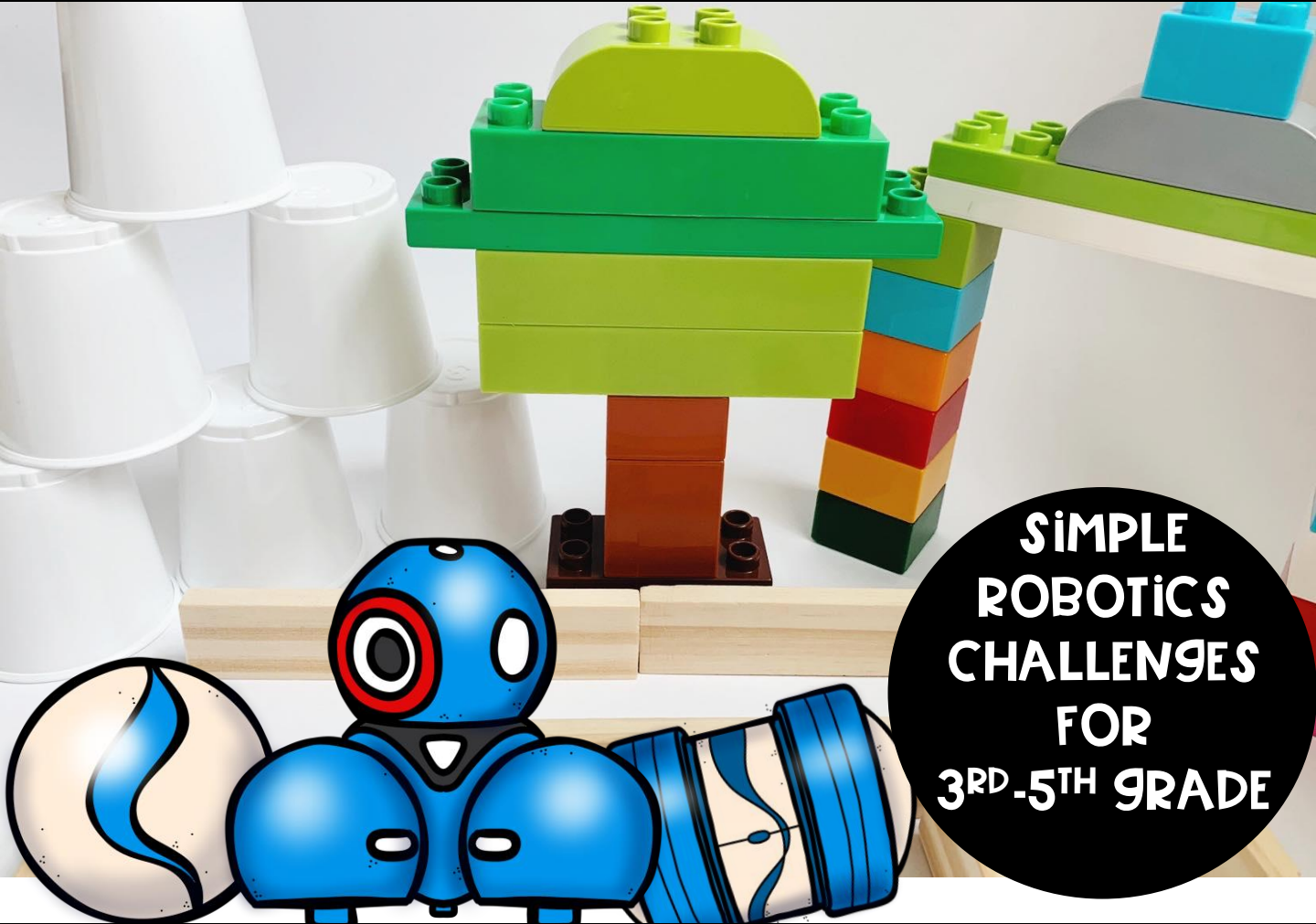


# BOT BASICS

## UPPER GRADE EDITION



CREATED BY BROOKE BROWN

# 20 BASIC CHALLENGES

## TAG

- 1) Place a glue stick on the floor away from you.
- 2) Program your robot to move forward, turn right, and move again.
- 3) Change the stick and program again.



## TUNNEL TIME

- 1) Build a "tunnel" out of bricks, wooden planks, cubes, or snap cubes.
- 2) Program your robot to move forward, turn right, and move again.

## CHAIN REACTION

- 1) Gather a variety of objects such as dominos, wooden blocks or planks, toy cars, marbles, and mini cups.
- 2) Set up the objects in a sequence of actions and reactions.
- 3) Program your robot to begin the chain reaction.
- 4) Arrange the objects in a different sequence and program your robot again.

## GOAL GETTER

- 1) Prop a box on its side and put a small ball such as a ping pong ball or bouncy ball in front of it.
- 2) Program your robot to move forward, turn right, and move again.



## EMOJI MATCH

- 1) Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze. Spread out your 6 "A" emojis along the path. Put the other 6 "B" emojis in a stack facedown.
- 2) Program your robot to move forward, turn right, and move again.



## AROUND THE TREE

- 1) Build a "tree" out of building bricks, linking cubes, or snap cubes.
- 2) Program your robot to move forward, go around the tree, and move again.
- 3) Change the distance and program again.

## CUP CRASH

- 1) Build a tower out of mini cups.
- 2) Program your robot to crash into the cups and knock them over.



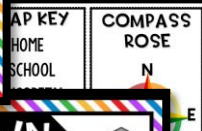
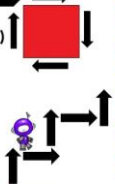
## TOW TRUCK

- 1) Place a plastic cup over your robot and tape a 12 inch length of yarn to the cup.
- 2) Tie or tape lightweight objects to the other end of the piece of yarn. Test the strength of your robot to see how many different objects it can tow.



## LEARNING LOOPS

- 1) Use a LOOP block to repeat commands (forward, turn right) and program your robot to make the path of a SQUARE.
- 2) Use a LOOP block to repeat commands (forward, turn right, forward, turn left) and program your robot to make the path of a ZIG ZAG.

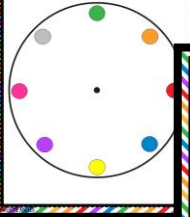


## OVER THE BRIDGE

- 1) Build a low bridge out of wooden planks or books.
- 2) Program your robot to go all the way over the bridge.
- 3) Change the distance and program again.



## AWESOME ANGLES



## AWESOME ANGLES

- 1) Place your robot on the dot in the center of the circle and the color cards facedown in a stack. Flip over the top color card.
- 2) Program your robot to move at the correct angle toward the matching color on the circle.
- 3) Repeat with the remaining color cards.



## PINBALL MACHINE

- 1) Arrange the point tents and starting line on the floor.
- 2) Using only ONE sequence of code, program your robot to touch or tag as many point tents as possible. Add up the total number of points that you tagged.
- 3) Reprogram your robot and try to improve your score.



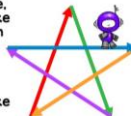
## ROBOT TOWN

- 1) Create a map of a town with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your map.
- 2) Put the symbol cards around the town and the direction cards facedown in a stack. Put the map key and compass rose next to your map.
- 3) Flip over the direction cards and program your robot to move from symbol to symbol along the roads. You may only use ONE sequence of code for each direction card.



## STAR LIGHT

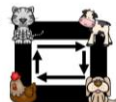
- 1) Using ONE sequence of code, program your robot to make the path of a STAR. On each point of the star, you must also program your robot's light to CHANGE COLORS.
- 2) Program your robot to make the path of at least 3 other shapes, changing colors for each side of the shape.



## START HERE

## BARNYARD DANCE

- 1) Create a square-shaped "fence" with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your fence.
- 2) Program your robot to move around the fence. On each corner of the square, program your robot to make any ANIMAL SOUND and SPIN AROUND IN A FULL CIRCLE.



## LETTER DETECTIVE

- 1) Take turns with a partner. Think of a mystery capital letter. Use the "Drive" or "Draw" tool to make the general path of that letter and have your partner guess the mystery letter.
- 2) Switch roles and have your partner program a mystery letter that you can guess.
- 3) To make it even more challenging, think of a 3-5 letter word and have your partner guess each letter and build the word!



red

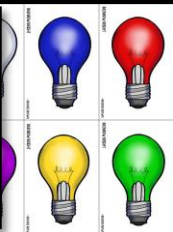
blue

white

orange

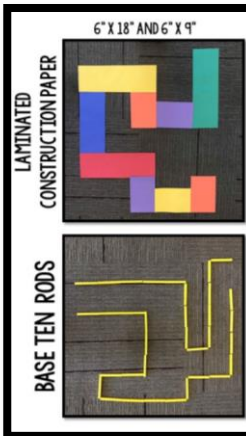
## RAINBOW BRIGHT

- 1) Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- 2) Spread the colored lightbulbs throughout the maze. Mix up the color word cards and place them facedown in a stack.
- 3) Flip over the top word card. Program your robot to move to the matching colored lightbulb. Try to use only ONE sequence of code. Your robot must also CHANGE COLORS of LIGHTS when it reaches that lightbulb.
- 4) Flip over the next word card and repeat. Continue with all word cards.





# 10 SEASONAL MAZE CHALLENGES



## LIGHTS & SOUNDS

Students may place any TWO lights and TWO sounds next to the rewards along their maze. They can insert them in binder clips or clothespins so that they stand up and place them next to the rewards.

When students program their robot to navigate the maze, they must also program the given lights and sounds.

WORD or SENTENCE	ANIMAL SOUND	TRANSPORTATION SOUND	SILLY SOUND



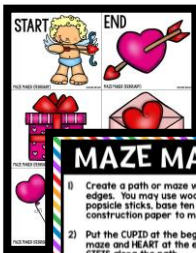
## MAZE MAKER SEPTEMBER

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the BUS at the beginning of your maze and the SCHOOL at the end. Put the SCHOOL SUPPLIES along the path.
- Program your robot to move from the BUS to the SCHOOL and collect all the SCHOOL SUPPLIES along the way. Try to use only ONE sequence of code.



## MAZE MAKER OCTOBER

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the WITCH at the beginning of your maze and the HAUNTED HOUSE at the end. Put the CANDY along the path.
- Program your robot to move from the WITCH to the HAUNTED HOUSE and collect all the CANDY along the way. Try to use only ONE sequence of code.



## MAZE MAKER FEBRUARY

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the CUPID at the beginning of your maze and HEART at the end. Put the GIFTS along the path.
- Program your robot to move from the CUPID to the HEART and collect all the GIFTS along the way. Try to use only ONE sequence of code.



## MAZE MAKER JANUARY

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the SNOWMAN at the beginning of your maze and MOUNTAINS at the end. Put the CLOTHING along the path.
- Program your robot to move from the SNOWMAN to the MOUNTAINS and collect all the CLOTHING along the way. Try to use only ONE sequence of code.

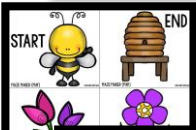


## MAZE MAKER DECEMBER

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the GINGERBREAD MAN at the beginning of your maze and the HOUSE at the end. Put the CANDY along the path.
- Program your robot to move from the GINGERBREAD MAN to the HOUSE and collect all the CANDY along the way. Try to use only ONE sequence of code.

## MAZE MAKER NOVEMBER

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the BOY at the beginning of your maze and GRANDMA'S HOUSE at the end. Put the FOOD along the path.
- Program your robot to move from the BOY to GRANDMA'S HOUSE and collect all the FOOD along the way. Try to use only ONE sequence of code.



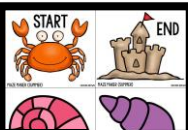
## MAZE MAKER MAY

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the BEE at the beginning of your maze and HIVE at the end. Put the FLOWERS along the path.
- Program your robot to move from the BEE to the HIVE and collect all the FLOWERS along the way. Try to use only ONE sequence of code.



## MAZE MAKER APRIL

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the GIRL at the beginning of your maze and POND at the end. Put the RAIN GEAR along the path.
- Program your robot to move from the GIRL to the POND and collect all the RAIN GEAR along the way. Try to use only ONE sequence of code.



## MAZE MAKER SUMMER

- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the CRAB at the beginning of your maze and SAND CASTLE at the end. Put the SHELLS along the path.
- Program your robot to move from the CRAB to the SAND CASTLE and collect all the SHELLS along the way. Try to use only ONE sequence of code.



## MAZE MAKER MARCH

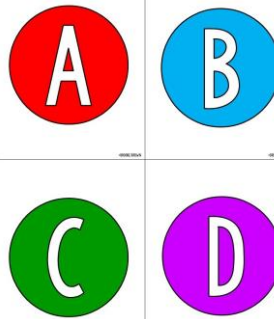
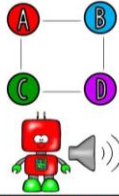
- Create a path or maze with straight edges. You may use wooden planks, popsicle sticks, base ten rods, or construction paper to make your maze.
- Put the LEPRECHAUN at the beginning of your maze and POT OF GOLD at the end. Put the TREASURES along the path.
- Program your robot to move from the LEPRECHAUN to the POT OF GOLD and collect all the TREASURES along the way. Try to use only ONE sequence of code.

# USE WITH ANY DRIVING BOT!

# EDITABLE ACTIVITIES FOR ANY SUBJECT AREA

## FIND THE ANSWER

- 1) Place the A, B, C, and D cards in a square shape.
- 2) Read a question card and determine the answer.
- 3) Program your robot to move to the correct letter answer AND add a sound block to speak the answer aloud.
- 4) Repeat with the remaining questions and answers.



Type Here

Type Here

Type Question

- 1) Type Question
- 2) Type Answer Choice
- 3) Type Answer Choice
- 4) Type Answer Choice
- 5) Type Answer Choice

Type Question

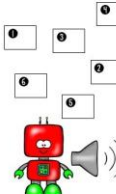
Type

Type Question

Type Question

## TASK CARD TAG

- 1) Read the task cards and determine the answers. Write the answers on your recording sheet.
- 2) Cut apart the answers on the recording sheet and spread them around on the floor.
- 3) Program your robot to move to the each answer in order AND add a sound block to speak the answer aloud.



TRUE



FALSE



Type Statement

Type Statement

TRUE OR FALSE?

TRUE OR FALSE?

Type Statement

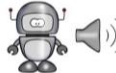
TRUE OR FALSE?

Type Statement

Type Statement

## TRUE OR FALSE

- 1) Place the TRUE and FALSE cards on the carpet.
- 2) Read a question card and determine the answer.
- 3) Program your robot to move to TRUE or FALSE. Add a sound block for your robot to speak the correct answer AND change colors to GREEN for True or RED for False.
- 4) Repeat with the remaining questions and answers.





# ROBOTICS CHALLENGES

## PROGRESS IN DIFFICULTY

### TUNNEL TIME

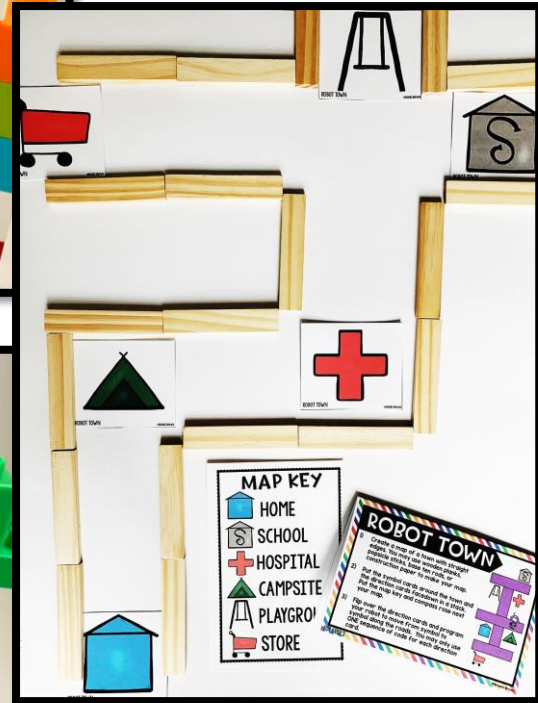
- 1) Build a "tunnel" out of building bricks, wooden planks, linking cubes, or snap cubes.
- 2) Program your robot to move forward and go all the way underneath the tunnel.
- 3) Change your tunnel design and program your robot again.

ROBOT BASICS



### AROUND THE TREE

- 1) Build a "tree" out of building bricks, linking cubes, or snap cubes.
- 2) Program your robot to move forward, go all the way around the tree, and move back to you.
- 3) Change the distance of the tree and program your robot again.



#### MAP KEY

- HOME
- SCHOOL
- HOSPITAL
- CAMPSITE
- PLAYGROUND
- STORE

#### ROBOT TOWN

- 1) Create a map of your town with various landmarks. Use the map key to create your map. You may use any materials you want.
- 2) Use the map to program your robot to move from one landmark to the next. You may use any materials you want.
- 3) Use the map to program your robot to move from one landmark to the next. You may use any materials you want.

# USE WITH ANY DRIVING BOT!