

# CODING WITH DASH ROBOTS

**Course Name:** Library/STEAM Lab Activity Period  
**Unit/Theme:** Coding

**Time Frame (in minutes):** 25  
**Grade Level:** 5th grade

CONTENT AND SKILLS
<b>Learning Objectives:</b> <ul style="list-style-type: none"> <li>Students will be able to code the Dash robot around an obstacle using repeating code and/or conditionals.</li> <li>Students will be able to collaborate respectfully with their partner.</li> </ul>
<b>Essential Questions (optional):</b> <ul style="list-style-type: none"> <li>How can repeating code or conditionals help your robot navigate an obstacle?</li> </ul>
<b>Students I can statements . . .</b> <ul style="list-style-type: none"> <li>I can use repeating code and conditionals to navigate the Dash robot around an obstacle.</li> <li>I can work respectfully with my partner.</li> </ul>
<b>How will you meet the needs of SWD and ENL students?</b> <ul style="list-style-type: none"> <li>Review of student IEP and 504 plans to ensure modifications are in place</li> <li>Students will be partnered to support each other</li> <li>Blockly has the functionality to read the text aloud to support students who can benefit from that feature</li> </ul>
<b>Content Standards</b> List all standards and how learners will meet the standard
<ul style="list-style-type: none"> <li>ESIFC (Empire State Information Fluency Continuum): 1.2 Design Thinking</li> <li>ESIFC: 3.2 Collaboration</li> </ul>
<b>NYS Computer Science and Digital Fluency Standards</b> List all standards and how learners will meet the standard
<ul style="list-style-type: none"> <li>4-6.CT.8 - Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem</li> </ul>
<b>NYS SEL BENCHMARKS -</b> <a href="https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf">https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf</a>
<ul style="list-style-type: none"> <li>1A.2a. Identify a range of increasingly complex emotions and possible causes</li> <li>1A.2b. Identify and practice self-regulation skills and coping strategies that help them to express their emotions.</li> <li>2A.1b. Use listening skills to identify the feelings and perspectives of others.</li> </ul>

## INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.

### Introduction/Direct Instruction: (5 minutes)

- Discuss: Our goal today is to code our Dash robot around an obstacle and back to our starting point, using repetition to help us be successful. Turn and talk with a partner: What is repetition? How can repetition help us in coding?
- Discuss:
- Students will open Blockly app to investigate the coding blocks available
  - Which coding blocks will help you to use repetition to get back to the starting point? (Repeat \_ times) **4-6.CT.8**
  - How could you use the conditional blocks in your code? (If Dash obstacle in front) **4-6.CT.8**

### Independent Practice: (15-20 minutes)

- Students will spread out around the library with their partner and Dash robot
- Stools have been placed as obstacles to navigate around
- Students will work together to code their Dash robot around the stools, using the coding blocks we discussed as a class **4-6.CT.8**
- If students finish quickly, teachers will offer additional “challenges” to engage with until the other groups are finished (ex: Is there a way to use less blocks to get the same result? Can you code Dash around the obstacle with only 2 turns?)

### Assessment:

- Students will share their code with one of the teachers to assess their ability to use repetition and conditional coding to navigate around the obstacle. Teacher will observe the Dash robot navigate the obstacle successfully.

## BACKGROUND OR PRIOR KNOWLEDGE

- Prior to this lesson students have had multiple lessons with the Dash robot and coding blocks in Blockly and Scratch

## MATERIALS / RESOURCES

Add additional resources needed for this lesson such as instructional technology templates, images, videos, etc.

- ipads with Blockly app
- Dash Robots
- Stools or other obstacles