

# USING SCRATCH IN ROBOTICS

**DESIGN TECHNOLOGY – DIGITAL TECHNOLOGIES**

**Year 6**

b Makedonitissa Primary School

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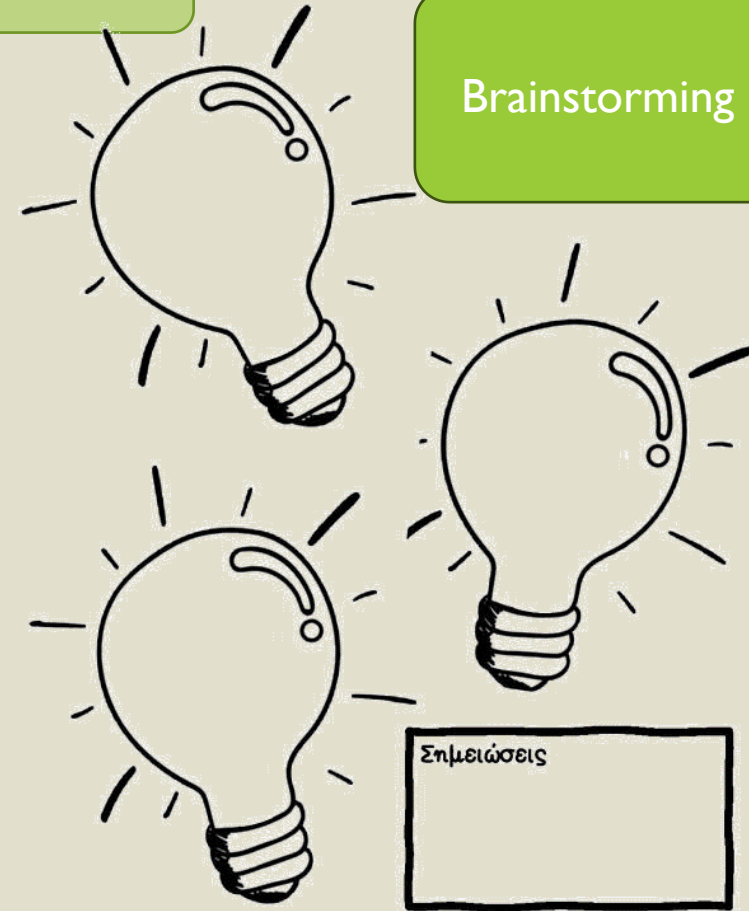


# 1. Introduction

What do you know about robots?



Brainstorming ....



Σταθμώδης

## 2. Objectives



### What we are going to learn ...

- ✓ Describing robots, their characteristics and everyday usages.
- ✓ Programming floor robot (InO-Bot) using scratch (e.g. movement, drawing shapes, using sensors) to solve problems.
- ✓ Using online games with scratch.
- ✓ Testing and improve our programs.

### 3. Investigation ...

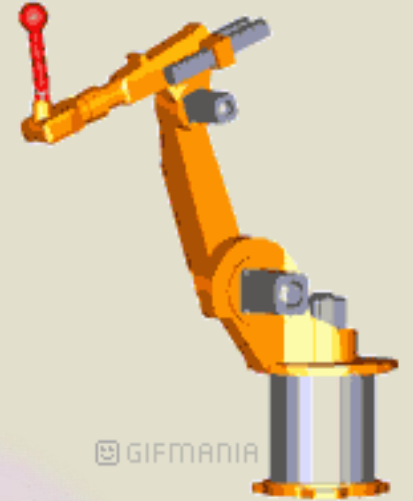
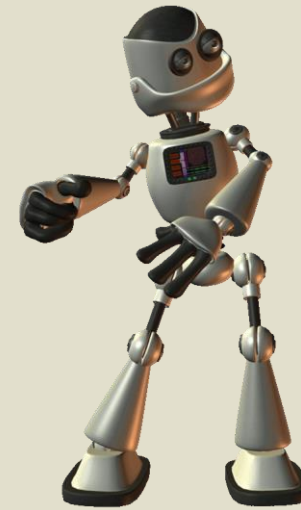
## What are robots...

- **Machines** that help people.
- They are **programmed by people** to do certain jobs.



# What are their characteristics

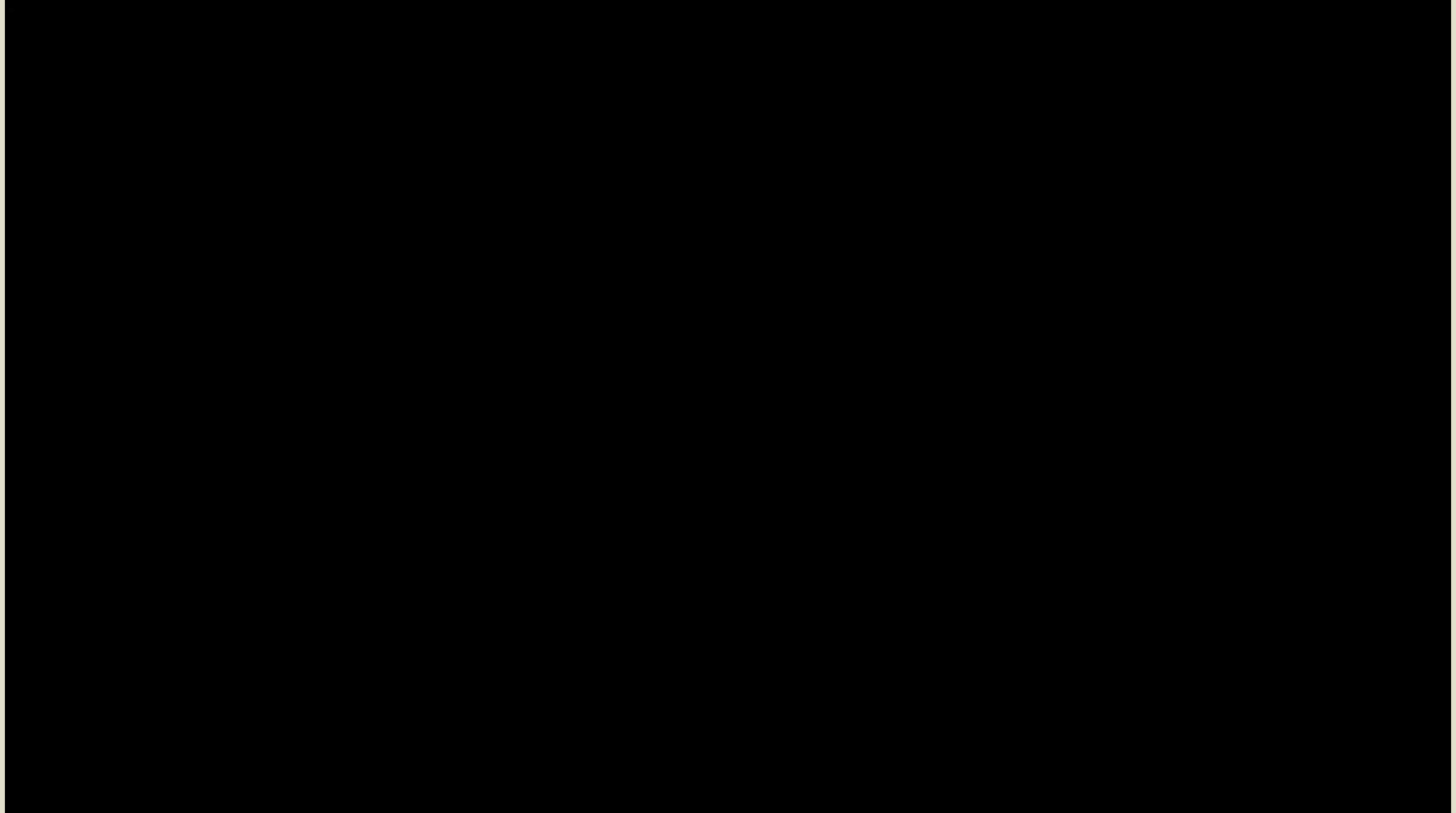
- **Programmed by people**
- **Using sensors**
- **Move (legs / wheels, arms)**
- **Do difficult works**



GIFMANIA

*Robota = hard work*

## ✓ Where we use robots in everyday life?



## 4. Activities ...

- ✓ Using online games (based on Scratch )

### FROZEN

<https://studio.code.org/s/frozen/stage/1/puzzle/1>

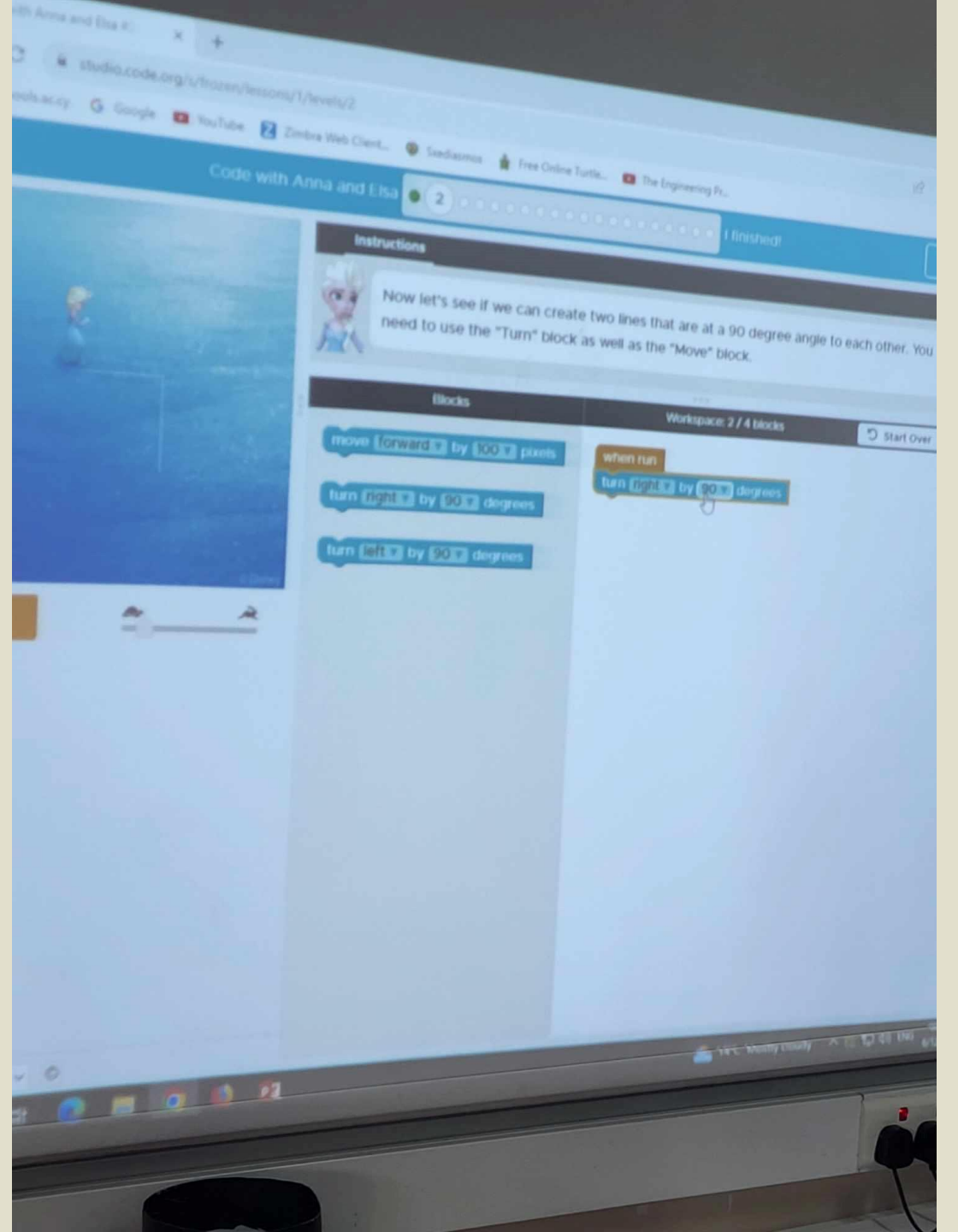
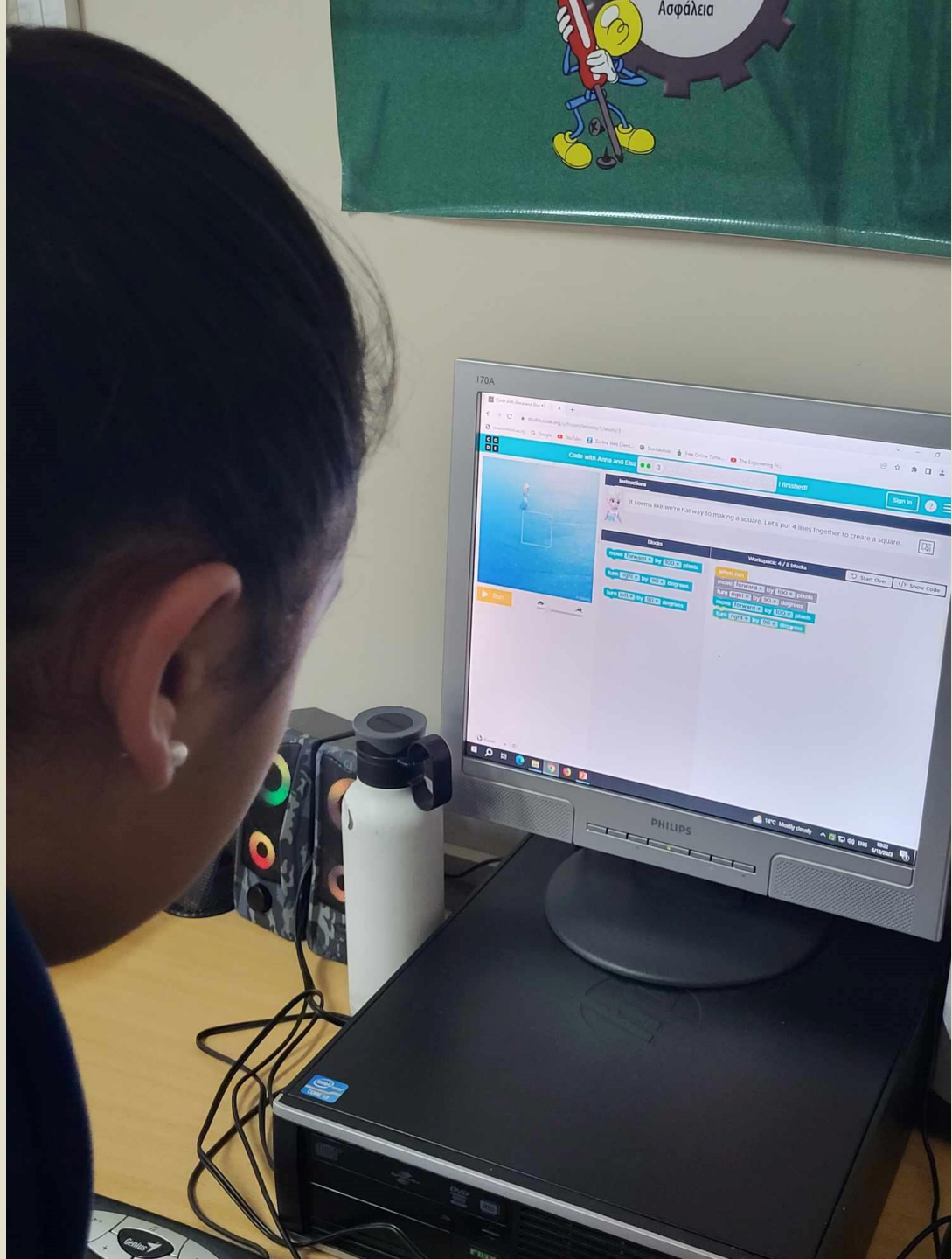
### STUDIO CODE ANGRY BIRDS

<https://studio.code.org/hoc/1>

### THE GRINCH

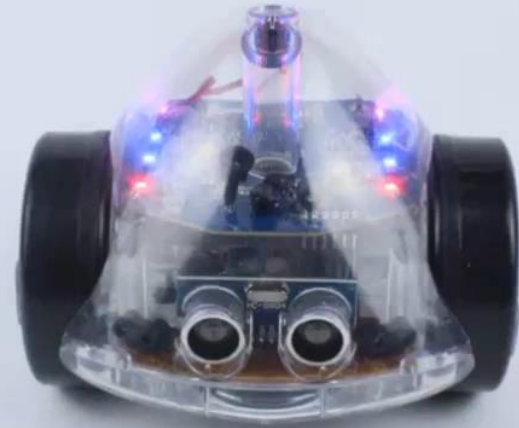
<https://www.grinchhourofcode.com/game.html>







✓ Programming InO-BOT with Scratch



**InO-Bot**

✓ **Activities InO-Bot** (worksheets)

**Problem 1: InO-Bot with emergency lights**

**Problem 2: InO-Bot is drawing shapes**

**Problem 3: To InO-Bot explore obstacles**

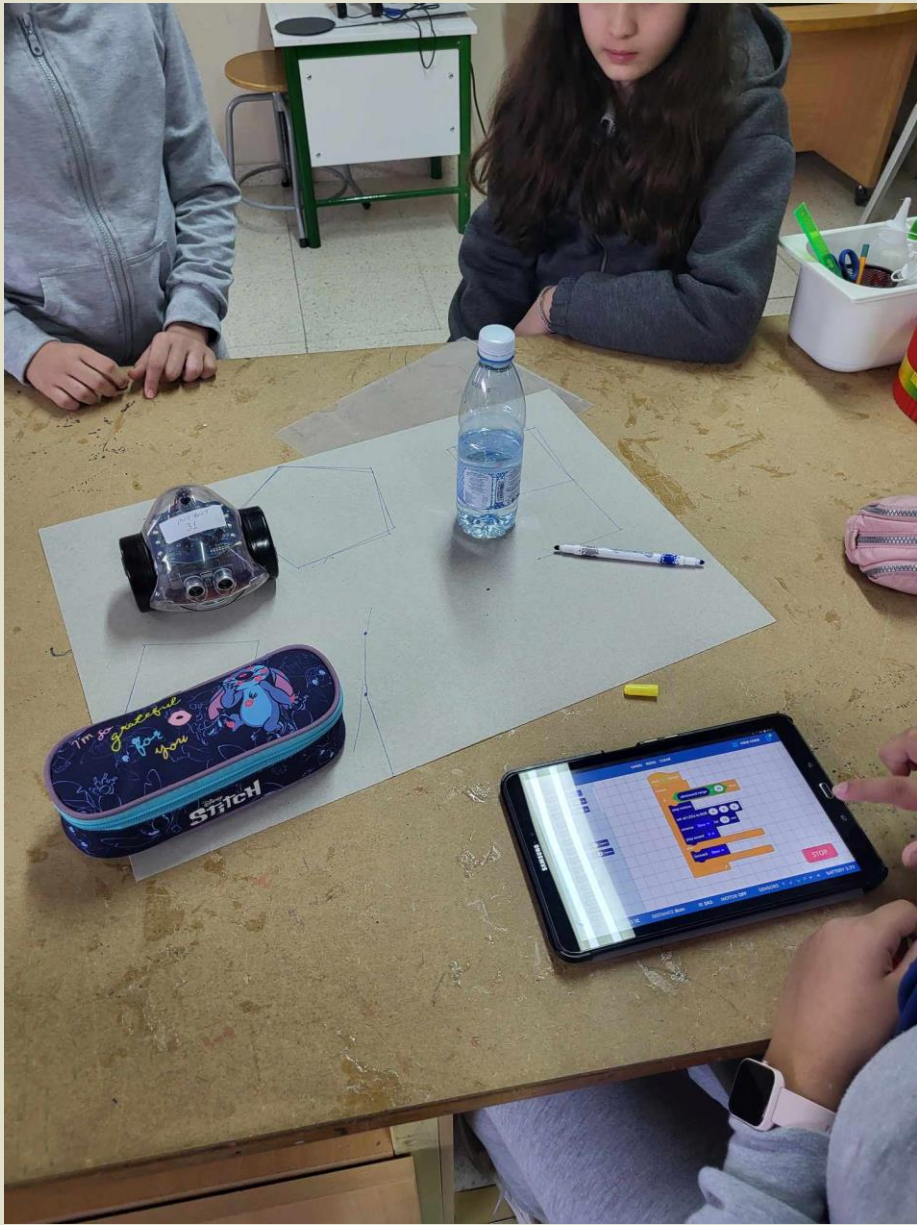


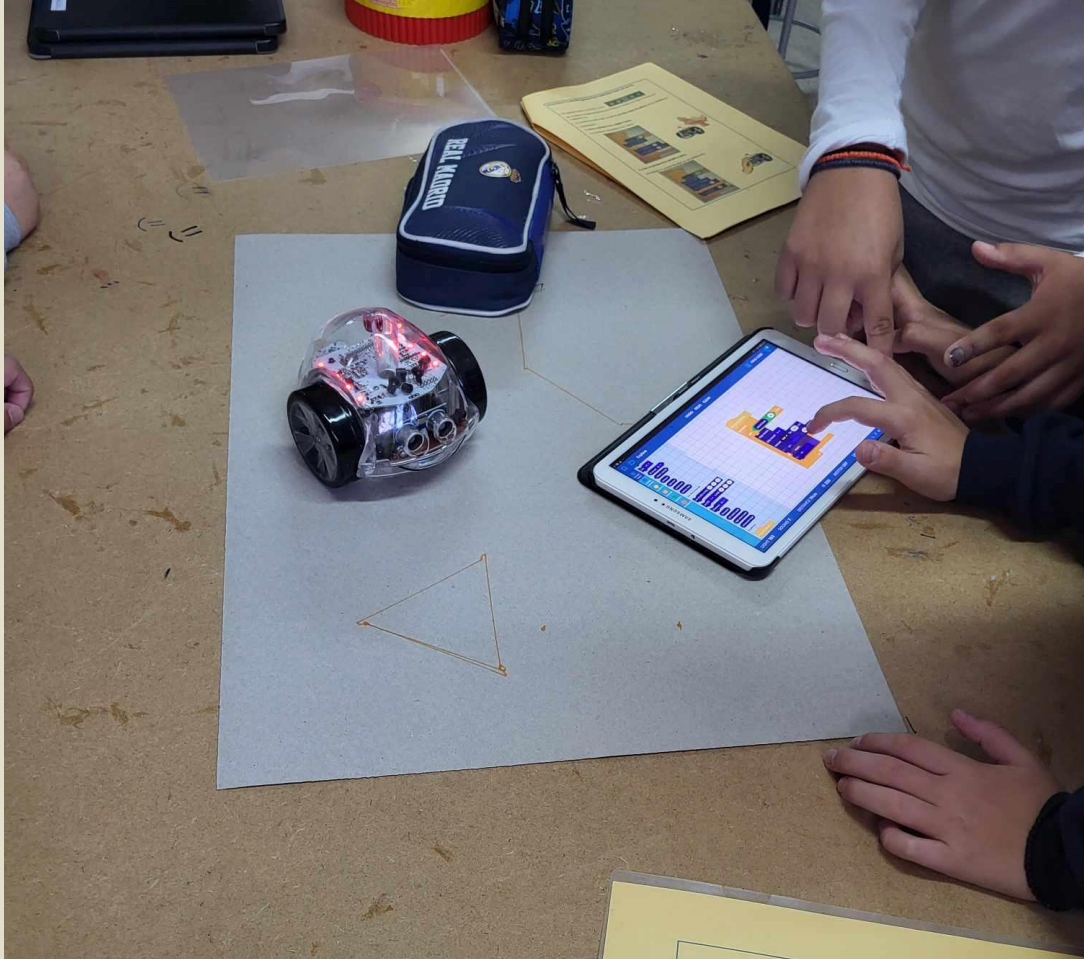
**Emergency lights**

**Hexagon**

```
όταν γίνει κλικ σε R2
επανάλαβε 6
  forward Slow for 10 cm
  spin left Slow by 60 degrees
```

```
όταν γίνει κλικ σε R2
για πάντα
  set LED 1 to Red
  set LED 1 to Blue
  set LED 4 to Red
  set LED 4 to Blue
  set LED 5 to Red
  set LED 5 to Blue
  set LED 8 to Red
  set LED 8 to Blue
```





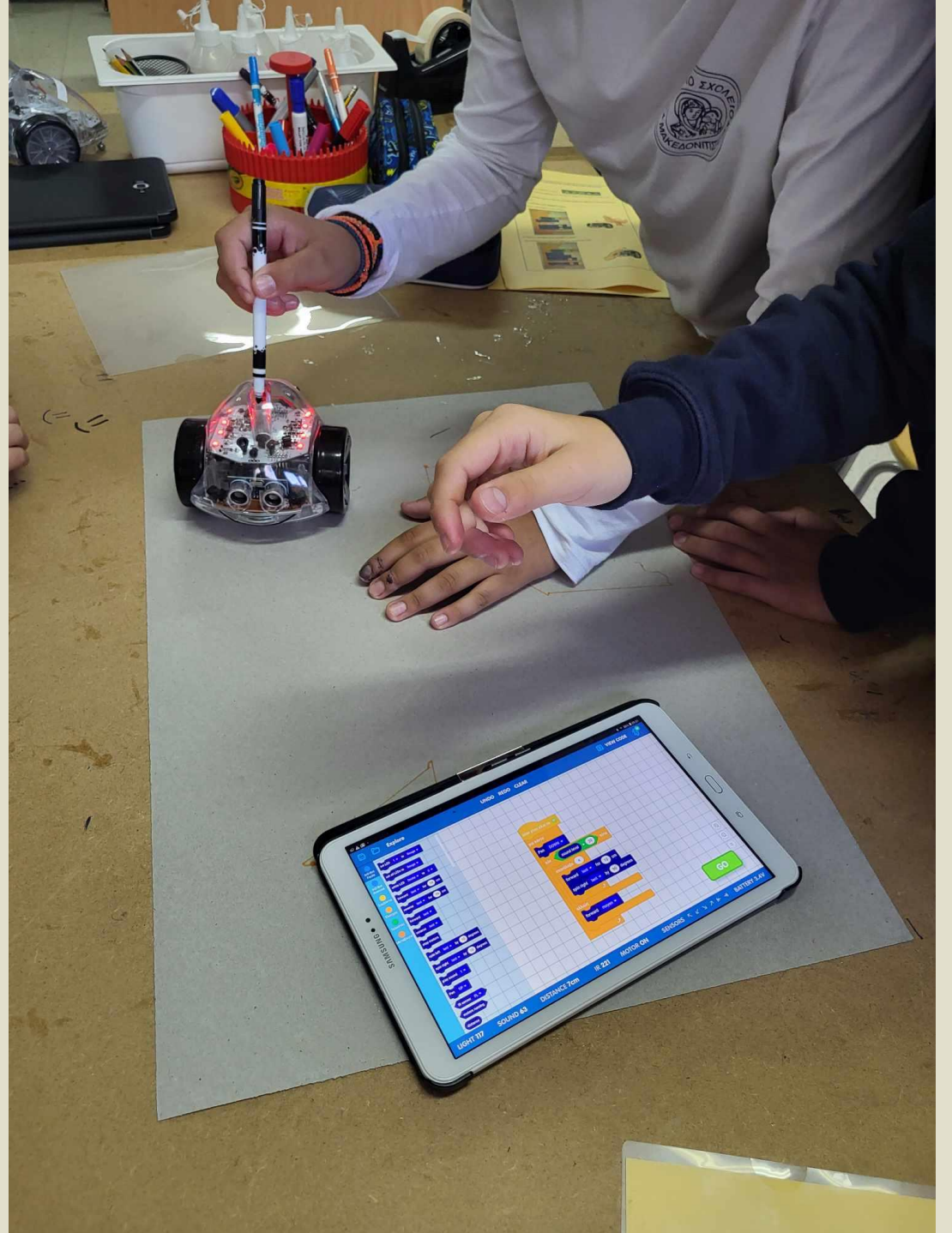
**World Wide Web**

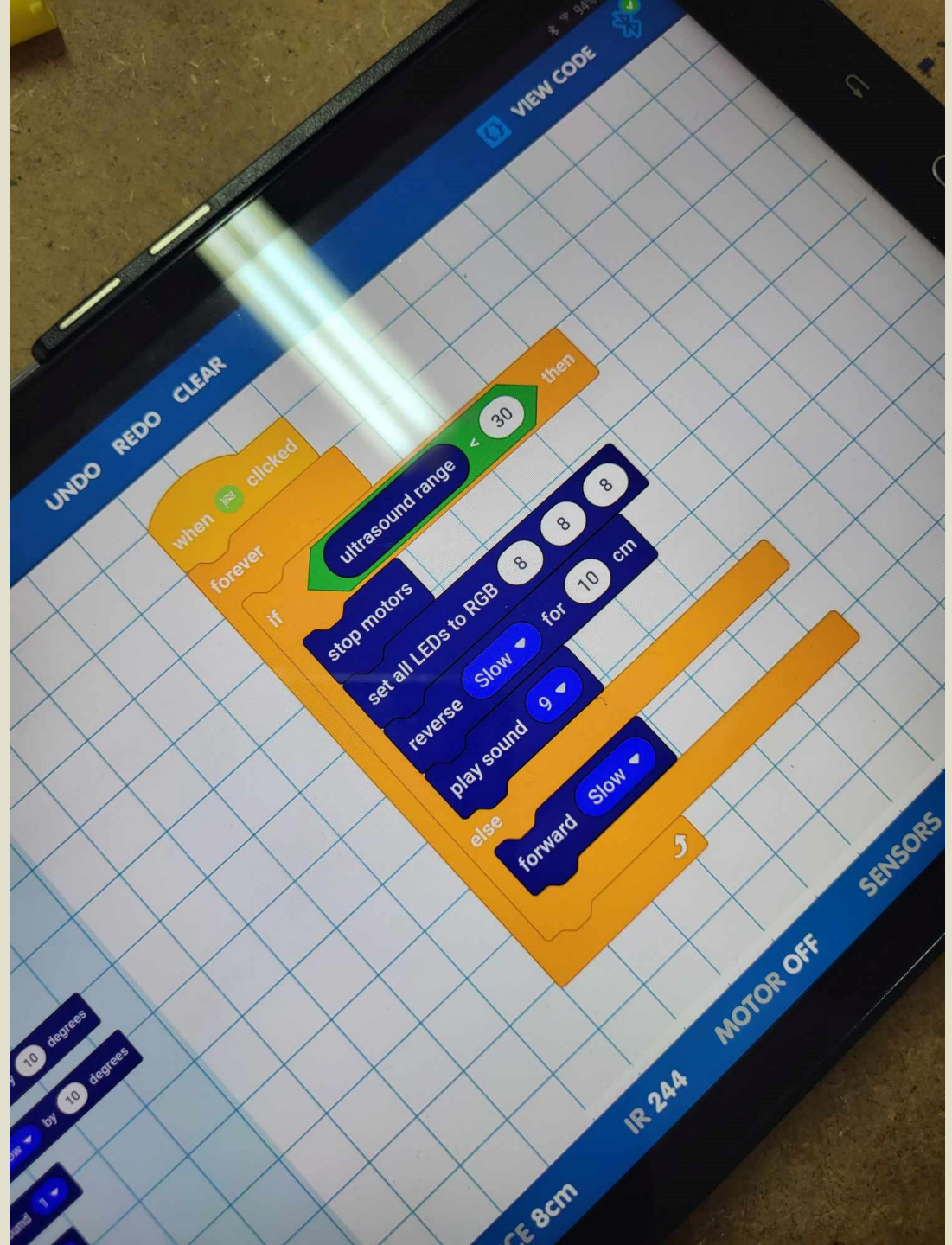
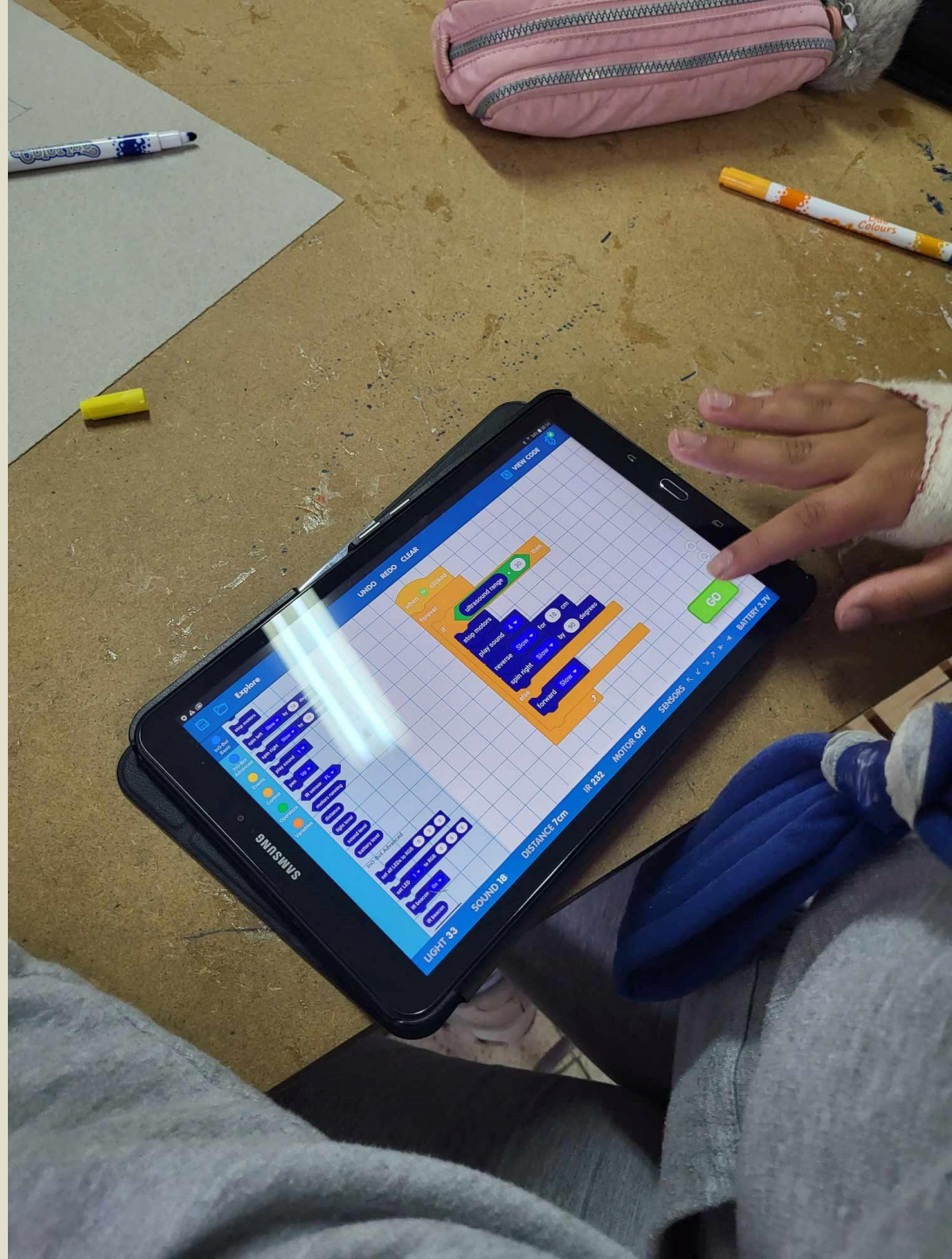
- ▶ Inventor: English Engineer Sir Tim Berners-Lee
- ▶ Type: System of Interlinked Hypertext Documents Accessed via the Internet
- ▶ Application: View Web Pages, Other Multimedia

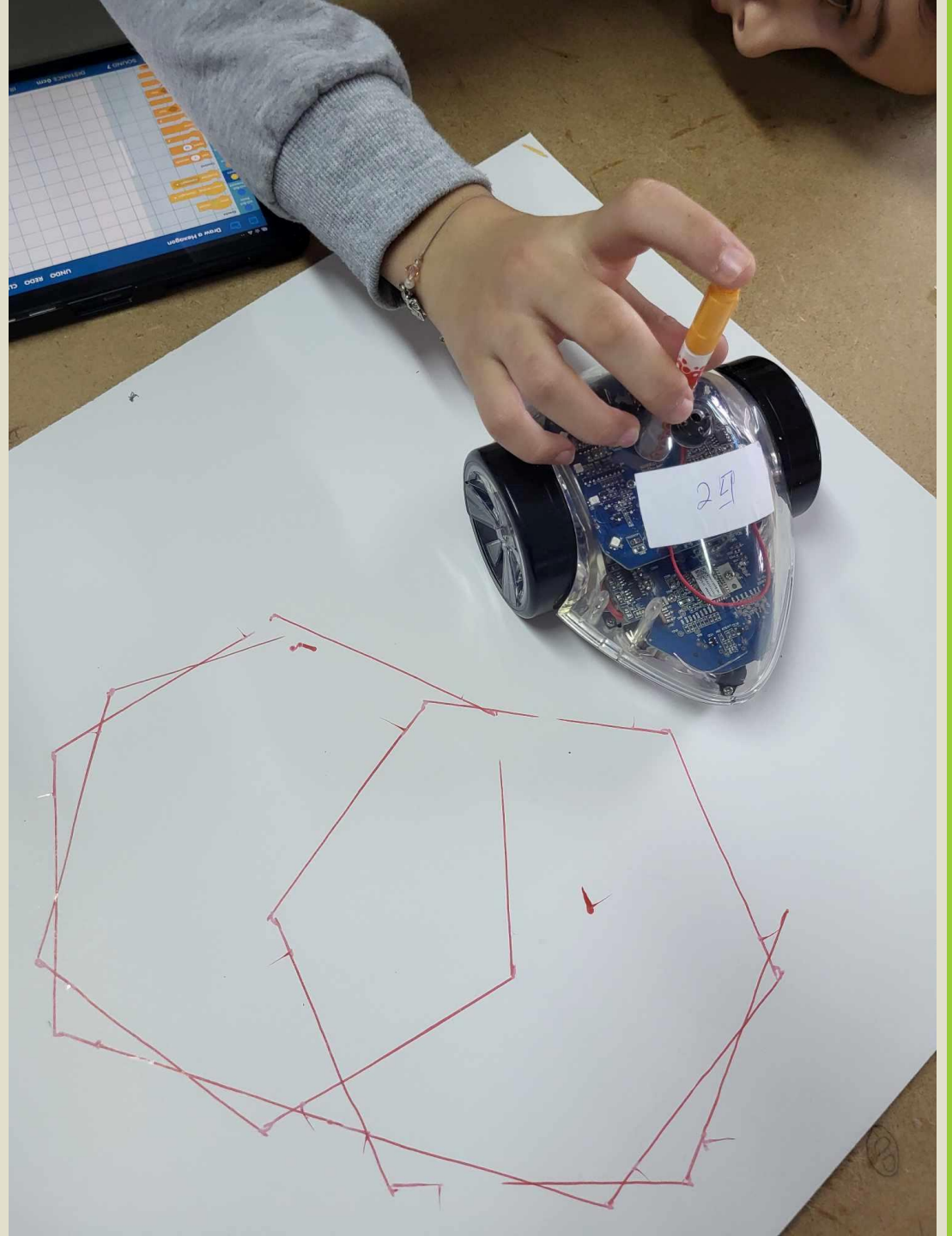
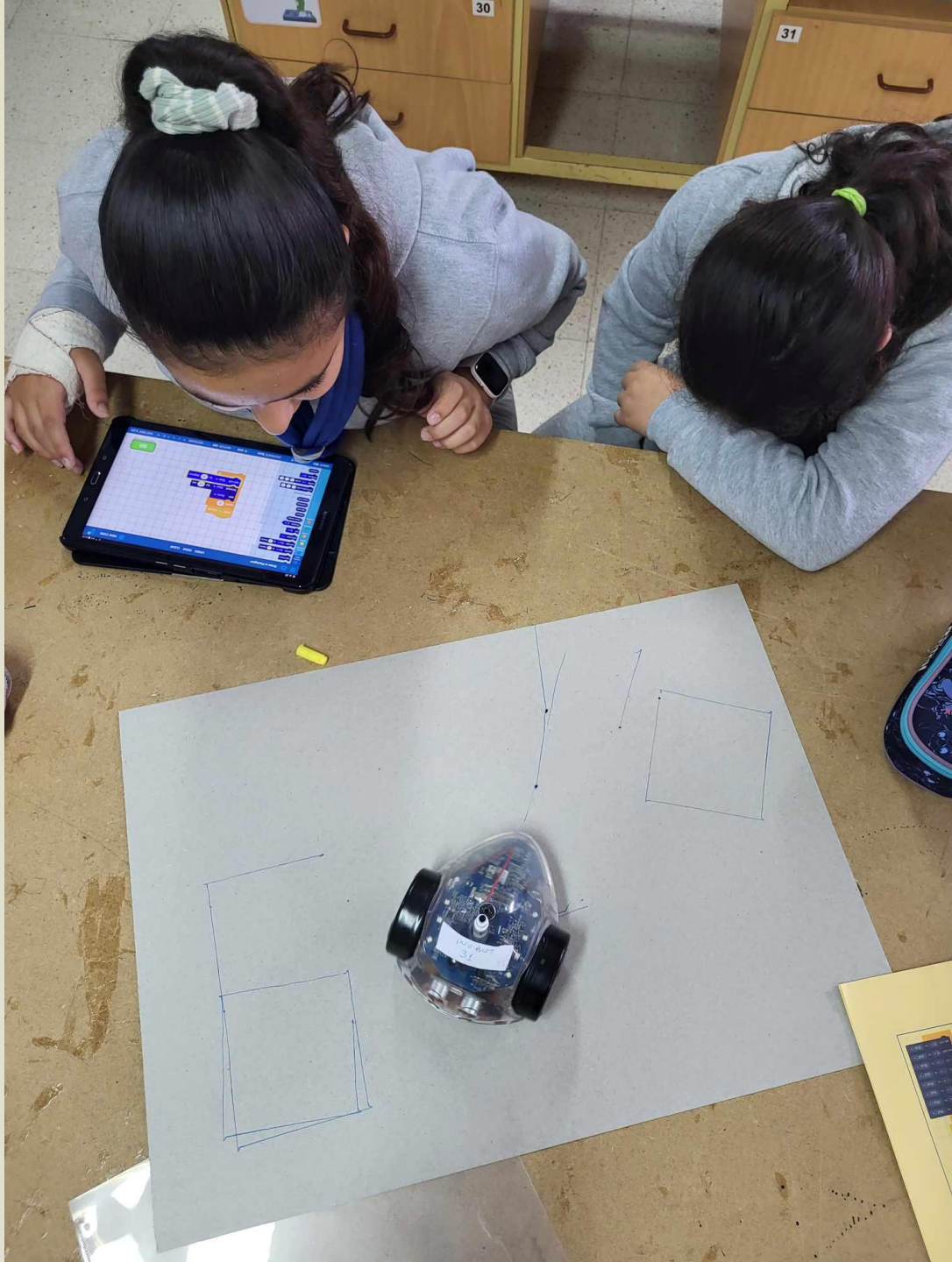
**ΑΙΤΙΟΛΟΓΙΑ ΜΕ ΙΝΤΕΡΝΕΤ**

Από τον 19ο αιώνα γίνεται αμετάβλητη η δομή της πληροφορίας. Η πληροφορία είναι σταθερή και δεν αλλάζει. Η πληροφορία είναι σταθερή και δεν αλλάζει. Η πληροφορία είναι σταθερή και δεν αλλάζει.

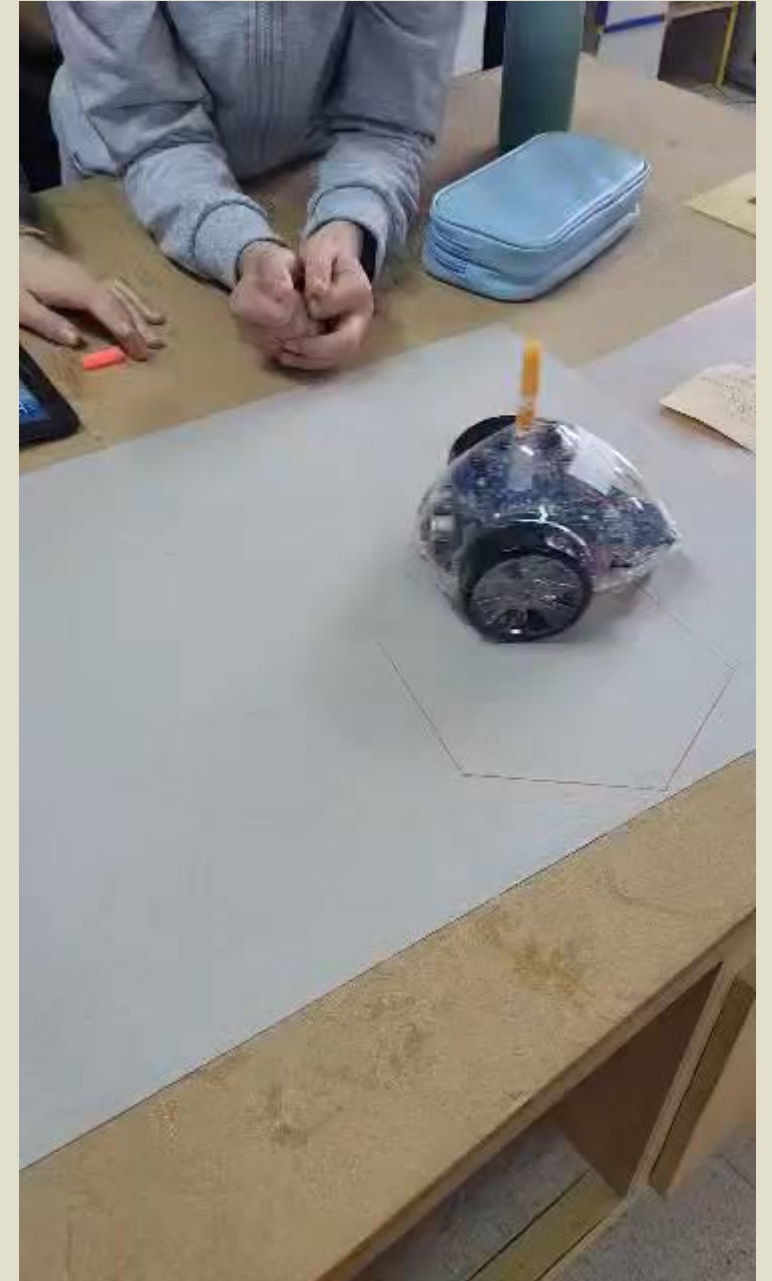
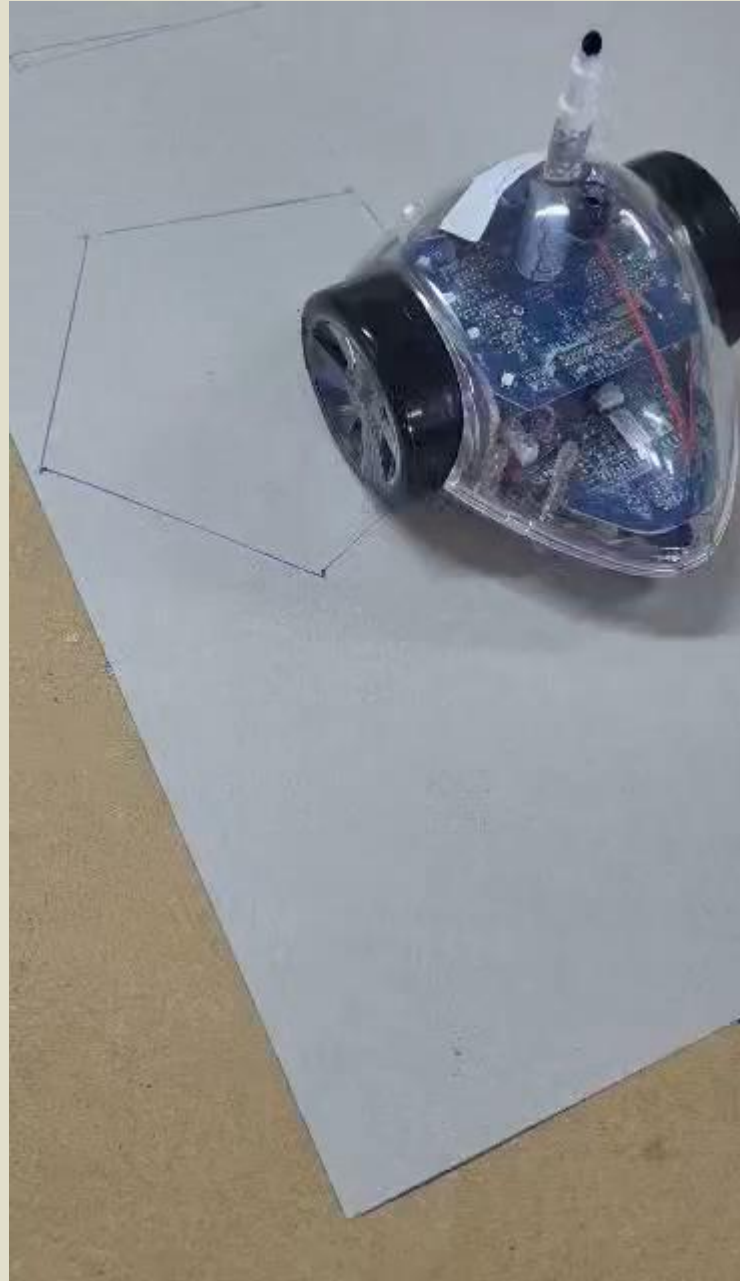
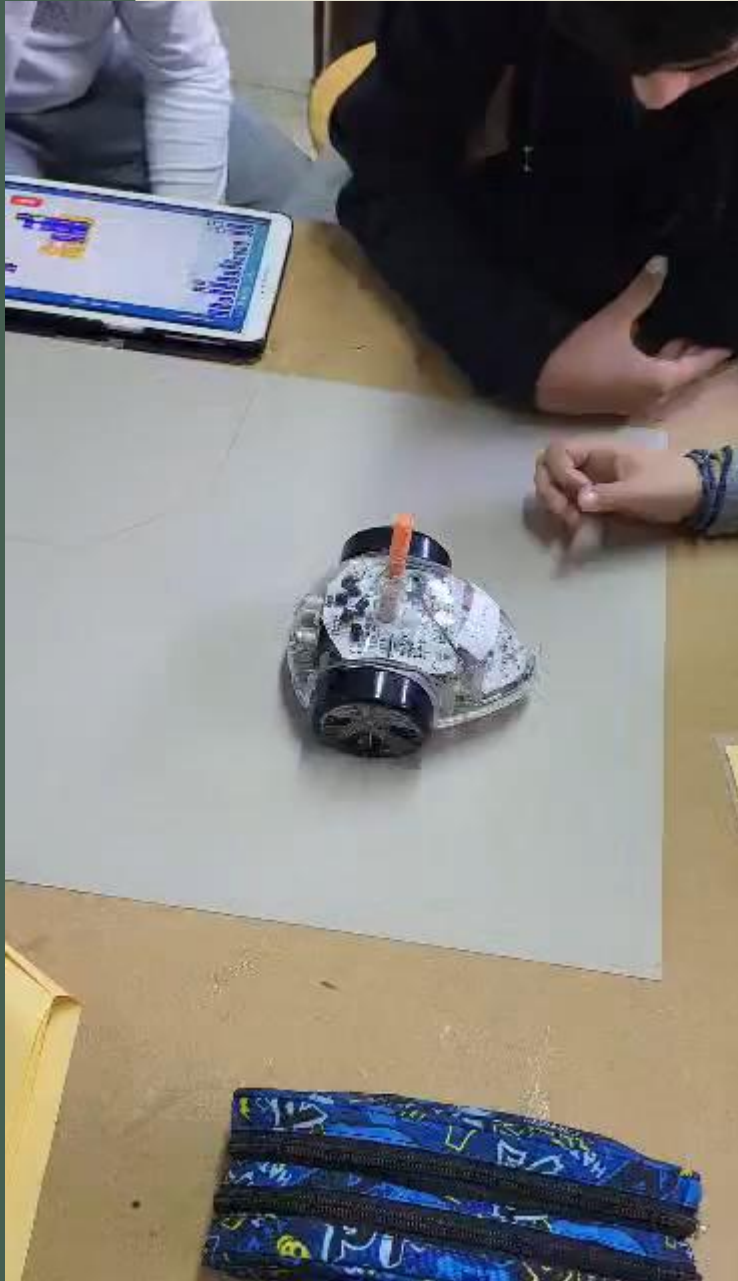
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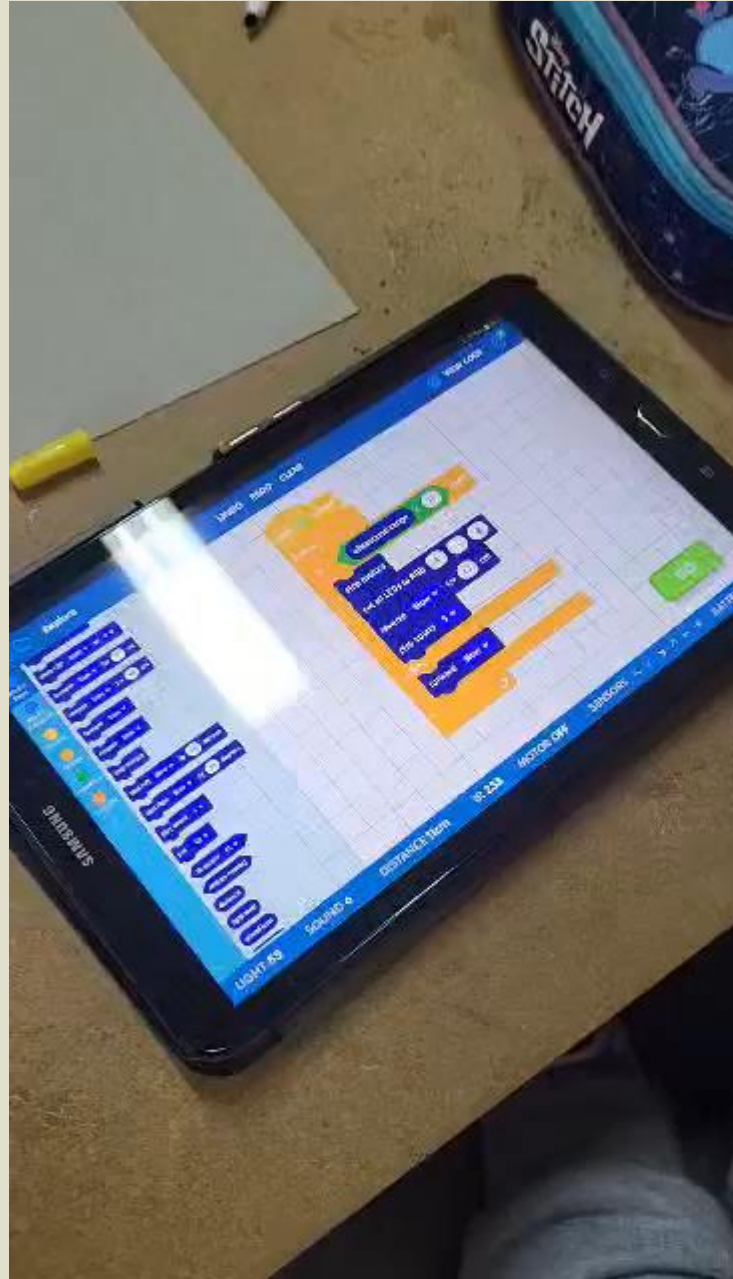




✓ VIDEOS: InO-Bot is drawing shapes



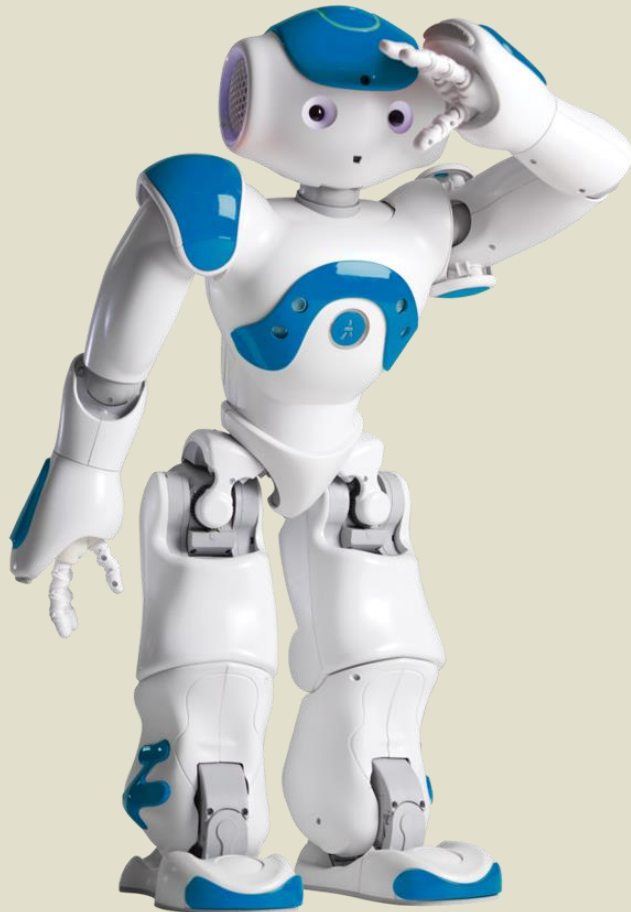
✓ VIDEO: InO-Bot is exploring obstacles using sensors



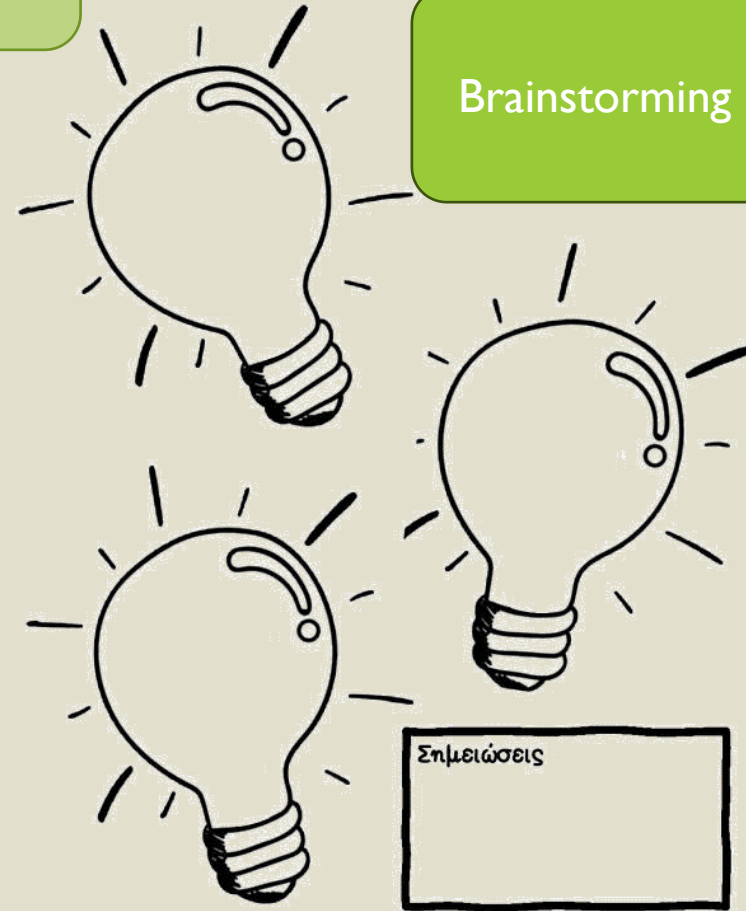


## 5. Assessment ...

What have we learned about  
**INO-BOT and Scratch?**



Brainstorming ...



Σημειώσεις