

WINTER WONDERLAND

Up for a Challenge?

Dashing Through the Snow!

MATERIALS

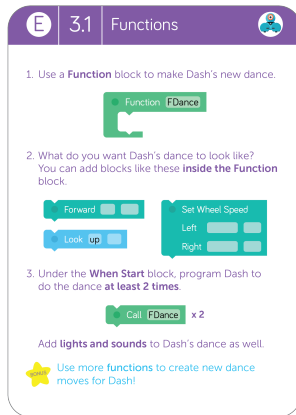


Dash robot



Blockly app

Background
Music



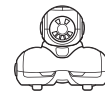
Dash Challenge Card E 3.1

STEPS

- 1 Use the "Dance Rehearsal" Dash Challenge Card to create a sequence of commands for Dash.
- 2 Open the Blockly app on your compatible device* and create a new program.
- 3 Follow the instructions on the Challenge Card by dragging the block commands onto your screen. Connect them in order below the START block.
- 4 Be creative when choreographing Dash's dance moves. Don't be afraid to use trial and error until it looks just right.
- 5 Press the green PLAY button to test your program.

What Can You Do with Cue?

MATERIALS

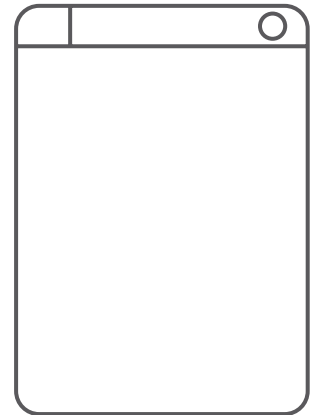
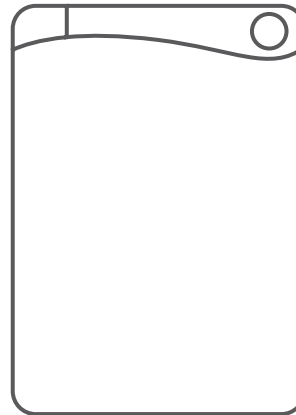


Cue robot



Cue app

Background
Music



Blank Challenge Card

STEPS

- 1 Take a look at the "Dance Rehearsal" Dash Challenge Card.
- 2 Create your own Challenge Card outlining a similar robot dance using functions for Cue.
- 3 On the front side, add an image with a title and problem statement. On the back, outline your challenge in simple steps!
- 4 Open the Cue app on your compatible device*.
- 5 Share away!

Record a video of Dash or Cue running your program successfully.

Share your video on Twitter @WonderWorkshop with the hashtag #FunWithWonder.

Cut out the Dash Challenge Card and fold in half or glue back to back.

E
3.1 Functions

Dance Rehearsal

Dash is getting ready for the
Interstellar Dance Contest!
Let's create a dance move for
Dash to use in the contest.

wonder
workshop

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E
3.1 Functions

1. Use a **Function** block to make Dash's new dance.

Function **FDance**
2. What do you want Dash's dance to look like?
You can add blocks like these **inside the Function** block.

Forward

Set Wheel Speed
 Left
 Right

Look up
3. Under the **When Start** block, program Dash to do the dance **at least 2 times**.

Call **FDance** x 2

Add **lights and sounds** to Dash's dance as well.

Use more **functions** to create new dance moves for Dash!

Design your own Challenge Card. Cut and fold/glue when you are done.

Now Let's Get Creative!

Use your coding skills to create a winter pageant for Dash or Cue! Dress up Dash or Cue in their winter finest and program a runway walk. Use craft materials or LEGOs to outfit your robot in elaborate costumes. Then use the Path, Blockly, Wonder, or Cue app to program Dash or Cue to move down the runway or across a stage. Be sure to add a little style and attitude to your robot's walk. And don't forget the runway music!

MATERIALS



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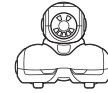
OR



OR



OR



+



Dash

Path app

Blockly app

Wonder app

Cue

Cue app

(Dot robot optional)

Crafting materials: fabric scraps, construction/scrapbook paper, pipe cleaners, pom poms, stickers, etc.

Scissors, (double-sided) tape and/or stapler

Building Brick Connectors and LEGOs

Painter's tape or cardboard/wooden blocks to outline the runway

STEPS

- 1 Create a "runway stage" with painter's tape or blocks.
- 2 Create costumes for Dash or Cue using a variety of craft materials.
- 3 Program your Dash using Path, Blockly, Wonder, or program Cue using the Cue app to show off their costume with a creative runway walk.
- 4 Make sure to add lots of turns, and maybe even a little dance animation or two. Want more flair? Add some lights and sound! Show off your robot's personality.
- 5 Use a clap, voice command, or other event to run your program.

LEVEL UP!

Create a uniquely shaped runway, maybe in the shape of a "T", a "U", or a "+" sign. Use blocks or small cardboard boxes to "fence in" the runway. Use the "IF" programming blocks (you may need more than one) to program your robot to sense the runway's end and then keep turning until it has a clear runway path again.

VOCABULARY

Function A sequence of instructions, usually given a name, that can be reused throughout a program or in other programs.

Record a video of Dash or Cue running your program successfully.

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Want to unplug for a while? Build your own robot!
Let's build a robot out of recyclable materials you can find around the house.

- Paper towel or toilet paper rolls
- Aluminum or tin cans (no sharp edges)
- Plastic and paper cups
- Empty cereal boxes
- Plastic food containers
- Bottle and their caps, etc.

Use page 5 to design and plan your robot.
Then, use glue or tape to engineer your materials
into a robot masterpiece!!

When you are finished building, write a story here about your robot and its winter wonderland adventures.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

Design Your Own Robot!

MATERIALS

List the recyclable materials you found around your house here:

DESIGN PLAN

Sketch a design for your robot using the materials you have found:

Recommended Reading



National Geographic Kids Everything Robotics

by Jennifer Swanson

Take a look at our recommended book.

Have it heard about it before?

Do check out our other recommended picture and chapters books that have to do with coding and robotics at:

www.makewonder.com/blog/stem-recommended-reading-list

How many books on the list have you read?

Color in our robot's eye to show how many books you've read:



❄️ FUN FACT ❄️

Two robots, Spirit and Opportunity, landed on Mars in 2004 to assist NASA with space exploration. Opportunity is still transmitting data to this day!.

Want more free resources?

Go to www.makewonder.com to discover more activities and lesson plans, plus special savings!