

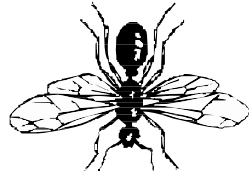
Spiders Don't Have Wings (Thank Goodness!)

Not every creepy-crawly thing is an insect. How can you tell?
Insects have 6 legs. Nobody else does!

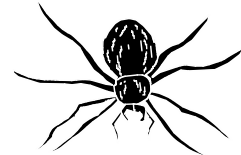
What You Need: Your plastic model bugs

What To Do: Divide the model bugs between 6-legged insects and 8-legged arachnids.

Insect



Arachnid (ah-rack-nid)



Insects have 3 body segments: the head, thorax and abdomen. The legs grow out of the thorax. Look at each of your insect models. On which can you easily find the three body segments?

ant	fly	praying mantis
queen ant	dragonfly	grasshopper
bee	ladybug	rhino beetle

Arachnids have two body segments: the cephalothorax (front part), and the abdomen (back part). Check your models. Which segment do the legs grow from?

cephalothorax
abdomen

What are those two things sticking out of the bugs' heads?

On insects, they are antennae, used for feeling and smelling. Look how small the dragonfly's antennae are.

Most insects have wings and antennae.

On arachnids, they are palps, used for holding onto food. The scorpion has pinchers on the ends of its palps.

Arachnids have no antennae and no wings.

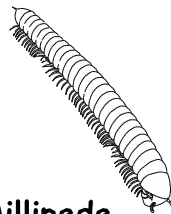
More Bugs That Aren't Insects

Pillbug

Also called roly-polys



I'm really a crustacean like a crab - with 7 pairs of legs.

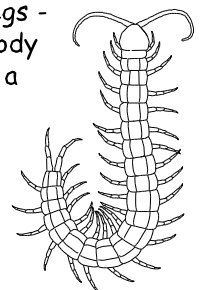


Millipede

I have 2 pairs of legs per body segment.

Centipede

I have many legs - one pair per body segment - and a poison bite.



How Many Wings Do Insects Have?

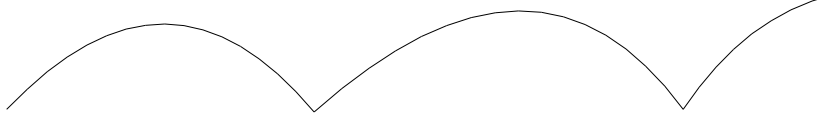
Line up your insect models and look at each one closely. Report what you see in this chart.

Insect	Number of Wings You See	Clues:	Number of Wings There Really Are
Dragonfly		Count the wings.	
Fly		See the article below.	
Bee		Look carefully! From underneath you can just see an extra pair of wings.	
Queen Ant		Look and feel underneath, very carefully. This one's tricky.	
Worker Ant		In the ant colony, only the queens and males have wings.	
Grasshopper and Praying Mantis		Two wings are folded over the abdomen. There's another pair underneath, that you can't see.	
Ladybug and Rhinoceros Beetle		One pair of a beetle's wings forms a shell over its body. Underneath is the pair that is used for flying.	

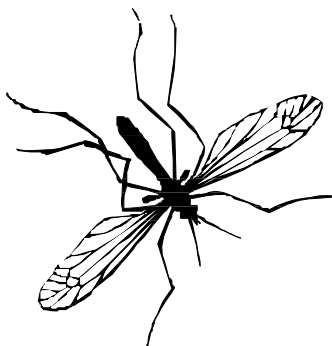
And yes, there are insects with NO wings. Fleas, for instance.



Who needs wings when you can jump like this?



Flies, mosquitoes and crane flies are members of the order **Diptera** ("two wings").



Crane fly



Fly



Mosquito

Instead of a second pair of wings, as most insects have, these have a pair of balancing bars called halteres. These are very easy to see on a crane fly.