

EOLIM HAS A THIRD EYE

Eolim is happy to be finally awake and ready to explore our Planet.

I can't wait to learn everything about the Earth!" he says excitedly

Eolim is amazed by all the marvelous things he is seeing on our Planet, with all the objects, creatures, and structures that surround us...



A car driving by... A cat chasing a butterfly... A tall blooming tree reaching the sky... and much, much more!



"What a thing!" he says with the wonder of a child as he observes a small bee buzzing around a beautiful flower.

"Is everything on this Planet black or white?" he wonders. "Where are all the Reds, Blues, and Greens?!"

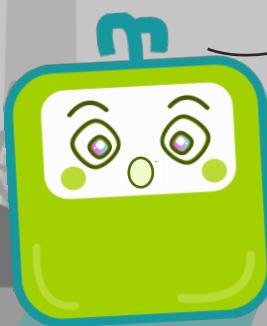
After a while, Eolim starts noticing something unusual. From the moment he has arrived, he can't see any colors other than black and white!

This mystery keeps Eolim puzzled, as he knows how colorful Planet Earth is supposed to be...

Perhaps he is the only one who cannot see the colors around here!

It will be very hard for him to learn more and explore the Planet without his ability to see colors, don't you think?

Can you help Eolim?



Episode 2

Discovery: Build - Test - Learn

THE MISSION

Eolim used to see colors on the Stemmian's Planet, he even has "a Third Eye" specialized for this purpose! To activate Eolim's Third Eye, you need to attach a very special component that will give him back his ability to see colors.

WHAT DO YOU NEED

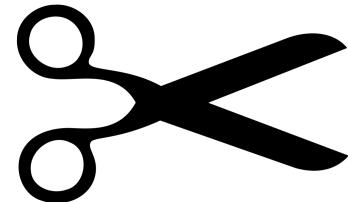


Eolim shield

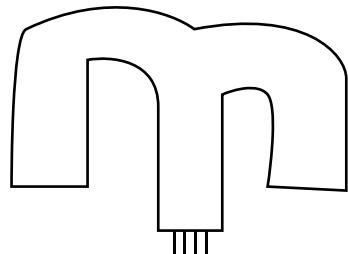
piezo buzzer



scissors



antenna



x2
wires



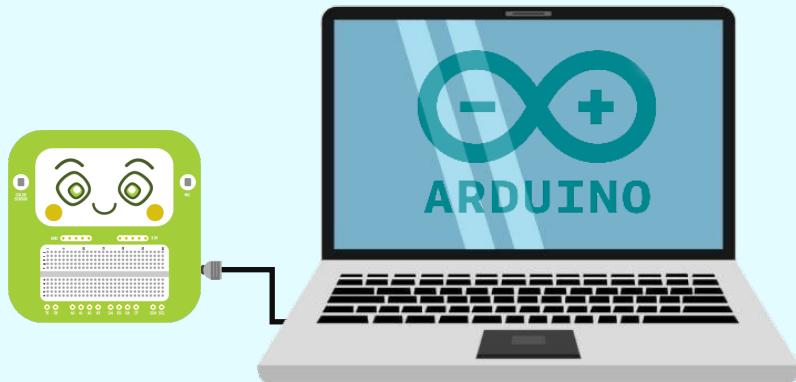
Power bank

USB 3.0 cable

Step-by-Step

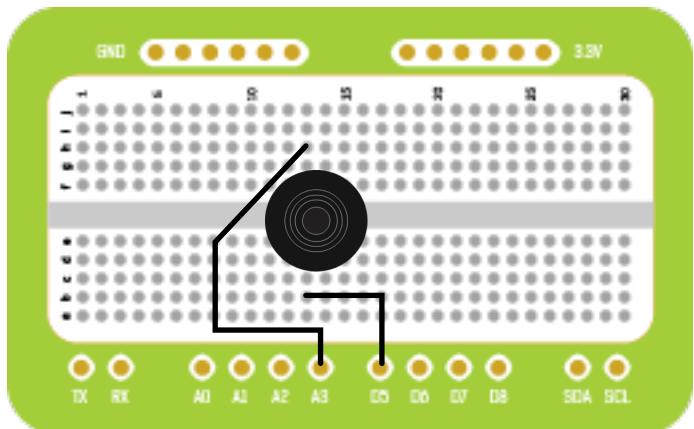
Step 1 - Start the Discovery

Ask your teacher or your parents to upload the program named "Colors (Discovery)" on your computer or tablet.



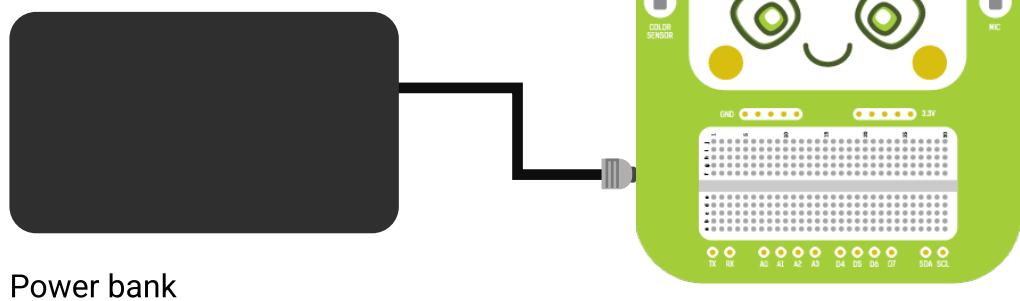
Step 2 - Connect the Buzzer

Hold the Buzzer and carefully insert the two legs as it follows: the long leg goes into the D4 hole, and the short leg goes into the A3 hole. Push it in, until you cannot see the legs anymore and you just see the black plastic head of the Buzzer laying down on the surface.



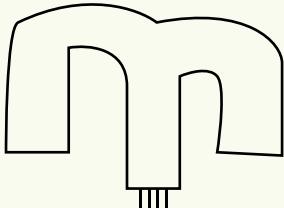
STEP 3 - Connect the Power bank

Plug it in through the Power Cable.



Power bank

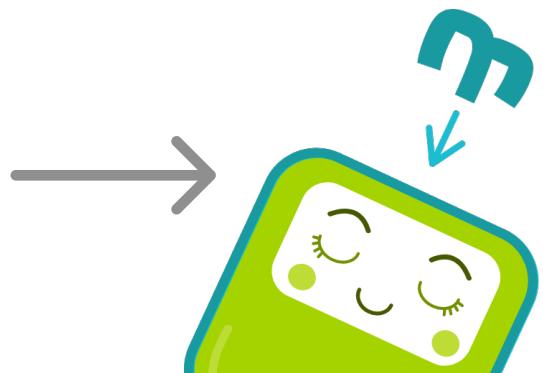
Focus 1 **The Antenna**



The Antenna looks like the English letter "m" with the first leg being taller than the third leg. There is a black connector below the letter "m" with five tiny squared holes at the bottom. If you take a look at the top of Eolim's head, you should notice a groove where the Antenna should be attached. If you look closer at the groove, you will notice five tiny golden pins inside.

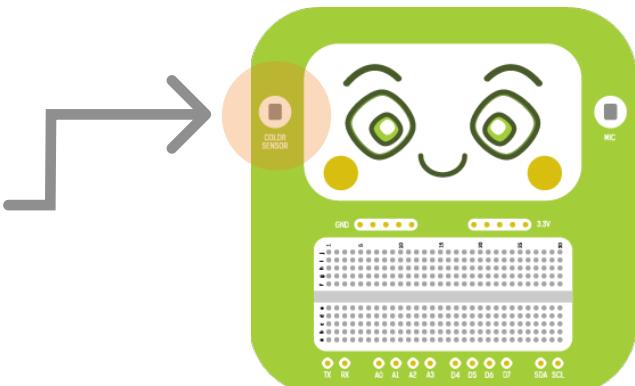
STEP 4 - Attach the Antenna

Now, hold the Antenna between your fingers, so that the taller leg is on the left and carefully insert the black connector into the groove on top of Eolim's head. Make sure that the five tiny squared holes match the five tiny golden pins and then push all the way in.



Step 5 - Check if the Third Eye is activated

You should notice that a small LED near the left eye has turned ON. This is where the Color Sensor is located. Make sure that this light turns ON before doing the Test.

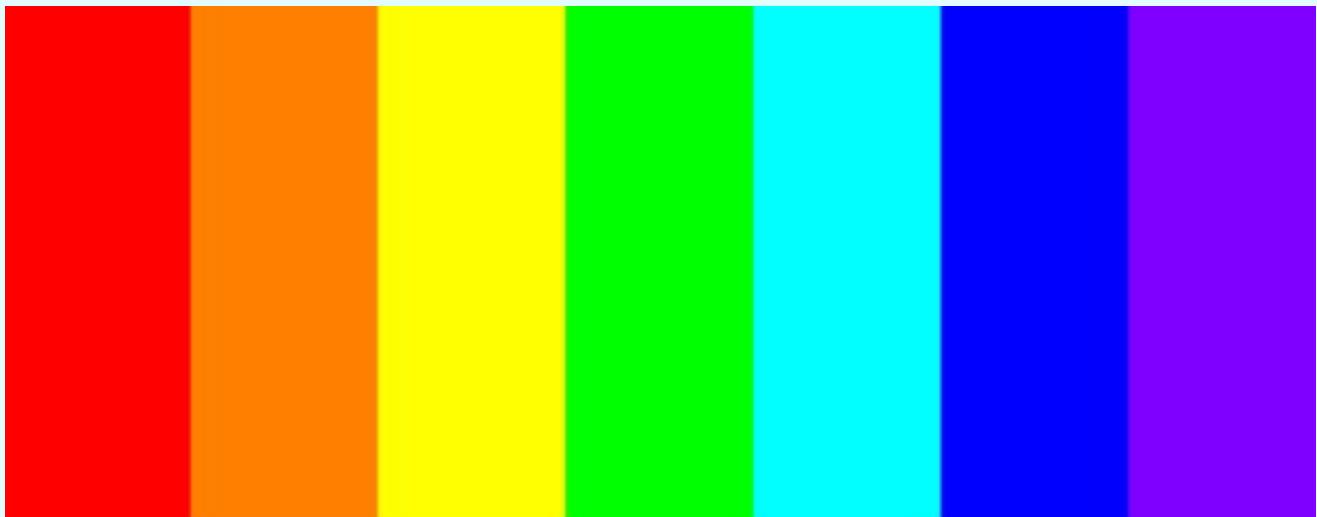


Step 6 - Give Eolim some time to get ready

Lay Eolim down on his back, on the table where you will do the Test. Leave him there for about 7 seconds, but be careful! You don't have to touch him or move him at all during this time. When he is ready, you should hear and see some happy tunes and lights.

Test

Use a pair of scissors to cut the color cards that you find below. You should collect seven individual colored cards: Red, Orange, Yellow, Green, Cyan, Blue, and Violet.



1. Lay Eolim down on his back on the table.
2. Now scan the Red card: Hold the card at a distance of 2 or 3 millimeters from the color sensor for 3 seconds. Make sure to hold the card firmly so that it fully covers the sensor.

Observe Eolim's reaction to the Red color. What do you see? 🔍

Hint: listen to the sound, you should hear a musical note

1. Now scan the Orange card, the same way you did with the Red one.

Observe Eolim's reaction to the Orange color. What do you see? 🔍

Hint: listen to the sound, you should hear a new musical note

1. Scan the remaining color cards, one by one Yellow, Green, Cyan, Blue, and Violet. Do it the same way you did for the Red and Orange cards.

Observe Eolim's reaction to each new color. What do you see? 🔍

Hint: listen to the sound, you should hear a different musical note for each new color

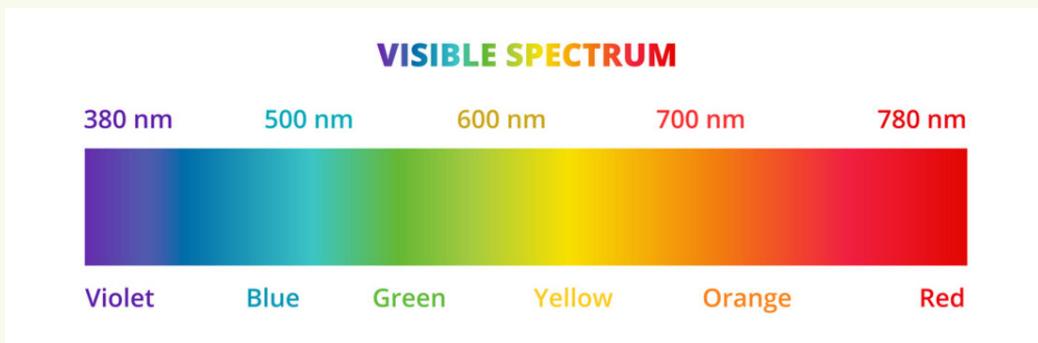
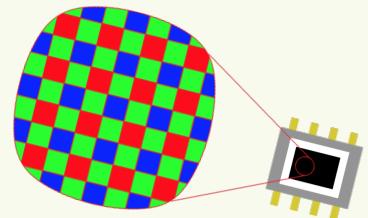
Focus 2

The color sensor

Discover the color sensor

Learn

Eolim's Third Eye is an electronic device called "Color Sensor". As suggested by its name, the sensor recognizes different colors. The sensor can sense all colors in the "Visible Light Spectrum", which is the whole range of colors that the human eye can see. The Visible Light Spectrum includes the seven rainbow colors, Red, Orange, Yellow, Green, Cyan, Blue, and Violet, and every other color in between.



The Visible Light Spectrum

When you scan a color card, the sensor will read the color of that card and Eolim will give you a unique response:

The C Scale

A musical scale diagram titled "The C Scale" showing notes C, D, E, F, G, A, B, and C on a staff. The notes are represented by black circles on the lines of the staff.

With the Red card you should hear Eolim reacting with a musical note that lasts for half a second. The musical note is the first one on the musical scale, and it's called "C. With the Orange card Eolim reacts again with a musical note that lasts for half a second. But this time the note is different: it is the second one on the musical scale, and it's called "D". If you take all the remaining color cards in this precise order, Yellow, Green, Cyan, Blue, and Violet, you should hear the notes of the musical scale in an ascending order: E, F, G, A, then B

Back at home, Eolim and all the Stemmians adore colors, so when they see them, they sing! Can you use Eolim's musical reactions to play your favorite song? Try to put the color cards in the sequence that corresponds with the musical notes of your favorite song.

Color sensors can be found in many modern electronic devices and applications on Planet Earth. We can find them in the camera of our smartphones, allowing us to capture high quality photos of our favorite moments.

Episode 3

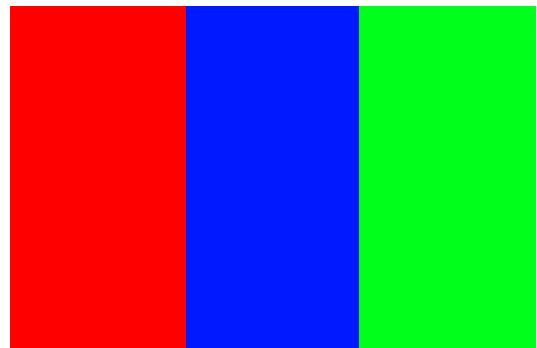
Color Matching Game

THE MISSION

Eolim is very curious to explore and learn more about objects from Earth.

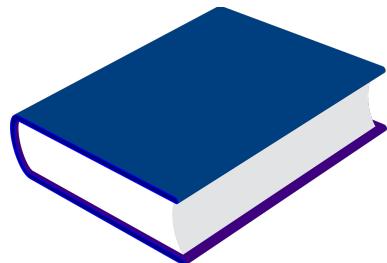
Now that Eolim is able to see colors, you can play together a color-matching game, where you teach him the different colors of objects.

You need to go around the house and collect three objects. You can search for them in your closet, in the kitchen, in the garden, or in the living room. These three objects should be exactly the same color of your Red, Green, and Blue color cards. These are the only colors that you can use for this challenge!



Do you want some examples? You can show Eolim some vegetables, some fruits, a book, a toothbrush or your favorite clothes, but remember:

- The object should have the exact color shade as one of the three color cards: red, blue or green.
- The object should be wide enough to cover the sensor entirely.
- The object should be solid, not transparent.
- The object should not have a shiny surface, otherwise it will reflect too much light and it won't work!



Play

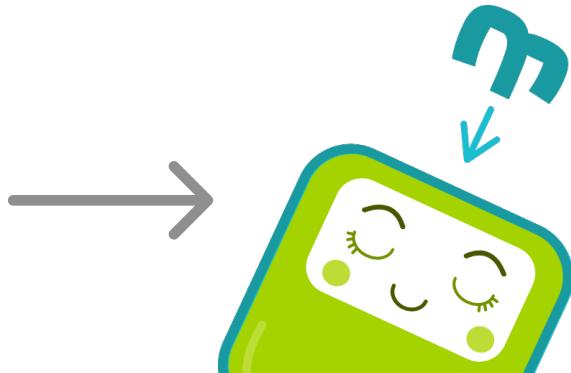
STEP 1

Ask your teacher or your parents to upload the program named "Colors (Quest)" on your computer or tablet. Connect the Power Bank: Plug it in through the Power Cable.



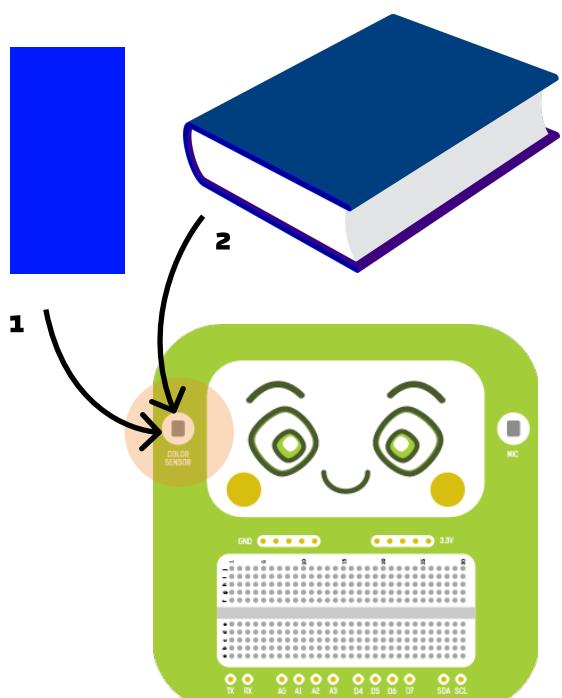
STEP 2 - Attach the Antenna

Look at the instructions for the Antenna in the Build section. Give Eolim some time to get ready: Lay Eolim down on his back, on the table where you will do the Test. Leave him there for about 7 seconds, but be careful! You don't have to touch him or move him at all during this period of time. When he is ready, you should hear and see some happy tunes and lights.



STEP 3 - Scan the color card

Scan one of the cards with the Color Sensor, choosing between Red, Green, and Blue. Hold the card firmly for 3 seconds until Eolim reads it. You should hear a musical note when Eolim finishes reading the color. Now you can remove the color card from the sensor.



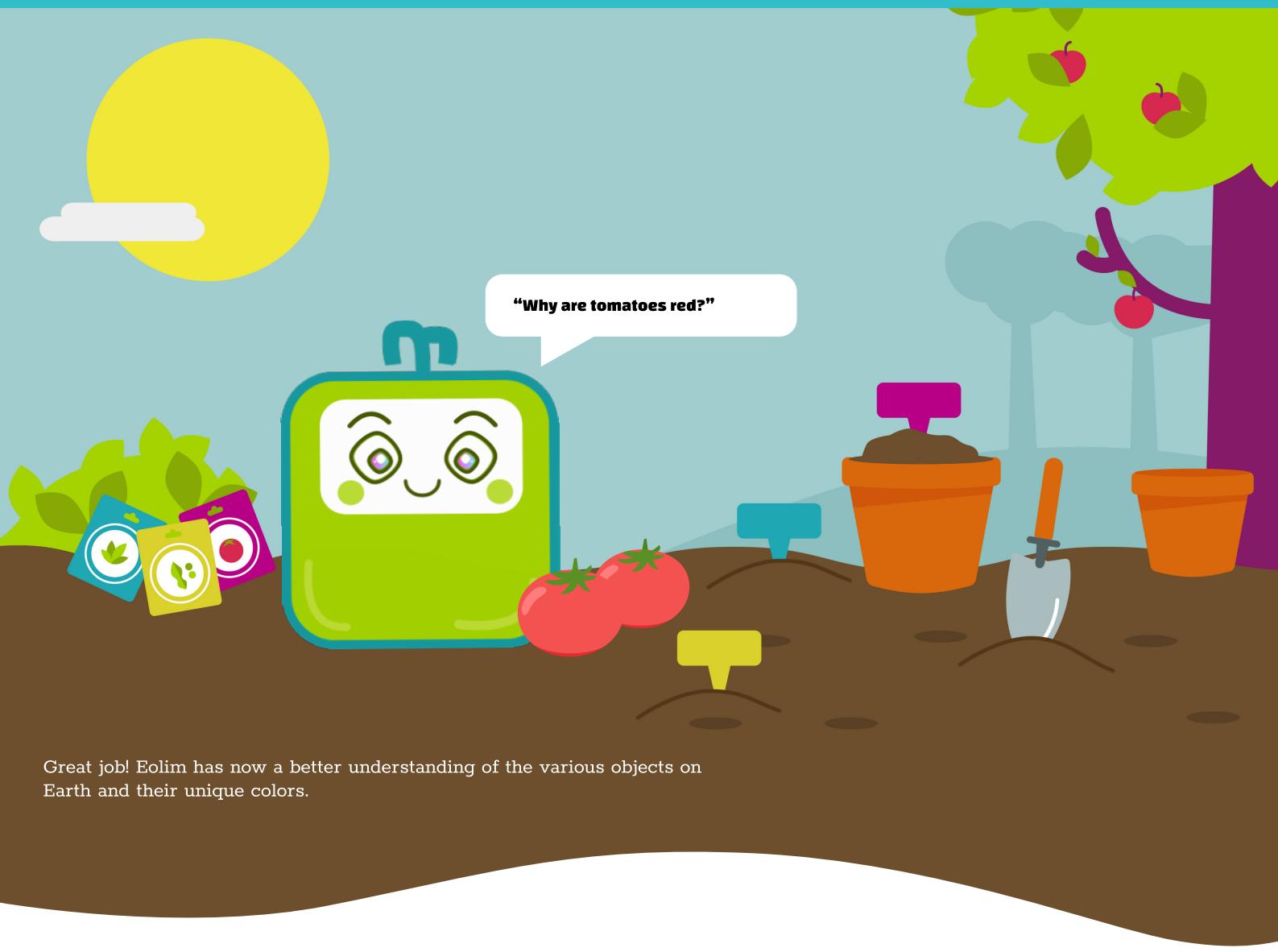
STEP 4 - Scan your object

Take the object that has the same color of the card that you just scanned. Hold it on top of the sensor for 3 seconds until Eolim reads it.

Repeat the same steps for each color: First you scan the card, then you scan the matching object and wait for Eolim's reaction.

Episode 4

Mission accomplished



Great job! Eolim has now a better understanding of the various objects on Earth and their unique colors.

This is an interesting question! To answer, we first need to understand how vision works. Let's say you walked into the kitchen and you saw a tomato laying down on the counter. How did you see that tomato?

The light rays in the kitchen coming from the window or the ceiling light hit the tomato's surface and then bounce and enter your eyes. This is why you can see it! Without the natural daylight or ceiling light, you wouldn't be able to see the tomato or anything else.

Most of the light sources around us emit white light. The white light is not only made by one color, but it actually consists of the seven rainbow colors all together: Red, Orange, Yellow, Green, Cyan, Blue, and Violet. When white light falls on an object, the object's material absorbs all the colors except one, which gets reflected into your eye.

