

### ROBOTIC ACTIVITY MAT

# BEEHIVE



**Summary:** The Beehive mat is designed to introduce fun challenges that encourage problem solving for early learner of robotics. This bee and flower themed mat is highly engaging and provides simple sequential based programming combined with obstacle avoidance to make for an entertaining and interactive lesson.

#### Features:

- Fits up to 8 students
- Educational worksheet

**Objective:** Collect as many flowers as you can while avoiding the enemy squares. After each flower has been collected, return the pollen to the hive to win.

**Skills taught:** Basic Navigation, Sequential Programming, Teamwork and Problem Solving. This mat works best with the following robots: BeeBot and Code & Go Mouse.

# Activity : Collect the Flowers

### How to Use:

1. Place the robot on one of the large beehives located in each corner of the mat. Note: Use the beehive's hole for accurate and consistent placement.

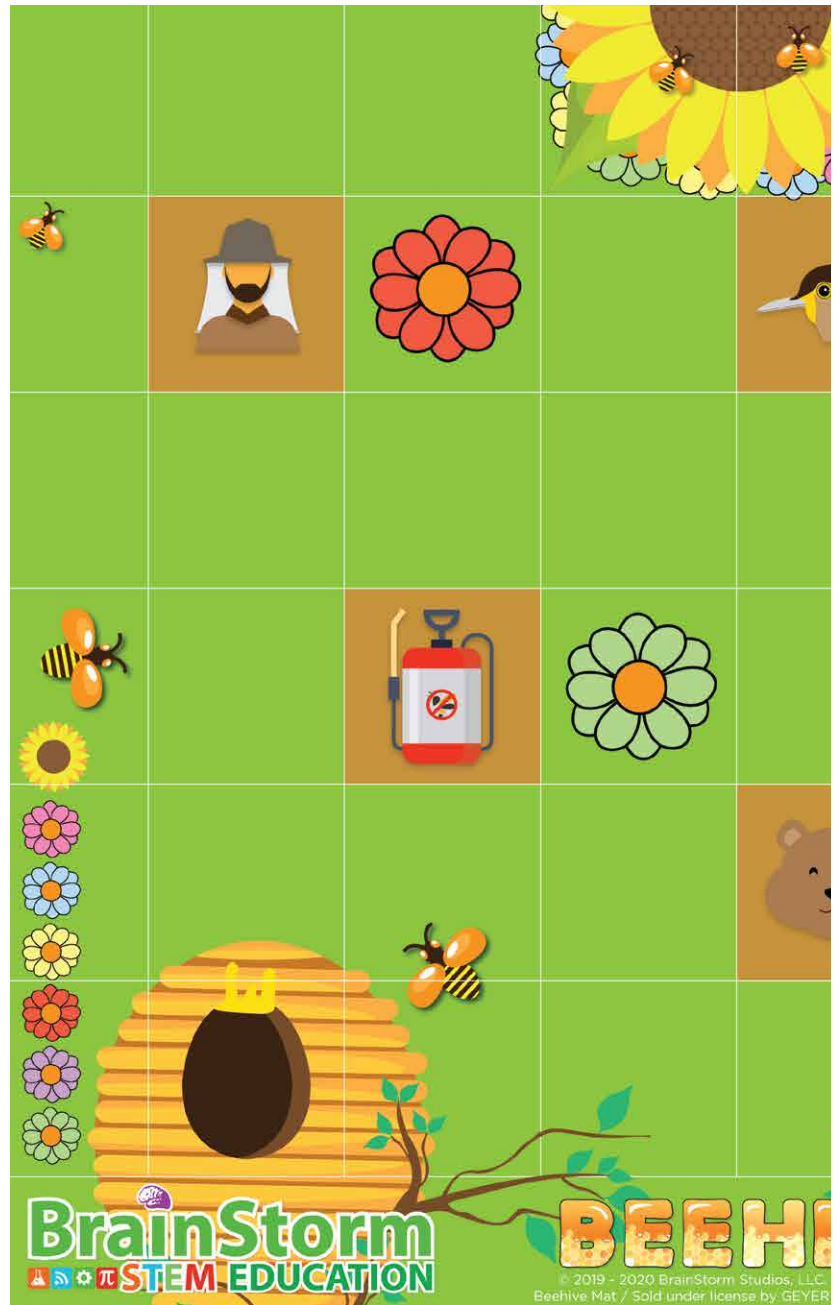
2. Begin programming the sequence of code needed to collect a flower.

3. To collect a flower, the robot must drive over the flower.

Tip: Use the flower checklist located by each beehive to keep track of the flowers you have collected.

4. Once a flower has been collected, program the robot to turn around and return to the beehive in which you started.

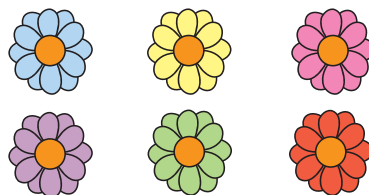
**Challenge:** Collect all of the flowers in one program with the shortest sequence possible.



### Starting Positions



### Collect



### Avoid



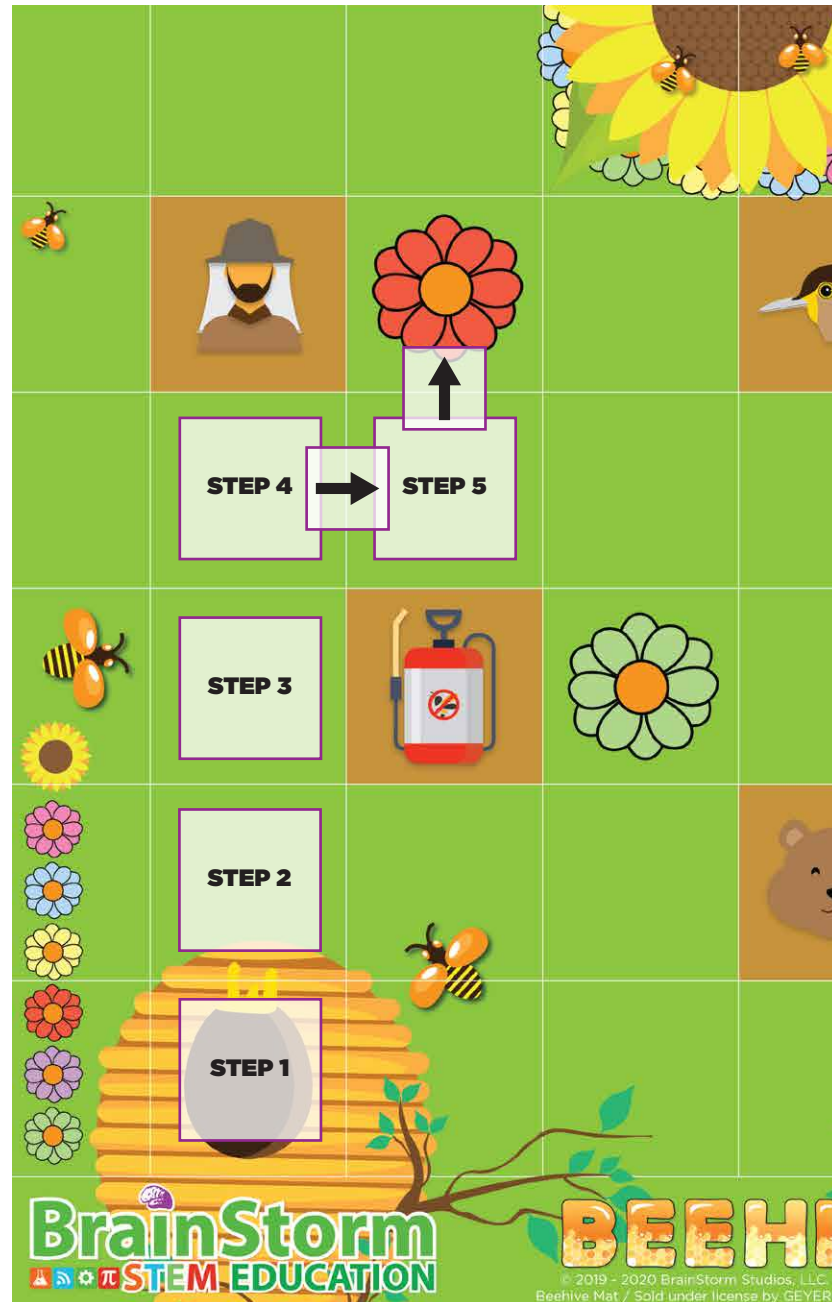
# Worksheet 1 : Sequential Navigation

### Now it's your turn!

Beehive Activity Worksheet:  
Fill in the boxes with steps 1-5 below in which direction the robot should move to get to the red flower. Be careful not to touch any red squares!

Robots are preprogrammed with a set of specific instructions. They do not inherently know what to do or learn. For example: If I gave you a potato and called it a tomato, chances are you would correct me and know it was still a potato, but robots are different. They only do exactly what we tell them. We must program and tell them what to do step by step in order to complete a task the way we want them to.

This activity will help you understand how sequencing works and how robots need step by step instructions in perfect order to complete a task.



STEP 1	STEP 2	STEP 3	STEP 4	STEP 5



### Worksheet 2 : Planning a Path

#### Beehive Activity Worksheet:

Draw a path along the worksheet collecting all the flowers and returning back to the hive. Dont forget the Sunflower, and remember to avoid enemies!

