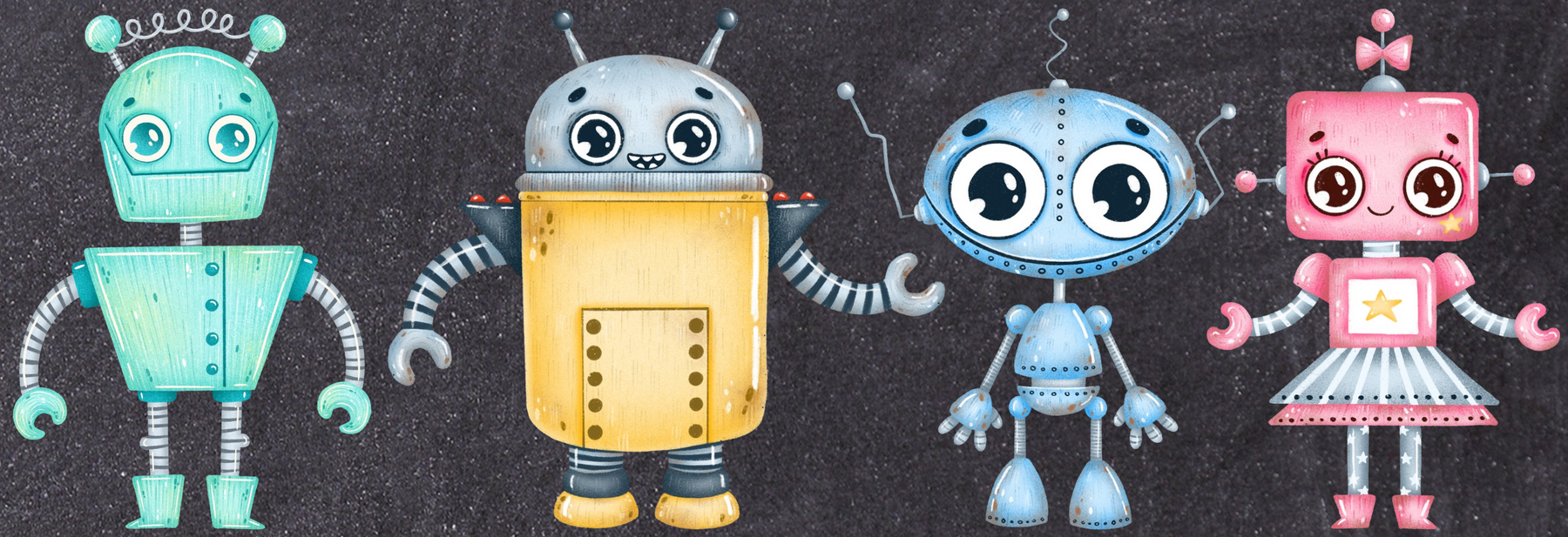
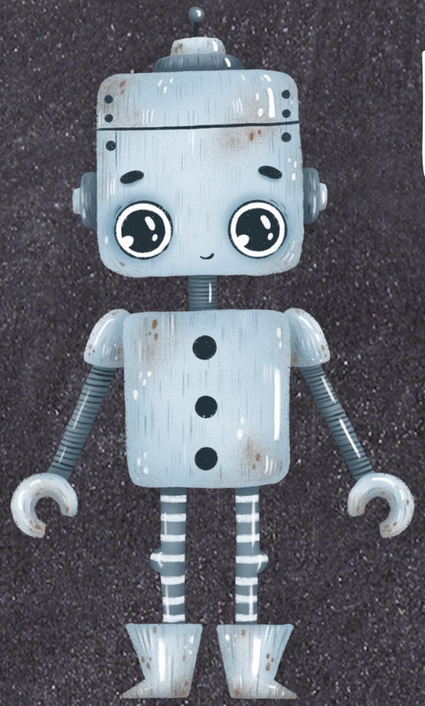
ROBOTICS IN THE ELEMENTARY CLASSROOM

JENNA FINCEL



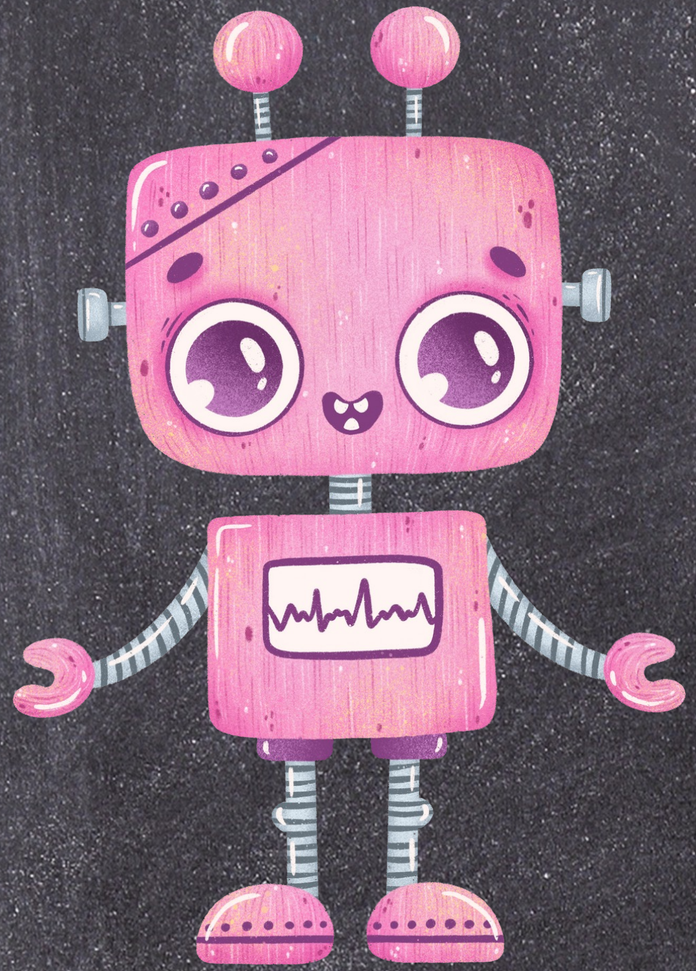
AGENDA

- INTRO TO DIFFERENT ROBOTS
- GATHER LESSON IDEAS
- EXPLORE!



WHY ROBOTS?

- WHAT DO YOU TEACH?
- WHY DID YOU PICK THIS SESSION?

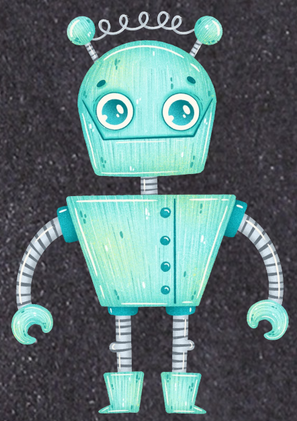


ROBOTS WE WILL DISCUSS

- *BEEBOTS/CODE AND GO MICE
- OZOBOTS
- *LEGO WEDO/SPIKE ESSENTIAL
- LEGO MINDSTORM/*SPIKE PRIME
- DASH
- *SPHERO

BEEBOTS

- IDEAL FOR PREK-1
- SCREEN-FREE CODING
- DRIVEN ON MATS (OR CAN MAKE YOUR OWN)
- HIVE AND FLOWER INTRODUCTION GAME
- THEMED MATS
- $99
- PURPLE CODE AND GO MICE $33



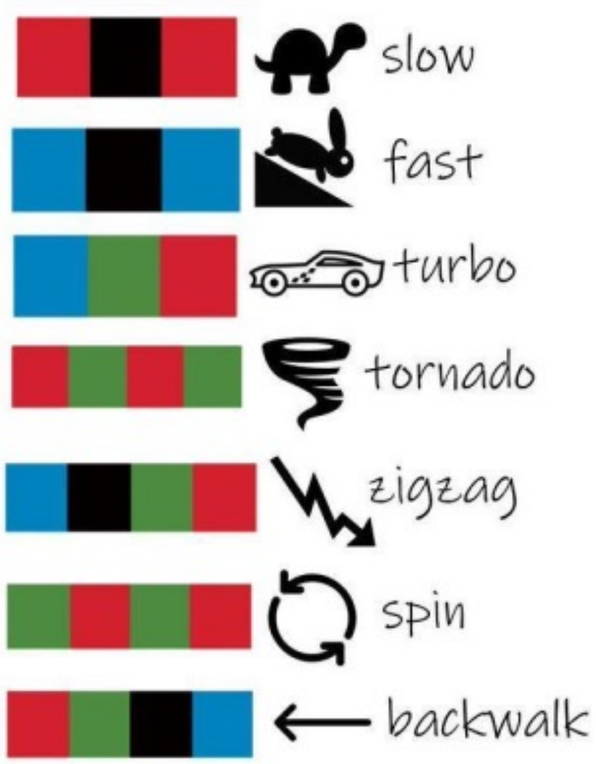
BEEBOTS

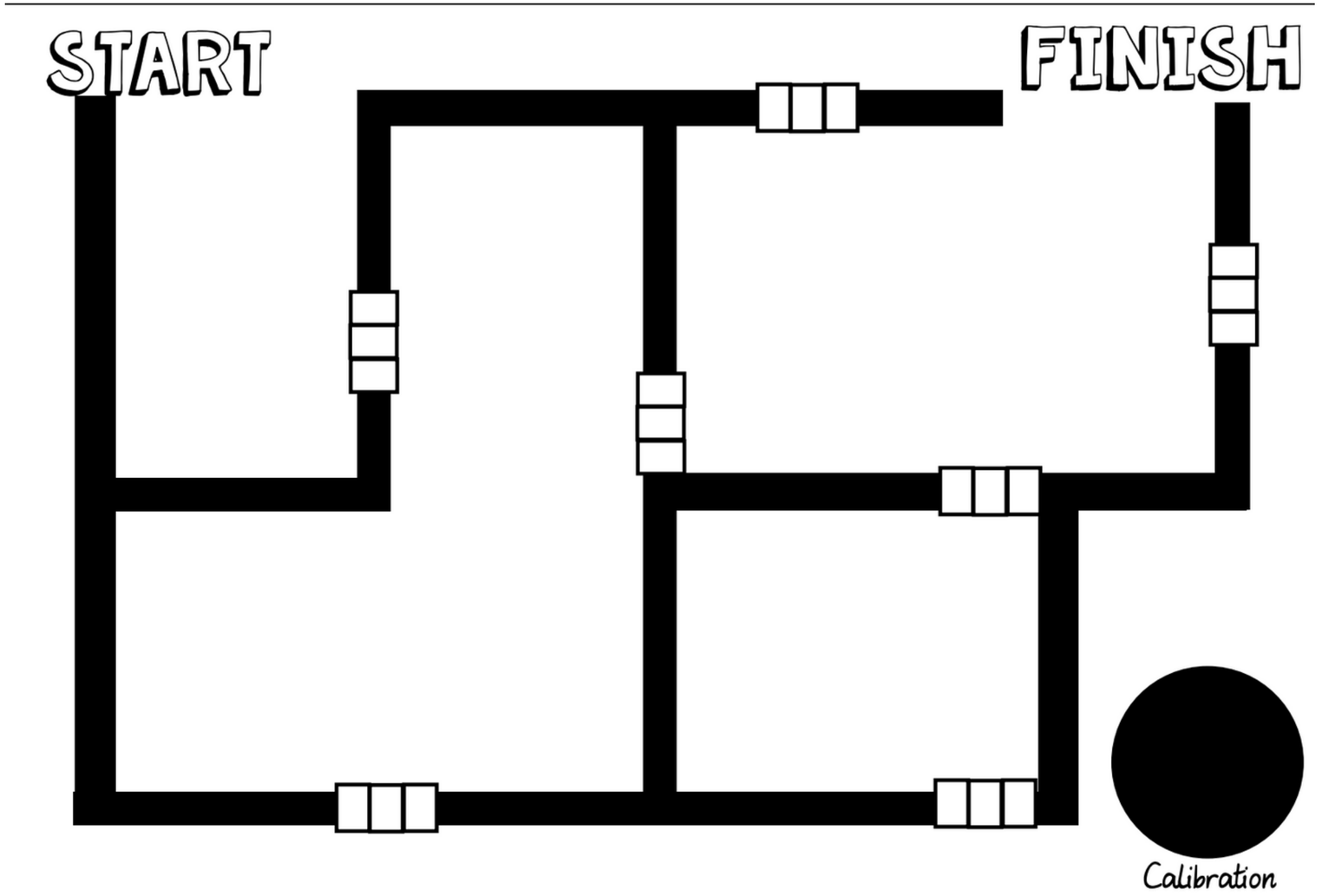
ADD PICTURE OF HIVE/FLOWER/STICKS

OZOBOTS

- IDEAL FOR 1-3
- SCREEN-FREE CODING OR ON IPAD
- DRAW PATH WITH MARKER
- CAN USE "SECRET CODES"-PRINT ON LABELS
- CAN USE GRID PAPER
- CONSTRUCT A ROBOT CITY TO DRIVE THROUGH
- $175

OZOBOTS


slow
fast
turbo
tornado
zigzag
spin
backwalk

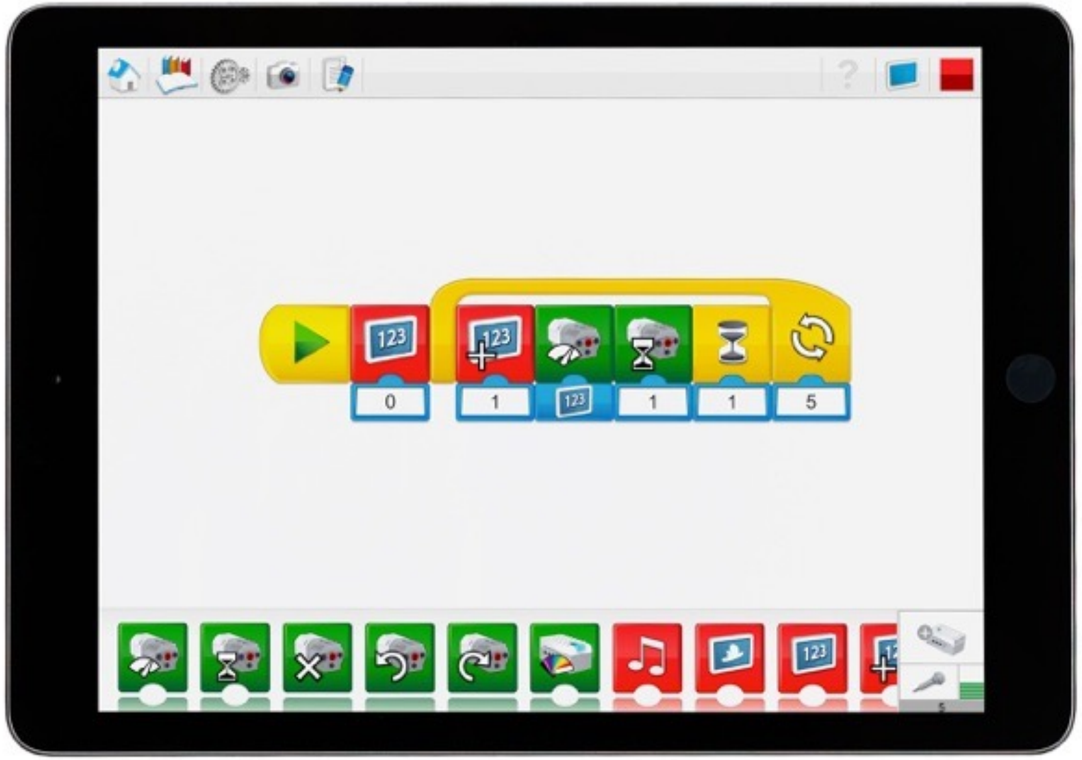

START
FINISH
Calibration

LEGO WEDO/SPIKE ESSENTIAL

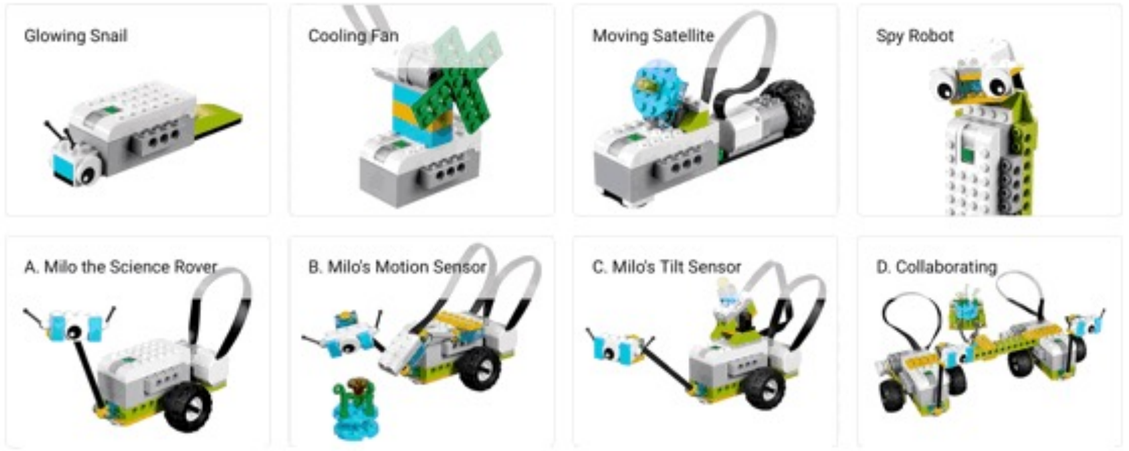
- IDEAL FOR 1-3
- CLASSROOM PROJECT DIRECTIONS ON IPADS
- DRAG AND DROP PICTURES SHOWN
- WONDERFUL WAY TO PRACTICE TAKING TURNS AND FOLLOWING DIRECTIONS CAREFULLY
- ROBOTIC PET EXTENSION PROJECT
- WEDO NO LONGER SOLD (APP JULY 2026): SPIKE ESSENTIAL-UPDATED VERSION
- $330

LEGO WEDO

Drag-and-drop programming environment.

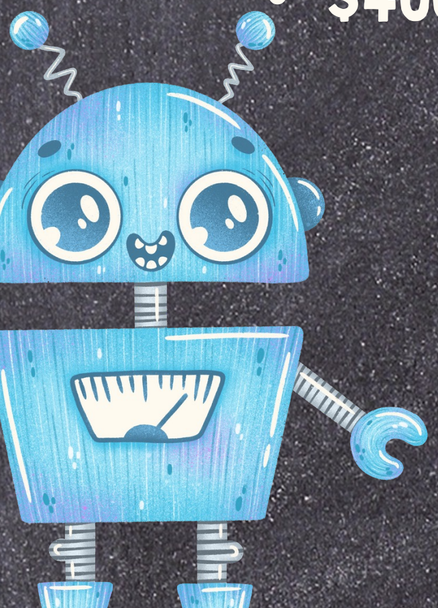


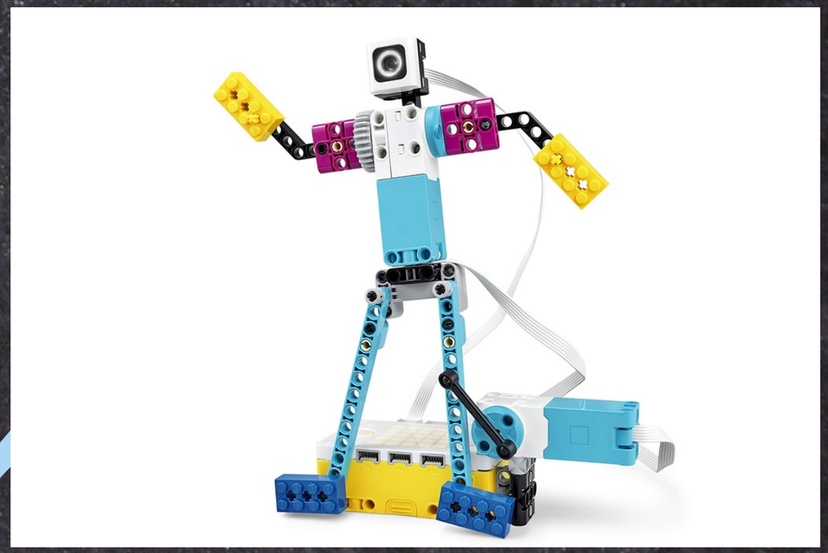
Getting Started



LEGO MINDSTORM/SPIKE PRIME

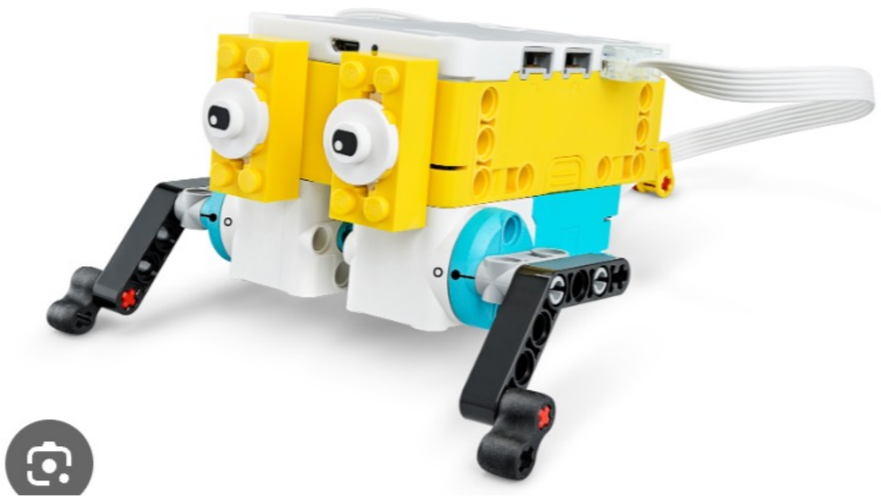
- IDEAL FOR 4-6
- CLASSROOM PROJECT DIRECTIONS ON IPADS
- DRAG AND DROP WORDS-PRESET
- WONDERFUL WAY TO PRACTICE TAKING TURNS AND FOLLOWING DIRECTIONS CAREFULLY
- $400





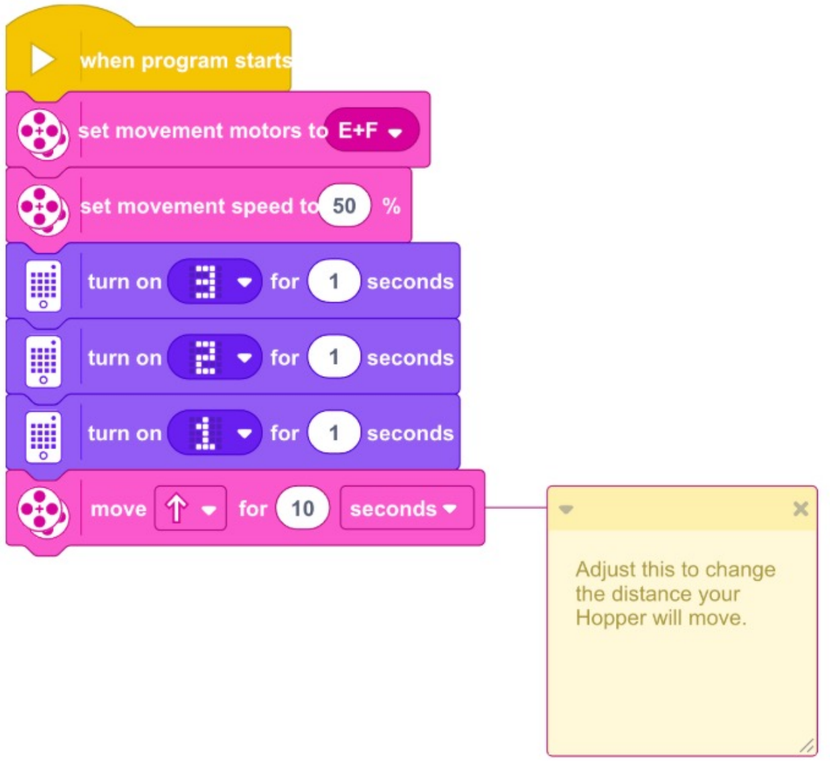
LEGO SPIKE PRIME

Hopper



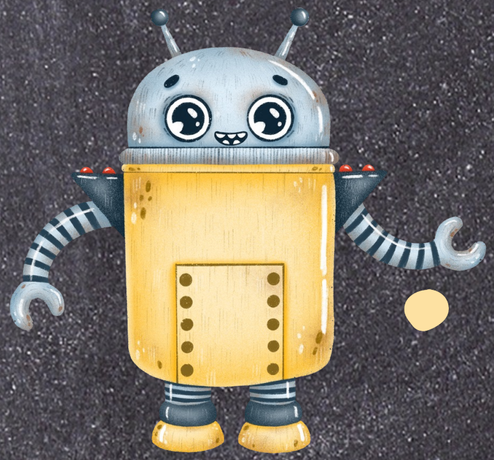
Program

Main Program

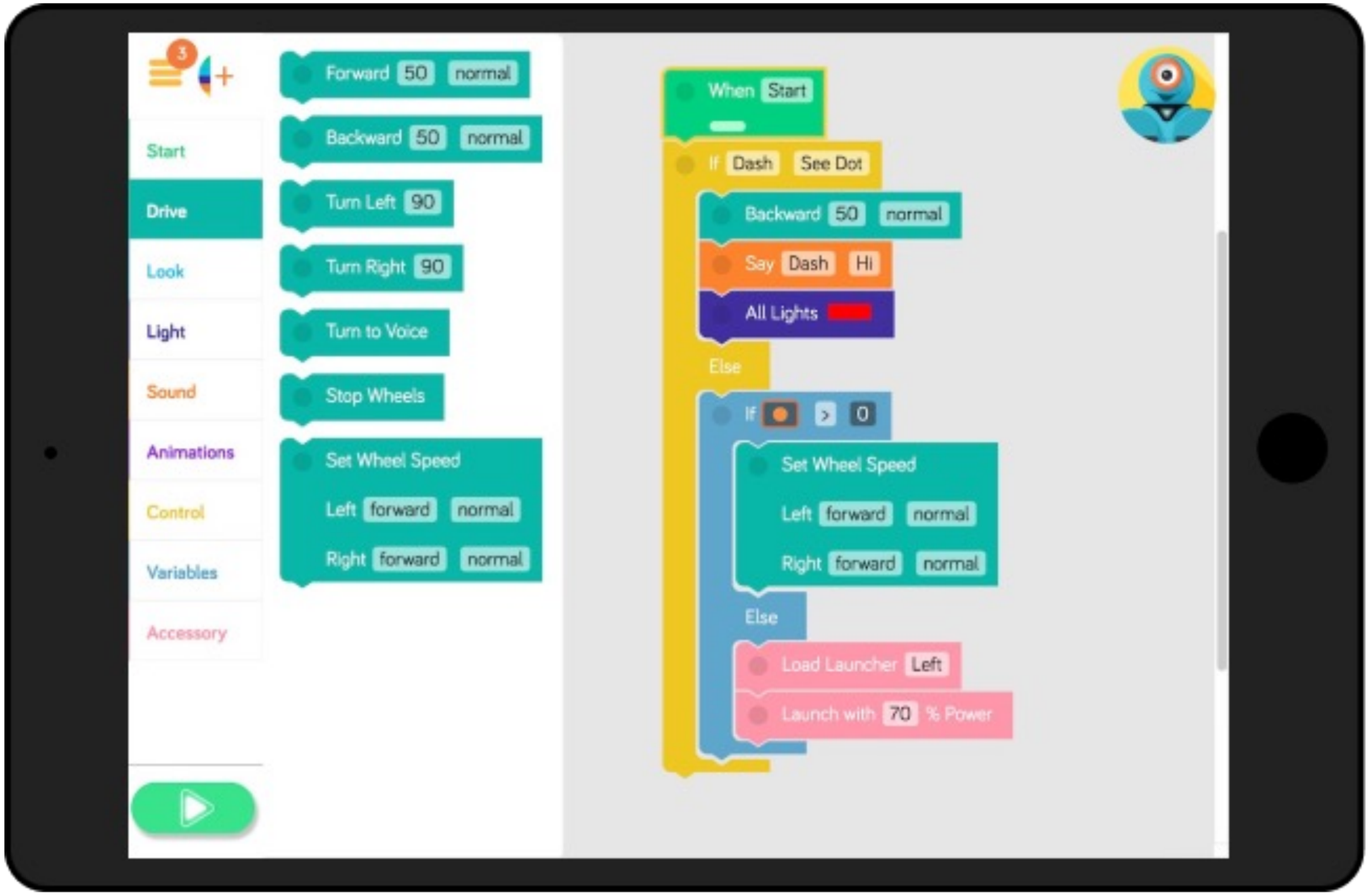


DASH

- IDEAL FOR 3-5
- CAN USE WITH PUZZLETS FOR SCREEN-FREE K-1 CODING ($130 FOR TRAY AND PIECES)
- DRAG AND DROP APP
- CHALLENGE CARDS
- $180
- DOT: $70



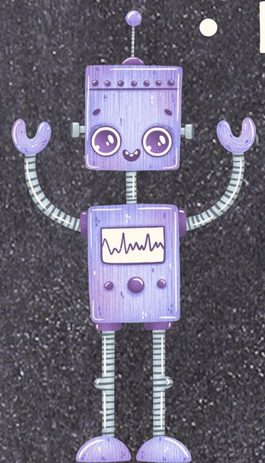
DASH


Forward 50 normal
Backward 50 normal
Turn Left 90
Turn Right 90
Turn to Voice
Stop Wheels
Set Wheel Speed
Left forward normal
Right forward normal
Start
Drive
Look
Light
Sound
Animations
Control
Variables
Accessory
When Start
If Dash See Dot
Backward 50 normal
Say Dash Hi
All Lights
Else
If > 0
Set Wheel Speed
Left forward normal
Right forward normal
Else
Load Launcher Left
Launch with 70 % Power

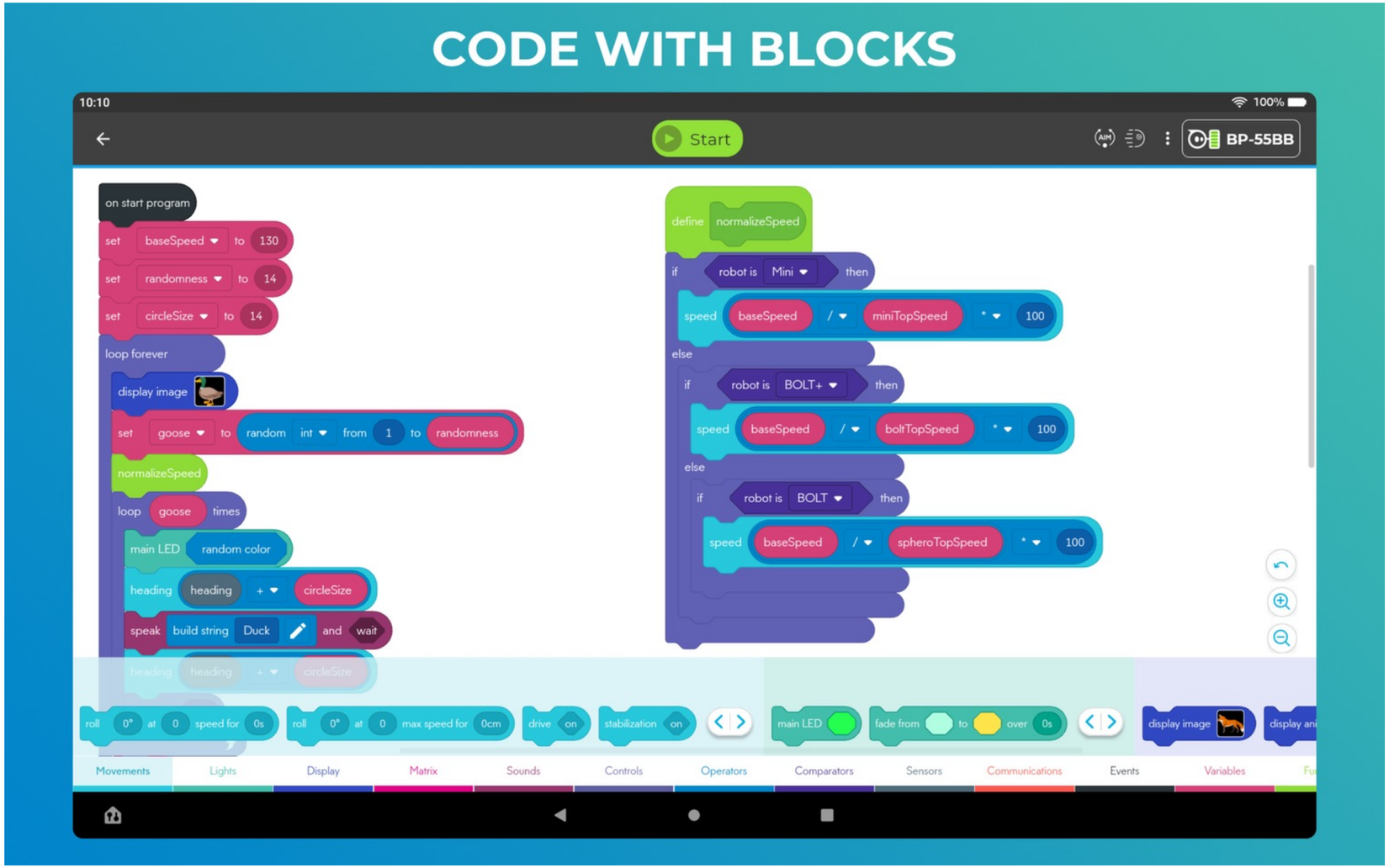
3.4 Functions
Dog Trainer
Dash is acting like a puppy
and you are the trainer.
Train Dash to turn in a circle!
3.4 Functions

SPHERO

- IDEAL FOR 3-6
- MINIS
- DRAG AND DROP CODING OR JOYSTICK NAVIGATION
- TAIL LIGHT
- CHECKLIST CHALLENGES, DRAW A SHAPE, NAVIGATE A MAZE, DESIGN A COSTUME AND DANCE
- $50
- BOLT: $180 INDI: $190 (SCREEN FREE)



SPHERO

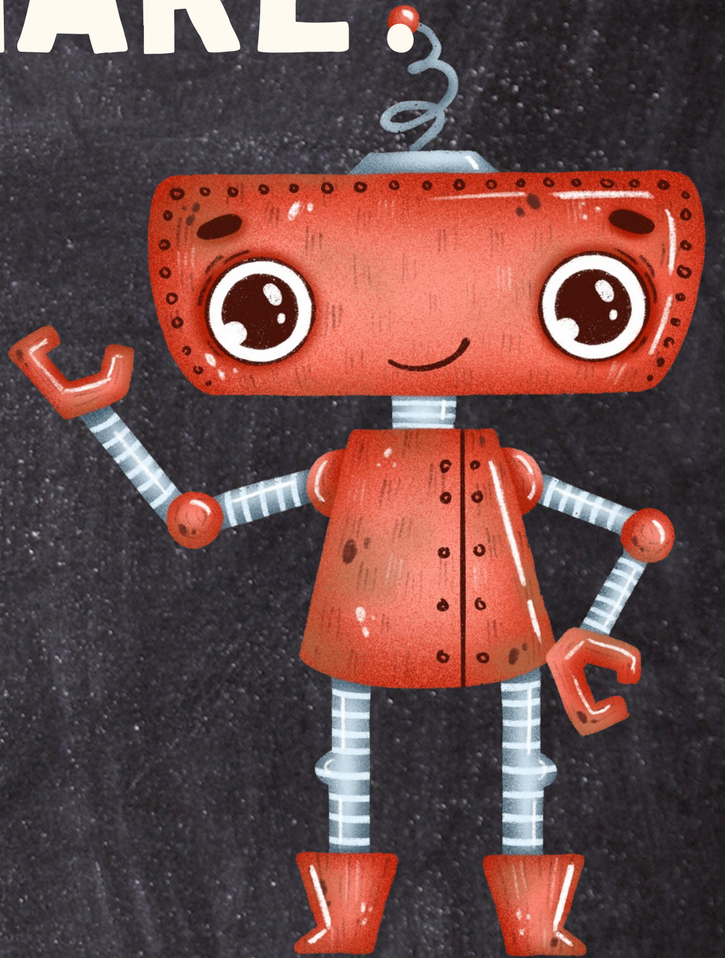

CODE WITH BLOCKS
10:10
100%
Start
BP-55BB
on start program
set baseSpeed to 130
set randomness to 14
set circleSize to 14
loop forever
display image
set goose to random int from 1 to randomness
normalizeSpeed
loop goose times
main LED random color
heading heading + circleSize
speak build string Duck and wait
define normalizeSpeed
if robot is Mini then
speed baseSpeed / miniTopSpeed * 100
else
if robot is BOLT+ then
speed baseSpeed / boltTopSpeed * 100
else
if robot is BOLT then
speed baseSpeed / spheroTopSpeed * 100
roll 0° at 0 speed for 0s
roll 0° at 0 max speed for 0cm
drive on
stabilization on
main LED
fade from to over 0s
display image
Movements
Lights
Display
Matrix
Sounds
Controls
Operators
Comparators
Sensors
Communications
Events
Variables

ROBOTS OVERVIEW

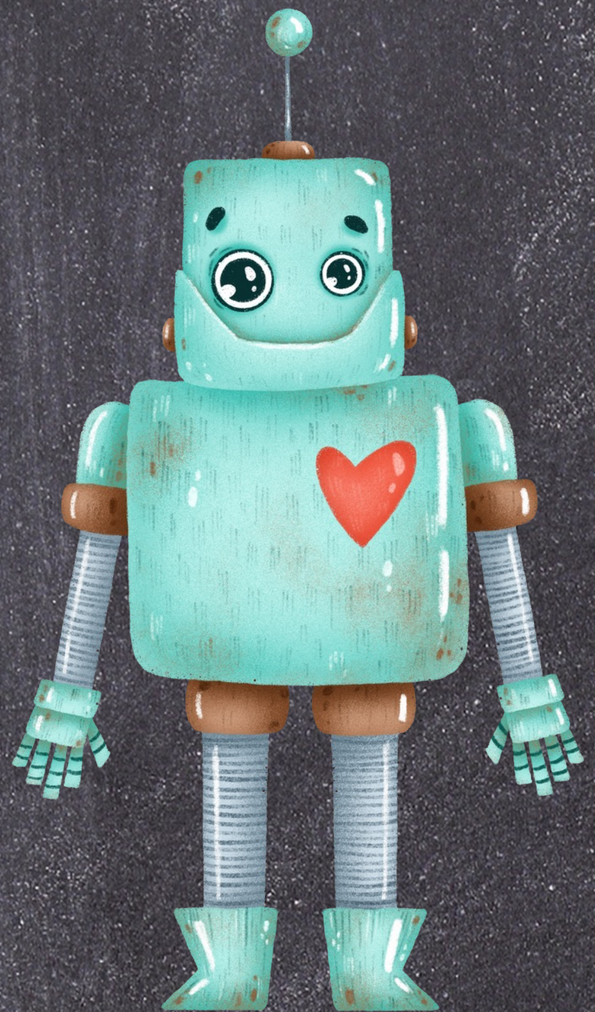
- PREK: BEEBOTS, CODE AND GO MICE, DASH (WITH PUZZLETS)
- K:BEEBOTS, CODE AND GO MICE, DASH (WITH PUZZLETS)
- 1: BEEBOTS, CODE AND GO MICE, DASH (WITH PUZZLETS), LEGO WEDO OR SPIKE ESSENTIAL, OZOBOTS
- 2: DASH (WITH PUZZLETS), LEGO WEDO OR SPIKE ESSENTIAL, OZOBOTS
- 3: DASH, SPHERO MINI, OZOBOTS
- 4: LEGO MINDSTORM OR SPIKE PRIME, DASH, SPHERO MINI
- 5+: LEGO MINDSTORM OR SPIKE PRIME, DASH, SPHERO MINI, OZOBOTS

QUESTIONS?

OTHER IDEAS TO SHARE?



TIME TO EXPLORE!



PRESENTATION SLIDES

ROBOT ACTIVITY HANDOUTS