



Parks and Open Space Education and Outreach Activity

The Insect Eyes Have It

Ages 3-8

Theme: Eyesight is important to insects, but they see very differently than we do.

Materials:

Insect eye piece toys
Insect eyes made from straws
Photos of how bees see flowers

Intro:

Insects have two eyes like we do but they are very different. Their two large eyes are actually compound eyes, made of sometimes hundreds or thousands of smaller eyes.

Body:

Most insects have about 3 simple eyes that just detect light and dark. But the big eyes that you see on their heads are their compound eyes, and these are very fancy indeed.

- 1) First of all, each of their compound eyes are made up of many tiny segments (like a honeycomb) called ommatidia. Some insects may have only a few of these segments while others can have up to 40,000 in each eye! *Show photos of fly and dragonfly eyes. Show compact straws that have been pasted together to illustrate the honeycomb effect.*

Activity: use the insect eye toys and have kids look through these to see how an insect might see the world.

The reasons it is thought that insects have these complicated eyes is that it makes it easier for them to see movement quickly, and also gives them a wide field of vision. This is important when you're a small insect and have lots of predators.

- 2) Insects see different color wavelengths than we do. For humans the lowest frequency of visible light we see is red, and the highest is violet. Insects don't see red well on the lower spectrum, but they can see ultra violet light, above what humans can see. This really helps them when they are searching for nectar. It turns out that nature provides a visual runway for insects to find the center of a flower.

Activity: Use the photos to show how an insect would see a flower differently than we would. They probably wouldn't see the center color as red since they don't see red well (it's like being color blind and seeing colors slightly different). The patterns on the flowers are like a bullseye to insects, pointing to them where to go.

Conclusion:

Even though insects see the world differently than us, eyesight is important to them. It helps them find food and avoid danger.

--Deborah Price, Education Liaison, Boulder County Parks and Open Space, March 2015.