

Eyeballs

The following California State Science Standards are relevant to this Pathway:

Grade	Topic	Subsection
7*	Structure and Function in Living Systems	5.a, b, g
	Physical Principles in Living Systems (Physical Science)	6.a, b, c, d, e, f
9–12	Biology/Life Science (Physiology)	9.b, d, e

* Grade 7 Focus on Life Science.

California State Standards

In this Pathway, we will take a look at our own eyes and how they work. There are many ways to learn about the eye and its place in our visual system, including looking at the inside of a cow's eye, looking into our own living eye, and experimenting with our vision.

Can't find an exhibit or have a question? Ask an Explainer.



Cow's Eye Dissection

Related Material:

[Cow's eye dissection on-line](#)

Note: Cow's eye dissections are conducted throughout the day at the demonstration table.

1. What are two differences between a cow's eye and a human eye?

The cow's eye is bigger, its iris is only one color, it has a tapetum, its corneas are tougher.



2. What parts of the eye allow it to focus?

The cornea, the lens, and the muscles that attach to the lens.

3. What determines the color of your iris?

The amount of melanin.

4. What color (if any) are the parts inside the eye (aqueous fluid, lens, and vitreous humor)? Do you think this is important? Why?

Clear: Light needs to be able to pass through the eye to the retina.

Blood Vessels of the Eye

Related Material:
[Exhibit Information](#)

Remember seeing the red blood vessels in the back of the cow's eye? Now look at your own!

1. Make a sketch of what you see.



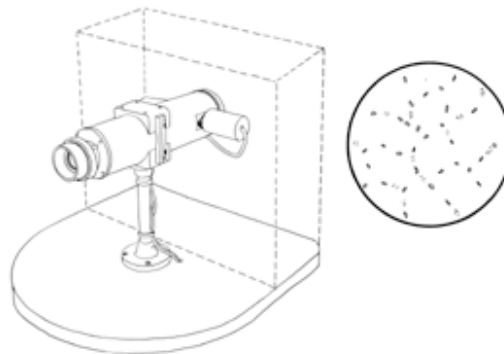
2. Why don't we notice these vessels all the time?
Our constantly moving eye does not allow us to focus on this relatively small image on our retina, especially when there are many other objects in our field of vision, many of which are moving.
3. Are these vessels in front of, or behind, our retina?
In front.

Blood Cells in the Eye

Related Material:
[Exhibit Information](#)

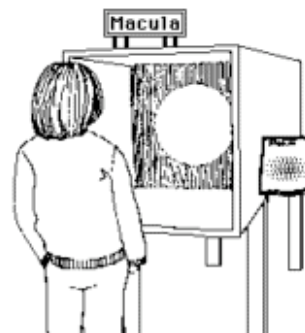
Look inside your own eyeball!

1. Describe how your blood cells look and move.
The cells look like little black lines that squiggle around fairly quickly.
2. Do you notice any rhythm to the movement you see? What is this rhythm?
Hint: feel your pulse while you look at your cells.
It's the same rhythm as your heartbeat!



Macula

Related Material:
[Exhibit Information](#)



Afterimage

Related Material:
[Associated Snack](#)
[Exhibit Information](#)



Bright light can leave a lasting impression.

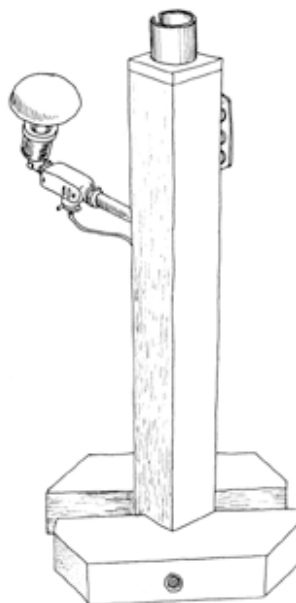
1. What happens after the flash of light, when you look around you?
You see an image of "+ +" no matter where you look.
2. About how long does the effect last?
Depends on the person, but usually up to about a minute.
3. When have you noticed this effect before?
After accidentally looking at the sun or a bright lightbulb for too long.

Pupil

Related Material:
[Associated Snack](#)
[Exhibit Information](#)

This exhibit allows you to "manually override" what is usually an automatic body response.

1. In what light is your pupil the biggest?
In low light.
2. In what light is it the smallest?
In bright light.
3. How could you repeat this experiment at home?
You can do it in a mirror at home with a flashlight or near a light switch.



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