



Why Do Cats' Eyes Glow in the Dark?

Have you ever shone your flashlight into the dark and been met by a pair of eyes glowing back at you? What causes this and what is its purpose?

The glow is caused by an adaptation found in some animals, including cats: a “mirror” layer at the back of their eye called the tapetum lucidum (tape-eh-tum lu-sah-dum). When light comes into their eye it is supposed to hit photoreceptors (part of the eye that sends information to the brain). If it doesn't, the tapetum lucidum reflects the light back for another chance, making their eyes glow. This helps cats to see using roughly one-sixth the amount of light that people need! Want to see this in action? Try the illuminating experiment below!

Materials: empty tin can, flashlight, scissors, rubber band, piece of black plastic (a garbage bag is perfect!)

Directions:

1



Cut out a 10x10 cm square of black plastic, then cut a small oval in the middle of the square.

3

Head into a dark space with the prepared can and a flashlight.

2



Using the rubber band, secure the square of plastic over the open side of the tin can with the oval opening in the centre.

4



Hold the closed side of the can against a wall, then shine the light into the can through the opening in the plastic.

What do you notice? Does the tin reflect the light back?

This is because the bottom of the tin acts like the tapetum lucidum layer in a cat's eyes and reflects the light back, making the black plastic appear to glow, just like a cat's eyes in the dark!

The tapetum lucidum, or “mirror” layer, reflects light in a way so that most cat eyes glow a silver-green-gold colour, or ruby red for those with blue eyes. Do you think big cats' (like cougars or lions) eyes glow? Why or why not?

Doing this with a friend or sibling? Have one person hold the tin can against their chest while the other shines the light into the can.

Some other animals that have a tapetum lucidum include sharks, deer, cattle, horses, crocodiles, owls and dogs. Humans on the other hand, have a black layer at the back of the eye that absorbs the light!