

# Sports Hall STEM Club

11/10/18

**Good morning students!**

**Today's themes are:** The  
Magic Box of the Robot--The Main  
Board/Brain/MCU

*Read p.33 and 40 out loud with a partner!*

# Questions

- What are the two other names of the brain of the robot?
- What 3 things does the brain help the robot do?
- What does MCU stand for?
- **What things can we connect to the Brain of the robot? Let's Review!!**

**SENSORS**

# SENSORS

- You can think of Sensors similar to your “sensors” :
  - You take in scent via your **nose sensor**
  - You take in flavor via your **taste bud sensors**
  - You take in your surroundings via your **eye sensors**
  - You take in sounds via your **ear sensors**
  
- **INPUT**
  - Taking “IN” information from your sensors



Touch Sensor (2)



IR Sensor (3)



R/C Receiver (1)



Mic Sensor (1)



CDS Sensor Board(1)

**MOTORS**

# MOTORS

- You can think of Motors similar to your “body” :
  - Your brain sends signals to your leg motors to make you walk
  - Your brain sends signals to your mouth motor to help you to chew food
  - Your brain sends signals to your finger motors to help you to grab things
  
  - **Similarly, the brain of the robot (MCU) sends signals to its motors. These motors allow the robot to move, make sounds, and respond to info it collects from the sensors**





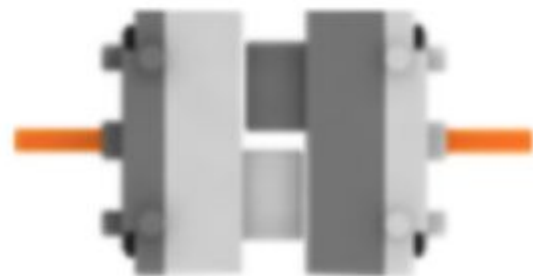
Servo Motor (1)



Speaker Board(1)



Buzzer Sensor (1)

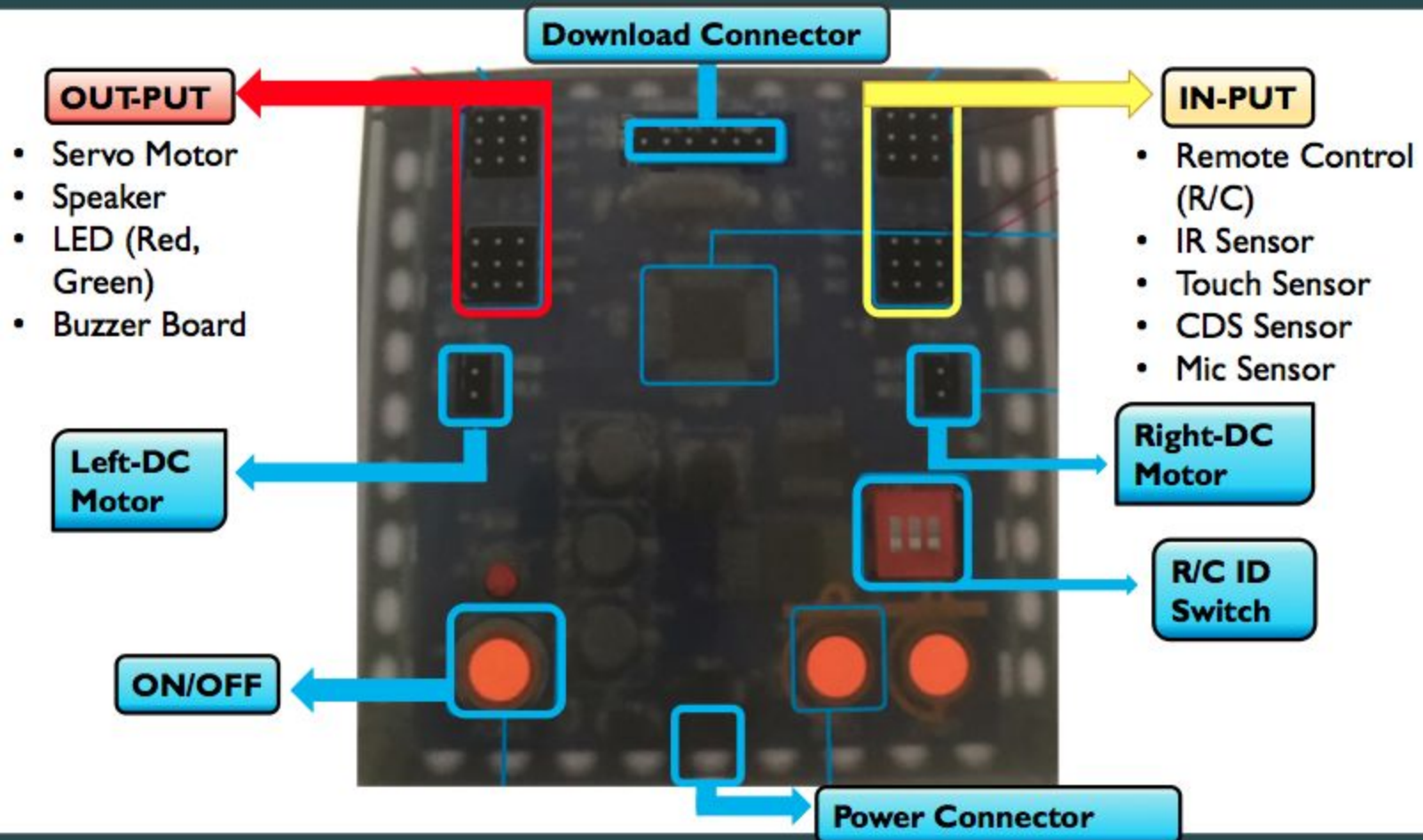


DC Motor (2)



LED Sensor Board(2)

**HOW DO WE  
CONNECT THINGS  
TO THE BRAIN?**



# LET'S GET TO WORK!

## 3 Groups

- Scratch Programming Team
- Robotics Team
- Khan Academy Team



# Scratch Programming Team -- Create your own robot!

- Create a Scratch Animation that shows a robot of your own! Describe its sensors and what they allow your robot to sense! Describe its motors and how they allow your robot to move!
- You can
  - Create a voice recording explaining the concept
  - Create a comic where your sprites are talking about the robot
  - Research + Create an animation about a real-life robot and what sensors and motors it uses to function
  - **USE YOUR CREATIVITY**
- Ask anyone on the STEM Team if you need help!

# Robotics Team

- Build the Mini Tank from the Blue book (p. 12)
- Discuss what sensors and motors it uses! Tell someone from the STEM team!

## Khan Academy

Begin Practicing Math Subject on the Khan Academy App -- Ask anyone on the STEM Team If you need help and let us know when you start a new lesson, and if you need any help.

## SWAP

Now it's time to swap teams everyone! Break down your robots and clear your Scratch programs!



# Wrap Up/Review Questions

- What are the two other names of the brain of the robot?
- What 3 things does the brain help the robot do?
- What does MCU stand for?
- **What things can we connect to the Brain of the robot?**
- **Types of Sensors? What do they allow the robot to do?**
- **Types of Motors? What do they allow the robot to do?**