

6-8  
years

pri-sci-net



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**Science Content:**

Life Sciences

**Target Concepts/Skills:**

Adaptation of animals to the surroundings, biodiversity in surrounding environment

**Target Age group:**

6-8 years

**Duration of activity:**

2-3 lessons

**Summary:**

This activity involves children exploring and investigating a range of animals that live in the school grounds by going on an animal safari. During their exploration, children are to notice different types of minibeasts (invertebrates) and to record their observations in the worksheet provided. Afterwards they are asked to focus on one minibeast and to prepare a poster about it. The use of different forms of recording: drawings, photographs, notes can be used.

**Objective:**

By the end of the activity children should be able to:

- Name different types of minibeasts that can be found in the school nearby environment;
- Identify the different types of habitats that can be found in the school's nearby environment;
- Identify the different parts of some minibeasts found in the school's nearby environment;
- Relate the minibeasts' characteristics to their preferred habitat.

**Resources:**

- Magnifying glass/hand lenses;
- Trays/petri dishes to collect animals;
- Measuring equipment (measuring tape, ruler)
- Cameras;
- Small brushes for handling animals;
- Pond nets if using the school pond.

# Discovering what animals live in/around the school

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# Discovering what animals live in/around the school

## 1. Engage (Forming hypotheses)

*Decide which question to investigate (= the challenge)  
What do children already know? What are their ideas? (make the question to investigate meaningful for the children)*

Starter/ stimulus - to elicit prior knowledge  
Fresh leaf litter in a tray – teacher asks children “what do you think is living in here?”

- Children looking and finding invertebrates (minibeasts) in the leaf litter. They can use a magnifying glass and can move litter either using a stick or else by wearing disposable gloves.
- Children are invited to consider which kinds of animals live around us that we don't normally see often, or do not usually notice.

*Teacher encourages them to consider this by presenting the materials – going around classroom, letting children discover; or in small groups.*

Pose the questions - Where do you think this leaf litter was? What do you think we might find in the school grounds? What sort of places shall you look in?

- Children start thinking about how to investigate this, what is important to find out.

## 2. Inquiry

### Investigation - What animals live in the school grounds?

Going on an animal safari

Children to explore and investigate range of animals that live in the school grounds, in groups. They need to discuss together:

- which questions they would like to answer
- what they will do to try and answer these and in which order
- which materials they need/want to use
- how long they are going to take for each part of the investigation
- who will do what
- what they expect to see
- how will they collect the animals
- what other materials and equipment e.g. hand lenses they will need
- which findings are important to answer their question and how
- how they will record their findings
- how to present their ideas/findings to the whole class

*Teacher shows all available materials and guides the preparation and prediction process, whole class and per group.*

Possible options for questions to investigate (children write down their predicted findings per selected question):

- Where will we find animals?
- What are the best places for animals to live?
- What do the animals we found look like?
- Are they all the same?
- What animals have we found?

- What sort of places have we found animals?
- What animals are 'visitors' to the school grounds?

The planning and investigation will need to be carefully guided to ensure rich results and that all observations are noted.

### Planning including prediction described above

### Recording, describing and identifying - the variety of animals and their habitats (places found)

Children gather as a whole class

Teacher leads short session on:

- How are you going to record what you find? What would be the best way(s) to record? I.e.
- Graphs
- Data tables
- Drawings
- Pictures
- Paragraphs/free writing
- Diary

*Teacher selects what to discuss as appropriate for age group*

- Children decide on how to record and describe – drawings, photographs, graphs (counts), tables, paragraphs; teacher goes round and assists/facilitates
- Children spend time outside with teacher exploring and recording where they have found animals and what types of animals they have found

# Discovering what animals live in/around the school

*Teacher makes sure all children have recordings/descriptions in their books*

- Close observation of one animal

Children choose one animal each and investigate it, make a poster (individual or in small groups) of their findings with drawings and information, then present their findings within their small group

*Teacher helps/facilitates*

## **Possible options for questions to investigate**

- What is my animal?
- What does it look like? (shape, colour, legs, head, tail, body parts / segments / feelers etc.)
- What else can I find out about it?
- Where did I find my animal?

## **Observation and identifying – annotated drawings of chosen animal Children draw, teacher helps Investigation (books/ internet) to find out more information**

Teacher led – what kind of information could you look for and where would you find it? – elicited from class

Teacher helps individual children/groups where needed as they research the internet/library/books/other resources.

## 3. Evaluation (Evaluating evidence)

### **Explanation of findings and evaluation**

#### **Activity 1. Plenary / whole class discussion of findings**

- Group leaders present their findings to the whole class, which questions they asked and answers they got; their methods, their discoveries (surprises)? Next steps for investigation

*Teacher encourages groups to comment on each other's methods and findings, to compare, give feedback – come up with a synthesis of the best practice + a top 3 of most interesting findings*

*Teacher also facilitates in terms of what questions could be asked, helping children note things they don't out if their own accord*

#### **Activity 2. Recording information as a poster for class discussion / plenary**

Teacher puts up all posters in class.

- Children go round posters in groups so that all work is acknowledged. They write down on post-it notes and place beside each poster:
  - 2 things they found interesting;
  - 1 thing they would suggest to the child/group who made the poster about what might be improved next time

Teacher leads class discussion of:

1. 3 most important things learnt about animals in the school ground and their habitats
2. Which were the most informative/interesting posters and why

#### **Optional:**

Extending thinking/ creativity: Do mini-beasts have feelings? How important are these little animals? Which is more important, a small or a big animal? What about humans?

Teacher facilitates a philosophical enquiry with the whole class – eliciting arguments and counter-arguments; syntheses of both; new questions; conclusion for now (anthropocentric and anthropomorphic views of the world, biodiversity and interdependence)

**[this can be experimented with, i.e. the question can be asked before or after the investigation to measure the effect on the quality of the investigation and children's scientific enquiry based questions]**

### **Materials in attachment:**

Data recording sheet (for optional use)

# Discovering what animals live in/around the school

## References

Allen, M. (2010) Misconceptions in primary science. Maidenhead, Berkshire: Open University Press.

Cross, A. and Bowden, A. (2009) Essential Primary Science. Maidenhead, UK: Open University Press.

Gillespie, H. and Gillespie, R. (2008) Science for Primary School

Teachers. Buckingham, UK: Open University Press.

Loxley, P., Dawes, L., Nicholls, L., Dore, B. (2010) Teaching primary science – promoting enjoyment and developing understanding. Harlow, UK: Pearson Education Limited.

## Teacher notes/advice/things to think about

How large should the groups be? Mixed ability or not? Should roles be assigned?

- Support with going outside in groups; adults available
- Which places are off limits? ( health and safety)
- Do you want to give children hints about where they might go and look? Or have a brainstorm in the class together, or in small groups?
- Possible health & safety hazards such as allergies; children need to wash their hands well after the activity, not stick their fingers into their mouths or eyes during the activity
- Care for the animals – class discussion? This is an important moral issue. Scientists are passive observers of living things and do not interfere with animal life, but it is important to teach children that all animals have a right to life, especially when taking them from their natural habitat in order to study them in a science lesson. Such animals should never be deliberately attempted to harm, and should be safely returned to their natural habitats as soon as possible (see Gillespie et al., 2008)
- Should animals be studied outside or can children bring back some to the classroom?
- Should they take soil samples to get a sense of and compare habitats?
- How much guidance do children need with each stage of the investigation?
- Have questions ready to help children along
- Structured vs. open-ended: this is something to be considered. The worksheets are provided if teachers prefer a more guided lesson. If the teacher prefers to let the children decide about how to record their data, they can decide not to use the worksheets. Similarly, if teachers wish to focus more on the active part of the investigation than on writing, the worksheets can be skipped, or worksheets can be adapted to the age of the children or children with special needs.

### Subject knowledge background

‘Habitats’ are the natural homes of a group of plants and animals. They are a specific set of conditions to which the animals and plants who live there have successfully adapted and in which they are interdependent (see Loxley et al., 2010). Habitats are changeable as plants grow and mature and with environmental changes. The most common groups of animals that children are likely to have access to in/ around the school are invertebrates such as arthropods (e.g. insects, spiders) molluscs (snails and slugs) and annelids (earthworms). Invertebrates are animals without an internal skeleton, although some like the arthropods have an exoskeleton. Differences between organisms are more readily appreciated than similarities, and the relationships between one category and another are often overlooked. Studying living organisms in their natural habitat is useful in primary science because it enables children to experiment and to investigate effectively with things which occur locally and which are of interest to them.

Animals are often physically adapted as a result of natural selection to live in particular habitats, but they can also adapt their behaviour to suit different environments. Children can be asked to consider the habitats in which they found invertebrates are living. What do they need? How are they adapted to their habitat? For example, does the shape of the animal assist the way it lives? Does its colour help it survive? How does it move? How does it behave? How does this help the animal? (I.e. why is a slug slimy?)

It is good if children can describe what they observe in as much detail as possible, such as naming body parts, textures and colours, and describing how body parts are assembled. They can also group the mini-beasts according to different criteria, i.e. number of body segments, legs/no legs, shiny/dull looking, hairy/non-hairy, and where they are found (see attached worksheet). (See Cross et al., 2009)

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**Mini Beast Safari Record Sheet**

	Under logs and stones	In leaf litter	In the soil	On trees and plants	Other	How long are they?	How many legs do they have?	What colour are they?	Does it have a head?	Does it have a tail?	Does it have feelers?
<b>Slugs</b> 											
<b>Snails</b> 											
<b>Worms</b> 											
<b>Wood lice</b> 											
<b>Spiders</b> 											
<b>Ants</b> 											
<b>Beetles</b> 											
<b>Earwigs</b> 											



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### Mini Beast Safari Record Sheet

	Under logs and stones	In leaf litter	In the soil	On trees and plants	Other	How long are they?	How many legs do they have?	What colour are they?	Does it have a head?	Does it have a tail?	Does it have feelers?
Centipede 											
Millipede 											
Caterpillars 											
Butterflies 											
Bees 											
Other:											

How many different types of mini beasts have you found?  
Where were they living?  
How does the way they look and behave help them?



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