WINTER WONDERLAND

Up for a Challenge?

Dashing Through the Snow!
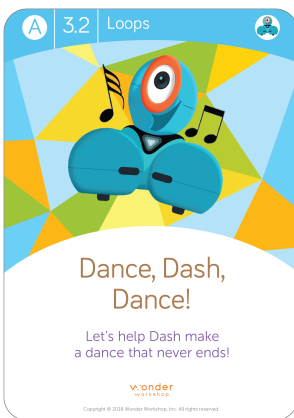
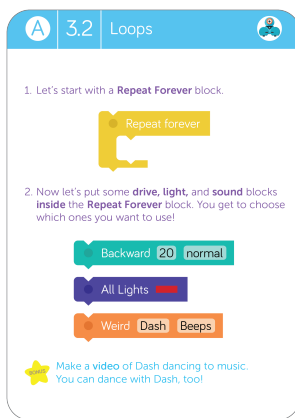**MATERIALS**

Dash robot
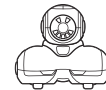
Blockly app

Dash Challenge Card A 3.2

STEPS

1 Use "Ready, Set, Go!" 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 Press the green PLAY button to test your program.

What Can You Do with Cue?

MATERIALS

Cue robot

Cue app
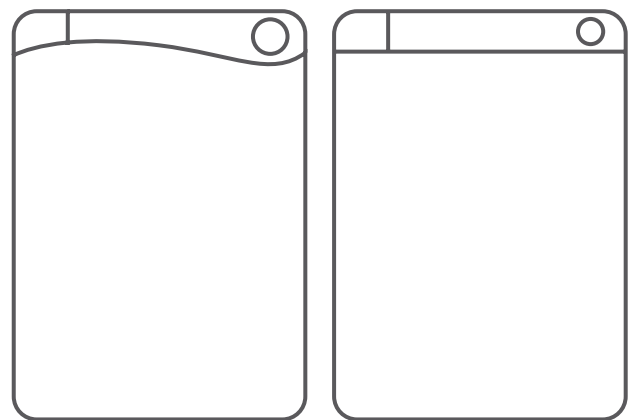
Blank Challenge Card

STEPS

1 Look at the "Ready, Set, Go!" Dash Challenge Card.

2 Create your own Challenge Card outlining a similar race challenge 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* and create and test your challenge.

5 Share away.

Record a video of Dash or Cue running your program successfully.
Share your video on Twitter @WonderWorkshop with the hashtag #FunWithWonder.

wonder workshop

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

(A) | 3.2 | Loops

Dance, Dash, Dance!

Let's help Dash make
a dance that never ends!

wonder workshop

(A) | 3.2 | Loops

1. Let's start with a **Repeat Forever** block.

   Repeat forever

2. Now let's put some **drive, light,** and **sound** blocks **inside** the **Repeat Forever** block. You get to choose which ones you want to use!

   Backward 20 normal

   All Lights

   Weird Dash Beeps

   BONUS Make a **video** of Dash dancing to music. You can dance with Dash, too!

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

wonder workshop

Now Let's Get Creative!

Holiday cheer is in the air! Can you hear it?
It's time to get musical with Dash and Cue and few "Jingle Bells" to create a music video.
Will you or the robot be the star?

MATERIALS

Dash　　**Xylo app**

STEPS

1. For Dash, download the Xylo app.

2. Next, attach the Xylophone to Dash (see directions: https://www.makewonder.com/play/setup/#xylophone).

3. Pair your device with your robot and then calibrate the head mallet per the app's instructions.

4. Use the following sheet music to program "Jingle Bells" in honor of winter.

5. What winter dance moves might you create to add to a music video?

MATERIALS
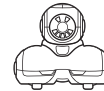
Cue　　**Cue app**

STEPS

1. Want to harmonize with Cue in a music video?

2. Cue has 30-second recording capabilities. Record yourself singing the song lyrics below.

3. Sequence your sound clips in the Cue app with the WAIT command as needed.

4. Then, as your program runs, play an instrument along with Cue's singing, or you could record a beatbox drum track, and sing along as Cue runs your rhythmic program.

5. Try programming Cue's LEDS for some visual effects -- can you make them count the beats in a measure?

Jingle Bells

E	E	E	-	E	E	E	-	E	G	C	D	E	-	-	-	F	F
Jin-	gle	bells,		jin-	gle	bells,		jin-	gle	all	the	way.				Oh	what

F	F	F	E	E	E	E	E	D	D	E	D	-	G	-
fun	it	is	to	ride	in	a	one	horse	op-	en	sleigh!			

E	E	E	-	E	E	E	-	E	G	C	D	E	-	-	-	F	F
Jin-	gle	bells,		jin-	gle	bells,		jin-	gle	all	the	way.				Oh	what

F	F	F	E	E	E	E	G	G	F	D	C
fun	it	is	to	ride	in	a	one	horse	op-	en	sleigh!

❄ VOCABULARY ❄

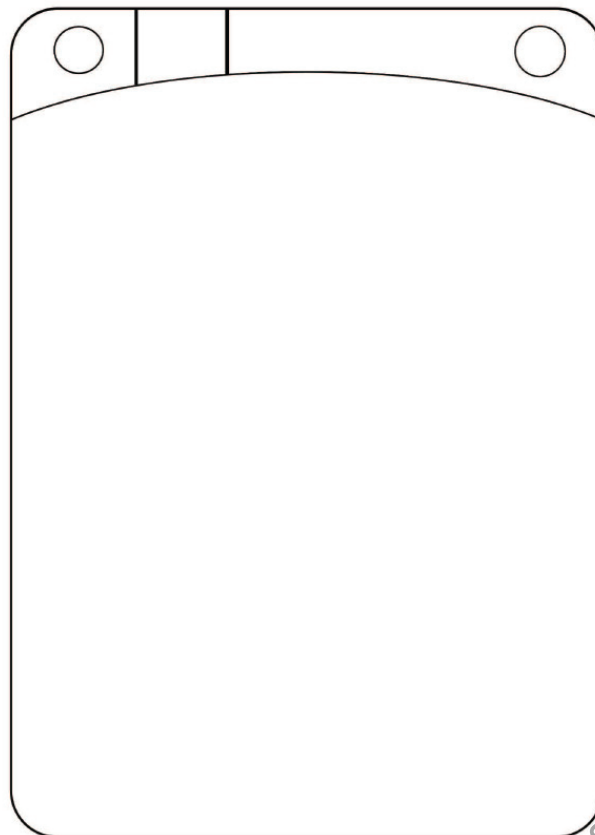**Loop**　　A command used to repeat a portion of code until a desired process is complete.

Record a video of Dash or Cue running your program successfully.
Share your video on Twitter @WonderWorkshop with the hashtag #FunWithWonder.

Time to Go Offline!

Creative idea and photo from
Little Bins for Little Hands.

Want to write a word in code? Use the binary alphabet.

1 Write down a word -- try your name or a word associated with winter.

2 Next, use one colored craft bead to represent 0 and another colored craft bead to represent 1. Find each letter in the Binary Alphabet.

3 Choose a third colored bead to separate letters.

4 Letter by letter, add beads to a pipe cleaner. Remember to slide right to left so that your message begins with the correct letter. Then bend the ends of the pipe cleaner.

**5** You can create a bracelet, an ornament, or even a shape like a candy cane!

Binary Alphabet

A	1000001		**N**	1001110
B	1000010		**O**	1001111
C	1000011		**P**	1010000
D	1000100		**Q**	1010001
E	1000101		**R**	1010010
F	1000110		**S**	1010011
G	1000111		**T**	1010100
H	1001000		**U**	1010101
I	1001001		**V**	1010110
J	1001010		**W**	1010111
K	1001011		**X**	1010111
L	1001100		**Y**	1011001
M	1001101		**Z**	1011010

Want more free resources?

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

wonder workshop

4

Recommended Reading
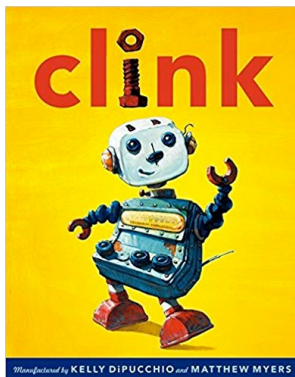
Clink
by Kelly DiPucchio
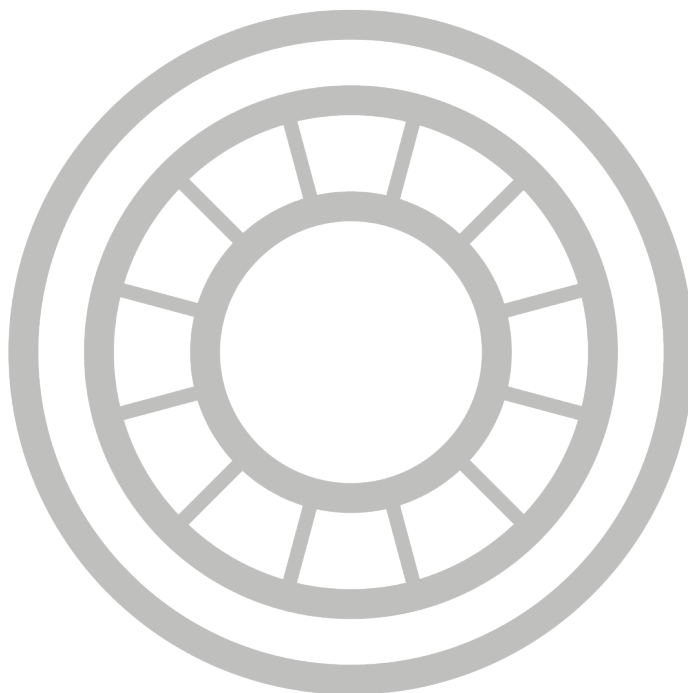
Take a look at our recommended book.

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 so far:

❄ **FUN FACT** ❄

The smallest robot is called a nanobot. It is less than 1/1000th of a millimeter.

Want more free resources?
Go to **www.makewonder.com** to discover more activities and lesson plans, plus special savings!

wonder workshop

5