

Please refer to Worksheet Template Icon Key v0.1 for symbols above



"Hello from the 5000mileproject! On 27th July 2012, we will fulfil a dream expedition and the biggest challenge of our lives, to run the length of South America, unsupported, in a year!! Running 15 to 25 miles per day, over 5000 miles; it will be the equivalent of over 200 marathons and we will pull our food, water and equipment. We are both Ecologists and will also be carrying out the world's longest wildlife survey ("Mega Transect") and raising money for BirdLife International and Conservacion Patagonica. We want to share the amazing wildlife and wild places we see, hear and smell along the route with you, so come and join us at www.5000mileproject.org.....!", Katharine and David

Click this Link to show your Class a 2 minute film about the project:

<http://www.5000mileproject.org/2012/05/promovideo/>

Teacher PART A - Guidelines

WORKSHEET GOALS

We will be carrying out a bird survey every day during the 5000mileproject. This worksheet investigates the steps that pupils can follow to undertake their own bird surveys. It also includes a comprehension exercise on the words and terms discussed.

Mapping to Syllabus

- Sc1 Scientific Enquiry:
 - Investigative Skills:
 - Planning
 - Obtaining Evidence
 - Considering Evidence and Evaluating

At the end of this worksheet, pupils will

- Know how to carry out their own bird survey
- Be able to create a survey form and choose the correct equipment for a bird survey
- Understand what factors might affect a bird survey
- Learn some of the key terms Ecologists use when carrying out a bird survey

NEEDS AND RESOURCES

Required Background

To successfully complete this worksheet, pupils must

- Be able to count and have a basic level of arithmetic
- Be sensitive and quiet around wildlife

Required Materials

To successfully complete this worksheet, pupils will need

- Optional binoculars.

Additional Print Resources

- N/A

Online Resources

- Bird Identification for the UK and some European species <http://www.rspb.org.uk/wildlife/birdidentifier/form.aspx#>
- Bird Identification for the USA <http://www.allaboutbirds.org/guide/browse>
- UK National Garden Surveys: <http://www.rspb.org.uk/naturecount/> and <http://www.bto.org/volunteer-surveys/gbw>
- Ireland National Garden Surveys: <http://www.birdwatchireland.ie/News/15thAnnualGardenBirdSurveynowunderway/tabid/578/Default.aspx>
- New Zealand National Garden Surveys: <http://www.forestandbird.org.nz/what-we-do/news/birders-alert-2010-garden-bird-survey>
- Australia Backyard Surveys: <http://www.birdsinbackyards.net/surveys/Schoolground>
- USA Backyard Surveys: www.birdsource.org/gbbc and www.birds.cornell.edu/pfw/nsert

Teacher PART B –Answers

Activity 2: THE PLAN

Survey Questions	Guiding Notes
<p>What time of the year will you survey?</p>	<p>The great thing about birds is that there are always species visible all year around, so pupils can do their surveys at any time of the year. BUT you might also like to consider the following points:</p> <p>Typically March- May in the Northern Hemisphere and October-December in the Southern Hemisphere are good times to do the surveys. The birds are very active and visible: defending territories, singing and building nests. There is also less foliage on deciduous trees and shrubs so the birds can be seen easily.</p> <p>Typically November- January in the Northern Hemisphere or June- August in the Southern Hemisphere also provide good opportunities for seeing birds, as there is less natural food around, so birds will flock into towns and gardens and use bird tables and water baths more.</p> <p>In the Equatorial regions, the time of year is generally less important, as food is typically available all year around</p> <p>Some birds are migratory such as cuckoos, geese, swallows, house martins, bobolinks and osprey. They will only be present at certain times of the year.</p> <p>Birds are present in urban and rural settings and can be encouraged to school grounds through feeding, providing water for bathing and drinking and providing vegetation. They are a good group of animals to encourage interest in the natural world in pupils.</p>
<p>What time of the day will you survey?</p>	<p>Any time of day will do!</p> <p>Although, the best time of day is early in the morning, when many birds sing and there are fewer human noises. Some birds also sing during a second chorus in the late afternoon.</p> <p>There are of course also nocturnal birds such as owls and nightjars that call at night.</p>
<p>How long will you survey birds for?</p>	<p>Survey for the same length of time for each survey e.g. 15- 25 minutes. This will ensure that the results are comparable.</p>

<p>How should the birds be recorded?</p>	<p>Every time the pupil sees an individual bird they can mark "1" using a tally and then sum the total number of birds sighted at the end of the survey.</p> <p>If the pupil wishes to carry out a more thorough survey, they should consider the problem of double recording, as some of the birds they record at different times will be the same individual. One method of preventing double recording is to sum the total number of species (or total number of individuals of a species) seen every 5 minutes. At the end of the survey, the total should be the greatest number recorded.</p>
<p>Number of surveys?</p>	<p>Ideally the survey should be repeated at least three times. This should prevent any bias from affecting results e.g. weather, construction work etc. and ensure the results are comparable.</p>
<p>Where to survey?</p>	<p>The pupils may consider the following factors when choosing where they would like to survey: Somewhere dry and warm; easy to get to; with good views of the survey area. They may also consider how the location can bias their results e.g. bird tables and seed plants attract birds.</p>
<p>How will the information be recorded?</p>	<p>All that is needed is paper and a pencil.</p> <p>Binoculars are fantastic but not necessary.</p> <p>Ideas about what data should be collected are provided in the worksheet and a sample survey form. Bird identification resources are provided at the end of the worksheet.</p>

Ideas for further bird surveys:

Question	General Method
<p>Which habitats do the birds use the most? Why?</p>	<p>Consider identifying habitats in the survey area e.g. large tree, tarmacked area, hedgerow, building, log pile, pond, shrubbery. The pupils could survey each habitat separately, at the same time in the day, at least three times and record the highest number of birds perched in the habitat during the survey. At least two habitats should be surveyed. The pupils can then consider why birds prefer certain habitats.</p>
<p>When do the greatest numbers of birds visit your survey area?</p>	<p>This would require surveying the site at different times during the day.</p> <p>If you would like to set up a long term survey, you could also answer what time of the year the birds use the playground most. Always survey at the same time in the day during the different months. This would encourage pupils to observe when certain bird species are present in their home areas and when others disappear during migration for example.</p>

How do the birds behave when they visit the survey area?

Pupils should decide what they are going to test; e.g. Are the birds:

Feeding on natural food, Feeding at the bird table, Drinking, Preening, Fighting, Singing, Dust bathing, Nest building.

They could consider whether they will use quantitative survey measures (e.g. how many times they register a bird feeding during the survey) or qualitative (a description of how the birds are behaving during the survey).

Activity 4, Q.1: What do you think are the two most important pieces of equipment you will need? ANS: Paper and Pencil/Pencil.

Activity 5: Blue tit can be found in the UK and Europe, American Robin in the USA, Rayadita in southern Chile and Argentina, Kiskadee in the Caribbean and South America.

Activity 6: Comprehension; Definitions, ANSWERS

1. species
2. habitat.
3. survey
4. data.
5. Mega Transect.
6. factors
7. method.
8. method
9. repeatable
10. Predators
11. breeding season
12. breeding season
13. dawn chorus
14. deciduous
15. deciduous.

INFO

Every day before or after running, Katharine and David will carry out a bird survey as part of their "Mega Transect". It will be the longest Mega Transect ever undertaken, stretching from the southern-most tip of the South American continent, Cabo Froward, Chile to the Caribbean Sea, in Venezuela at the north of the continent. They will record the different species of birds they see in an hour, count how many there are and where they are and then upload their records on to eBird an international bird database.

Stuff you'll learn

- ✓ You will learn how to plan an exciting bird survey at school or at home
- ✓ Consider what factors might affect your bird survey
- ✓ The equipment you will need to carry out your survey
- ✓ How to create a survey form
- ✓ Where to find resources about national and international bird surveys



Like us, you can also **survey** the birds in your garden, school playground or park.....!

Activity 1



FIRST YOU NEED A PLAN

What questions do you want to know the answer to?

Ring the question below that you'd like to investigate or think of your own question:

Q 1.. How many birds visit my garden/park/school playground?

Q 2.. How many different **species** of birds visit?

Q. 3. How many different species and how many of each species visit?

Activity 2



Ringed kingfisher, Chile

Once you have chosen your question you need to think **HOW** you are going to do it?

You need to ask more **QUESTIONS**.

Below are some example questions. Fill in your answers.

What time of the year and what time of the day will you do your survey?

A.

How long will you survey the birds for & will you need to do the survey more than once?

A.

Where exactly will you do it?

A.

How will you record the information?

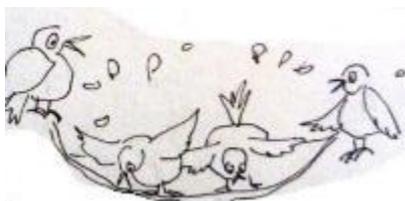
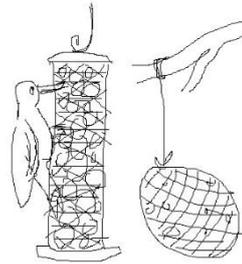
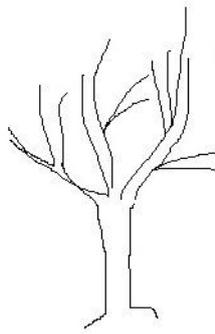
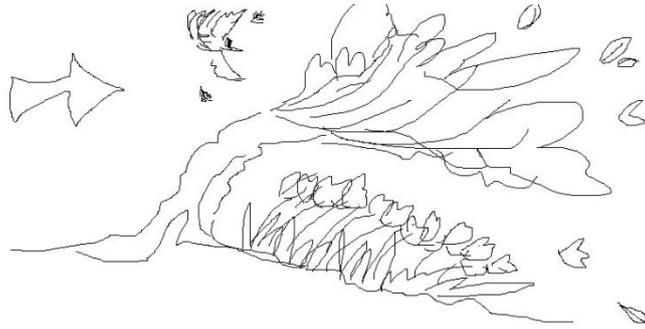
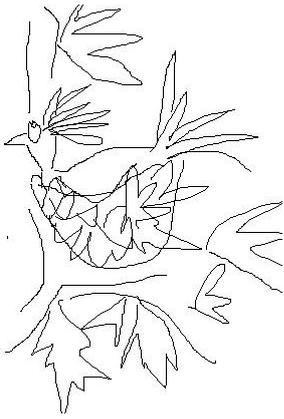
A.

Activity 3

Below are some **FACTORS** that might affect your bird survey.

Match the illustrations to the sentences:

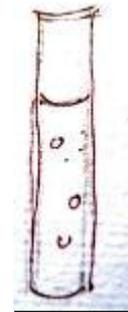
1. Feeding birds un-salted peanuts, suet balls or seeds, will attract them to your garden.
2. Very windy weather makes hearing and seeing birds difficult when surveying.
3. **Predators** such as cats and dogs upset birds and cause their behaviour to change.
4. Water attracts birds. It is very important for their washing and drinking.
5. The **breeding season** is a good time to survey birds because they are very visible as they are busy feeding, singing, building nests and attracting mates.
6. In the cold months birds are easier to see as there is less food and **deciduous trees** lose their leaves.
7. It is difficult to survey in very heavy rain and the birds are also not very active.
8. Birds are often easiest to see and hear in the morning during the **dawn chorus**.



Activity 4

EQUIPMENT: Below are various items that you might use for a science investigation.

1. Match the correct labels to the items.
2. Ring the items you think you will need for your bird survey.



1. Magnifying Glass

2. Flask

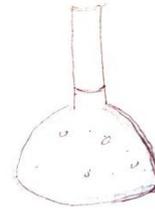
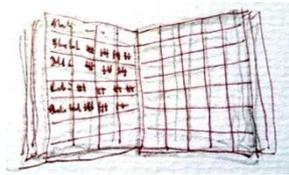
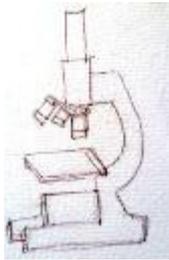
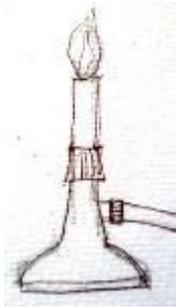
3. Note Pad

4. Pencil

5. Microscope

6. Binoculars

7. Camera



7. Telescope

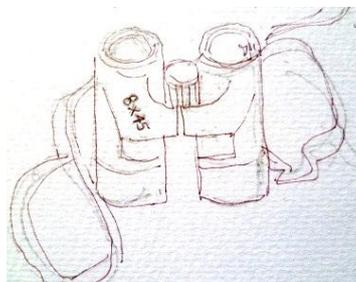
8. Bunsen Burner

9. Measuring Beaker

10. Test Tube

11. Survey Clipboard & Sheet

12. Pipett



1. You can carry out a bird survey with very little equipment. What do you think are the two most important pieces of equipment you will need?

Activity 5

SURVEY FORM for your notepad or clipboard:

Below is an example of some of the **data** you might collect during your bird survey:



Chimango Caracara, South America

Tallies make summing the total number of birds easier.

Date	Start Time	End Time	Species	Tally	Weather	Notes
4. 7.2012	0700	0800	Blue tit		cloud + sun	1 cat
5. 9. 2012	0500	0630	American robin		sun	noise of cars
12.5.2013	1700	1900	Great kiskadee		heavy rain	building nest
3. 4 2013	0900	1000	Thorn-tailed rayadita		windy	

Use 24 hour clock.

Circle the species that live in your country?

Weather can affect the way that birds behave.

Try and be as observant as possible. Your notes may provide clues to the questions you're asking.

REMEMBER:



Every time you do your survey, follow the same **method** so that your survey is **repeatable**.

Zero counts (when you see no birds) are important too! If you do not see any birds during one of your surveys you must record zero birds.

And when you are doing your survey **REMEMBER:**



Be very quiet and still. Birds and other wildlife will disappear if you are not.

Remember to LISTEN. Each species of bird has a unique call or song. If you learn who says what, you will be able to identify birds with your eyes closed!

Animals do not like bright colours. It is better to wear camouflage clothes that allow you to merge in with the surrounding **habitat**.

As long as you have a notepad and a pencil you can survey birds and other animals.....!

Activity 6

Comprehension; Definitions

During this work sheet you will have noticed that certain words were **highlighted**. These are key words for which it is useful to know the meanings of. Fill in the missing definitions below using the highlighted words you have seen in this work sheet:



There are many different types of birds, just as there are many different types of beetles and other animals. Each type or s_____ of animal has their own name and can only breed with one another.

The area where you live includes your house, school, park and other areas where you play. Animals also have a home area, or h_____. This can be as small as a stone for a beetle or as big as the Pacific Ocean for a blue whale.

If you want to investigate an animal such as a bird, an insect or a fish you can carry out a s_____ to find out more about it. The information that you collect are your d_____.

Katharine and David will be carrying out a daily bird and wildlife survey along the long path of their 5000 mile route in South America. This is called a M_____ T_____.

When designing your bird survey you need to consider the f_____ that might affect it, such as weather conditions, time of day, time of year, noise from traffic etc.

You need to write a m_____, this explains how you do the survey. It is like the recipe you follow when making a cake. You should make sure that the m_____ is r_____; that you can follow the same instructions each time you do the survey.

P_____ are animals that eat birds and other animals. These are animals such as cats, dogs, rats, foxes and other birds such as hawks.

In the Northern Hemisphere, where for example Britain, USA and Sweden are found, the b_____ s_____ is between March and July. In the Southern Hemisphere, where for example, Chile, Argentina and New Zealand are found the b_____ s_____ is the opposite between October and February. Near the Equator, like Venezuela, the weather is similar all year around and birds can breed at any time.

Song birds that perch, like finches, robins, flycatchers and thrushes, are known as passerines. They sing early in the morning during the breeding season to attract mates and keep other birds away from their territories. Birds also sing at other times of the day, but the d_____ c_____ is the most important time and the loudest!

Some species of trees lose their leaves, they are known as d_____ trees. In countries with cold seasons like the UK, Chile, Argentina and the USA, trees such as oak, southern beech and maple are d_____. Their leaves turn from green into oranges, yellows and reds, before falling to the ground. Birds are easier to see in the bare branches.



RESOURCES

It is a good idea to learn some of the names of the birds that visit your school, park or garden. You can do this by:

- Ask someone who knows about birds to help you identify them. Bird experts are called ornithologists.
- Look in a bird identification book.
- The Royal Society for the Protection of Birds (RSPB) (UK) and Cornell Lab (USA) both have websites that can help you identify birds:

<http://www.rspb.org.uk/wildlife/birdidentifier/form.aspx#>

<http://www.allaboutbirds.org/guide/browse>



National and International Surveys:

As well as doing your own surveys, you could take part in a national garden / back yard bird survey: The websites below provide resources including survey sheets and help on methods and identification:

UK: <http://www.rspb.org.uk/naturecount/> and <http://www.bto.org/volunteer-surveys/gbw>

Ireland:

<http://www.birdwatchireland.ie/News/15thAnnualGardenBirdSurveynowunderway/tabid/578/Default.aspx>

New Zealand: <http://www.forestandbird.org.nz/what-we-do/news/birders-alert-2010-garden-bird-survey>

Australia: <http://www.birdsinbackyards.net/surveys/Schoolground>

USA: www.birdsource.org/gbbc and www.birds.cornell.edu/pfw/

Ebird is an International database of bird records: <http://ebird.org/content/ebird/>



Chuca, Chile and Argentina



Green-barred Woodpecker, Uruguay