



The
Book of Brilliant
BUGS



MEET THE FAMILY

The invertebrate family is enormous!

We split it into smaller families to help us understand it a little better. Some of the main groups of invertebrates are arthropods, worms, and mollusks, but sponges, corals, and starfish are also invertebrates!

Insects

Insects are by far the biggest group of arthropods. In fact, around 80 percent of all animals on Earth are insects! Insects have six legs, three segmented body parts, compound eyes, and a pair of twitchy antennae.

Arachnids

Arachnids have eight legs. Their bodies are made up of two parts, and they don't have antennae or wings. They also have highly specialized mouthparts for grabbing prey and chopping up food.

ARTHROPODS

The biggest group of invertebrates is the arthropods. It's gigantic!

Of all animal species alive on Earth today, 85 percent are arthropods. And most arthropods are known as "bugs." Every arthropod has a skeleton on the outside of its body, jointed legs, and a body that is split into segments (sections). Four of the main groups of **arthropods** are **insects**, **arachnids**, **myriapods**, and **crustaceans**.

Myriapods

Like insects, myriapods have one pair of antennae, but instead of three body segments, they can have more than 100! Millipedes and centipedes, the most common myriapods, can have more legs than any other creature on the planet.

Crustaceans

Almost all crustaceans live in the water and are well adapted to aquatic life. Most people don't consider crustaceans to be bugs, but there is one small exception: wood lice. They are the only crustaceans to spend their entire lives on land and can often be found in gardens and woodlands.

WORMS

Worms have long, thin bodies and no legs. Segmented worms, like earthworms, have long muscular bodies split up into segments. They are very good at burrowing and swimming. Flatworms are very basic creatures, which usually live as parasites in the bodies of other animals.

MOLLUSKS

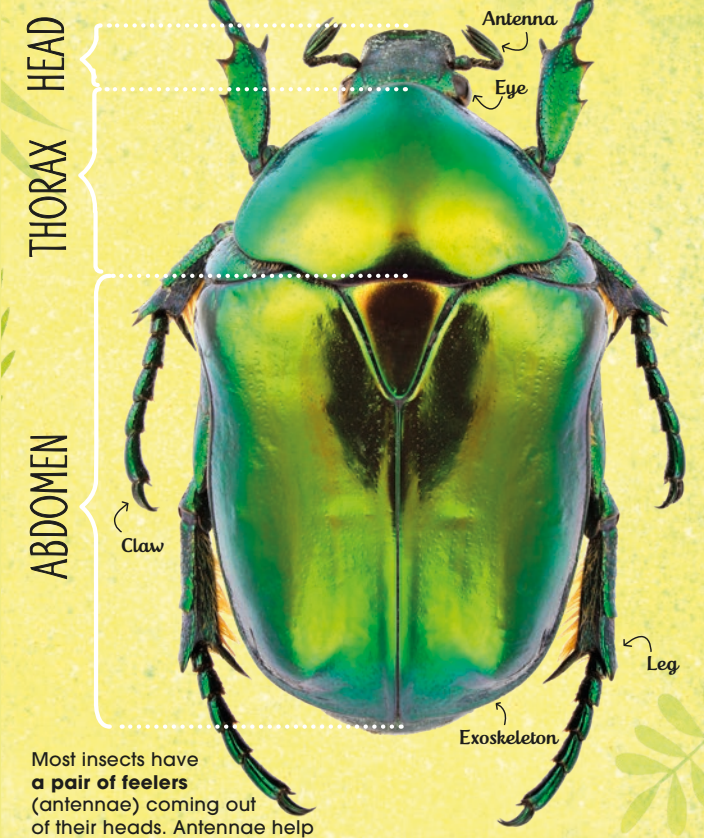
Mollusks are soft-bodied invertebrates. Most of these bug relatives have hard protective shells, and some have tickly tentacles! Lots of them live in the ocean, but some live on land.

Gastropods

The biggest group of mollusks is the gastropods. They have muscular bodies, hundreds of small teeth, and sensory tentacles for seeing and feeling. Most gastropods have shells, but some, like slugs, don't.

INSECT BODIES

There are thousands of different types of insects, but they all have six legs and three-part bodies.



Most insects have a pair of feelers (antennae) coming out of their heads. Antennae help bugs smell, touch, and taste.

Eyes
Insects can have simple or compound eyes. Compound eyes are made up of hundreds of tiny cells that are sensitive to light.

Legs
Insects have three pairs of legs with lots of joints. They have claws at the tips for clinging to surfaces.

Exoskeleton
Insects often have hard outer casings, called exoskeletons.

Photo credit: Cosmin Mancl

INSECT MOUTHS

BUTTERFLY
Proboscis
Butterflies have long, hollow tongues that are perfect for sucking up sweet nectar.

FLY
Sponging
Fly sponges suck up soft food and liquid—no chewing required!

MOSQUITO
Piercing and sucking
Their needlelike mouths can pierce through skin.

BEE
Chewing and lapping
Bees also use their mouthparts for making honeycomb.

INSECT LEGS

DIVING BEETLE
Swimming
Long back legs with a thick fringe of hairs help diving beetles swim.

PRAYING MANTIS
Hunting
The praying mantis has lightning-fast front legs with sharp spines to trap its prey.

BEE
Pollen carrying
Bees have special hairs on their legs for collecting and carrying pollen.

MOLE CRICKET
Digging
Shovellike front legs help mole crickets dig underground tunnels.