

# AWESOME TECH

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# Mars Exploration



## AWESOME TECH

# Mars Exploration



Seven week program

**STEAM**



# Project Based

# Curriculum

Seven Weeks

Journey to Mars

Logistics

Construction Mars Rover

Coordinates

Navigation

Habitat

Electronics

Programming / Problem solving

Science Blog

# Group Based

# Roles

Organiser

Resourcer

Understander

Includer

# Organiser

Keep the group together and focused  
on the problem

# Resourcer

Only person that can leave their seat to collect rulers, calculators, pencils, etc., for the group

# Understander

Make sure all ideas are explained  
so everyone is happy with them

Records the teams ideas

Reports back at the end

# Include

Make sure everyone's ideas are listened to

Invites everyone to make suggestions



# Equipment

Raspberry Pi's  
CamJam Edukit 3  
Pi-topCEEDs  
Robot Chassis  
Blockly



• Airport for nobody  
• Spent 30 minutes  
• Checked take off + land

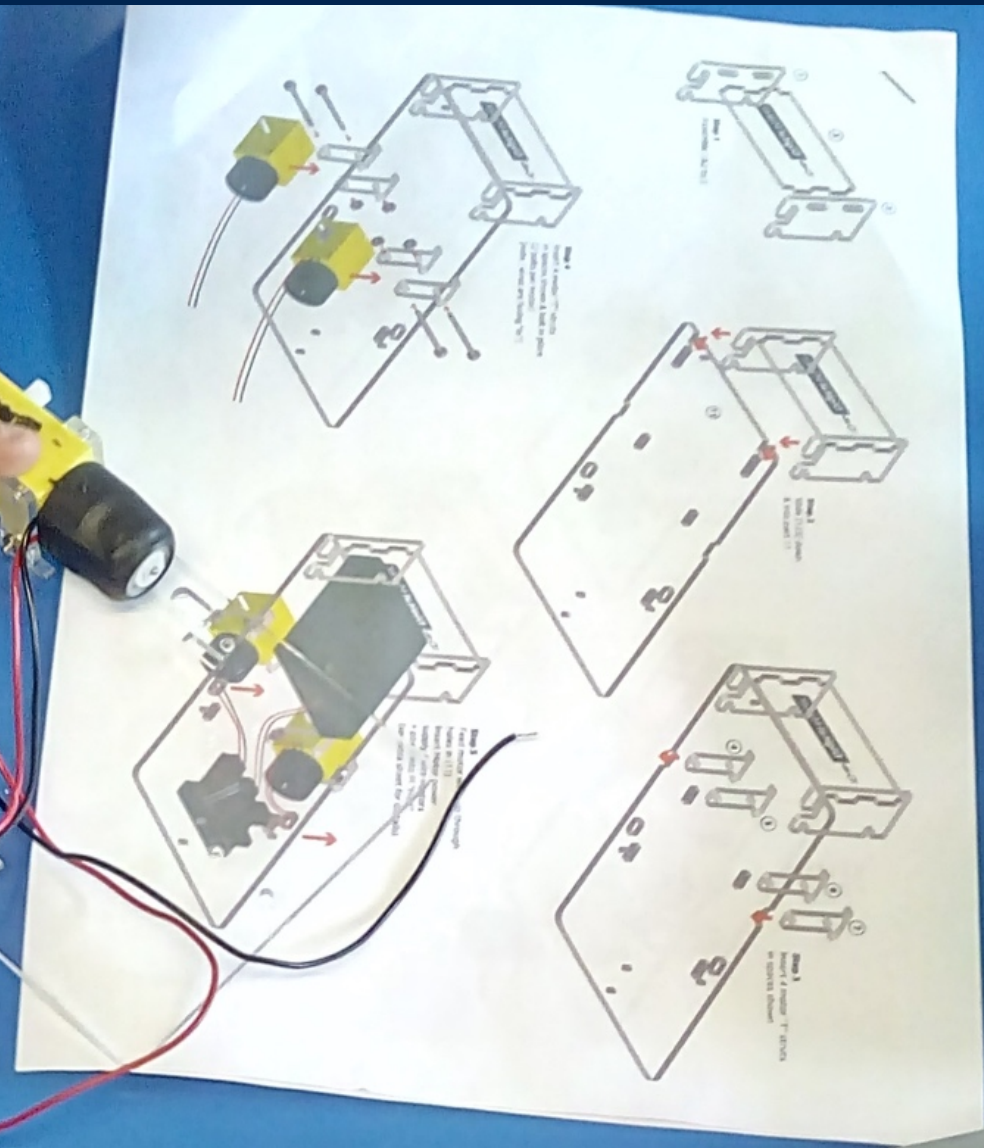
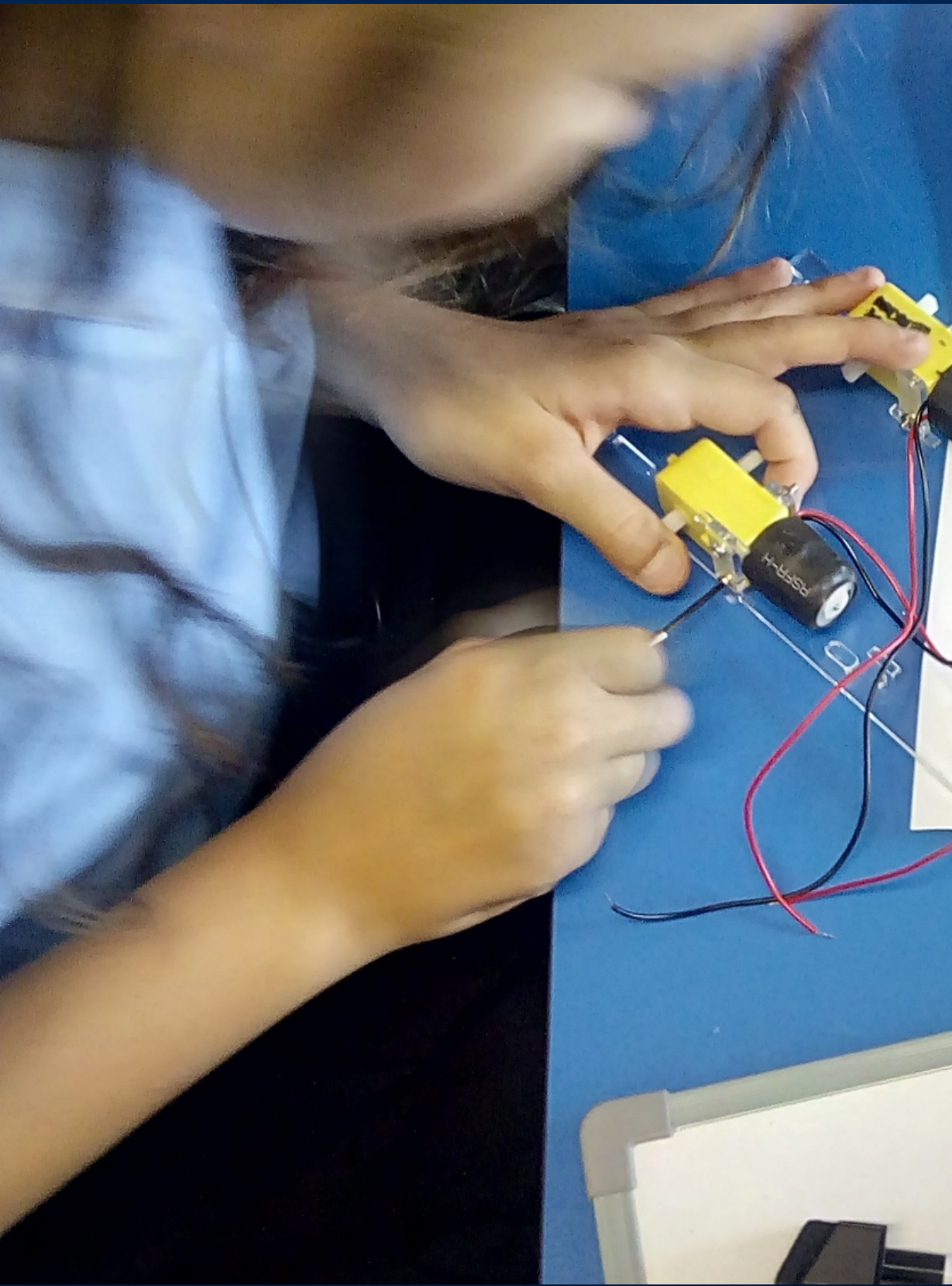
























# Lessons Learned

# Worksheets

# Whiteboards

- I learnt how to connect a rover to a pi-top CEED - Karolina
- I learnt that rovers can dance - Krystyna
- I learnt that raspberry-pi's can come in all different sizes - Vera
- I learnt how to work well with others - Olivia
- I learnt that airports for rockets are called spaceports. - Vera
- I learnt how to work in a group - Karolina
- I learnt how to control a rover - Krystyna



Paulina Justine Julia  
Natalia

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Paulina learned how to  
build a robot.

Justine learned that if u  
put wires in wrong places  
it wont work

Julia learned how to con-  
struct things

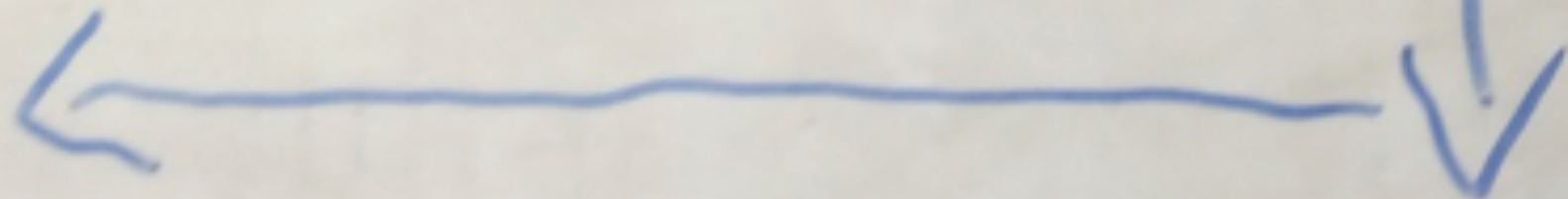
Natalia learned how to  
control a robot



move forward  
50 speed 0.2 sec  
turn right  $90^\circ$   
move forward  
50 speed 0.2 sec  
turn left  $90^\circ$   
move forward  
50 speed 0.1 sec  
turn left  $90^\circ$   
move forward 60  
speed 0.4 sec

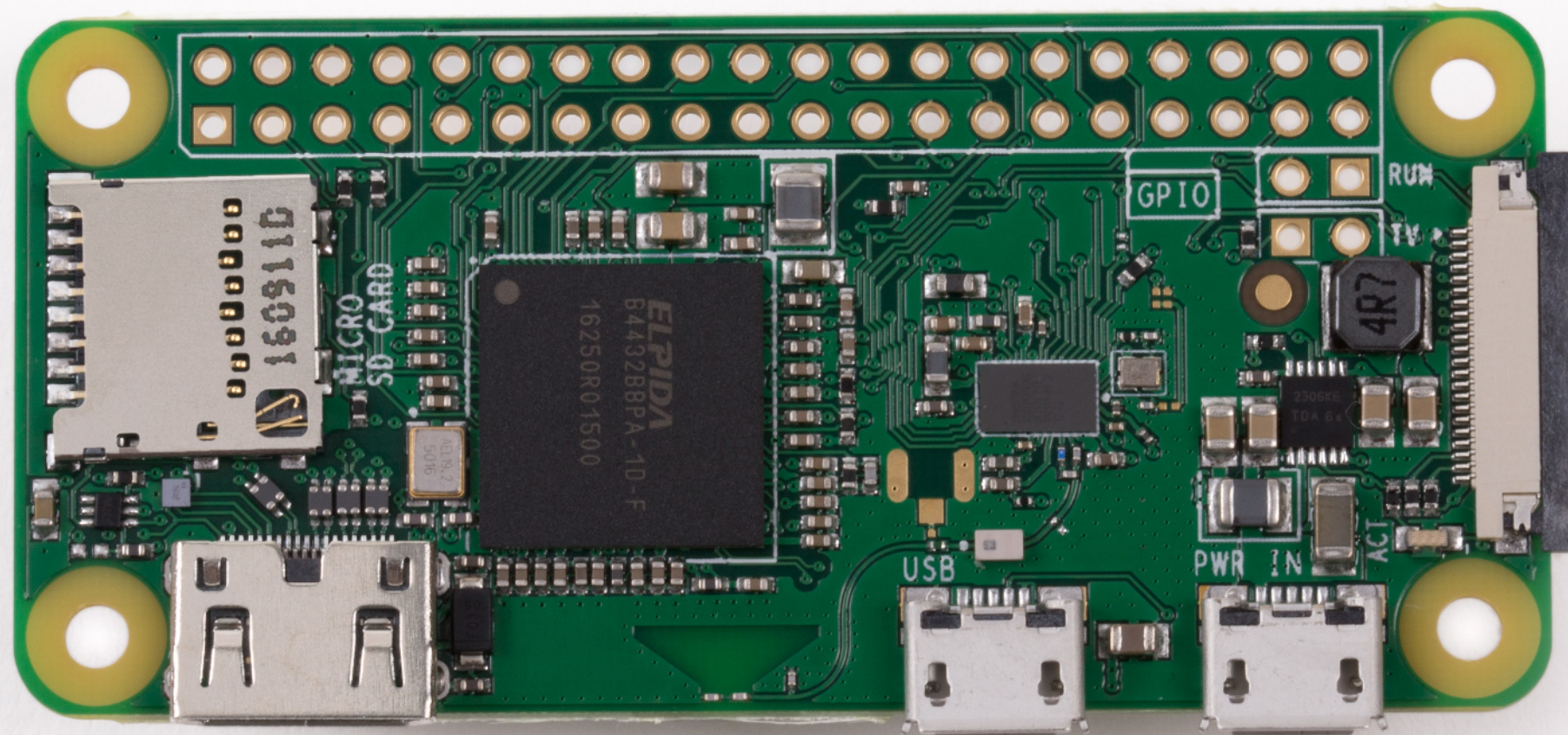
ROV

Garage



Wi-Fi





Pi Zero W

Powered by Pi-top

USB Ethernet

Tethered

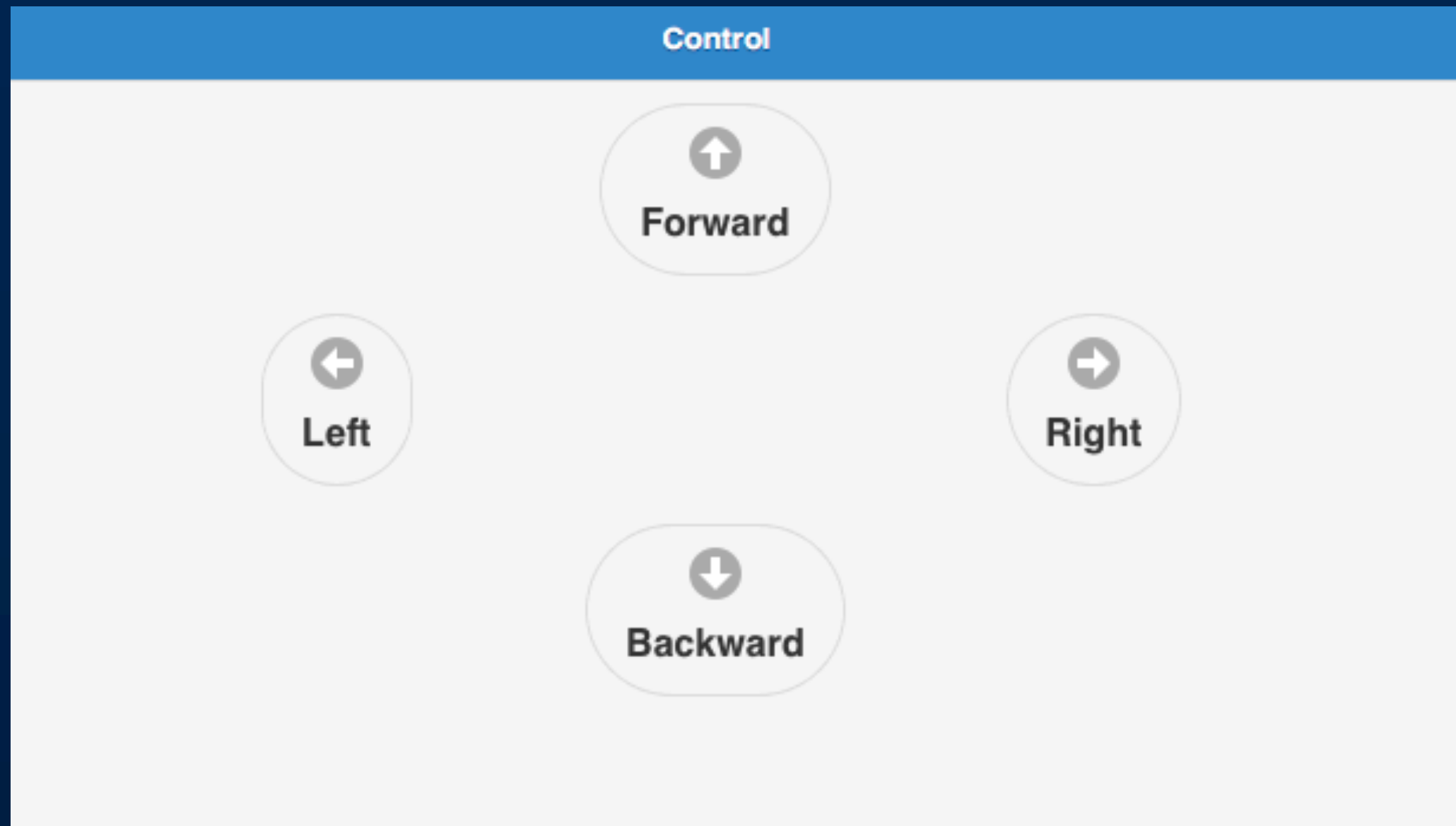
**Focus on**

**Problem Solving**

**Not the Tech**



# Scratch

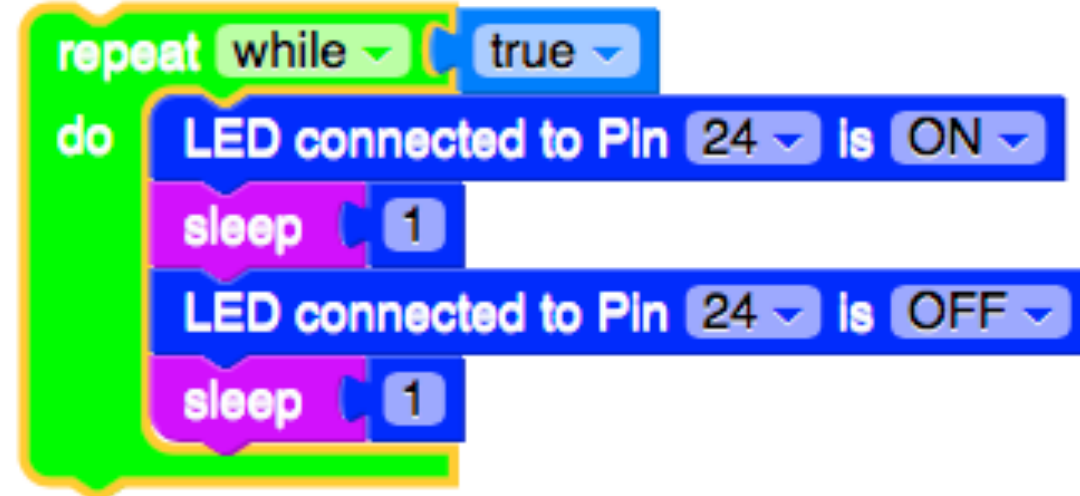
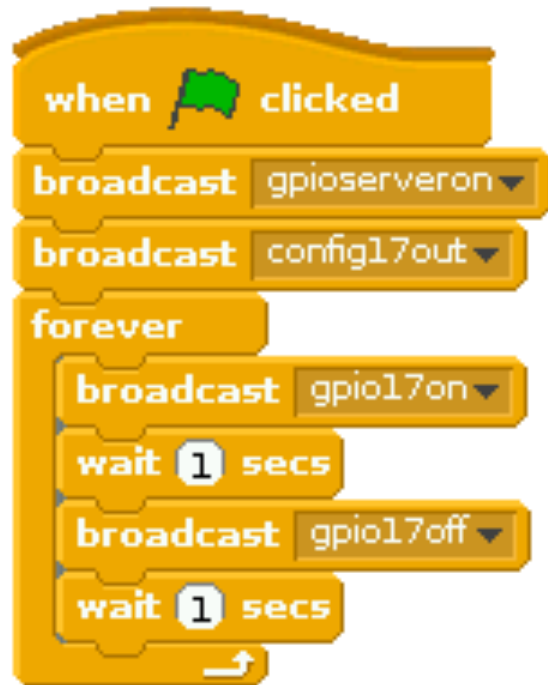


# Coderbot / Blockly

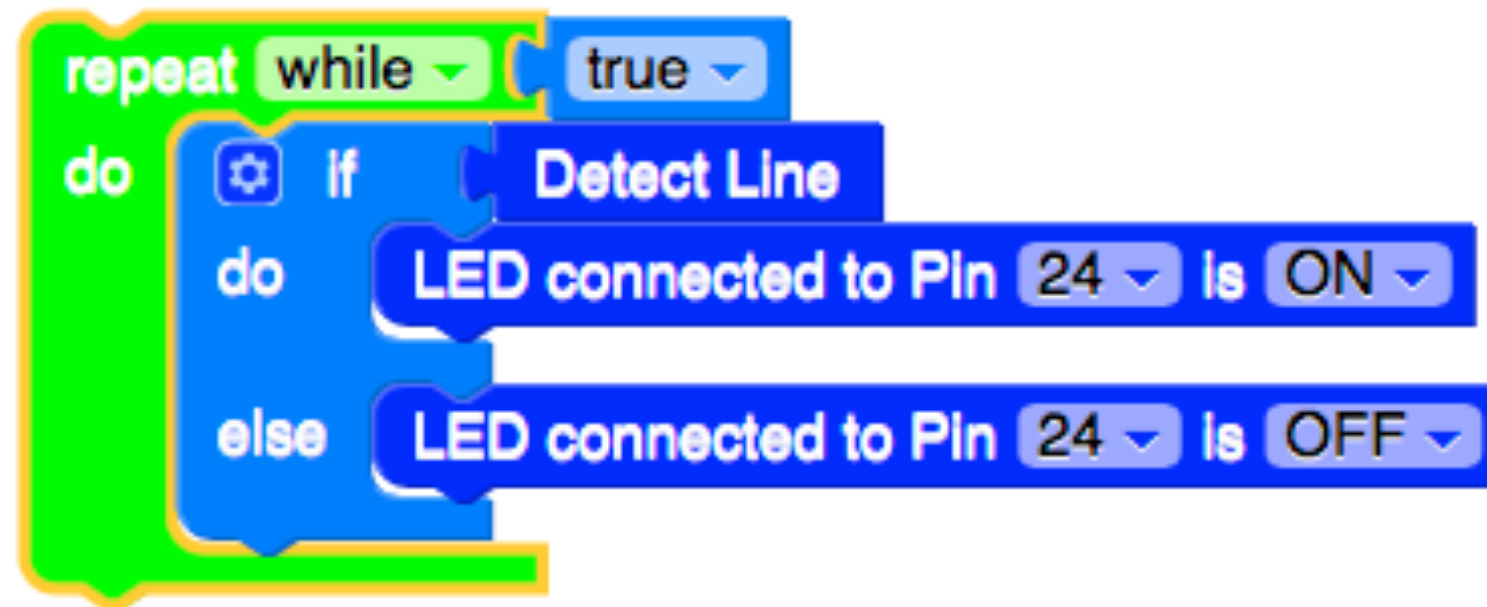




# Movement



# Flash an LED

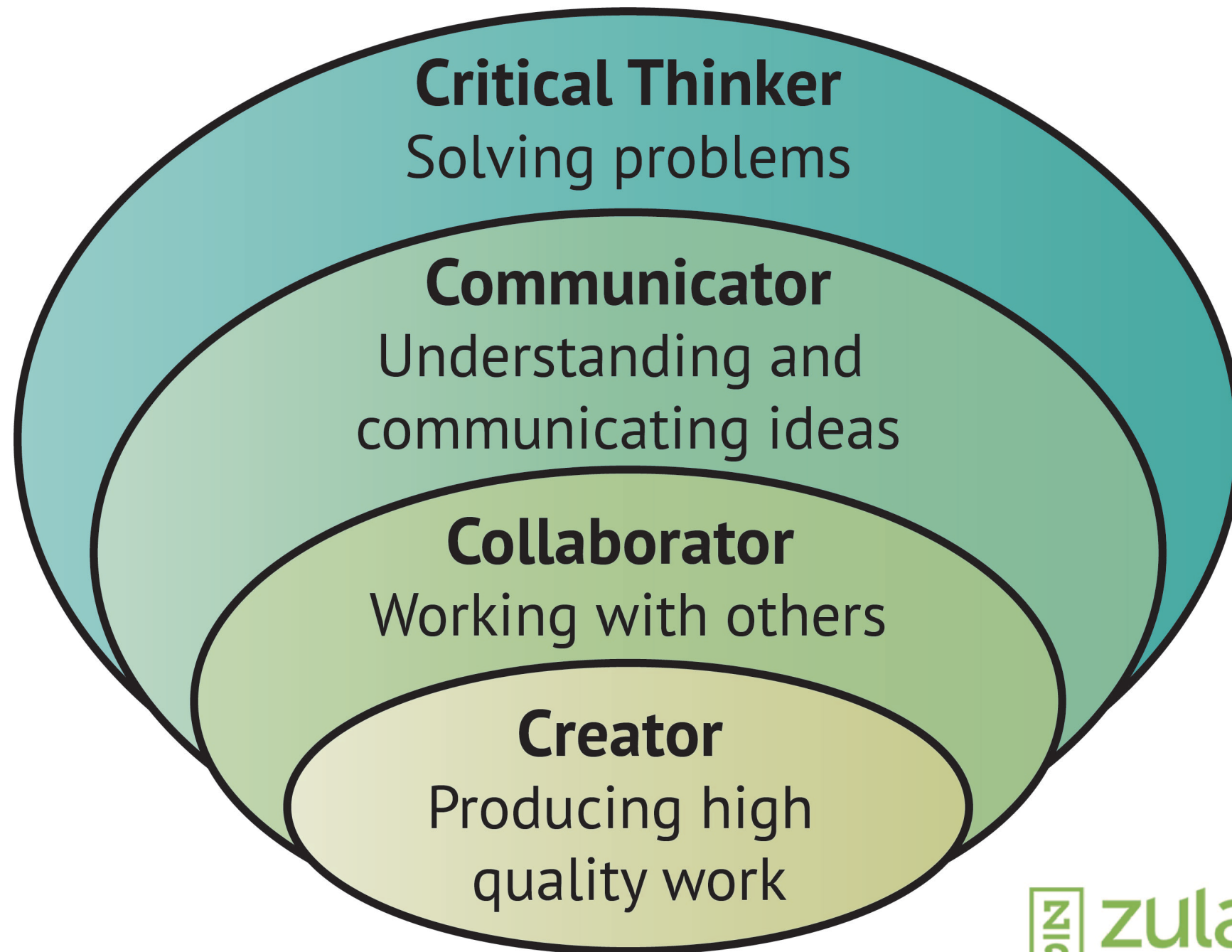


# Line Detection



# Outcomes

# The Four Cs of 21st Century Skills

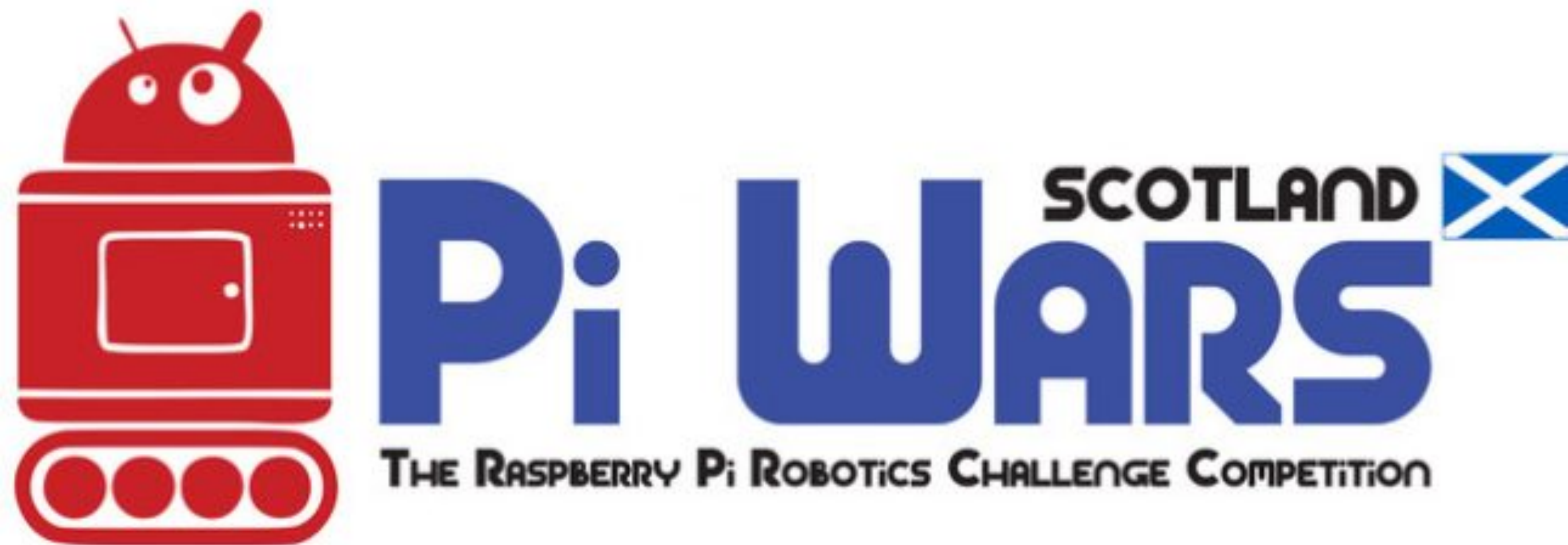


**Problem Solving**

**Creativity**

**Group Work**

**Growth Mindset**



# Pi Wars Scotland

**Early Next Year**

**Venue?**

**Register an interest**

**[Piwarsscotland.org](http://Piwarsscotland.org)**

**AWESOME TECH**

**THANK YOU**

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