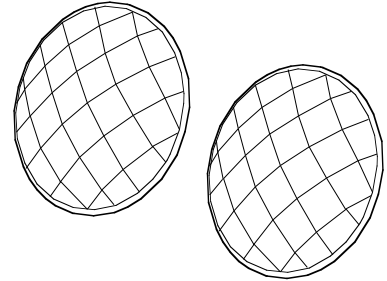


COMPOUND EYES

Most insects have *compound eyes*. These eyes have thousands of eyelets facing in different directions. Each eyelet sees a slightly different image. What would it be like to see through *compound eyes*?

What You Need:

A multifaceted lens like the ones at right.
You must also get a small, brightly colored object to stand for a flower.



What To Do:

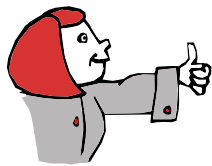
Place your "flower" in the middle of the floor and stand way back from it. Now imagine that you are a bee. Wrap your hand around a lens and hold it near your eye. Close your other eye. Using only the lens to see with, try to find the flower. Then try to come closer and closer to it until you "land" on it.



How can you tell you are getting closer to the flower?

You saw many images in this experiment. Does an insect really see all these images? Let us consider. You have two eyes. Do you see two images? or one?

Look at a picture on the opposite side of the room. Now hold your thumb up at arm's length, in line with the picture, but keep your eyes focused on the picture.



Do you see one thumb or two? _____

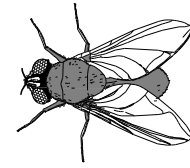
Now focus your eyes on your thumb.

Do you see one picture or two? _____



With your two eyes, you see two images all the time. Your brain blends the images into one most of the time so you don't get confused. Maybe something like that happens for insects.

Compound eyes are formed of many little eyelets, arranged in hexagonal patterns. Have we seen a hexagonal pattern before when studying insects? Yes! With honeycomb. Why are insects so taken with hexagon patterns?

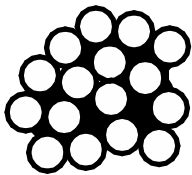


Fly with Compound Eyes

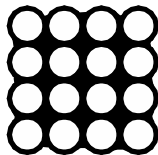
What You Need: a spoon and 18 BBs,
give or take a couple

What To Do:

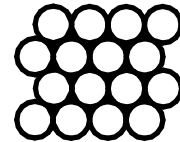
Pour the BBs into the bowl of the spoon, and notice what pattern they form. Stir it up with your finger, give the spoon a little shake, and notice the new pattern. Try this 5 times. Each time, put a check mark next to the type of pattern that seems to be forming.



Random
(no pattern)



Square Pattern



Hexagon Pattern

Why do bees prefer this pattern? Imagine that you are a bee trying to build a honeycomb made of circular cells. You want to pack the circles together as tightly as possible, because it takes extra wax to fill in the gaps between the circles. Which pattern would you choose?

Ants may have only a hundred eyelets in their compound eyes. Honeybees have thousands. The more eyelets, the better the eyesight. Between the compound eyes are three simple eyes that only sense light and darkness.