

Helpful Information about Bugs

Whilst the Bug Blitz™ module has a key focus on the science aspects of the curriculum, it also incorporates art and design, ICT, mathematics, communication, and personal and interpersonal skills as a means to explore the world of bugs and communicate the findings to others.

Scientific classification of all living things divides organisms into groups - Kingdom, phylum, class, order, family, genus, species. Scientific classification of bugs sees bugs as being in the Order Hemiptera (True Bugs) with the insect Class. However common use of the term 'bug' includes anything that is an invertebrate (animals with no backbone). **Arthropods** are invertebrate animals that have segmented, hard outer skeleton (exoskeleton) and jointed legs. They include insects, mites, scorpions, millipedes, spiders, centipedes and crustaceans.

Bugs are grouped into four different classes of arthropods based on the number of body parts, legs and antennae :

Arthropod class	Number of legs	Number of antennae	Number of body parts
Insects	6	2 (1 pair)	3
Arachnids (spiders and scorpions)	8	0	2
Myriapods (centipedes and millipedes)	Many (18 or more)	2 (1 pair)	2 (head and segmented trunk)
Crustaceans (crabs and slaters)	8 or more	4 (2 pair)	Variable

Invertebrates without a backbone and with a soft body, such as earthworms, snails, slugs and nematodes, are not generally considered to be bugs.

There are about 36,000 species of vertebrate animals in the world (including humans). In comparison, the estimated number of species of invertebrate animals ranges from 1.5 million to 30 million (a very big gap!) Insect species make up the largest group of arthropods. Of all the animal species on Earth that have been named and described, 75% are insects. It is estimated that for every human on the planet there are about 200 million insects.

Bugs Grouping Exercise

Overview:	Students work out how bugs might be grouped according to their body types.
Grouping:	Small groups or individuals
Special resources needed:	Student Handout: Buckets of Bugs for each student/group Classification charts
Approx. duration	One session
Assessment suggestions:	Written explanations for grouping

Directions

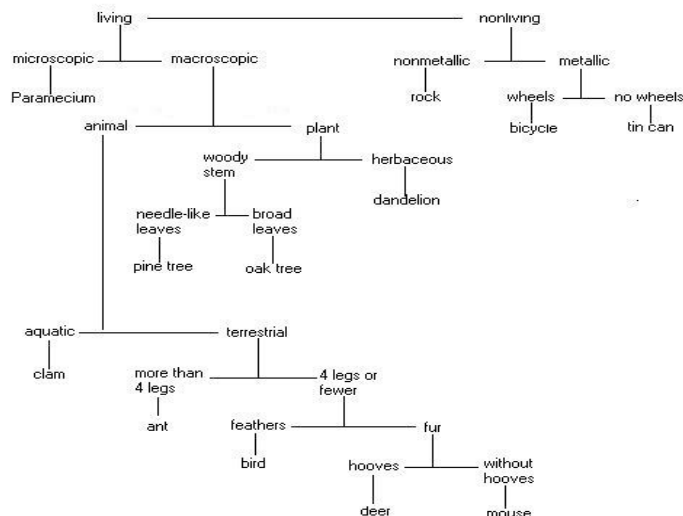
This activity introduces students to the concept of grouping bugs based on what their bodies look like.

In small groups or as individuals, students are given a copy of the handout 'Bucket of Bugs.' Get students to look for things that different bugs have in common and try to decide how scientists might put them into groups.

Ask students to cut out the bugs and group them according to their own classification system and write down explanations/justifications for grouping their pictures in particular ways. Repeat the process with a new way to classify the bugs. Give the groups appropriate names.

Discuss different groupings with the class and the approaches students took to group the bugs. Ask students why it might be important to group bugs and note down some of the reasons given. (Think finding a book in the library. Without a classification system you would find a particular book almost by accident. If you want to find the book on another visit to the library it could take some time. When the books are classified or grouped, you know exactly where to look for it.

Students can then create a dichotomous key, based on their classification system.



Bucket of Bugs

