

EOLIM IS LOST IN THE MAZE

Today is the day! Eolim is really excited to be a tourist in the huge city of Cairo, in Egypt, a tourist from another planet! Eolim is particularly interested in visiting the Pyramids: he has always heard of how huge and gorgeous they are.

He decides to reach the Pyramids following the directions on a map.

On following the directions it seems that he keeps moving in circles and finds himself back to where he started!

He is very surprised to see how big and busy the city is, it looks like a very large maze!

Eolim needs your help to navigate the maze of "Cairo" and reach his destination, the Pyramids.

Episode 2

Discovery: Build - Test - Learn

THE MISSION

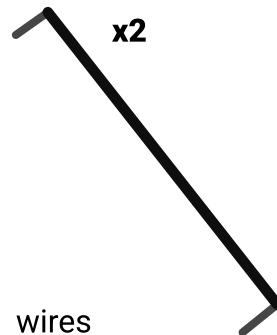
Before helping Eolim in navigating the maze, you need to make sure that he knows some simple directions: right, left, forward, and backward. Let's do a directions test and see how he responds!

WHAT DO YOU NEED

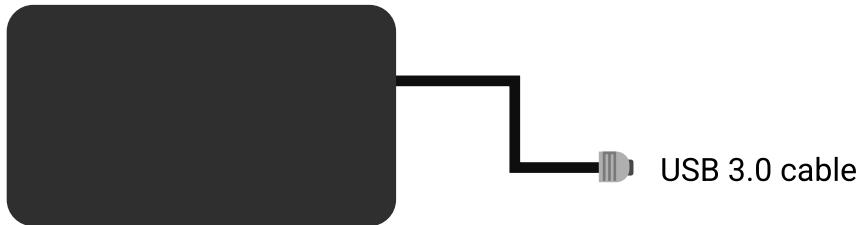


Eolim shield

piezo buzzer



wires



Power bank

Step-by-Step

Step 1 - Start the Discovery

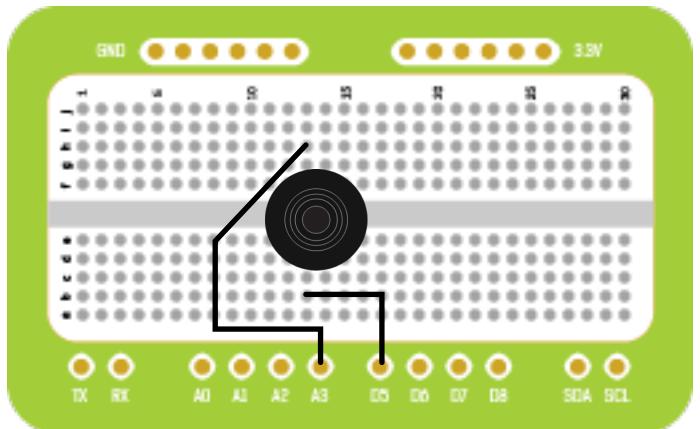
Ask your teacher or your parents to upload the program named "Directions (Discovery)" on your computer or tablet.



Step 2 - Connect the Buzzer

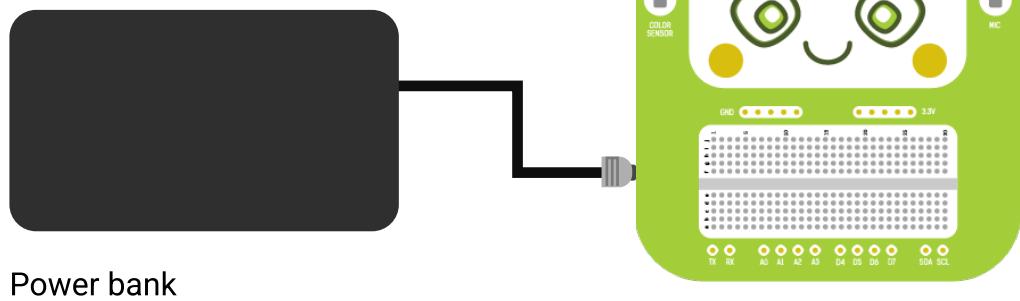
Do you remember how to do it? Try to place it without looking!

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.



Test

Position Eolim on the table in an upright position so that you face each other.

What do you see?  (Hint: Observe the lights and sounds)

From the upright position, slowly move Eolim backwards until he lays down on his back; then slowly put him back upright on the table facing you. From the upright position, slowly move Eolim forward until he lays down on his face, and then slowly get him back upright on the table facing you.

What do you see?  (Hint: Observe the lights and sounds)

In the upright position, slowly turn Eolim to the right, and then turn him back to you. Then slowly turn Eolim to the left, and then turn him back to you.

What do you see?  (Hint: Observe the lights and sounds)

From the upright position, slowly rotate Eolim's right side until it touches the table, then turn him back upright facing you. Now slowly turn Eolim's left side until it touches the table, and then turn him back upright facing you.

What do you see?  (Hint: Observe the lights and sounds)

Focus 1

The Microphone

Eolim can sense directions using an internal electronic component called an "Accelerometer".

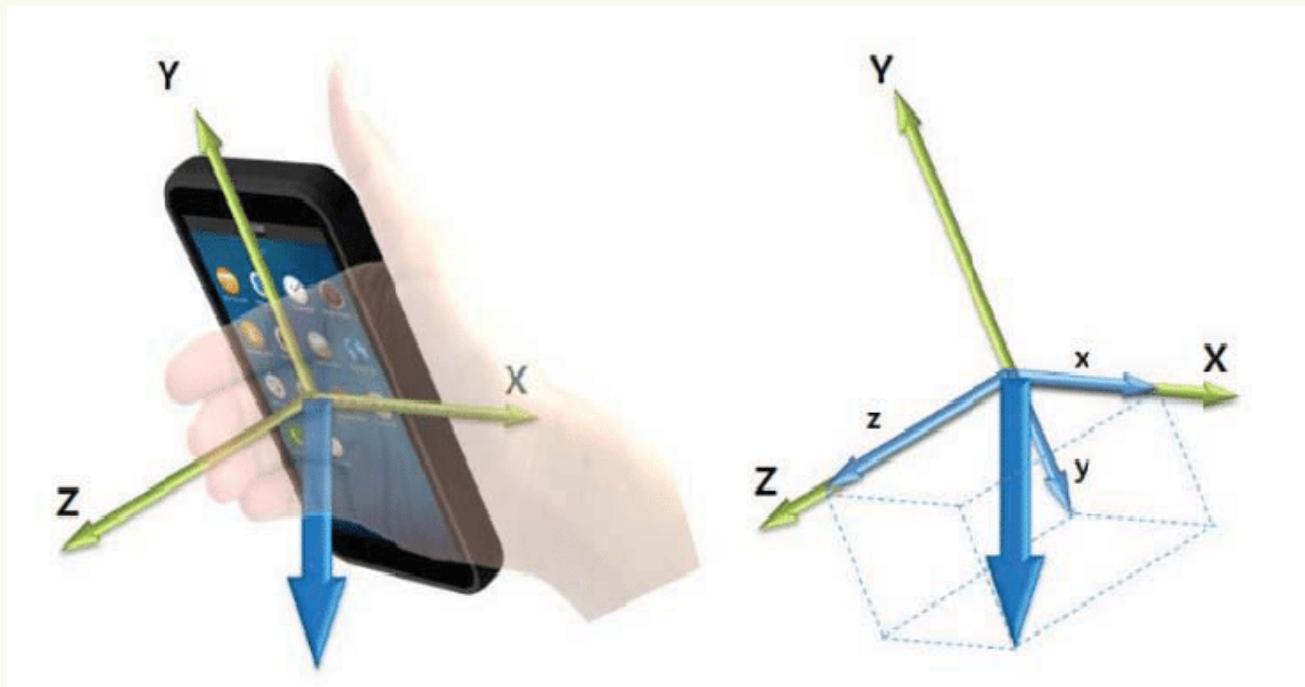
The Accelerometer can sense directions in three different ways:

Tilt: This happens when you move Eolim's face forward or backwards towards the ground. Eolim knows when his body is tilted forward or backward and he reacts by decreasing the brightness of his eyes until they turn off.

Pan: This happens when you turn Eolim's face to the right or left. Eolim knows when his body is panned right or left and he reacts by blinking his eyes on and off.

Roll: This happens when you rotate Eolim's right side or left side towards the table. Eolim knows when his right or left side is being rolled towards the ground and he reacts by turning off his eyes.

The Accelerometer is a very important electronic component that we can find in many devices around us, for example in smartphones and tablets. You should have noticed it in your parents' smartphone, for example. When the phone is rotated vertical or horizontal, all applications, videos, and photos automatically adapt to the new horizontal orientation thanks to the Accelerometer inside!



Episode 3

Maze Game

THE MISSION

Even if Eolim is now able to understand the different directions, he still needs your help to navigate the Cairo Maze to reach the Pyramids. Lay the Maze-mat on the ground and get ready. Position Eolim at the "Start" sign of the Cairo Maze and hold him so that his face looks forward. Your goal is to reach the "End" sign.

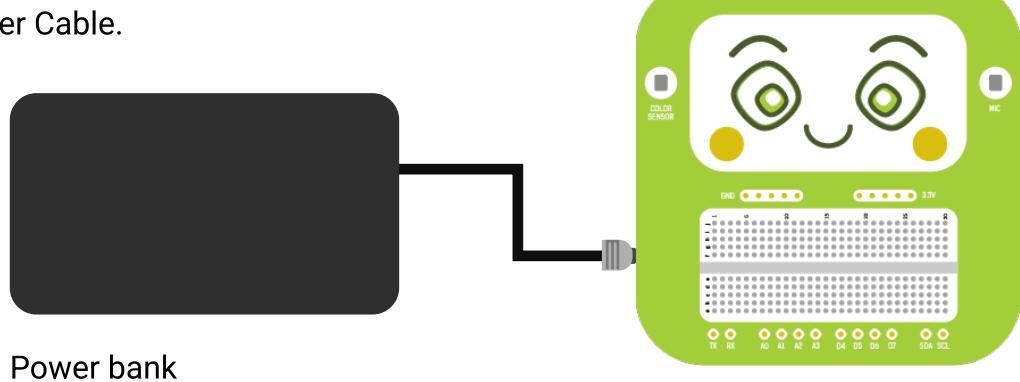
STEP 1

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



STEP 2 - Connect the Power bank

Plug it in through the Power Cable.



Play

STEP 3 - Move one step forward to the next tile

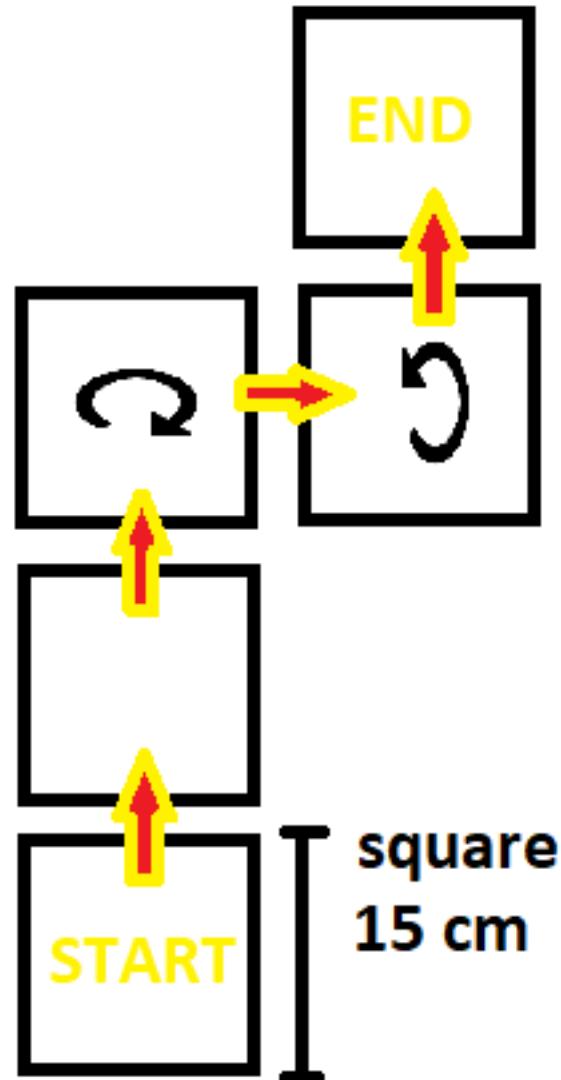
Start from the Face Forward position; now Eolim's face down to the ground and then position him on Face Forward again. After you can keep on moving to the next tile. Rej this action for each new step forward. If you move to the next tile without the Tilt move the step will not be perceived by Eolim.

STEP 4 - Turn right

When you see this sign, Pan Eolim's face to right until he looks towards the correct direc

STEP 5 - Turn left

When you see this sign, Pan Eolim's face to left until he looks towards the correct direct



How complete the Quest

>For each correct step or turn you take inside the Maze, Eolim will be happy. You will hear some brief happy tunes and his eyes will blink.

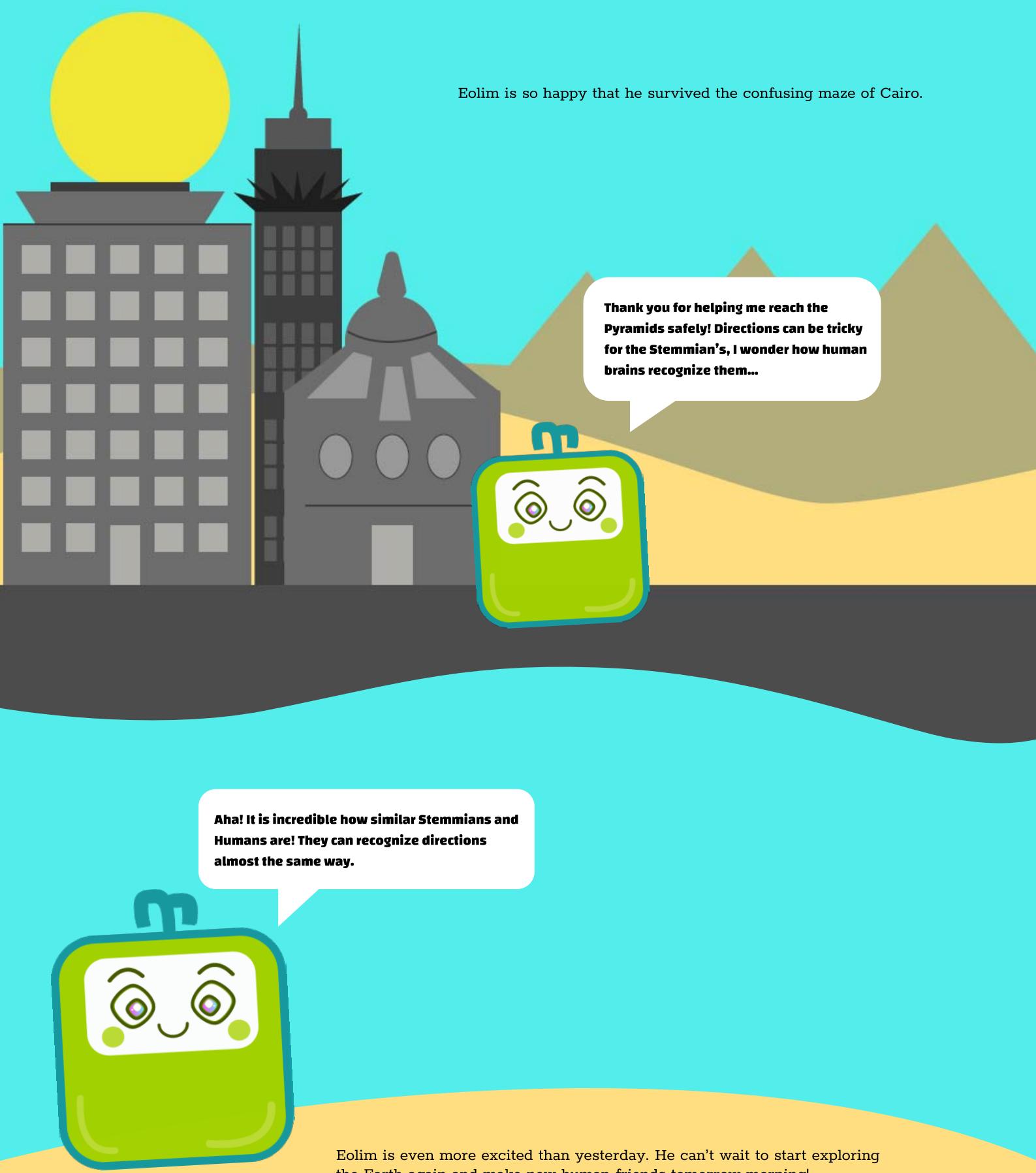
>If you complete all the steps and turns correctly, Eolim will be super happy. You will hear some prolonged happy tunes and his eyes will blink with joy!

>If you make one incorrect step in the sequence, Eolim will be sad. You will hear some gloomy tunes and his eyes will briefly turn OFF and then ON again.

>To start over, place Eolim at the "Start" sign and take your steps carefully. Luckily this time you will guide Eolim to the end of the Maze!

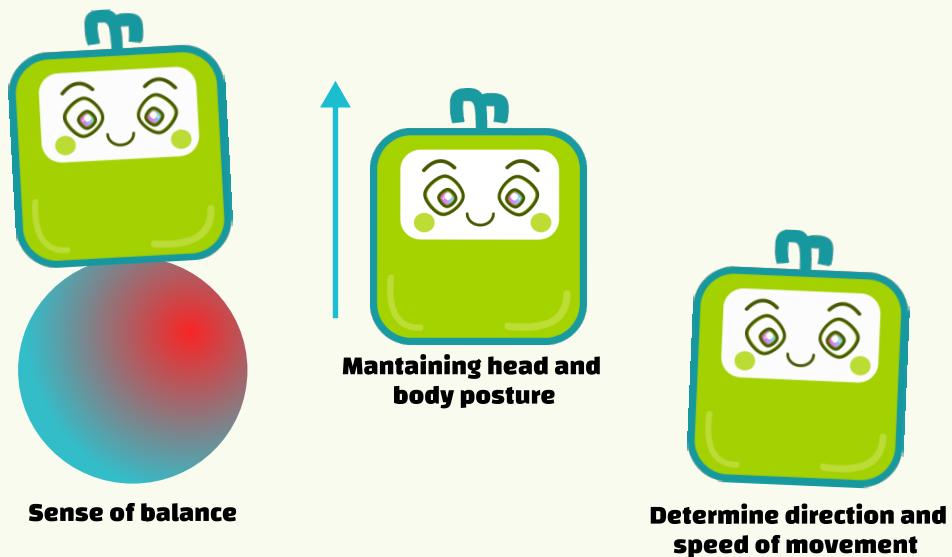
Episodio 4

Mission accomplished

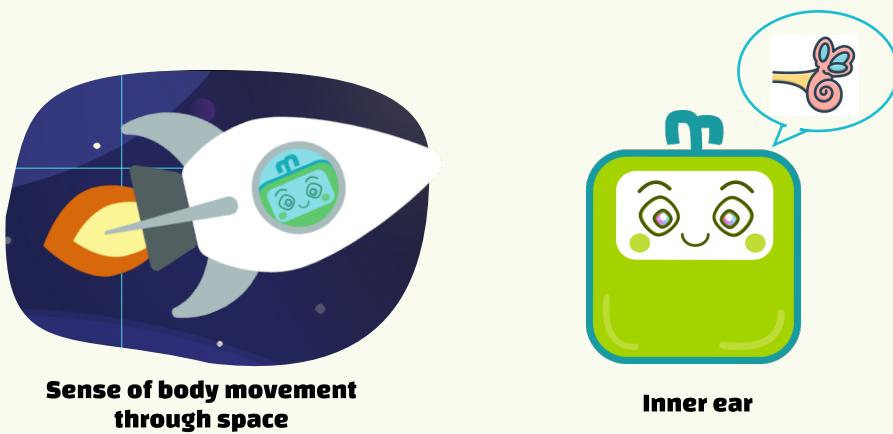


Focus 2

Il sistema sensoriale vestibolare



VESTIBULAR SENSORY SYSTEM



Human beings can sense the directions and balance in a very similar way as that of Eolim, thanks to a natural system in our inner ears called the vestibular system. This system can sense movement due to a liquid placed in very tiny tubes. The liquid moves around the tubes as we move or tilt our head, just like water moves inside a closed bottle when you shake it! Your brain knows that you moved in one direction or the other when the liquid moves.

The human Vestibular system is very sensitive: have you ever tried spinning around in one spot, and afterwards feeling that the room keeps on spinning for a while? It takes some time for the Vestibular system to settle down and get back to normal, like when you shake a bottle filled with water: it takes some time to settle down. Thanks to our Vestibular system, we can sense directions and navigate the world!