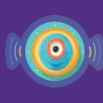# wonder

workshop

Dragon Challenge

Activity Guide

Dragon Challenge

Club Leader Notes

Transform Dash into a dragon in search of its precious egg!

wonder
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Objectives

Note: This activity works best if you have both Dash and Dot.

Kids will:

- Learn new ways to program Dash to see and react to Dot.
- Learn ways to add conditional statements using Wonder.
- Learn more about Dot's inputs.

Materials & Prep

Required

- Dash
- Dot

Optional

- Materials to make a nest for the dragon's egg. Make sure it doesn't block Dash's sensors.

Time Required

30 minutes

Concepts Covered

- Sequences
- Conditional Statements
- Beacon
- Cues and Behaviors

- Obstacle Seen
- Dash or Dot Seen
- Move
- None
- Move To
- Spin To
- Sound: Happy
- Moving Basics
- Wait For
- Random Wait
- The Listener
- Shake
- Clap Heard

Warm Up

- Practice using the **Dash or Dot Seen** cue. The beacon only works if Dot is turned on, but Dot doesn't need to be paired to the app.

- Show these videos to any Wonder beginners:

  ▶ All About Cues

  ▶ Creating & Deleting States

  ▶ Dash or Dot Seen

Dragon Challenge

Club Leader Notes

Transform Dash into a dragon in search of its precious egg!

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Level 1

The dragon (Dash) is overjoyed to find its egg (pretend that Dot is the egg)!

- Use this key to download the starter program: **cp2e**

- The program makes Dash move forward while using the **Dash or Dot Seen** cue (set to **Dot Seen**) to search for its egg (Dot).

- When the dragon reaches the egg, it makes a **Happy** sound. Choose a different sound, then run the program.

Level 2

The dragon must get around an obstacle to reach the egg!

- Now it's time to make things more difficult for the dragon. Put an obstacle between Dash and Dot.

- Update the program so that Dash avoids the obstacle and reaches the egg. You should use **Obstacle Seen** to avoid the obstacle rather than simply mapping out Dash's path.

- When the dragon reaches the egg, it should make a **Happy** sound.

- **Example solution:** **k3ia**

Level 3

The dragon must get around multiple obstacles to reach its egg. When the egg is found, help the baby dragon hatch by shaking and tapping it.

- Make it even more challenging! Add two more obstacles between the dragon and its egg. These should be randomly placed.

- Program Dash to avoid the obstacles and reach the egg. Use the **Obstacle Seen** cue.

- When the dragon reaches the egg, it should make a **Happy** sound.

- Program the egg (Dot) so that it reacts when you shake, tilt, and tap it. Use the **Shake**, **Tilt**, and **Clap Heard** cues. The baby dragon should make different sounds in response to the cues.

- **Example solution:** **eh6w** for Dash searching for the egg.

- **Example solution:** **eptf** for Dot as the egg.

Tips

- An easy way to trigger the **Clap Heard** cue is to tap the robot lightly with a pen or pencil.

Notes:

Dragon Challenge

Activity Sheet

Transform Dash into a dragon in search of its precious egg!

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Level 1

The dragon is overjoyed to find its egg!

☐ Download the starter program to make Dash move forward and search for its egg (Dot): cp2e

☐ When the dragon reaches the egg, it will make a **Happy** sound.

☐ Choose a different sound, then run the program.

Level 2

The dragon must get around an obstacle to reach the egg!

☐ Now it's time to make things more difficult for the dragon. Put an obstacle between Dash and Dot. It should be at a random distance from Dash but directly between the two robots.

☐ Update the program so that Dash avoids the obstacle and reaches the egg. Dash should use the **Obstacle Seen** cue to avoid the obstacle.

☐ Dash should use the **Dash or Dot Seen** cue to find Dot.

☐ When the dragon reaches the egg, it should make a **Happy** sound.

**Try these behaviors and cues:**

Level 3

The dragon must get around multiple obstacles to reach its egg. When the egg is saved, help the baby dragon hatch by shaking, tapping, and tapping it.

☐ Add two more obstacles between the dragon and its egg. These should be randomly placed!

☐ Program Dash to navigate through the obstacles and reach the egg.

☐ When the dragon reaches the egg, it should make a **Happy** sound.

☐ Program the egg (Dot) so that it reacts to being shaken, tilted, and tapped.

Try these behaviors and cues:
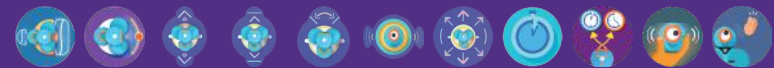
Ideas

- Try loading your programs onto the robots so that you don't need to use the app to run them.