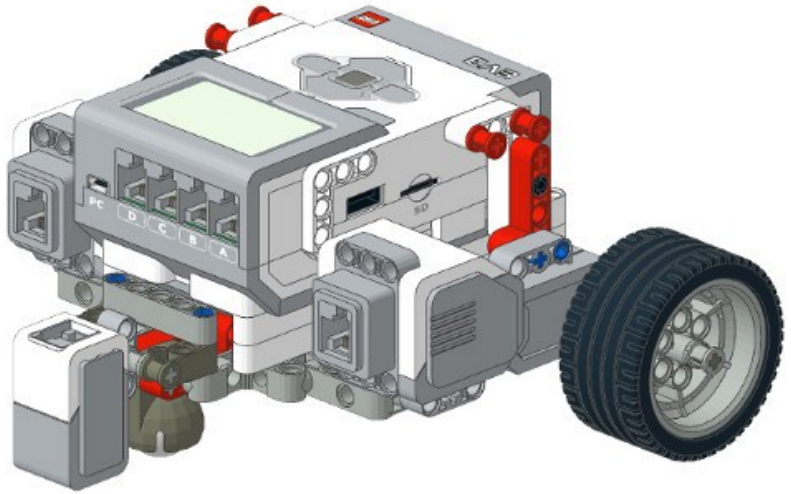
LEGO MINDSTORMS EV3

Pre-Season Preparations



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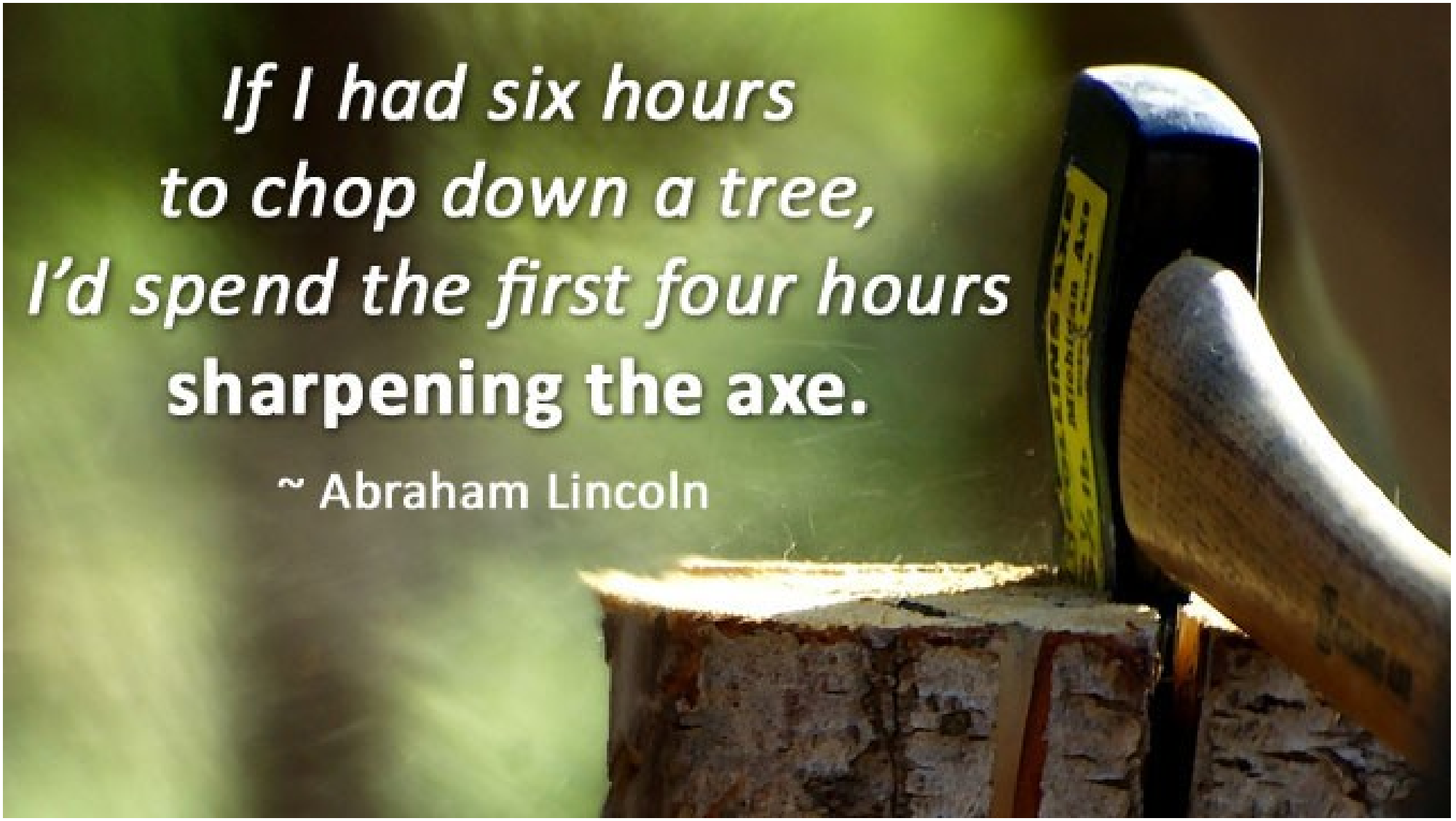
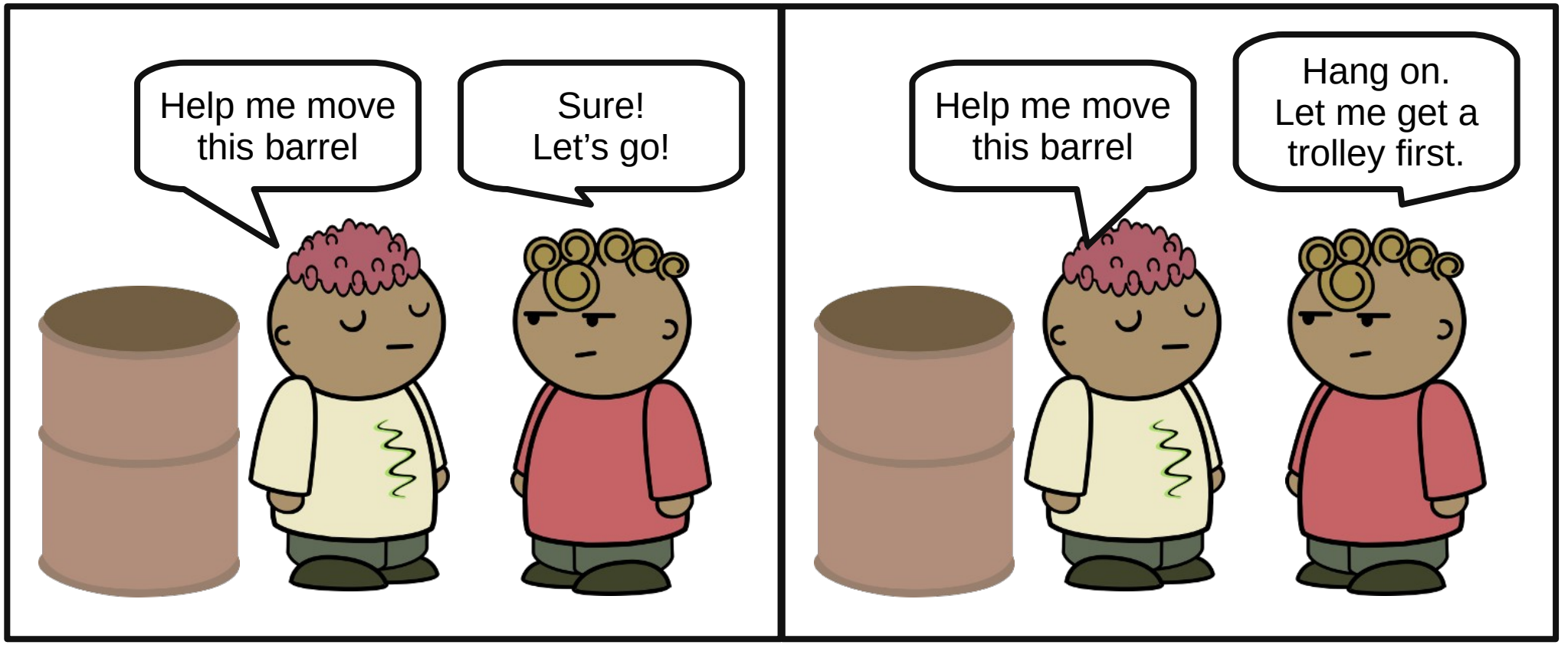
Why Prepare?


If I had six hours
to chop down a tree,
I'd spend the first four hours
sharpening the axe.
~ Abraham Lincoln

Why Prepare?

- Having the right tools help you work faster



Who will get the job done faster?

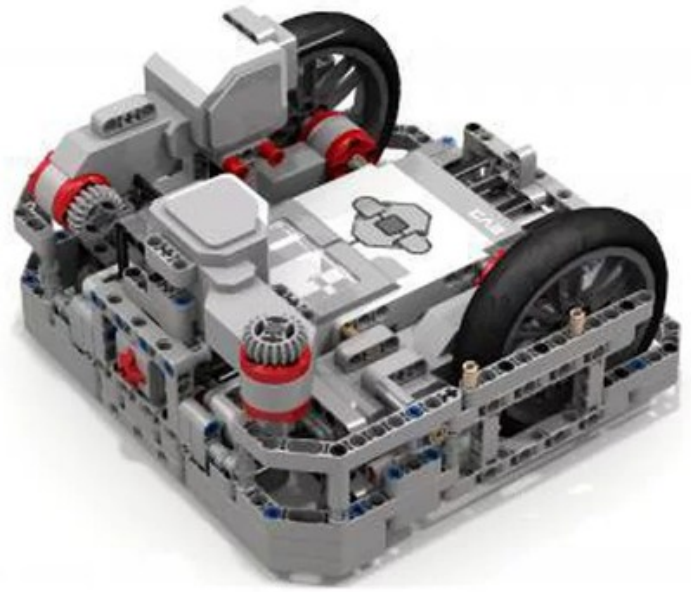
What to prepare?

- Base robot
  - The best teams re-uses the same base robot every year (...with modifications and improvements)
  - Can add and remove attachments for each mission

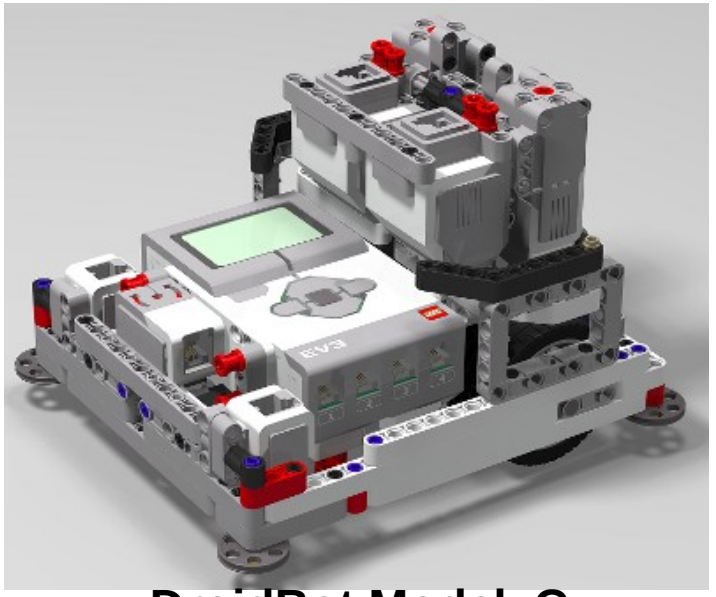
- Useful functions (My blocks)
  - Makes your programming easier
  - Less trial and error
  - Neater and more understandable programs

Base Robot

- Motors
  - Thin wheels, far apart
- Sensors
  - Far apart and close to ground for accurate line alignment
- Flat front and back
  - For wall alignment
- Flat sides
  - For wall gliding (situational)



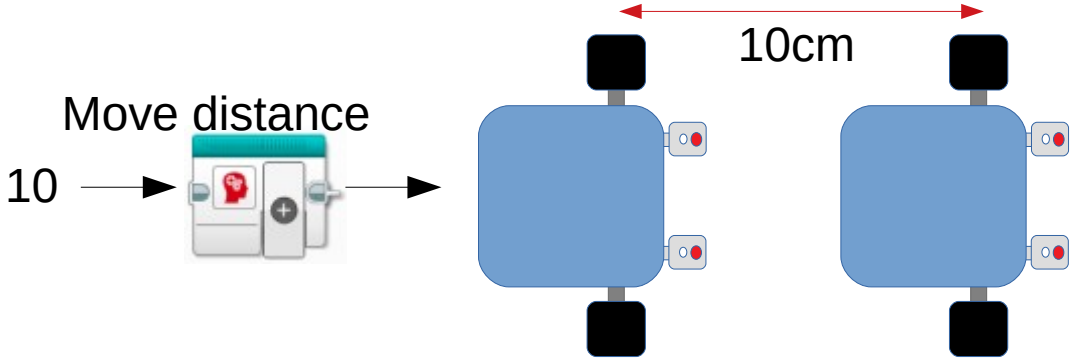
Fllying Tortoise (David Luder)

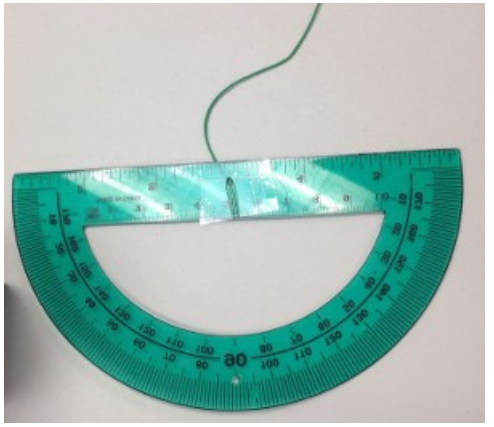


DroidBot Model C (Seshan Brothers)

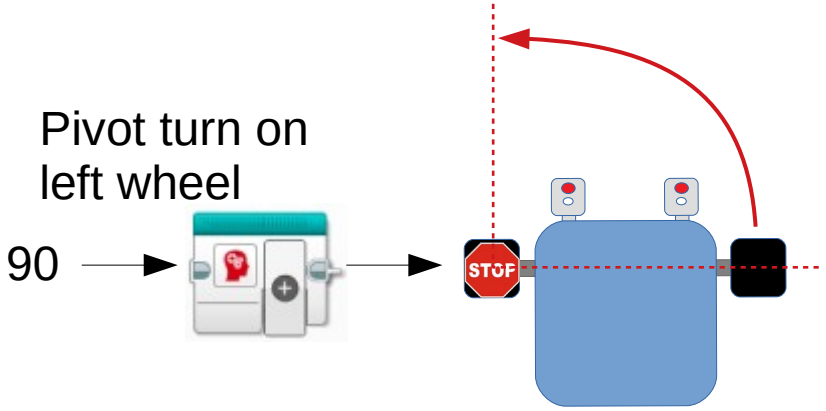
Useful Functions (My Blocks)

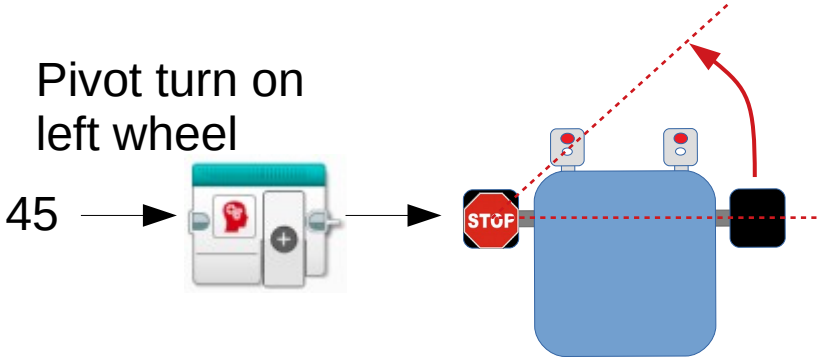
- Move distance (cm)
  - Use with a measuring tape to reduce trial and error





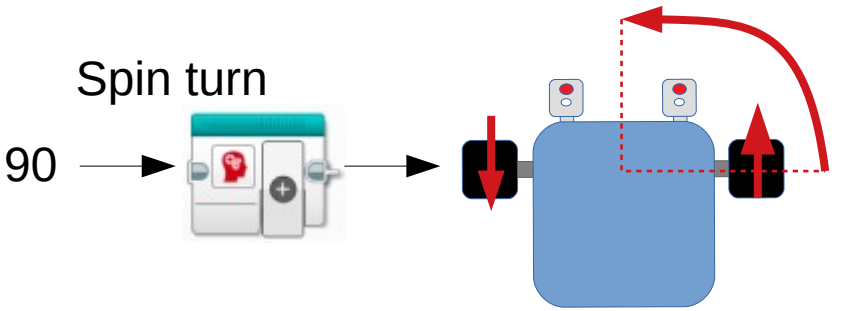
- Pivot turn right and Pivot turn left (degrees)
  - Use with a protractor





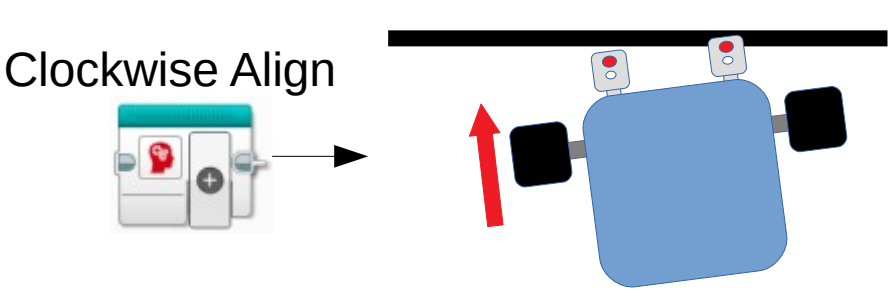
Useful Functions (My Blocks)

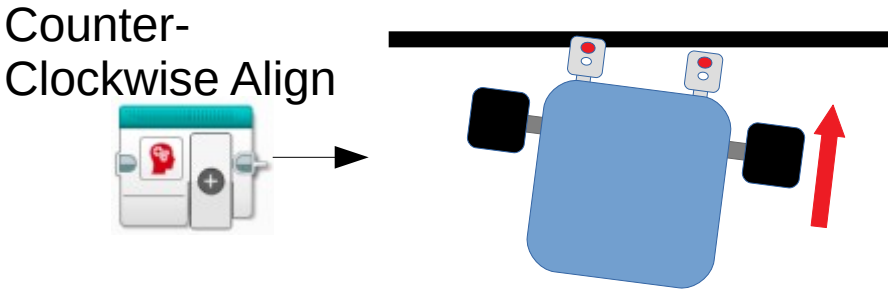
- Spin turn (degrees)



- Move till white (Left and Right)
- Move till black (Left and Right)

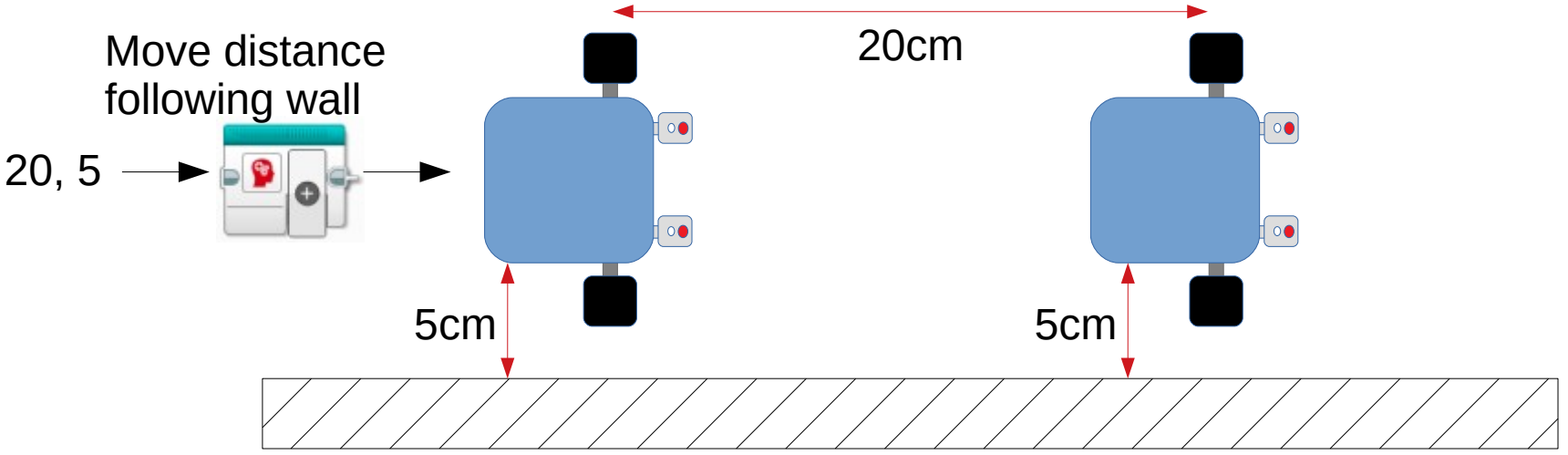
- Clockwise align
- Counter-clockwise align





Useful Functions (My Blocks)

- Move distance following wall
  - Use ultrasonic pointing sideways
  - Useful when traveling long distance
  - Better to glide against wall if not turning



Useful Functions (My Blocks)

- Move distance following gyro
  - Use the gyro to help robot move in a straight line
  - Better to align to wall if possible
  - MUST calibrate gyro

- Calibration my blocks
  - Calibrate light sensor
  - Calibrate gyro

Useful Functions Summary

- Move distance (cm)
- Pivot turn left, Pivot turn right (degrees)
- Spin turn (degrees)
- Move till white (one for left and one for right)
- Move till black (one for left and one for right)
- Clockwise align
- Counter-clockwise align
- Move distance following wall
- Move distance following gyro
- Calibrate light sensor, calibrate gyro

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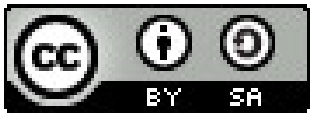

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