RAC 4 : INSECTS
Contents

The World of Insects

There are many millions of different kinds of insects on our planet. They have been around since the beginning of time. Although they are small, they play a very important part in our world.

Insects can live almost anywhere. Different insects can be found in very hot and very cold places. Cities do not stop them either. Because they are small, they can find homes in small spaces, in trees, grass, dirt or buildings. Some live in fresh water and even on the sea.

All insects have three parts to their bodies: head, thorax and abdomen. They have a hard outer shell and six legs. They have two antennae or 'feelers' on their heads which they use to explore the world around them. Most of them have wings.

One reason there are so many insects is that they do not need a large food supply. They can eat all kinds of things; plants, wood, other insects, things that are half-rotted. The sort of food they eat depends on how their mouths work. For example, caterpillars chew plants with their strong jaws. But when they become butterflies, they have a sucking mouth and feed on plant juices.

Insects lay many eggs. A queen bee may lay a million eggs during her life. Most insects go through several changes to become adults. They shed their hard shells several times as they grow. Often they go into a cocoon for a time. When they emerge they are a very different shape. For example, caterpillars become butterflies.

Insects do not have much to do with each other. Others, such as bees and ants, live in well-organised nests. They help one another by sharing the work.

Most living things eat insects; fish, reptiles, birds, other insects, and people. In Africa, some people enjoy eating crickets and certain worms and flies. People also kill insects because they eat their crops and carry sicknesses.

Most insects are useful in some way. Some make honey and some provide medicine. If there were no insects many creatures on our planet wouldn't have anything to eat. But the most important job that insects do is to pollinate plants. Without them, almost all the flowers, fruits and vegetables would disappear.

GLOSSARY

insect head - where the eyes, mouth, antennae of the insect are located
thorax - the middle part of the body of an insect, between the head and the abdomen, where the legs and wings are attached.
abdomen - the rear of the insect where it the organs are found (digestion, excretion, reproduction).
cocoon - a silky case spun by the insect to protect itself.
pollen - something a plant produces that needs to be transferred to other plants so that more plants will grow.

Headings and Trigger Words
(See SharpReading Stages 5B for details)
Use this column to write down a heading and trigger words to summarise each paragraph.

The World of Insects

Set 2:1 ACTIVITIES

REMEMBERING - What are the facts

1. Name the 3 parts of an insect's body.
2. Make a list of three things that eat insects.

UNDERSTANDING - Show that you understand the information

3. Show that you understand these words from the report by writing down what the word means, using it in a sentence of your own, and drawing a picture.
   planet, pollinate, organised, antennae
4. Draw diagrams showing the two different ways that insects grow up into adults.
   Include labels to explain what is happening in your drawing.
5. Chose one paragraph from the report. Decide on a heading for that paragraph. Write down 'trigger words' (words that trigger the ideas in your head). Use the heading and trigger words to rewrite the paragraph in your own words.

APPLYING - Using the information in another way

6. ***Poetry***
   Write a poem or a rap song about the life of insects.
7. ***Comic Strip***
   Make a comic strip showing where insects live. Use speech bubbles or captions.
   Include some information from the report.

ANALYSING - Identifying features that help insects survive

8. ***Information Web***
   Make a list of all the physical features and behaviours of insects that are mentioned in the report. Brainstorm how these things help them to survive. Show your ideas on an INFORMATION WEB.

   Example: INSECTS -> live anywhere -> don't need special conditions

CREATING - Coming up with new ideas

9. ***Super Insect***
   Design a new insect which is much better at surviving in its habitat. You could include ways to protect themselves from large predators.
   Draw and label your improvements.

Bedbugs

The insect commonly known as the bedbug is a tiny reddish-brown blood sucker. This refers to the feeding habits of the insect - they feed totally on blood. They prefer to feed on humans but will also suck blood from any other animal or bird.

The name bedbug comes from the insect's favourite habitat, inside beds and bedding or other sleep areas. They make their homes in tiny dark, warm spaces such as the seams of a mattress. They are expert at hitch-hiking a ride in clothes, furniture and bedding. Because people today move and travel so much, their population has spread widely. This is why hotel rooms often have big problems with bedbugs.

An adult bug is between 5-7 mm long and is oval-shaped. It cannot fly and its feet and claws are quite weak. It is able to survive so well because it is extremely flat. It can hide in a narrow crack the width of a credit card. It is often found in electrical sockets.

Bed bugs usually hide during the day. They only need to feed once every few days. They come out at night attracted by the warmth of the sleeping victim. They will bite the host, drink some blood and then go back to settle and make a new bite. They usually feed unnoticed because of the large number of bites they make the victim can wake up with a large area of itchy skin.

The bedbug has a very well-developed mouthpiece, ideal for this type of feeding. This mouthpiece consists of three tubes that unfold from underneath the head and form one of the two hollow tubes of the extended mouthpiece. Its function is piercing the skin and injecting the host with saliva. This numbs the skin and keeps the blood flow from clotting while feeding. The bedbug sucks up the host's blood. After sucking for about five to ten minutes the bedbug withdraws the mouthpiece, tucks it away, and goes back to hiding.

Like most insects bedbugs start life as eggs. The female lays the tiny white eggs in small spaces and covers them with a sticky liquid so that they are actually glued to a surface. In about ten days the eggs hatch as colourless nymphs. They can feed straight away and begin to progress though six weeks of growth, moulting five times before they reach the adult stage. Then they will mate and produce a new population of bedbugs. A bedbug lives for approximately a year.

Although many bedbugs may live together, they are not social insects. They do not feed or groom one another or work together. They only live in groups because they have found a regular food supply with plenty for everyone.

Natural enemies of bedbugs are other insects such as mites, ants and cockroaches. People do everything they can to kill bedbugs because they cause uncomfortable, itchy and inflamed skin. They can also feel ashamed that their home is infested by bedbugs although it is actually nothing to do with dirt. Neither do bedbugs spread disease. However, they are pests. All sort of methods are used to get rid of bed bugs. There are some chemicals that work. Another method is to seal such things as mattresses in plastic and freeze them for a year.

Headings and Trigger Words
(See Stages 5B for details)
Use this column to write down a heading and trigger words to summarise each paragraph.

Bedbugs

Set 4:3 ACTIVITIES

REMEMBERING - What are the facts

1. What food does the bedbug eat?
2. Why are they called bedbugs?
3. Write three questions like the ones above and provide the answers.
   You must be able to find the answers in the report.

UNDERSTANDING - Show that you understand the information

4. Show that you understand these words from the report by writing down what the word means, using it in a sentence of your own, and drawing a picture.
   habitat, mouthpiece, saliva, clotting
5. Draw a diagram to show that you understand the life cycle of the bedbug.
   Include labels to explain what is happening in your drawing.
6. Choose one paragraph from the report. Decide on a heading for that paragraph.
   Write down 'trigger words' (words that trigger the information in your head).
   Use the heading and trigger words to rewrite the paragraph in your own words.

APPLYING - Using the information in another way

7. ***Bedbug Poster***
   Design a poster for hotel rooms warning guests about bedbugs. Explain that bedbugs have nothing to do with the cleanliness of the room and how to tell when they are present.
   A poster should have an eye-catching title, information in bullet points, and illustrations.
8. ***A Day in the Life of a Bedbug***
   Use the information in the report to create a day in the life of a bedbug. You can do this by writing a story, a poem or a rap, a diary, or a comic strip with speech bubbles and captions.
   Try to include as many facts about bedbugs as you can.

ANALYSING - Identifying features that help the bedbug survive

9. ***Information Web***
   Make a list of physical features and behaviours of bedbugs mentioned in the report.
   Brainstorm ways in which these features and behaviours help the insect to survive.
   Present this information as an INFORMATION WEB.

   Example: BEDBUGS ———> good hitch-hikers ——> spread all over the place

EVALUATING - Making judgments

10. ***Checking the Information*** - It is important to check whether the facts in the report are accurate.
    Do an internet search on bedbugs (or look for resources in the library).
    - Make a list of at least two sources of information.
    - Tick off or highlight information in the report that agrees with what you have found.
    - Try to check off at least 50% of the information.

CREATING - Coming up with new ideas

11. ***Bedbug Upgrade - overcoming natural and man-made threats***
    Make some adaptations to the physical features of the bedbug and the way it behaves so that these these insects are more competitive with other species.
    Here are some suggestions to get you started …
    - An improved mouthpiece so that they don't leave marks on the victim's skin
    - Modifications so that they can survive when humans try to freeze them

    Remember to include pictures and labels to explain your interesting ideas.