

Topic: Reading - 'Beetles, bees and butterflies' - reading comprehension and classification

Reading/Discussion

Beetles are part of a very big family. There are about 380,000 different species of beetles - that is more than a quarter of all animal species! The next biggest family is the bee family, which includes wasps and ants. Did you know they were related? The third biggest family in the animal kingdom is the family of butterflies and moths. Because all these families are so big there is a great deal to learn about them so today we'll just look at some of their characteristics.

All three families of insects lay eggs and go through complete **metamorphosis**. This means that the young look very different from the adults and go through different stages until they become adults. When the eggs hatch the larvae emerge. In the butterfly family these larvae are often called caterpillars. They usually hatch out on plant leaves which they eat and eat until they grow to hundreds of times their original size. The larvae of beetles are usually called grubs.

The larvae of all three families **pupate** when they have grown large enough. That means they become inactive and change into pupae. The pupa is often covered by some sort of cocoon or case. Some pupae from the beetle or butterfly families form under the ground. While they are in the pupa stage the larvae change completely into their adult form.

The beetle adults can vary in size from .005cm to more than 15cm. Use your rulers to work out the size of the smallest and the biggest beetle. Most beetles have hard front wings or wing cases and biting mouth parts. Beetles are found all over the world, some live in salt water and some in fresh water, some live under the bark of trees. They eat roots, wood, leaves, flowers and fruit. Some eat other insects and some live on dung or dead animals – Yuk!

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Most adult female bees have stingers which are straight and barbed. When they sting you, the barb gets stuck in your skin, the rest of the stinger is pulled out of the bee's body and it dies. So stinging you is really worse for the bee than it is for you, unless you are very allergic to bee stings.

Most adult bees also have pollen brushes on their hind legs, or pollen baskets, to collect and carry pollen which they eat and feed to their larvae. Bees also feed on the nectar or plants which they can turn into honey.

Although we always think of bees as living in bee hives, only truly social bees like bumble bees and honey bees live in big communities. Many bees are solitary.

Adult butterflies usually have brightly colored and patterned wings and thin antennae with a club-like end. The color and patterns on their wings are important because they help them to recognize each other when looking for a mate. The largest butterflies have a wing span of up to 25cm and the smallest are less than 1cm. Like bees, butterflies feed on nectar and pollen, but some, like beetles, also eat rotten fruit and other nasty things. They use a **proboscis**, which is a long, thin, sucking tube, to eat.

Butterflies live in a variety of places and some, like the monarch butterfly, migrate for thousands of miles!

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Activities:

A. Let's find out what we know.

Read through the article again and answer the following questions:

1. Each of the three families of insects has many different species. Can you list the families by number of species from the biggest to the smallest?
2. There are three words in bold print in the article: **metamorphosis**, **pupate** and **proboscis**, can you use your own words to explain what each one means?
3. If we compare beetles and butterflies, which family has the smallest adult and which has the largest?
4. Choose two of the families and write down two things about them which are the same.
5. Now choose two of the families and write down two things about them which are different.

B. Making and matching patterns.

Fold a piece of paper in half and draw and cut out butterfly wings. Now draw patterns on your wings and colour or paint them.

When you have finished, compare your butterfly with those of your friends. Are there any patterns which are similar to yours? Put together the butterflies which 'recognize' each others' patterns.

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Answer Sheet

Activity A

1. Beetles, bees, butterflies
2. **Metamorphosis** means that the young insects look very different from the adult form and go through different stages until they become adults.
Pupate means the insect becomes inactive and changes into a pupa
Proboscis is a long, thin, sucking tube.
3. The beetle family has the smallest adult (.005cm) and the butterfly family has the largest (25cm).
4. and 5. Some possibilities are:
Same – all lay eggs; butterflies and bees eat nectar and pollen; all go through complete metamorphosis; some pupae from the beetle or butterfly families form under the ground.
Different – Beetles have hard front wings or wing cases, butterflies have brightly coloured, patterned wings; the larvae of the butterfly family are called caterpillars, those of the beetle family are called grubs; beetles have biting mouth parts, butterflies have a proboscis; unlike both beetle and butterfly families, bees have stingers and pollen brushes or baskets.