



**First Facts**



# Bugs



**Start a lifetime of learning**



**First Facts**

# Bugs





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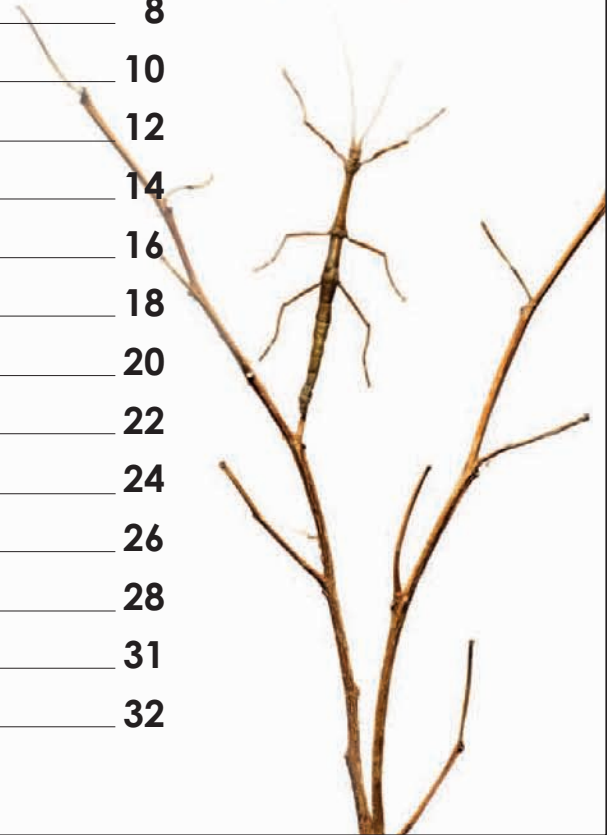


# First Facts Bugs



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# How many legs?

Bugs come in all **shapes** and **sizes**. But you can often tell which **kind** it is by counting the legs. **Count** quickly, some **bugs** are fast!



**six**.....

If it has six legs then say hello to an insect! All insects have six legs.



6

**no legs**.....

If you come across a creature with no legs, then you are probably looking at a worm or slug.

eight.....

Can you count eight legs? If so, you are looking at a spider or scorpion. They always have eight legs.



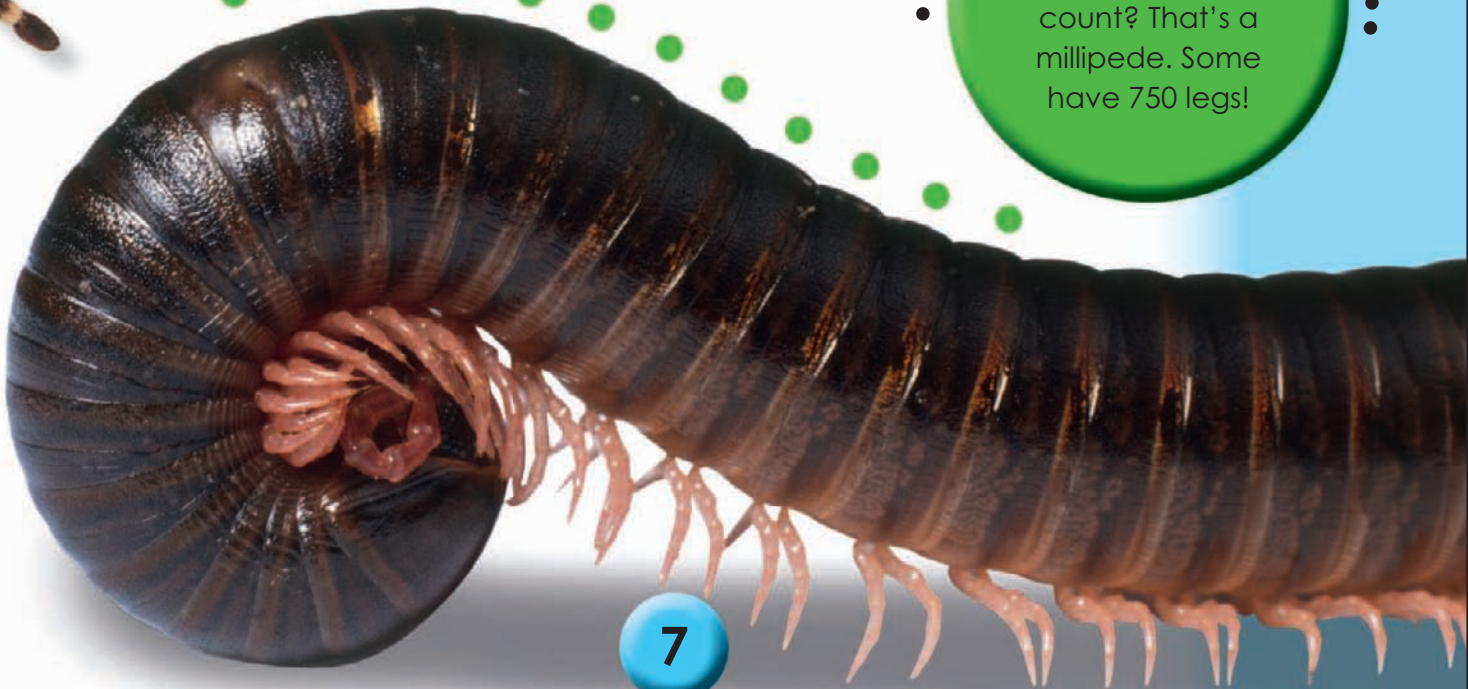
many.....

Centipedes have lots of legs. They have one pair on each small body segment.

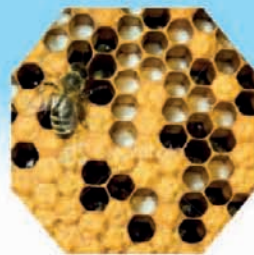


.....too many.....

One, two, three, four, five... too many legs to count? That's a millipede. Some have 750 legs!







# Bug babies

All **creepy crawlies** lay eggs.

Some **babies** are just **mini** versions of the adults, but the babies of **butterflies**, ants, bees, wasps, **beetles**, and flies look very different than their **parents**.



**different**

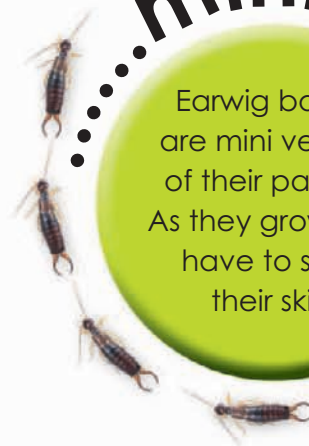
Maggots are fly babies. They look different than flies. Maggots don't have legs or wings.



8

**mini me**

Earwig babies are mini versions of their parents. As they grow they have to shed their skin.





The egg hatches into a caterpillar.



The caterpillar turns into a pupa.



The butterfly lays an egg.



**no more caterpillar!**



The pupa splits and out climbs a beautiful butterfly.



**the complete change**

Caterpillars are amazing bugs. They build themselves a pupa and magically turn themselves into butterflies.



# Beetles

Beetles are **insects**.

**Insects** all have six legs, two pairs of wings, and three **body** parts. There are lots of different beetles—some are **spotted**, some have stripes, and **some** even have **horns**.

lots of beetles

There are a lot of beetles in the world. In fact, almost half the insects in the world are beetles!

# glowing.....

Fireflies are a kind of beetle that can glow in the dark. They talk to each other at night by flashing their bodies.

# close up.....

All insects have:

- six legs
- two pairs of wings
- three body parts:  
head, thorax  
abdomen

head

thorax

leg

abdomen

wing



driver ants.....

When driver ants are on the hunt, up to 20 million travel in long lines. They kill and eat any small animal that gets in their way.



# Ant armies

There are many **different** types of ant. They all live in groups where they work **together** to find **food** and take care of their young.



leaf-cutter ants





## .....honey pot ants.....

Honey pot ants live in the desert. A few ants act as a food store. They store nectar in their tummy for the other ants to eat.

## .....weaver ants.....

These ants build nests by weaving leaves together. They use their babies, which make a special kind of silk, to sew the leaves together.



# Nature's little helpers

**Creepy crawlies** may be small, but they are **very important** to our **planet**. Here are some jobs that they do that we **couldn't** do ourselves.

pest control

Aphids eat the plants that we like to eat. So we put ladybugs on the plants to eat the aphids!





Earthworms bury into the soil making it healthy for plants.

Millipedes eat leaves and turn them to soil again.



...let's recycle...

If these bugs didn't eat rotten leaves, dead animals, and poop, our world would be very, very messy.

Baby flies, called maggots, eat dead animals.



Dung beetles remove lots of poop by eating it.



city of bees.....

Honeybees live in big groups with one queen, lots of babies, and hundreds of workers.



# Buzzing bees



What do you know about **bees**?  
They **buzz** a lot and they **sting**?  
**But** they are actually **smart**  
and **very** busy.





# honey.....

Bees collect nectar from flowers and turn it into honey. They feed the honey to their babies. We like to eat it too!

# ouch!.....

A bee stings if it is upset or being attacked. A sting hurts.

# bee dance.....

When a honey bee finds flowers, it does a dance to show other bees where to find it.



...tarantula...

Tarantulas are the giants of the spider world. Some are as big as this page.



# Spiders



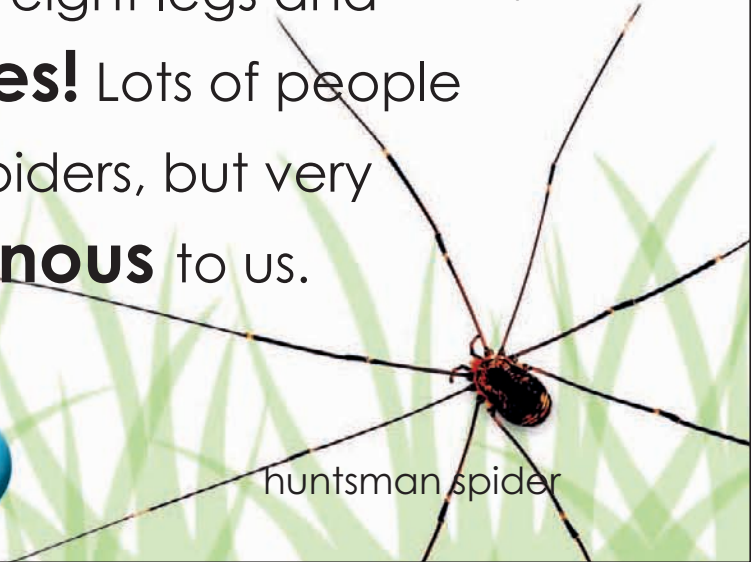
black-widow spider

All **spiders** have eight legs and some have eight **eyes!** Lots of people are **scared** of spiders, but very few are **poisonous** to us.



house spider

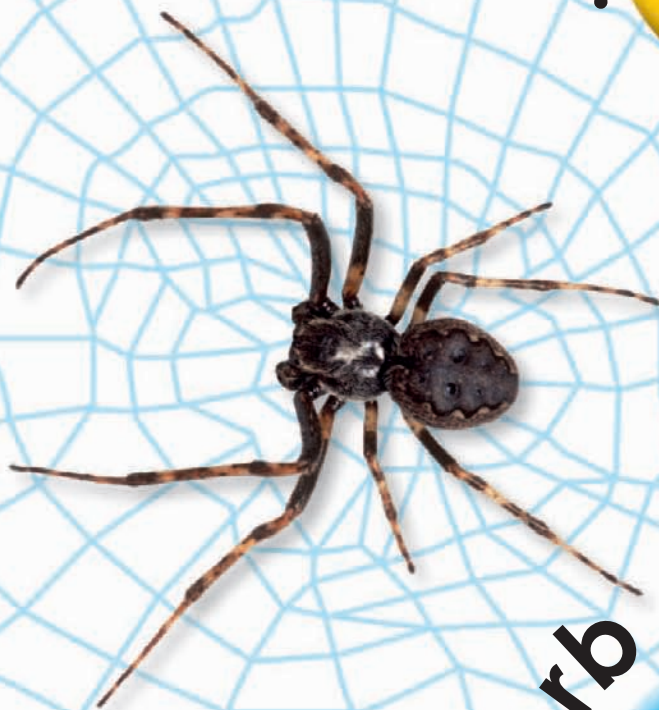
huntsman spider





# Spider's web

All spiders make silk in their body, which they use to weave webs.



# Orb spider

The orb spider can weave a web in an hour. It waits until an insect flies into it. The spider then wraps the insect in silk and sucks its juices.



# Flies



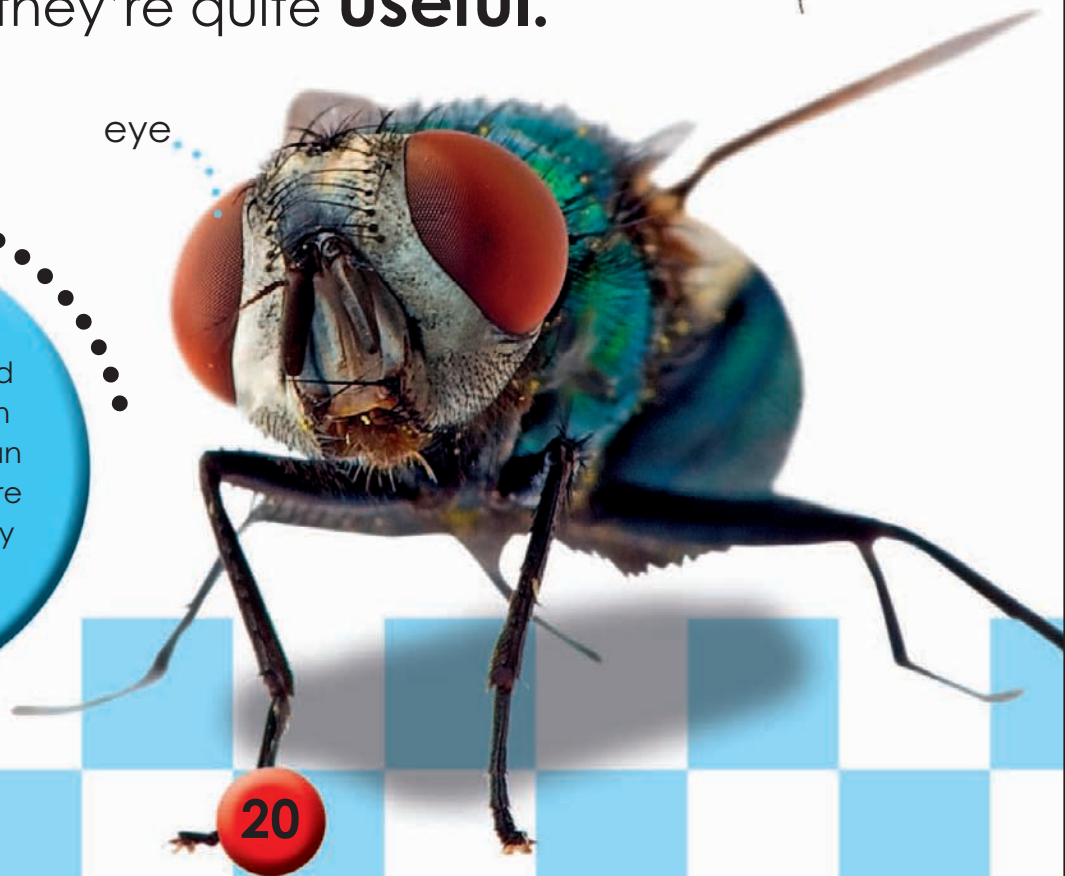
**Flies** are everywhere, even in our homes. Most people don't like flies, but sometimes they're quite **useful**.



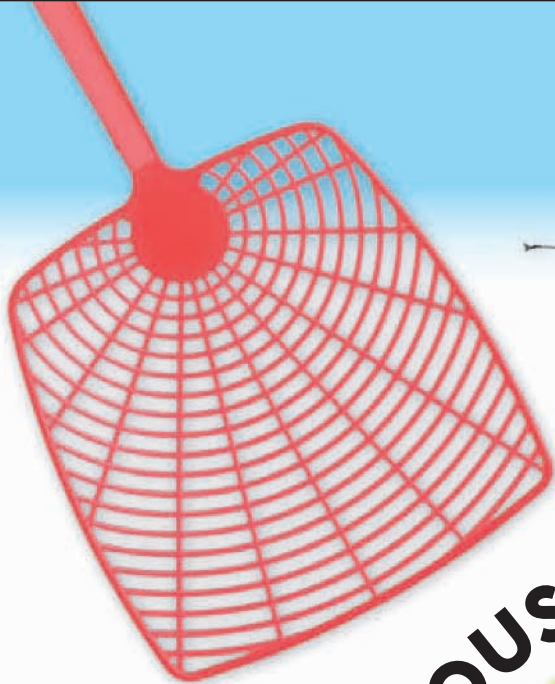
.....fly's eyes.....

A fly's eyes are huge compared to its body. Flies can see much better than we can, and they are very fast—that's why they are difficult to swat!

eye







**maggots**

Flies lay their eggs on rotten meat. The eggs hatch into maggots, which eat it. They like to eat nasty garbage.

**house fly**

The house fly has sticky feet. It can walk up walls and even upside down across ceilings. It rubs its feet to keep them sticky.



tsetse fly



mosquito



**blood suckers**

Some flies, such as the mosquito and tsetse fly, love to drink blood. They pierce your skin, drink, and leave you with an itchy bump.

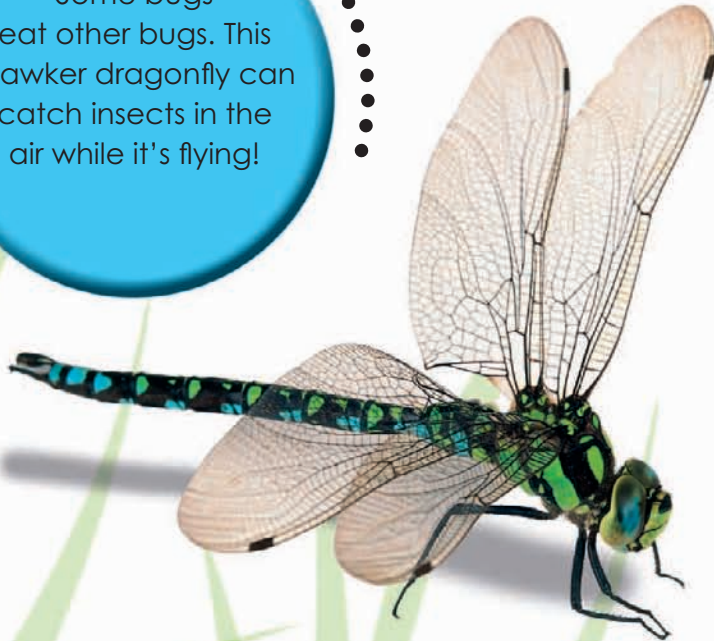


# I'm hungry

**Creepy crawlies** eat lots of different kinds of food. Some are **vegetarians**, eating only **plants**, and some eat **meat**.

.....**meat eaters**.....

Some bugs eat other bugs. This hawk dragonfly can catch insects in the air while it's flying!



.....**deadly sting**.....


The scorpion hunts at night. When it finds its prey it stings it with its powerful tail and injects it with poison.





## ...sipping nectar...

When caterpillars become butterflies they sip flower nectar through their straw-like tongues.



## munching plants...

Lots of bugs are vegetarians, like this caterpillar. He munches through leaves with his strong jaws.





This katydid looks exactly like a leaf. It even has leafy stripes.

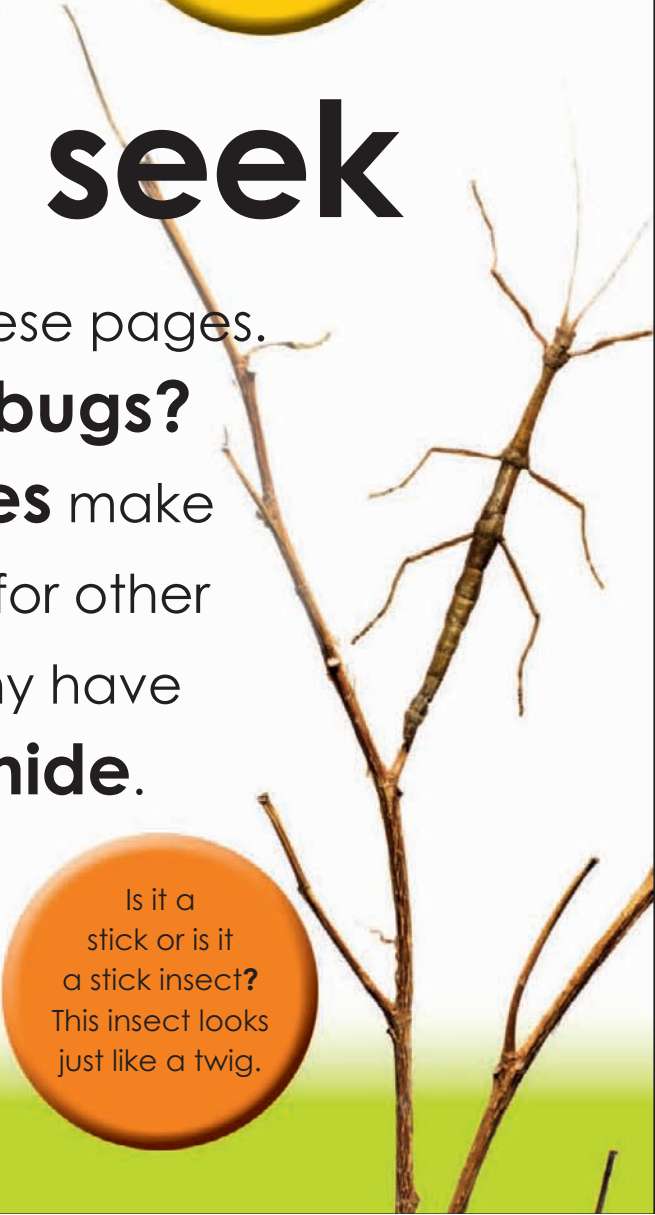
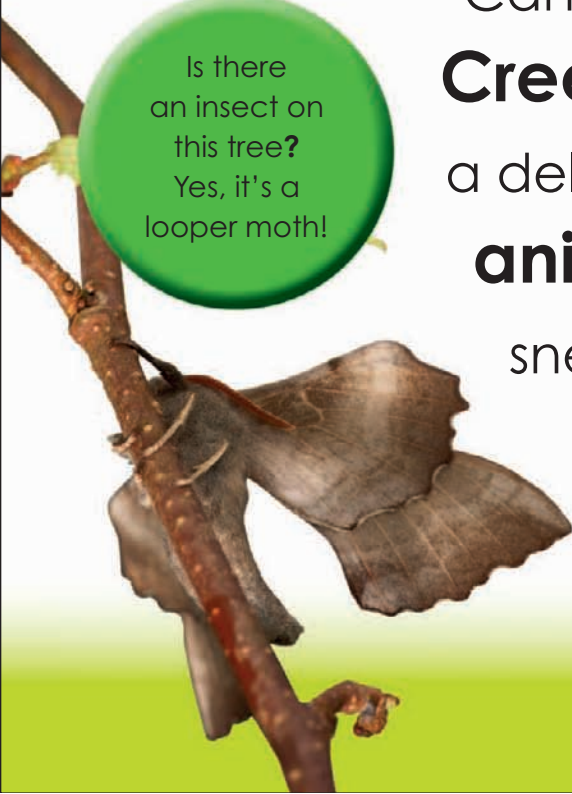
# Hide and seek

**Look** carefully at these pages.

Can you find any **bugs?**

**Creepy crawlies** make a delicious **meal** for other **animals** so many have sneaky ways to **hide**.

Is there an insect on this tree?  
Yes, it's a looper moth!



Is it a stick or is it a stick insect?  
This insect looks just like a twig.

A pile of dead leaves? Actually there is a crafty cryptic moth on top!



This is not a bird poop—it's a king swallowtail caterpillar. What a disguise!

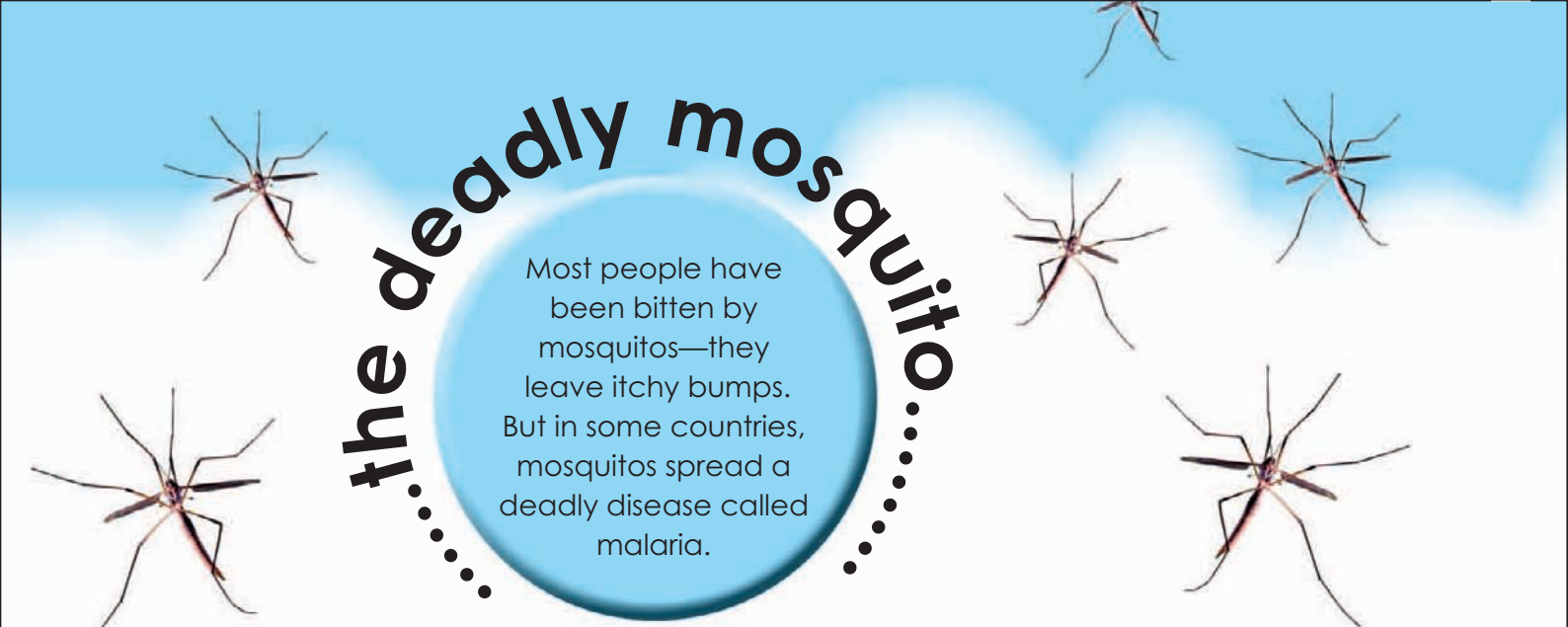


Don't go too close to smell this flower. There's a crab spider on it!



Nobody wants to eat prickly thorns. So these treehopper bugs are nice and safe.





## ...the deadly mosquito...

Most people have been bitten by mosquitos—they leave itchy bumps. But in some countries, mosquitos spread a deadly disease called malaria.

# Small but deadly

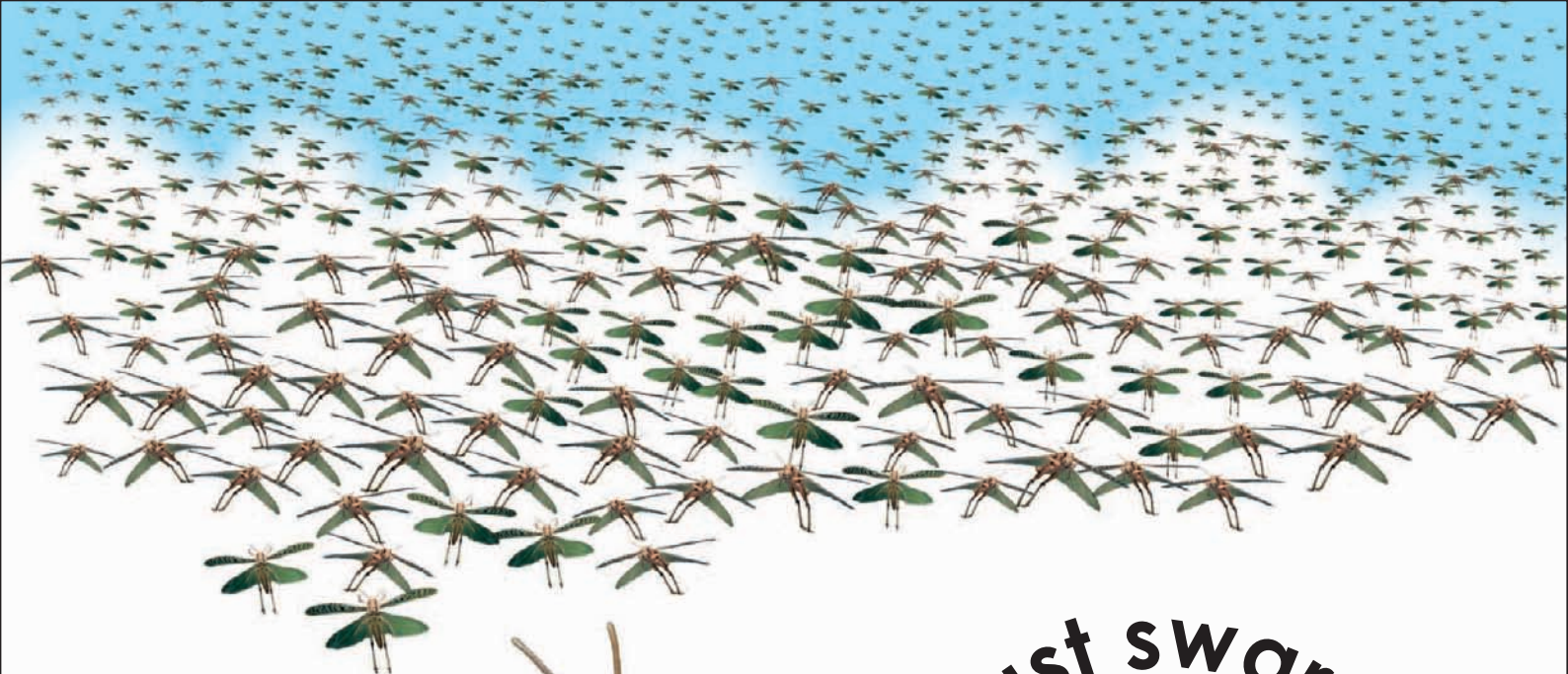
They may be **small** but some bugs are very **dangerous**, not just to **each other** but **to us** too.



## ...spider...

Not many spiders bite people but some are so poisonous that their bite can kill a man. The Sydney funnel-web spider is thought to be one of the most dangerous.





# .....locust swarm.....

Locusts are grasshoppers that sometimes fly in groups of a thousand million. They can eat whole fields of a farmer's plants in a few hours and nothing can stop them.

# Record holders

There are more **bugs** on **Earth** than any other creature— for every person alive, there are **hundreds of millions** of bugs!



## Biggest spider

The goliath bird-eating spider is as big as a dinner plate!



## Biggest butterfly

The Queen Alexandra birdwing stretches to 12 in (30 cm).



## Heaviest insect

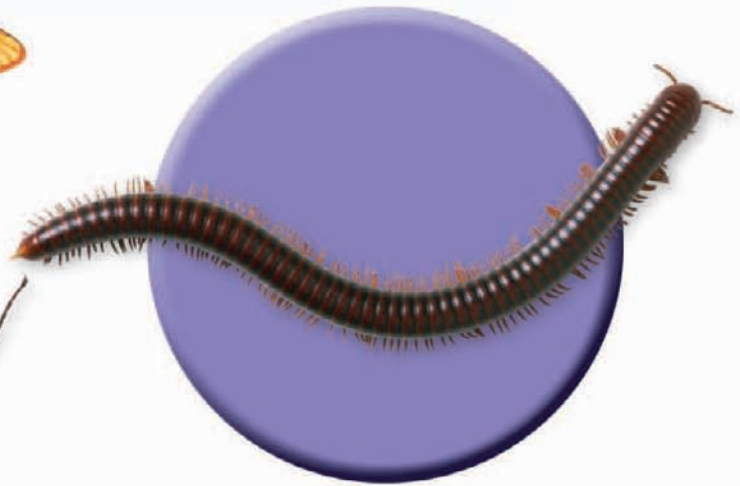
The giant weta cricket is three times heavier than a mouse.



### **Loudest insect**

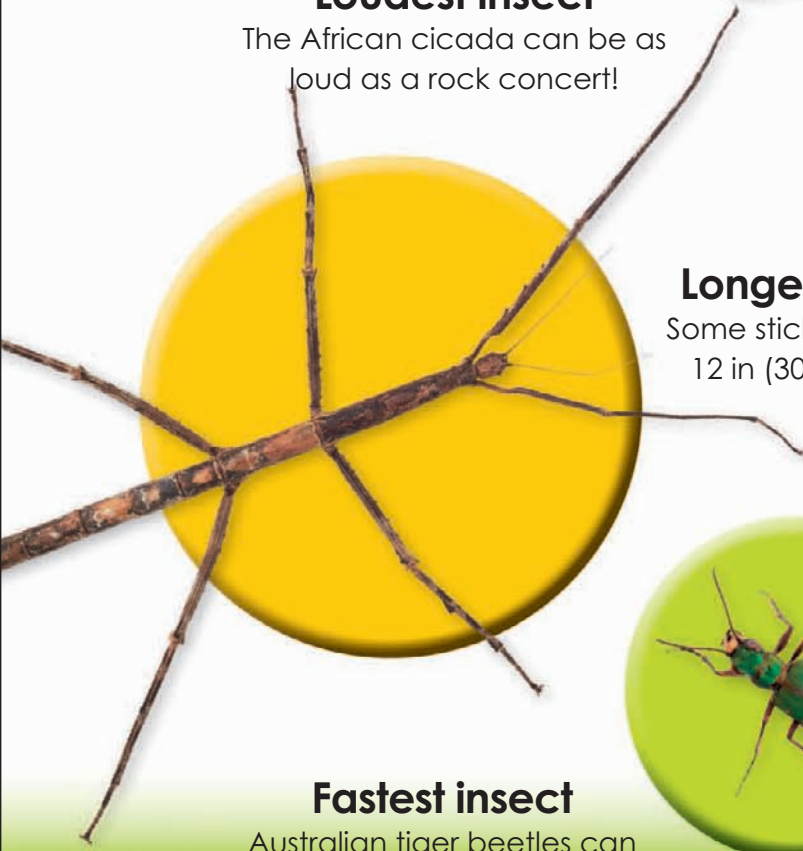
The African cicada can be as loud as a rock concert!

**Most legs**  
Some millepedes have as many as 750 legs.



### **Longest insect**

Some stick insects are 12 in (30 cm) long.



### **Most poisonous insect**

The harvester ant is very poisonous.  
One sting could kill a rat.

### **Fastest insect**

Australian tiger beetles can run at 5 mph (8 kph).





# Glossary

## **caterpillar**

The larva of a butterfly or moth.

## **insect**

A bug that has six legs and three body parts.

## **larva**

The early life-stage of an insect.

## **maggot**

The worm-like baby of a fly.

## **nectar**

Sweet liquid produced by flowers. Bees collect nectar and turn it into honey.

## **prey**

An animal that is killed and eaten by other animals.

## **pupa**

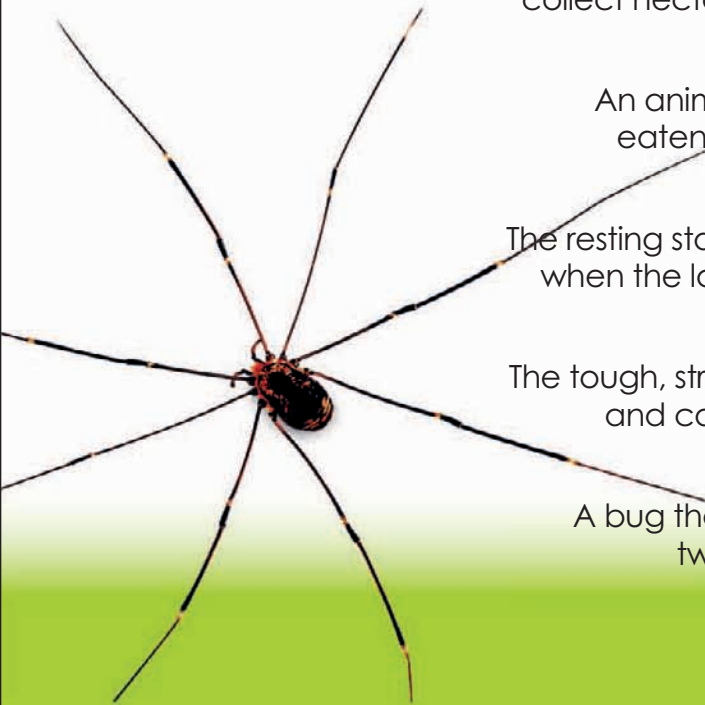
The resting stage of an insect's growth, when the larva turns into an adult.

## **silk**

The tough, stretchy thread that spiders and caterpillars produce.

## **spider**

A bug that has eight legs and two body parts.



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