The Secret Life of Colors

learn.kids4alll.eu/en/node/2200

April 7, 2025

Discover the fascinating world of colors!

In this unit, you'll learn how our brain perceives colors...how light influences what we see...how colors change when mixed. Exciting experiments and interactive simulations will help you uncover the secrets of color vision. Are you ready to see the world with new eyes?

Warm up

Do an experiment together with your buddy!

Isaac Newton was very interested in learning all about light and colours.

One bright sunny day, Newton **darkened his room** and made a **hole** in his window shutter,

allowing just one **beam of sunlight** to enter the room.

He then took a **glass prism** and placed it in the sunbeam.

Do you want to see what he saw?

- Get a glass prism with your buddy
- · darken the room
- · go close to the window to catch a sunbeam
- Just like Newton, place the prism in front of the sunbeam.

You can hold a **white paper** in front of the prism to see the **rainbow**! **Amazing, right?**

Tip: If you don't have a prism, don't worry.

You can create one using a glass or a transparent plastic sheet and some water!



Learn

Well, do you believe that Newton stopped at this point?

Of course not!

If the light could be **split into colours** through a **glass prism**, then maybe it could also work **the other way around**!

He took **another prism** and placed it in front of the first one — and...

...it worked!!! The rainbow of colours turned back into white light again!

Dive in 1

Is it only the glass that transforms the rainbow back to light?

Well, you'll be surprised — we humans can do the exact same thing! Let's see how.

Click here and choose "RGB Bulbs"

Then turn all the bulbs to maximum and see what the woman perceives as a colour.

Together with your buddy, describe your findings!



Dive in 2

Well done! Let's go one step further now.

On the same page

click on "Single Bulb".

Together with your **buddy**, follow these steps:

- 1. Select a Bulb Color of your choice
- 2. Make sure the red button on the bulb is turned on (click if it's not)
- 3. Choose a Filter Color of your choice
- 4. Make sure the filter button is also turned on (turned to the right)
- 5. Now that everything is ready, make the following observations by **combining different Bulb colours with different Filter colours**:

What happens when the bulb colour and the filter colour are the same?

What happens when the bulb colour and the filter colour are different?



Create

There are different eyeglasses with coloured or black lenses.

The most famous ones are **sunglasses**, but there are also other types that are less known.

Task:

Take a look on the internet and find **3 different models of eyeglasses** (including sunglasses) with **different lens colours**.

Where and how is the best place to use them?

For example:

Is it for the sun at the beach, the snow in the mountains, or the computer at home?

Together with your buddy, draw an informative advertisement that explains:

→ Which sunglasses are best for which condition — and why!

Upload your result to work.it area

If you want your content to be in the KIDS4ALLL gallery, please ask your educator to upload it in the <u>work.it</u> area.



Reflect

Now that you know more about the way colour vision works, what would you like to **test in the future** about this topic?

Is there something you're still curious about?

Discuss with your buddy – and then create your postcard!

Download the free KIDS4ALLL app and your wish comes true!





Ask your educator to login and share your postcard with the KIDS4ALLL community.

Move to another unit