Day 4

Topic 4 - Living Things
Minibeasts

Handouts

WORKSHEET 1

WALKING TO THE HABITAT

Become familiar with the location of the habitat.

How far is it from the centre for the course?

Which landscape features can you see along the way, rivers, mountains?

What manmade features can you see? Are there roads, towns or villages?

How is the land used? Are there gardens, parks, pasture, and tilled fields?

Middle and senior classes: Use a compass. What the direction is the school?

THE HABITAT

Take 5 minutes to stand still and use your senses to become familiar with the habitat.

What can you hear? Can you hear any birds singing, any bees, and the wind moving the leaves?

What can you see? What shapes and colours can you see?

Describe the trees, flowers and plants you can see.

Describe the birds you can see.

What can you smell?

Touch the soil. Is it hard or soft? Does it crumble easily?

Wear gloves and collect some minibeasts. Minibeasts should be returned to their homes after the session.

Record briefly what you find either in pictures or in words.

Describe where the minibeasts were found, wet/dry/damp place, sunny/shady places.

How many of each creature was in that place approximately?

WORKSHEET 2

DETAILED OBSERVATION AND RECORDING (15 minutes)

The animals should be placed in viewing containers and examined with magnifying lenses. Observe one animal at a time.

What do you notice about the animal's head or body?

Is it hard or soft? What size is it?

Does it have any marking on its body?

How many body parts, legs, wings or antennae does it have?

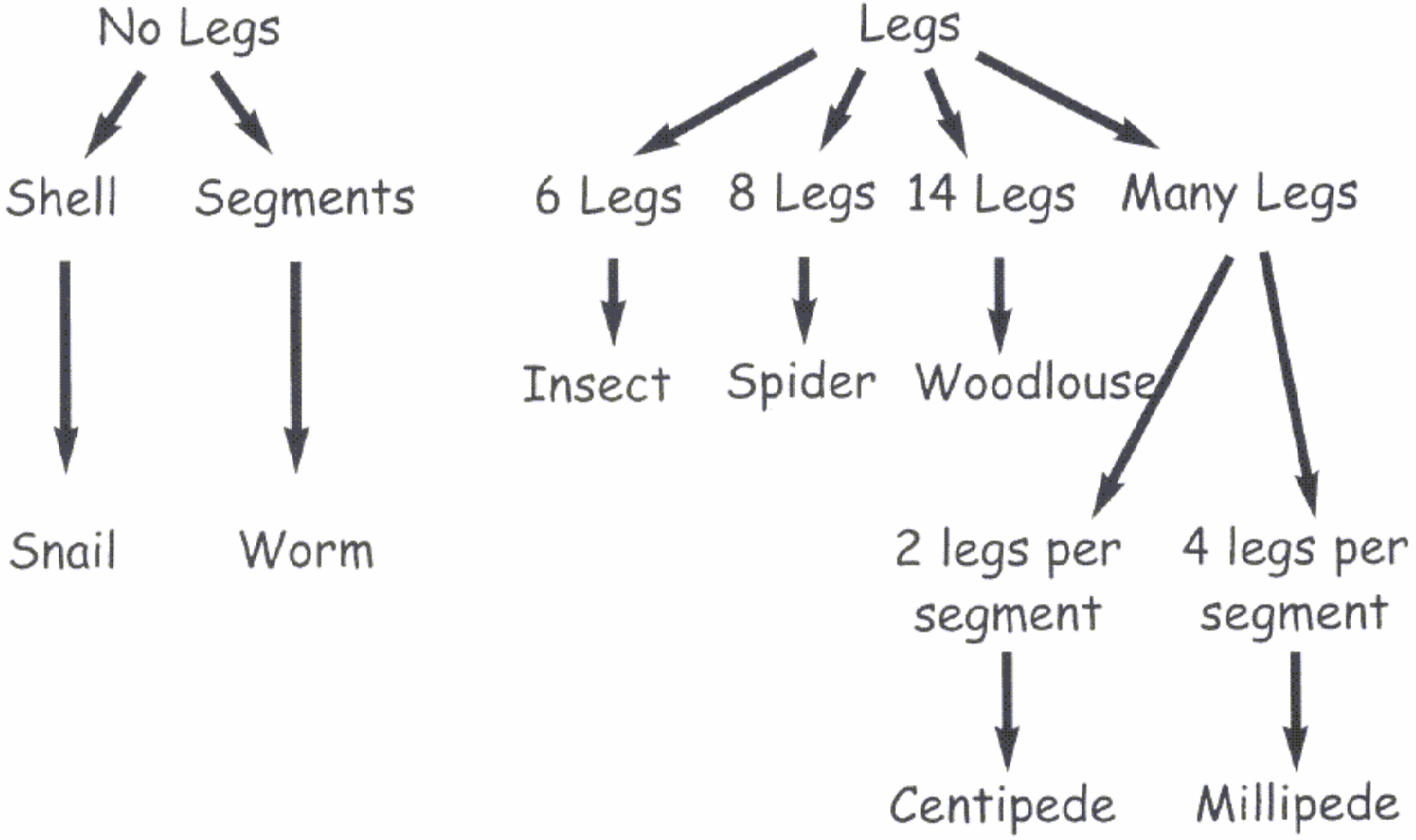
How does it move? Does it leave a trail on the surface?

Draw the animal and label the drawing.

Compare your minibeast with other minibeasts collected by your group. How are they similar?

How do they differ?

Key for Minibeasts



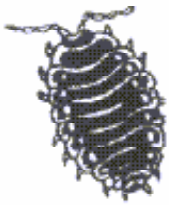
Minibeasts












LIVING THINGS: ANIMALS

The Revised Curriculum absorbs the current Environmental Study programme and incorporates a scientific approach to the study of living things. Children will look at the wide variety of plants and animals in their local environment and their life processes through **observation, asking questions, classifying, experimenting and analysing.** Thus an understanding of the interdependence of living things and the importance of conservation of habitats and our environment may be encouraged.

Infant classes should be enabled to (see Curriculum p.20, 21, 24, 28. Guidelines 62-72)
Observe and identify common animals in the immediate environment.
Be aware of animals in other environments
Recognise and identify external parts, legs, head, tail, and feathers.
Group living things into sets, trees, birds, and fruit.
Observe life cycle changes and seasonal changes, e.g. hibernation in animals.

First/Second classes (see Curriculum p.36, 237, 42, 48, glossary; Guidelines 62-72)
Observe, identify and explore common animals in different local habitats.
Identify common birds, animals, insects and minibeasts.
Develop awareness of animals from wider environments.
Recognise and describe external parts of animals, head, leg, wing, types of skin covering.
Group animals by different criteria e.g. hibernation, migration.
Observe growth and change in animals in life cycles and seasonal changes.
Understand that living things have essential needs for growth.

Third/Fourth classes (see Curriculum p.56, 57, 62, 68, glossary; Guidelines 62-72)
Observe, identify and investigate common animals in the different local habitats.
Develop an increasing awareness of animals from wider environments.
Group animals according to observable features.
Use simple keys to identify common species of animals.
Look at ways that animals adapt to their environment, e.g. colour and understand that animals depend on plants and indirectly on the sun for food.
Discuss simple food chains
Become aware of basic life processes of animals, growth, breathing, life cycle, feeding.

Fifth/Sixth classes (see Curriculum p.78, 79, 84, 92. Guidelines 62-72)
Observe, identify and examine common animals in different local habitats.
Develop an increasing awareness of the diversity of animals from wider environments.
Group animals into species, compare and contrast between members of the same species.
Use simple keys to identify common local plants and animals.
Understand the characteristics of major group of animals, e.g. mammals, insects.
Explore ways that animals adapt to their environment.
Discuss simple food chains
Become aware of basic life processes of animals, e.g. growth, breathing, life cycle, camouflage.

TEACHER INFORMATION 1

Minibeasts are small creatures found in land and water habitats. Common minibeasts are worms, snails, insects, spiders and woodlice. Invertebrates or animals without backbones make up most of the world's animals.

Minibeasts with jointed legs are called Arthropods. This group includes insects, spiders, woodlice, centipedes and millipedes. These animals differ from each other by the number of legs and segments in their bodies. They are **cold-blooded**. They have an external skeleton, an exoskeleton, made of chitin, unlike humans who have an internal skeleton. Their body parts and muscles are attached to this external skeleton.

INSECTS 70% of the world's species of animals are insects and more species of insects are being discovered each year. They are essential for pollination of many flowering plants and as a source of food for land birds. Their bodies are divided into **three segments**, the head, the thorax and the abdomen. They have **six legs**. The **head** has a simple brain and two feelers called **antennae**, which can touch and sometimes smell. Many insects have two compound eyes made up of many lenses to give the insect a wide-angle view of its surroundings.

The six legs and wings are attached to the **thorax**. Some insects have two wings, some have four wings and others have none. The digestive, reproductive and excretory organs are in the **abdomen**. Holes in the thorax and abdomen let in air for breathing.

Insect eggs are **fertilised** inside but hatched outside the parent's body. Many insects go through four stages, egg, larva, pupa and adult. Insects need to shed their outer covering as they grow.

Common insects are bees, wasps, butterflies, moths, dragonflies, ladybirds, grasshoppers, ants, cockroaches, fleas, mosquitoes, earwigs and beetles.

SPIDERS are also Arthropods and have jointed legs. However they differ from insects because they have **eight legs**. Their bodies have **two segments**, the cephalothorax and the abdomen. They do not have antennae. Spiders have a pair of limbs to grab their prey and four pairs of legs for movement. Spiders are carnivorous and chase, jump or trap their prey on their webs.

TEACHER INFORMATION 2

WOODLICE have **seven pairs of legs** and light-blue or grey bodies.

CENTIPEDE has **one pair of legs per segment** and a flattened brown or yellow body.

MILLIPEDE has **two pair of legs per segment** and a cylindrical body.

SNAILS are part of the Mollusk group, like the octopus and the oyster. Most Mollusks live in water.

The garden snail has one shell and moves on a soft muscular foot. Slime or mucus reduces friction and allows the snail to move over rough surfaces. It has four tentacles with simple eyes on the top pair and organs of smell on the lower pair. Snails have sharp tongues with which they shred leaves and vegetation. Garden snails are hermaphrodites, which means they have male and female sex organs. They lay many eggs in the soil, often near plants.

EARTHWORMS are part of the Annelid group. They have a long segmented body, which may have more than one hundred segments. It has no marked head or eyes. Its body is sensitive to light because there are light receptors in its body wall. The earthworm's skin is moist which allows it to let oxygen in through the skin and let carbon dioxide out. It moves by stretching and contracting its body.

As the earthworm burrows through the soil, it digests dead animal and plant material, which then passes through its body back into the soil, adding humus to the soil. Its burrowing helps to loosen and aerate the soil.

See PRIMARY SCIENCE TEACHER GUIDELINES P.67 FOR ILLUSTRATIONS OF MINI- BEASTS

LINE 1: LADYBIRD, CENTIPEDE, SPIDER

LINE 2: BEETLE, EARWIG, FLY

LINE 3: GRASSHOPPER,CATERPILLAR,WOODLOUSE

OTHER WORK ABOUT MINIBEASTS

Details of these activities are available in many Science books.

EARTHWORM: Set up a wormery in the classroom. Observe the worms burrowing through the soil. Investigate what happens when you moisten the top of the soil.
Reference: Gega, Harlow, Burnie.

GARDEN SNAILS: Put snails in a tank with some leaves, stones and damp soil.
Investigate which type of food the snails prefer. Listen carefully as the snails shred the food.
Investigate whether snails prefer damp or dry soil.
Put them on a perspex sheet and watch their muscle movement.

WOODLICE: Do woodlice prefer dry or damp soil?
Ref. Science Curriculum, Teacher's guidelines, Exemplar 19.

ANTS: Can ants tell the difference between sugar and artificial sweeteners?
Ref.: Gega

CATERPILLARS: Investigate what do caterpillars eat. How much do they eat each day? Ref. Science curriculum, Teacher's guidelines, Exemplar 18.

SPIDERS: Observe a spider's web. Design a web with wool or thread.

SAFETY Skin should be protected from the sun on trips outdoors.
Children should not look directly or use lenses to look at the sun.
Habitats should be examined for obstacles before the visit.
Mini-beasts should be returned to their homes and participants should wash their hands after the session.

REFERENCE

Government of Ireland Revised Primary Science Curriculum, Teacher's Guidelines Dublin, Stationery Office, 1999.
Harlow, R. and Morgan, G. Fun with Science, Minibeasts London, Kingfisher Books, 1991.
Burnie, David. 101 Nature Experiments, London, Dorling Kindersley, 1996
Gega, P. and Peters, J. Science in Elementary Education New Jersey, Prentice Hall, 1998. (Good as a resource for the school).