

# Examples

**Myth #1: The pupil of the eye is a black object or spot on the surface of the eye.** The retina of a human eye looks red because it has lots of blood vessels supplying the cells with metabolites. One reason you don't see the red color is because the retina absorbs nearly all of the light which enters the pupil. In normal circumstances very little light is reflected and so the pupil looks dark. When a very strong light is shone on the pupil, some of the light is reflected back.

The **pupil** is the opening that is located in and the pupil looks red (so you sometimes get red-eye in photographs).the center of the **iris** of the eye and that controls the amount of light that enters the **eye**.<sup>[1]</sup> It appears black because most of the light entering the pupil is absorbed by the **tissues** inside the eye.

A first guess might be that the inside of the eye is in fact **black**. That is not the case, however: the **retina** is red-orange from the many **blood vessels** in it. Another guess might be that the pupil appears dark because the interior of the eye is **dark**. But the very purpose of the eye is to collect light, and its inside is almost as well-lit as the rest of the room it is in.

The **lens** of an eye focuses all light from any given point in the room, for example an observer's eye, to a single point on the retina. When you make **eye contact** with someone, you see only a single spot on his/her retina, and that spot happens to be completely unilluminated. Why is it not illuminated? Well, consider where a light source would have to be to shine on it: where your pupil is. And as we all know, pupils are black...

Next comes the **pupil**, the opening that lets light enter the eye and ultimately reach the retina. The pupil appears black because of the layer of black pigmented cells that line the back of the eye and absorb the light.

**Myth #2: The primary colors for mixing colored lights are red, blue and yellow.**

Notes from podcast:

Three colors for mixing light are the additive colors: red, blue, and green. Together, they make white light. You can see this by putting a magnifying glass up next to a TV or computer screen. Mixing these colors two at a time produces cyan

(bg), magenta (rb), and yellow (rg). These three are called the subtractive colors. When mixed together in equal amounts, they produce black. Use a magnifier to check out the pixels on a magazine or colored newspaper.

### Myth #3: Mars is red.

[http://www.space.com/news/red\\_planet\\_991129.html](http://www.space.com/news/red_planet_991129.html)

Listen to the podcast on: <http://scienceinquirer.wikispaces.com/misconception>

### Myth #4: Batteries have electricity inside them.

A battery is essentially a can full of chemicals that produce electrons. Chemical reactions that produce electrons are called **electrochemical reactions**.

A cell is just the working chemical unit inside a battery; one battery can contain any number of cells. A cell has three main parts: a **positive electrode** (terminal), a **negative electrode**, and a liquid or solid separating them called the **electrolyte**. When a battery is connected to an electric **circuit**, a chemical reaction takes place in the electrolyte causing **ions** (in this case, atoms with a positive electrical charge) to flow through it one way, with **electrons** (particles with a negative charge) flowing the other way. This movement of electric charge makes an electric current flow through the cell and through the circuit it is connected to. That's the theory anyway. Now let's look at it in practice.

