cigarette Ends/Packet	
Fruit	
Magazine/ newspaper	
Glass	
Plastic Bags	
Plastic Bottles	
(Other)	

What happens to litter that is dropped at your school?

What happens to litter that is thrown away at your school?

What could you do to reduce the amount of litter thrown on the ground at your school?

What could you do to reduce the overall amount of litter your school produces?



Litter Survey

What happens to litter that is dropped at your school?

Some could be left on the floor where it can remain for many years to come. Some may be cleaned up by students or the caretaker or groundsman which costs the school money. If the litter is picked up what happens to it then? Is it recycled or put out for the bin lorry?

Some rubbish is biodegradable and will rot away over time or could be composted and used as fertiliser for school gardens or grounds. Other rubbish is not biodegradable and quickly becomes an eyesore.

Biodegradable- fruit, plain paper,tissues.
Non biodegradable- plastics, cans

What happens to litter that is thrown away at your school?

Most of the rubbish we throw away is taken to landfill sites, it is becoming more expensive to throw away litter as space in landfill sites is limited. The government are thinking of imposing a tax on households for rubbish collection. Recycling is becoming more important as we try to reuse resources rather than discarding them. All local governments are aiming to recycle two sources of waste before 2005, Sheffield has chosen Paper and Card and is issuing blue bins to households.

What could you do to reduce the amount of litter thrown on the ground at your school?

Begin a Don't Drop Litter campaign to raise awareness and reduce the amount of litter thrown away. Students who are spotted dropping litter could pick litter up that is thrown on the ground after school or in dinner hour. Classes could work on litter as part of Personnel and Social Education. If you have a public right of way through your school grounds it may be people from outside the school who are dropping litter. Students could watch for anti social behaviour on school grounds from the general public.

What could you do to reduce the overall amount of litter your school produces?

Recycling schemes, glass, plastic, paper and card

Encourage students to think about buying things with less packaging. Reusing packaging for other things, jars for storage, yoghurt pots for art or design and technology, aluminium foil or cans to send to groups who collect it for charities.

Habitat Survey, Tree Survey

Tree Survey Equipment:

Pencil, 1cm squared graph paper, tape measure, calculator

Trees are important in providing shade in your school grounds. Trees in your school grounds may also support a number of living organisms. Can you think of any examples?

We can use the methods below to estimate the amount of leaf cover a tree has and the amount of wood contained in the trunk.

Draw round five averagely sized leaves on squared graph paper. Calculate the surface area of each leaf.

Work out the average leaf size for your tree. _____

Once you have worked out an average leaf size you can estimate the total area of your canopy.

Count the number of leaves on one branch. _____

Count the number of branches on one tree. _____

Work out the total area of leaf canopy by multiplying the average leaf size by the number of leaves per branch, by the total number of branches.

Total leaf area = _____ x _____ x _____ = _____

Work out the volume of wood in your tree trunk. Use a tape measure to find the circumference of your tree trunk at approximately one meter from the ground.

Divide the circumference by 3.14(π) to calculate your trunk diameter.

Divide the diameter by 2 to get the radius (r)

To calculate the volume of wood in your tree trunk use this formula ($\pi r^2.h$)
What could this wood be useful for? _____

_____

How does this exercise help us to understand how important trees are to us?

_____

_____

Habitat Surveys, Tree Survey

Sc1 Scientific Enquiry

Sc2 Life Processes and Living Things

An older tree would be a better example than a very young tree, once again risk assess your site before taking pupils outside.

Draw round five averagely sized leaves on squared graph paper. Calculate the surface area of each leaf.
1cm graph paper would make it easy to count up, and calculate the surface area

Work out the average leaf size for your tree.
Add together the surface areas of the leaves counted. Divide the total by the number of leaves counted.

Once you have worked out an average leaf size you can estimate the total area of your canopy.

Count the number of leaves on one branch.
One branch stretches from trunk to end of twigs.

Count the number of branches on one tree.
Count the number of branches coming off from the main trunk.

Work out the total area of leaf canopy by multiplying the average leaf size by the number of leaves per branch, by the total number of branches.

Why are trees important?
They give out oxygen and take in carbon dioxide. They help hold the soil together with their root structures, stabilising banks and areas at risk of erosion. They provide habitats for wildlife, fuel for people and can be used to make furniture.

Why is leaf canopy important?
Shade and shelter from the sun and wind. Habitats for insects, birds and small mammals. Provides food for the tree.

Work out the volume of wood in your tree trunk. Use a tape measure to find the circumference of your tree trunk at approximately one meter from the ground.
Divide the circumference by pie (3.14) to calculate your trunk diameter.
Divide the diameter by 2 to get the radius
To calculate the volume of wood in your tree trunk use this formula ($\pi r^2.h$)

What could this wood be useful for?
Furniture, fuel, habitats.

Habitat Survey, Transects and Quadrats

Equipment:

Measuring tape, or cord of measured length, rulers, quadrats, pens, paper.

A **transect** is a line (measuring tape, or cord of measured length) which is used to survey an area of land for vegetation or wildlife. **Quadrats** are squares of a set size which are placed along the transect line. The vegetation inside the quadrat is recorded. This method is useful when surveying a large area as the transect line acts as a representation for the site as a whole.

Set up a transect line across your school field, covering a range of habitats. It is advisable to use a quadrat size of $1m^2$. At a set distance of your choice place a quadrat to the left of the transect line and survey the vegetation within the square. If the transect is 100metres long, it is advisable to place a quadrat every 10 metres, as otherwise it could become quite time consuming.

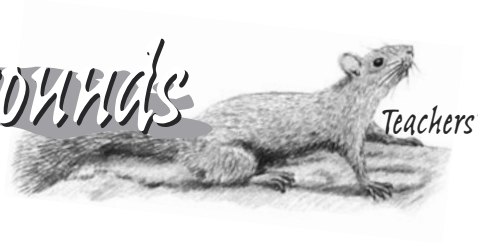
Draw an overview of your transect and show where you are testing and which quadrats you will be recording.

Draw an overview of your quadrat(s) and label the different plant types within them. Use a plant key to help with identification of common plant species.

Which area do you think would provide the best habitat for wildlife?

Why?

Could more areas in your school grounds be improved for wildlife? How?



Habitat Survey, Transects and Quadrats

Sc1 Scientific Enquiry

Sc2 Life Processes and Living Things

5	**Living things in their environment**
a. b.	**Adaptation and competition**

Set up a transect line across your school field covering a range of habitats. At a set distance of your choice place a quadrat and survey the vegetation within the square. If your transect is 100m long, you may want to place a quadrat every 10m.
Pick two points across the field and lay a measuring tape/ string or rope line along your transect between the two points

Draw an overview of your transect and show where you are testing and which quadrats you will be looking at in more details.
Split a class into small groups that can study one quadrat each in detail, if you have enough time groups could do more than one transect.

Draw an overview of your quadrat and label it with a key.
Draw in the square shape of your quadrat to a scale, and add symbols of the plant types that you can find making your own key using different symbols for the different plant species.

Which area do you think would provide the best habitat for wildlife?
Students should choose from one of the quadrats looked at or a particular area. You could count up the number of different plants you could find in a square to see which was most species rich. Spending time to look for invertebrates in the different areas might show the places insects prefer to live.

Why?
More habitat choice, insects could live in long grass and slugs and snails could shelter underneath thick grass or leaf litter. Greater range of foods available for invertebrate populations, flowering plant heads, rotting vegetation, other invertebrates.

Could more areas in your school grounds be improved for wildlife? How?
Allowing longer un-mown grass at field edges, planting trees, adding wildflower areas, bird food areas, regular litter picks, planting hedges, making habitat piles of old vegetation or logs. Could these ideas be incorporated into school projects?