

Summary

- We have learned a lot about gyro turns, gyro moves, and line following last year, but...
- ...many students have lost their code
- In this set of slides, we summarized the most important codes and processes

My Blocks (Turn)

The image displays two sets of Scratch code blocks for controlling a robot's turn. The left set is for a 'left turn' and the right set is for a 'right turn'. Each set includes a 'define' block, two 'start moving' blocks, two 'wait until' blocks, and a 'stop moving' block. The 'wait until' blocks use a gyro sensor to detect when the robot has turned a specific angle. The port number '2' is circled in red in both 'wait until' blocks, with a red arrow pointing to it from the text below.

```
define left turn direction
  start moving left: -100 at 40 % speed
  wait until gyro 2 angle < direction + 20
  start moving left: -100 at 10 % speed
  wait until gyro 2 angle < direction + 1
  stop moving

define right turn direction
  start moving right: 100 at 40 % speed
  wait until gyro 2 angle > direction - 20
  start moving right: 100 at 10 % speed
  wait until gyro 2 angle > direction - 1
  stop moving
```

Change the port number of the gyro to match your robot!

My Blocks (Forward and Back)

define gyro forward direction cm speed

set rotations to $\text{cm} / 17.6$

set degrees to $\text{rotations} * 360$

B reset degrees counted

repeat until B degrees counted > degrees

if B angle < direction then

start moving right: 10 at speed % speed

else

if B angle > direction then

start moving left: -10 at speed % speed

else

start moving straight: 0 at speed % speed

stop moving

Change the port number of gyro and motor to match your robot!

define gyro back direction cm speed

set rotations to $\text{cm} / 17.6$

set degrees to $\text{rotations} * -360$

B reset degrees counted

repeat until B degrees counted < degrees

if B angle < direction then

start moving left: -10 at $-1 * \text{speed}$ % speed

else

if B angle > direction then

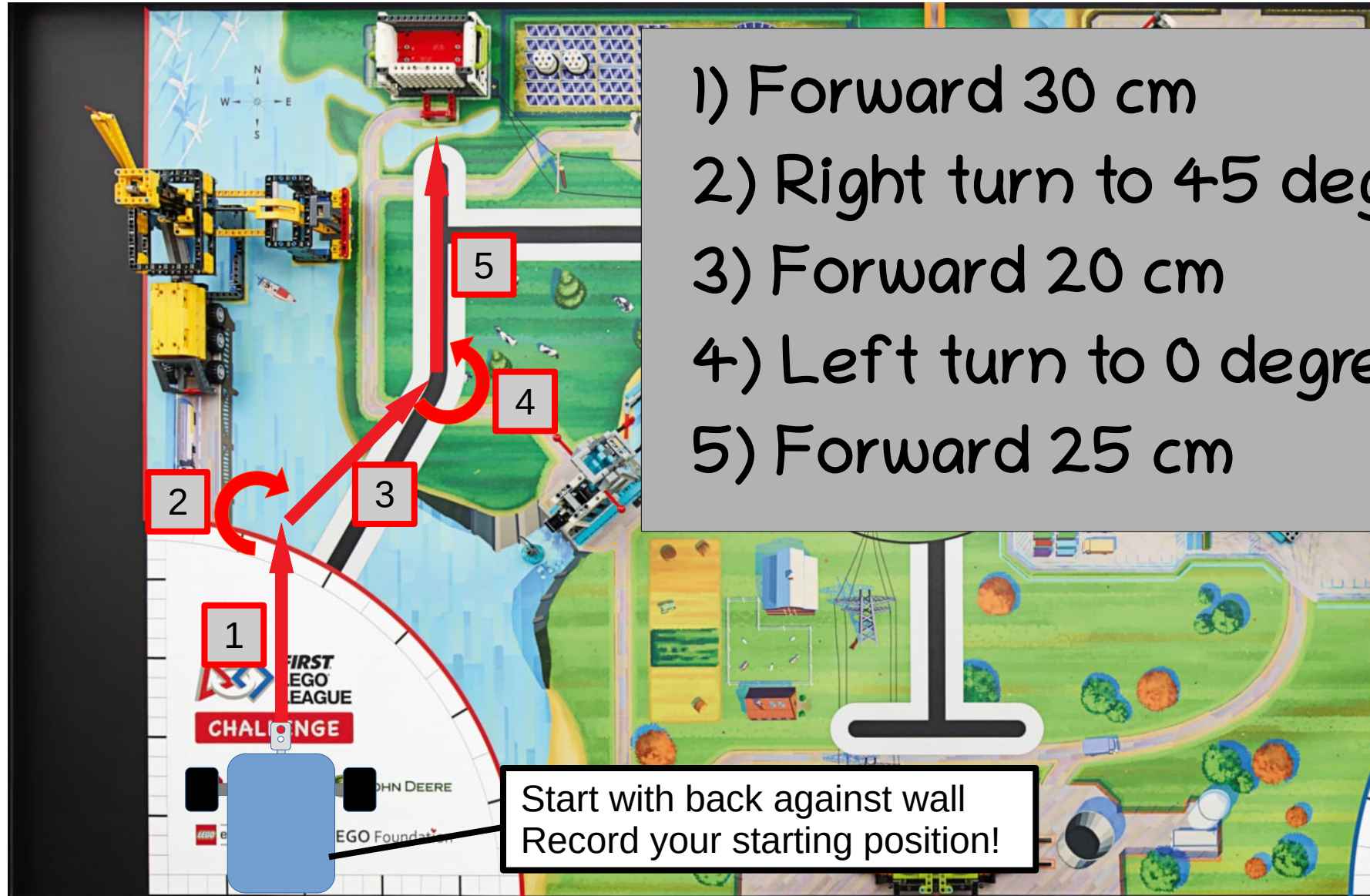
start moving right: 10 at $-1 * \text{speed}$ % speed

else

start moving straight: 0 at $-1 * \text{speed}$ % speed

stop moving

4) Prepare Detailed Plan



5) Program

- Program should resemble the plan

Change the motor ports to match your robot!

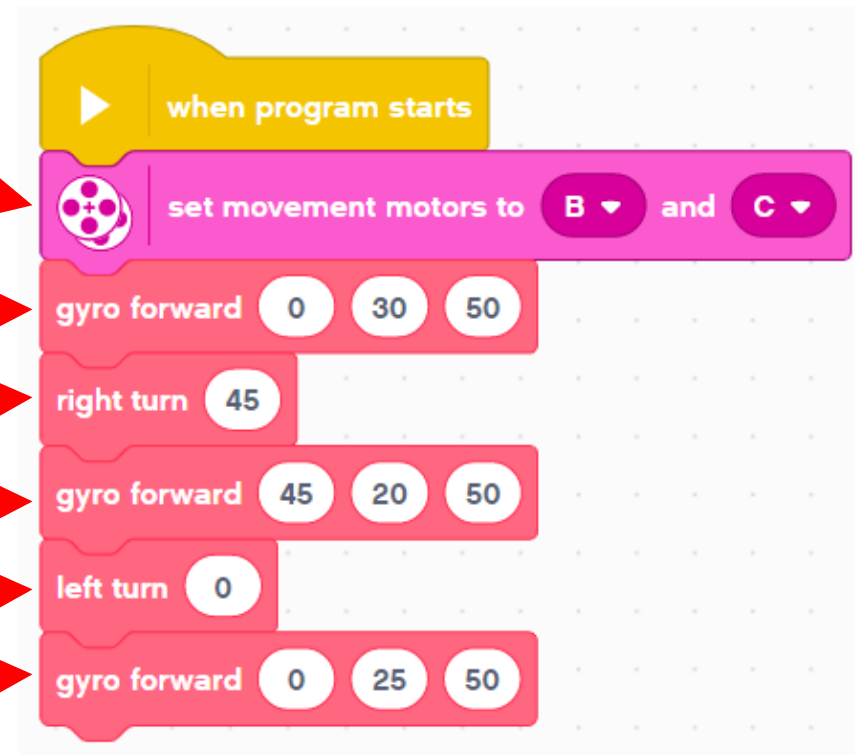
1) Forward 30 cm

2) Right turn to 45 degrees

3) Forward 20 cm

4) Left turn to 0 degrees

5) Forward 25 cm



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