



Two Eyes - Why do we have two eyes?

Fact

- We have two eyes because together they provide us with what some people call 'Stereoscopic Vision' and some people call 'Binocular Vision'.
- Each eye gives your brain two slightly different views of what you are looking at, and the brain can use those differences to calculate things like distance (how far away an object is) and depth (whether one object is closer to us or further away than another object).
- Stereoscopic/binocular vision helps us to carry out lots of every day tasks where we have to judge distance and depth like catching a ball, shaking hands, picking something up.

Do you know

- Some animals have monocular vision. They have an eye on either side of their head looking in different directions so the animal can watch for predators (other animals that might try to catch them)
- Owls have stereoscopic vision because they don't have many predators to look for. Instead they need to look for tiny scurrying meals like mice and rats so they need vision that is going to help them work out how far away something is so they can swoop down and catch it easily.
- The red eyes that you can get sometimes when your photograph is taken is caused by the light of the camera flash making the retina at the back of your eyes reflect (a bit like a mirror). The red is the colour of all the tiny blood vessels in the back of your eyes.
- Animals have a special reflective piece at the back of their eyes that reflects back the colour if the light shone into them.

Experiments you can do

Experiment with judging depth.

What you need:

Two pencils

What you do:

Hold the end of a pencil each hand. Hold them out in front of you at arm's length from your body. With one eye closed, try to touch the pencil tips of the together. Now try with two eyes – it should be much easier. This is because each eye looks at the image from a different angle and your brain uses both pictures to work out the distance and depth between the two pencils

Other Investigations

See how you get on with your 'Stereoscopic Vision' turned off. Try doing everyday things while keeping one eye shut. Make yourself a patch (like a pirate) to make it easier to keep one eye shut. Get someone to throw a ball with you. Is it easy to catch and throw the ball? Try playing some other games. Don't experiment for too long as it may give you a headache or sore eyes.

Jokes

What did one eye say to the other eye? There's something smelly between us. (your nose)

From Hoi finau and Teisina