



## HOUSE LIGHTING ACTIVITY

### **Essential Question/Summary**

Students will be able to use OzoBlockly coding skills in a more freeform activity. They will code their Ozobots using line following to light up a printout of a house.

### **Information**

This is a less structured activity that allows students to think creatively.

### **Prerequisites**

Students should be comfortable using loops and logic blocks.

### **Grouping**

Students may work individually or in pairs, but each student should receive their own handout.

### **Materials**

- Printouts of the "house" (found below)
- Ozobot Bit or Evo
- [OzoBlockly.com](https://www.ozoblockly.com) on a tablet or computer

### **Age/Grade Level**

Grades K – 12

### **OzoBlockly Programming Topics**

Loops, lights, line following

### **OzoBlockly Mode**

Either Ozobot Evo or Bit can be used, but blocks should come from level 3 (and/or level 4).

### **Duration**

Approximately 30 – 60 minutes.

### **Topics**

Computer Science (Loops, logic)

### **Academic Standards**

**CCSS.MATH.PRACTICE.MP1** Make sense of problems and persevere in solving them.

**CCSS.MATH.PRACTICE.MP5** Use appropriate tools strategically.

**CCSS.MATH.PRACTICE.MP6** Attend to precision.

**ISTE 6.b** Create original works or responsible repurpose or remix digital resources into new creations

**ISTE 4.c** Develop, test and refine prototypes as a part of a cyclical design process

**ISTE 6.a** Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication

### **Overview**

Each student will be given a handout, which contains an outline of a house with designated, colored intersections for where the house should light up. Students will program their Ozobot to follow a path around the house and to program a light animation for each intersection based on what color it is.

### **Related Activities**

The Winter Scavenger Hunt is a holiday activity that uses Ozobot color codes instead of OzoBlockly programming.

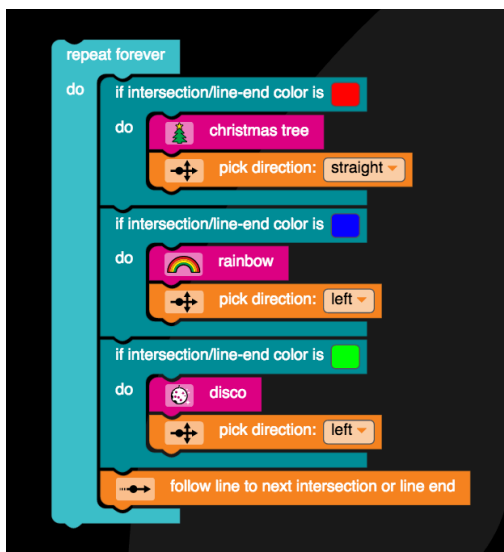
## LESSON/ACTIVITY PLAN

This activity will allow students to work creatively while practicing coding in OzoBlockly. There are no wrong answers as long as students follow the guidelines below. However, you may take a look at the students' programs at the conclusion of the activity and point out which ones are more concise and why they might be better than other solutions. Instructors can give more guidance for the activity if they choose.

### Instructions:

1. Hand out the printouts to the students and point out the different intersections that are different colors
2. Hand out the Ozobots and let the students create a program that incorporates the following:
  - a. Repeats forever: Ozobot should continue to light up the house until it is turned off or runs out of battery
  - b. At each intersection, Ozobot will perform a light animation. Students will code their Ozobot to visit every intersection and to perform a light animation at each intersection
    - i. The light animation should be unique for each different intersection color
    - ii. There are three possible colors (red, blue and green), so each color should correspond to a light animation

### Possible Solution:



**Notes:**

- Depending on the experience of the students, they may be asked to only visit 4 intersections (but should still follow a path continuously until the Ozobot is shut off).
- For more advanced students, have them build a function that will perform an original light animation (instead of using the preprogrammed animations).

