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Earth & Life Science Series

Creepy Crawlies

***Science activities for
6-9 year olds***

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Teacher Information

The Earth and Life Sciences Series is designed to provide teachers of children in the 6 - 9 age range with a set of materials that will give students a more rounded and scientific understanding of their world and their place in it.

Student activities are directed towards meeting the requirements related to Science education as set down in the UK National Curriculum document. This book, **Creepy Crawlies**, relates in particular to the concepts of **Life Processes and Living Things (Sc2)**, at Key Stage 1 and 2 level as indicated in the programme of study. In addition, the activities in the book enable children to utilise some cognitive processes which are incorporated in the **Scientific Enquiry** section of the curriculum.

These include:

Ideas and evidence in science

- collecting evidence by making observations;

Investigative skills

- exploring using the senses of sight, sounds, hearing, smell, touch and taste and make and record observations and measurements;
- communicating what happened in a variety of ways, including using ICT;

Considering evidence and evaluating

- making simple comparisons and identifying simple patterns.

LIFE PROCESSES AND LIVING THINGS

KNOWLEDGE, SKILLS AND UNDERSTANDING

Life Processes

Students will:

- relate life processes to animals and plants found in the local environment; **(KS 1 - 1. c)**
- understand that animals move, feed, grow, use their senses and reproduce; **(KS 1 - 1. b)**
- realise the life processes common to animals include nutrition, movement, growth and reproduction; **(KS 2 - 1. a)**
- make links between life processes in familiar animals and plants and the environments in which they are found. **(KS 2 - 1. c)**

Humans and Other Animals

Students will:

- recognise and compare the main external parts of the bodies of animals; **(KS 1 - 2. a)**
- learn that humans and other animals can produce offspring and that these offspring grow into adults; **(KS 1 - 2. f)**
- understand that the senses enable humans and other animals to be aware of the world around them. **(KS 1 - 2. g)**

Variation and Classification

Students will:

- group living things according to observable similarities and differences; **(KS 1 - 4.b)**

Living Things in Their Environment

Students will:

- find out about the different kinds of plants and animals in the local environment; **(KS 1 - 5. a)**
- learn ways in which living things and the environment need protection; **(KS 2 - 5. a)**
- understand that different plants and animals are found in different habitats; **(KS 2 - 5. b)**
- understand how animals and plants in two different habitats are suited to their environment. **(KS 2 - 5. c)**

STRUCTURE OF THIS BOOK

Books in this series are divided into two sections - the section which includes the **“Using Information”** activity pages and that containing **“General Activity”** pages.

Both sections include **Teachers’ Notes** which focus on aspects of subsequent activity pages such as:

- learning outcomes of the relevant pages;
- materials required to complete the activity page;
- teaching suggestions for each page in the section.

“USING INFORMATION” SECTION

All student activity pages in this section are preceded by an **“Information Page”** - a set of notes that provides background knowledge to the activities presented on the worksheet. It is intended that these sheets are also photocopied for students and used by them as they attempt the activity page. It is envisaged that this approach will allow teachers to relate the class Science program to the Language program, through using these Information Pages as opportunities for Reading and Viewing activities. They are ideal for these purposes in that they require students to retell meanings and make simple interpretations for the purposes of completing the accompanying worksheets.

The text in these pages may be at a slightly more difficult level than that presented on the worksheets and further assistance is given by defining some key words or phrases. These are underlined and link to the **Explanations** section at the base of the page, which contains further definitive statements and explanations about the text.

It should be noted that not all the information that is required to complete worksheets is contained in these notes. In fact, children will benefit greatly from introductory discussions and idea sharing sessions about the worksheet in conjunction with the use of the Information Page.

GENERAL ACTIVITIES SECTION

The activity pages in this section (headed ACTIVITY PAGE) utilize traditional print related reference materials for children to complete the set tasks on the sheets. It would be useful for a collection of appropriate books and materials to be assembled before commencing the unit so these can be accessed and used with as little disruption as possible. It is imperative, too, that these sheets are discussed thoroughly before children are set to work.

Lesson Notes

Pages 7 - 10

CONTENT AREA(S):

- language
- science
- technology

ATTAINMENT TARGETS:

In this section students will:

- use Information Pages to find and record required information.
- identify insect body parts and sense organs.
- label the stages of bee metamorphosis.
- distinguish between insect and arachnid characteristics.

MATERIALS REQUIRED:

- Information Pages
- pencil or pen

TIME:

- Approximately 30 minutes per lesson.

TEACHING TIPS: ALWAYS GO OVER THE DIRECTIONS FIRST.

- The Information Pages are designed as an introduction to understanding insects and spiders.

PAGES 7/8: BUG STUDY

- You may want to do this page as a whole group to show students how to use the Information Pages and to cover the basics of insects.
- Emphasize that students need to focus on the underlined words and definitions in addition to reading the text.

PAGES 9/10: SPIDER OR INSECT?

- Inform children that some of the clues may be a little tricky so they will have to think before they answer.
- Preview the vocabulary of the body parts so students have a reference for pronunciation.

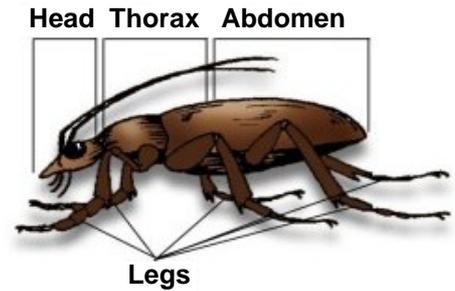
Information Page: Bug Study

An entomologist is a person who studies insects. Sometimes insects are called “bugs”.

There are a lot of insects in the world. As a matter of fact, there are over a million different kinds of insects and many more insects in the world than ALL other animals put together!

All insects have 6 legs and 3 body parts. The body parts are: the head (with 2 feelers called antennae), a thorax (the middle part), and an abdomen (belly).

Most insects also have at least one pair of wings. Instead of a skeleton on the inside, insects have an exoskeleton, which is like a skeleton on the outside.



INSECTS ARE NOT AT ALL LIKE PEOPLE

If you want to taste something, you put your tongue on it. But if a fly wants to taste something, it walks on it. Flies taste with their feet.

When you want to smell something, you put your nose near it, but a fly has no nose. Insects smell things with their two antennae.

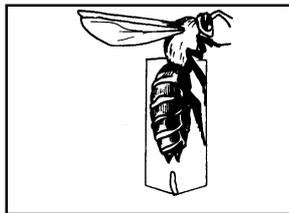
Insects don't see the way we do either. An insect's eye is made up of many tiny eye parts called lenses.

Each tiny eye, or lens, sees a part of what the insect is looking at. Dragonflies have as many as 30,000 lenses in each eye but you only have one!

YOU'VE GROWN SO MUCH!

All insects grow from eggs and change as they grow older. The changes in stages is called metamorphosis.

Butterflies, bees, ants, beetles, and flies grow in stages:



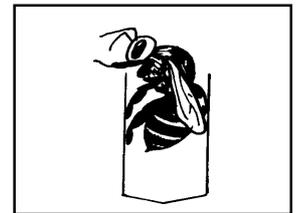
EGG - kind of like a chicken egg, but much, much smaller.



LARVAE - looks like a small worm that hatches from the egg



PUPAE - doesn't move around much but is beginning to look like an adult



ADULT - the beautiful insects that we know and love!

Dragonflies, termites, grasshoppers, and true bugs grow in three stages:

EGG - as above; NYMPH - looks like the adult insect when it hatches from the egg except it is very small and has no wings yet; ADULT - as above.

EXPLANATIONS

exoskeleton: An “outside skeleton” - a bony outer part to protect an animal. (The shell of a turtle or crab is an exoskeleton.)

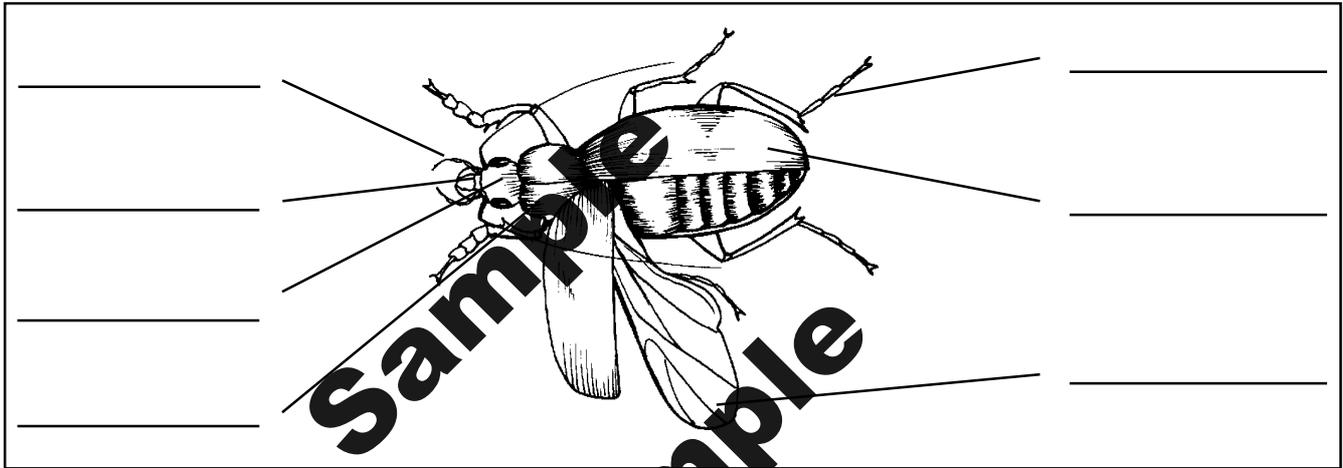
metamorphosis: A change from one thing to another. (A caterpillar goes through metamorphosis to become a butterfly.)

Bug Study

Use the Information Page on Bug Study to help you complete this page.

Answer the questions below.

1. What is a person who studies insects called?
2. A skeleton on the outside, instead of the inside, is called an
3. All insects have legs and body parts.
4. Look at the picture. Write the name of each insect body part.



Draw a line to show what a fly uses to do these things.

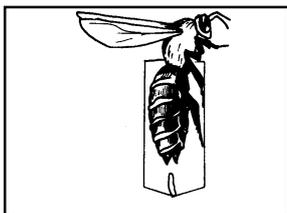
A fly tastes with...

A fly smells with...

A fly sees with...



Label each picture below to show the **four** stages of *metamorphosis*.



.....

Information Page: Spider or Insect?

Spiders, mites, and scorpions are not insects. Sometimes people think of them as insects, but they belong to a group called arachnids.

HOW CAN YOU TELL THEM APART?

You can tell the difference between spiders and insects in many ways. Here is what to look at:

LEGS

Insects: 6

Spiders: 8

EYES

Insects: Most have 2 big, compound eyes.

Spiders: Usually 8 simple eyes.

FOOD

Insects: Many different kinds (some even eat plastic, paper, or clothes).

Spiders: Mostly insects (some even eat small frogs or mice!).

ANTENNAE (an-TEH-nay)

Insects: Yes - that's how they smell.

Spiders: No - they sense through bristles on their legs.

WINGS

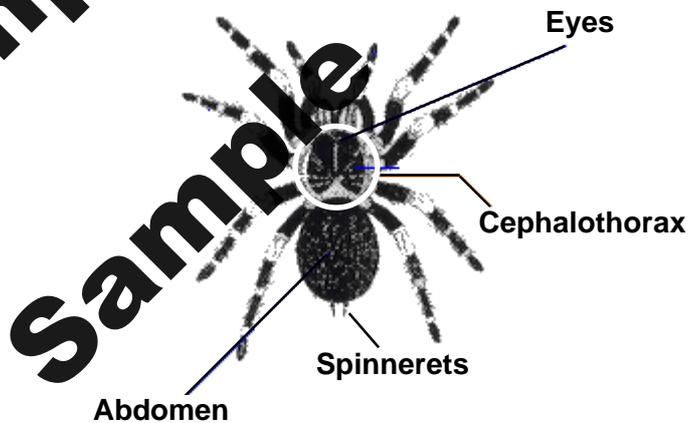
Insects: usually

Spiders: never

BODY PARTS

Insects: 3 - head, thorax, abdomen

Spiders: 2 - cephalothorax, abdomen



EXPLANATIONS

arachnid: This is the name for a group of small, insect-like, land animals. The best-known arachnids are spiders, ticks, mites, scorpions, and daddy longlegs.

compound eyes: A type of eye that has many tiny lenses close together. Two large groups of animals have compound eyes - insects and crustaceans (animals like crabs and lobsters).

thorax: The part of the body between the head and the belly.

abdomen: Belly

cephalothorax: The head and back are one part in some animals like spiders and crabs.

Spider or Insect?

Use the Information Page on Spider or Insect? to help you complete this page.

Read the Information Page to find answers to these:

1. Name four arachnids.

.....

How are spiders and insects different? For each clue below, write **I** if it is about insects, **S** if it is about spiders, and **B** if it is about both insects and spiders.

2..... Have eight legs.

3..... Usually have one or two pairs of wings.

4..... Mostly eat insects.

5..... Usually have eight simple eyes.

6..... Smell with antennae.

7..... Have one abdomen.

8..... Sense with bristles on the legs.

9..... Have two body parts.



Now that you know more about insects and spiders, draw a picture of a **spider** in the first box and draw a line to show the parts listed. In the other box, draw an **insect** and draw a line to show the parts listed.

Spider

Insect

eyes

cephalothorax

abdomen

legs

antennae

compound eyes

head

abdomen

thorax