

INSECTS

INSECTS HAVE BEEN ON EARTH FOR ABOUT 380 MILLION YEARS, EVEN BEFORE DINOSAURS.



INSECT STRUCTURE

- Adult insects have 6 legs
- In some groups of insects, juveniles resemble the adults. But in the other groups of insects, the juveniles have a very different life-form e.g., caterpillar, then metamorphose into adults via a chrysalis or pupal stage. Transforming body structure like this is a truly remarkable feat!
- Adult insects usually have two sets of wings but the front wings may be modified into hard protective covers for the hind wings.
- Insects use their antennae to detect smells.
- They have compound eyes (like lots of eyes stuck together) that see colour and movement. They cannot see shapes as well as human eyes can.
- Both adult and juvenile insects have an external skeleton that that is tough but does not stretch. In order to grow, they must shed their exo-skeleton, then expand rapidly before the new soft skeleton becomes rigid.



25,000 SPECIES OF INSECTS LIVE IN NEW ZEALAND

- 90% occur nowhere else in the world!
- Many still need to be identified and named
- New Zealand has few butterfly species compared to other countries.
- Our heaviest insect – the giant weta – may weigh up to 45g (the heaviest insect in the world is the Goliath beetle of Africa, which may reach 100g)
- Our giraffe weevil is the longest weevil in the world. We also have the smallest weevil in the world: it is 0.7-0.8 mm long and lives in soil around the roots of pohutukawa and mānuka
- Fairy ‘flies’ (actually a parasitic myrmecid wasp) are our smallest insect – the adult is only about 0.4 mm long



MORE THAN 5 MILLION SPECIES WORLDWIDE

- Insects are found on all continents. The few that live in Antarctica are parasites on other animals and birds. In the tropics, there are many thousands of insects still to be discovered.
- Some groups of insects live in freshwater for all or part of their lives.
- There are very few marine insects. There are some water-bugs that live on the sea surface, and caddis-flies that breed in rock-pools.



BECAUSE INSECTS EAT ALL SORTS OF FOOD, THEY HAVE MANY ROLES IN THE ENVIRONMENT:

- Decomposers
- Pollinators
- Predators of pests
- Food for other animals and carnivorous plants
- Traditional foods for some indigenous peoples
- Disease carriers e.g., malaria, bubonic plague
- Pests on living plants, animals and fungi
- Pests of stored products
- Parasites (external)

