

# Egg-cellent Fun Egg Toss!



## Overview

**Hop into some egg-cellent fun with Dash!** In this activity, you'll use Dash's Launcher to toss eggs into a basket and explore what happens when you change the launcher power and the weight of the eggs. Looking for other spring-themed activities? Check out the egg-stensions at the end to keep the fun going!

## Objectives

- Program Dash to launch plastic eggs using coding skills in Blockly
- Plan and carry out investigations on how distance, mass and energy affect the launcher's aim.
- Collect, analyze, and interpret data on the success and failures for the egg toss

## Subjects

- Coding
- Math
- Science

## Target Ages

7-11 years

## Time Required

50 minutes

## What You'll Need



Dash



Launcher



Bulldozer

## Other Supplies

- 1 Blockly compatible device per Dash
- Bucket/Basket
- Plastic Eggs
- Cotton Balls
- Tape

## Extension Supplies

- Arts and craft supplies
- Bulldozer
- (Optional) toys and props

## Downloadable Materials

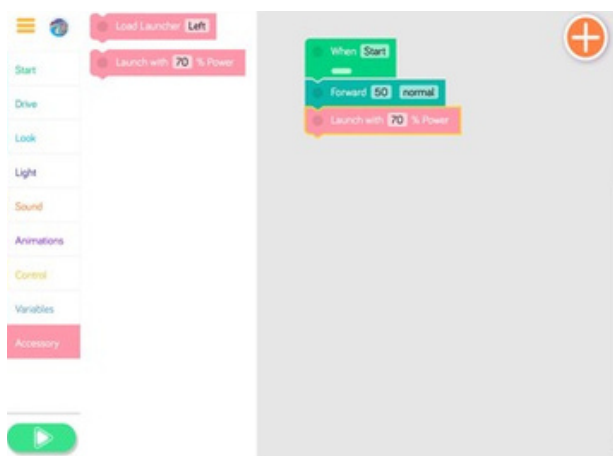
[Egg Toss Recording Sheet](#)

## Day 1/Step 1

### Describe the challenge to the class:

"Let's launch plastic eggs with Dash! We need to program Dash to launch an egg into the basket."

Each group of 2-4 students will launch plastic eggs that are empty and ones that are filled with cotton balls. Students will learn about how mass and energy affect distance.



Tap the "Accessory" menu and introduce the "Launch with X % Power" Block in Blockly.

Open the Blockly App to review projects with students. In Blockly, briefly review how to:

- Navigate to the Create New Project menu and create a new Blank Project.
- Use and change the Drive Forward and Drive Backward Blocks.
- Name and save their work.

Model filling out the Egg Toss Recording Sheet with the selected parameters (e.g., Trial # 1, egg type-empty, 10% power at 100 cm).

- Run the code and then ask students *'What happened?'*
- Fill out the "Observations" section of the worksheet with student observations (e.g., "The egg didn't go far enough. There wasn't enough power.")

Then ask students, *'What would you change?'*

- Talk about how students can focus on just one variable (distance versus launch power) to better fine tune results.
- Encourage students to begin forming hypotheses (e.g., "If Dash is closer, then the launcher needs less energy to get the egg in the basket.")

## Day 2/Step 2

### Let's get ready for some egg-cellent team work!

- Divide the class into teams of 2-4 students.
- Distribute the recording worksheets to each team.
- Place the baskets at 100 cm from a starting point on the ground where Dash will be placed.
- Provide each team with 3 eggs (1 empty and 2 weighted. Have students work together to create the correct egg weights (amount of cotton balls ) for the weighted ones. Provide teams with two different cotton ball amounts and tape as they may need to tape it shut if they have more.
- Option: To save time, you can pre-fill the eggs and label them. Also, You can have them repeat this with other amounts as well which further extends the challenge.

Once teams have completed the eggs, provide them with a Dash and a device.

- Briefly meet with each team to discuss Group Member Roles. Have team members assign roles to each other such as:
  - **Recorder** : Recording the team's trials on the recording worksheet
  - **Programmer** : Using the Blockly app to program Dash
  - **Egg Collector and Loader** : Collecting stray eggs, reloading the launcher, and resetting Dash
- Encourage students to switch roles during their group work.

Have teams continue trying the challenge until they get the eggs in the basket.

If teams finish early, they can:

- Try to make a basket using different parameters.
- Have Dash start to the left or the right of the basket (requires turns).
- Have Dash start turned away from the basket.
- Add lights/sounds/animations to their program.

## Presentations

- Have teams take turns showing their programs to the class.
- Have teams also share what they learned from their experiments (e.g., "The egg was more accurate when Dash was closer to the basket." or "We needed a lot of launch power when Dash was farther away.")

*After the presentations, have teams fill out the bottom of their recording worksheets with their conclusions/reflections.*

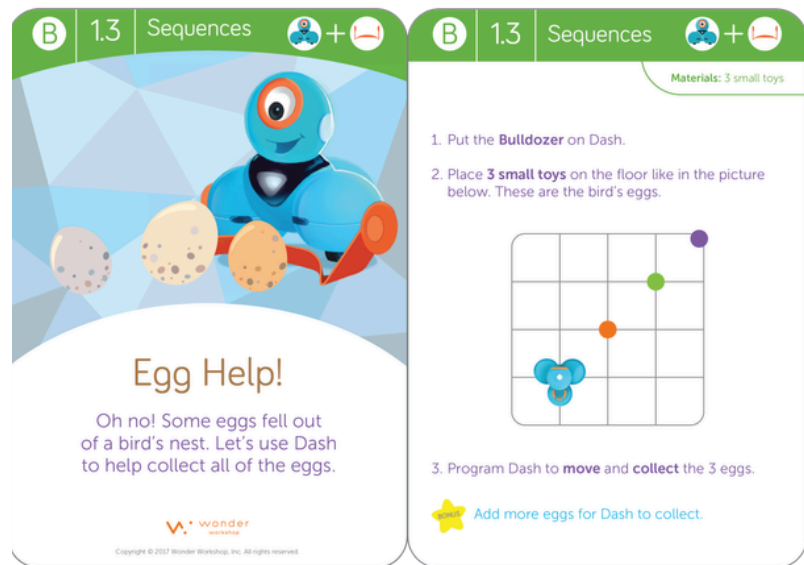
## Extension Activities

### Egg Help Challenge

In this challenge card, students are asked to help Dash collect eggs by programming sequences.

Download this double-sided Challenge Card to use as a station with your students next week!

[!\[\]\(c694a3ff3b077d76910920a6a1593ab4\_img.jpg\) Egg Help Challenge Card](#)



### Easter Parade

#### Host a parade with Dash as the star!

Dress up Dash with an Easter/Spring themed hat or outfit. Then, program Dash to move around and show off in a parade. You can use Blockly or the Wonder app to program Dash in your parade.

Need Inspiration? Watch the Easter Parade Video posted by TechAgeKids and see Easter fun with Dash Easter Bonnets and the Wonder App.

[Easter Parade Video](#)