Name: _____ Date: _____

# The Red Glow Inside Your Eyes in Flash Photos

Circle group

Have you seen a party photo where a person has glowing red eyes? It looks a bit spooky. But the cause is simple. It has nothing to do with the person.

Look at your eyes in a mirror. The black circle in the middle is the pupil. It lets light in. In a bright room the pupil is small. In a dim room it opens wide to get all the light it can. Behind the pupil, the inside of the eye is lined with the retina. Under the retina is a layer full of tiny blood vessels. The blood makes that layer look red.

Now think of a dim room and a camera with a flash. The flash goes off very fast. The pupil cannot change in time. The light goes into the wide pupil. It hits the back of the eye. Then it bounces back to the camera lens. The camera records the red color. The eyes look like they glow.

Camera makers have ways to fix this. Many cameras give a few soft flashes first. This makes the pupils shrink. Some cameras put the flash far from the lens. Then the light bounces back at a different angle. Turning on more room lights helps too. A smaller pupil lets less light reach the back of the eye.

Many animals have a glow too. It is often green or yellow, because their eyes are built a bit differently.

## Questions

**1. What is the pupil?**

_____

_____

**2. What does the pupil do in a dim room?**

_____

_____

**3. What makes the layer under the retina look red?**

_____

_____

**4. How do many cameras cut down red eyes?**

_____

**5. Why does a flash photo in a dim room often show red eyes?**

**6. Why does turning on more room lights help?**

**7. Why does the red glow have nothing to do with the person?**

## Words to know

pupil: the dark opening in the middle of the eye
retina: the layer at the back of the eye that senses light
blood vessels: tiny tubes that carry blood around the body
flash: a short, very bright burst of light

## Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

# The Red Glow Inside Your Eyes in Flash Photos

Triangle group

Have you ever looked at a photo taken at a party and seen a person whose eyes glow bright red? It looks a little spooky, but the cause is plain and has nothing to do with the person at all.

Look at your eyes in a mirror. The black circle in the middle is the pupil, an opening that lets light in. In a bright room the pupil is small, and in a dim room it opens wide to gather as much light as it can. Behind the pupil, the inside of the eye is lined with the retina. Underneath the retina is a layer packed with tiny blood vessels, and the blood gives that layer a reddish color.

Now picture a dim room and a camera with a flash. The flash goes off in a split second, much faster than the pupil can react. The light shoots into the wide-open pupil, strikes the back of the eye, and bounces straight back toward the lens. The camera records the red color of the blood-rich layer, and the eyes seem to glow.

Camera makers have found ways to reduce the problem. Many cameras fire a few quick, soft flashes before the real one, which makes the pupils shrink. Others place the flash farther from the lens, so the light bounces back at a different angle. Turning on more lights in the room also helps, because a smaller pupil lets less light reach the back of the eye.

Many animals show a similar glow, though it is often green or yellow, because their eyes are built a little differently.

## Questions

**1. What is the pupil?**

_____

_____

**2. What happens to the pupil in a dim room?**

_____

_____

**3. What gives the layer under the retina its reddish color?**

_____

_____

**4. How do many cameras reduce red eyes?**

_____

**5. Why does a flash photo taken in a dim room often show red eyes?**

**6. Why does turning on more room lights help?**

**7. Why does the red glow have nothing to do with the person?**

## Words to know

pupil: the dark opening in the middle of the eye
retina: the layer at the back of the eye that senses light
blood vessels: tiny tubes that carry blood around the body
flash: a short, very bright burst of light
reduce: to make something smaller or less

## Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

# The Red Glow Inside Your Eyes in Flash Photos

Square group

Have you ever examined a photograph taken at a party and noticed a person whose eyes seem to glow a vivid red? The effect can look faintly eerie, but its cause is perfectly ordinary and has nothing whatsoever to do with the person pictured.

Look at your own eyes in a mirror. The black circle at the center is the pupil, an opening that admits light. In a bright room the pupil is small, whereas in a dim room it opens wide in order to gather as much light as possible. Behind the pupil, the interior of the eye is lined with the retina. Beneath the retina lies a layer crowded with minuscule blood vessels, and the blood gives that layer a distinctly reddish color.

Now imagine a dim room and a camera equipped with a flash. The flash fires in a split second, far faster than the pupil is able to respond. The light streams into the wide-open pupil, strikes the back of the eye, and rebounds directly toward the camera lens. The camera records the red color of that blood-rich layer, and the eyes appear to glow.

Camera designers have devised several ways of reducing the problem. Many cameras emit a few quick, gentle flashes before the real one, which causes the pupils to shrink. Others position the flash farther from the lens, so that the light returns at a different angle. Switching on additional lights in the room also helps, since a smaller pupil admits less light to the back of the eye.

Many animals display a similar glow, although it is often green or yellow, because their eyes are constructed somewhat differently.

## Questions

**1. What is the pupil?**

_____

_____

**2. What does the pupil do in a dim room?**

_____

_____

**3. What gives the layer beneath the retina its reddish color?**

_____

_____

**4. How do many cameras reduce red eyes?**

_____

_____

**5. Why does a flash photograph in a dim room often show red eyes?**

_____

_____

**6. Why does switching on additional room lights help?**

_____

_____

**7. Why does the red glow have nothing to do with the person pictured?**

_____

_____

## Words to know

pupil: the dark opening in the middle of the eye
retina: the layer at the back of the eye that senses light
blood vessels: tiny tubes that carry blood around the body
flash: a short, very bright burst of light

## Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

# For the teacher: The Red Glow Inside Your Eyes in Flash Photos

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

### Circle: The Red Glow Inside Your Eyes in Flash Photos

Easier · 239 words · Flesch-Kincaid grade 2.6

1. The black circle in the middle of the eye that lets light in.
2. It opens wide to get all the light it can.
3. The blood in its tiny blood vessels.
4. They give a few soft flashes first, which makes the pupils shrink.
5. The flash is faster than the pupil, so light goes into the wide pupil and bounces off the blood-rich back of the eye.
6. The pupils get smaller, so less light reaches the back of the eye.
7. It is only light bouncing off the inside of the eye.

### Triangle: The Red Glow Inside Your Eyes in Flash Photos

This passage · 269 words · Flesch-Kincaid grade 6.3

1. The black circle in the middle of the eye that lets light in.
2. It opens wide to gather as much light as it can.
3. The blood in its tiny blood vessels.
4. They fire a few soft flashes first, which makes the pupils shrink.
5. The flash is faster than the pupil, so light enters the wide pupil and bounces off the blood-rich back of the eye.
6. The pupils get smaller, so less light reaches the back of the eye.
7. It is only light bouncing off the inside of the eye.

### Square: The Red Glow Inside Your Eyes in Flash Photos

Harder · 278 words · Flesch-Kincaid grade 8.6

1. The black circle at the center of the eye that admits light.
2. It opens wide to gather as much light as possible.
3. The blood in its minuscule blood vessels.
4. They emit a few gentle flashes first, which causes the pupils to shrink.
5. The flash is faster than the pupil, so light enters the wide pupil and rebounds from the blood-rich back of the eye.
6. The pupils become smaller, so less light reaches the back of the eye.
7. It is simply light rebounding from the inside of the eye.