

Why do cats' eyes glow in the dark?

Discover the science behind cats' glowing eyes and have a go at making a model

It's a myth that cats can see in the dark – in total darkness they cannot see any better than we can. However, they are better adapted than we are to see in low levels of light. Cats are natural hunters and being able to see their prey in the dark means they can also hunt at night.

A cat's eye lets in several times more light than a human eye. In poor light the cat's iris contracts and the pupil opens up to let in every drop of light, and in bright light the pupil

narrows to a thin vertical slit. Cats also have a 'mirror' layer at the back of their eye, which is reflective. It glows a silver green gold colour in most cats, and ruby red in Siamese cats. Human eyes have a black layer that just absorbs the light – but if you shine a bright light such as a torch, or car headlights, into the eyes of a cat at night, you see the light reflected back by the 'mirror' at the back of the cat's eye.

DID YOU KNOW

The cats' eyes we see on the road were invented by Percy Shaw. The invention uses the same science as real cats' eyes to reflect the light from a car's headlights



LION

MINI QUIZ

Q Which of these also has eyes like a cat?



CHIMPANZEE



TIGER



GREAT WHITE SHARK



YOUR PACK LEADER

Answers Lion, Tiger, Great White Shark - Same as a cat
Chimpanzees, your pack leader - Different to a cat

EYE EXPERIMENT

Ask the young people in your group to look at their eyes in a mirror, somewhere where there is a lot of light. Ask them to take note of the size of each pupil, which is the black dot in the centre of each eye. Next, ask them to cup their hands around their eyes to cast a shadow over them. Ask them to keep their hands over their eyes for a while to let the pupils adapt to the change in light;

they should see their pupils becoming slightly larger. Now ask them to take their hands away. Can they see their pupils shrinking?

Whereas humans' pupils are circular, cats' pupils are slits. Being able to reduce the pupils to slits rather than tiny circles gives the cat greater control of how much light enters their eyes.

ACTIVITY

Make a cat's eye

Discover why cats' eyes appear to glow through this illuminating experiment

SUITABLE FOR BEAVERS AND CUBS

YOU WILL NEED

- Empty tin can
- A torch ● Scissors
- Rubber band
- Piece of black plastic

INSTRUCTIONS

- 1 Ask your section to each cut out a 10 x 10cm square of plastic and cut an oval into the centre of the square.
- 2 Using a rubber band, secure the plastic over the empty can.
- 3 In twos, ask them to take the light and the can and go to a dark space.

4 One of them needs to hold the can around their chest and the other shines the light into the can.

5 They should see the light reflecting back the same way a cat's eyes do.

WOGGLEBOX

Jack says

'We learnt that cats' eyes reflect car headlights. I enjoyed shining the torch through our pretend cat's eye and I learnt how to keep safe when it's dark.'



TIME NEEDED

20 minutes

BADGE



Pets at Home partners the Beaver Animal Friends Activity Badge and Cub Animal Carer Activity Badge.

PARTNER



where pets come first

OUTCOMES

This activity explores the science behind cats' eyes and why they appear to glow at night. It encourages Cubs and Beavers to consider the vision of other vertebrates in their local zoo or wildlife park and help them to complete section B in their Animal Friend and Carer workbooks, which can be found at: scouts.org.uk/petsathome.

TAKING IT FURTHER

With your section, visit a wildlife park or zoo to observe big cats' eyes. Do their eyes work in the same way as domestic cats? Ask your section to research this and to write down their findings. Once the young people have collected their facts about big cats' eyes ask them to report their findings back to the rest of the Group.

MORE INFORMATION

For more activity ideas and information on how to book your free workshop, visit: scouts.org.uk/petsathome.

