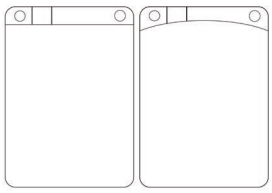
wonder workshop

dash & dot challenge cards

Dash the Puppy: E 3.4 - E 3.6

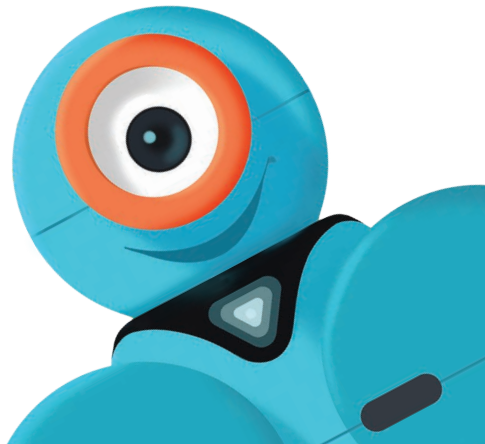
Are you ready to take on the challenge?

- Review the first **Challenge Card** in the set.
- Use one of the **Planning Worksheets** to plan out your code.
- Open the *Blockly* app.
- Complete the challenge.
- Take a video of your robot as it completes the challenge.
- Use one of the **Reflection Worksheets** to reflect on your work.
- Work through each of three **Challenge Cards** in the same way.

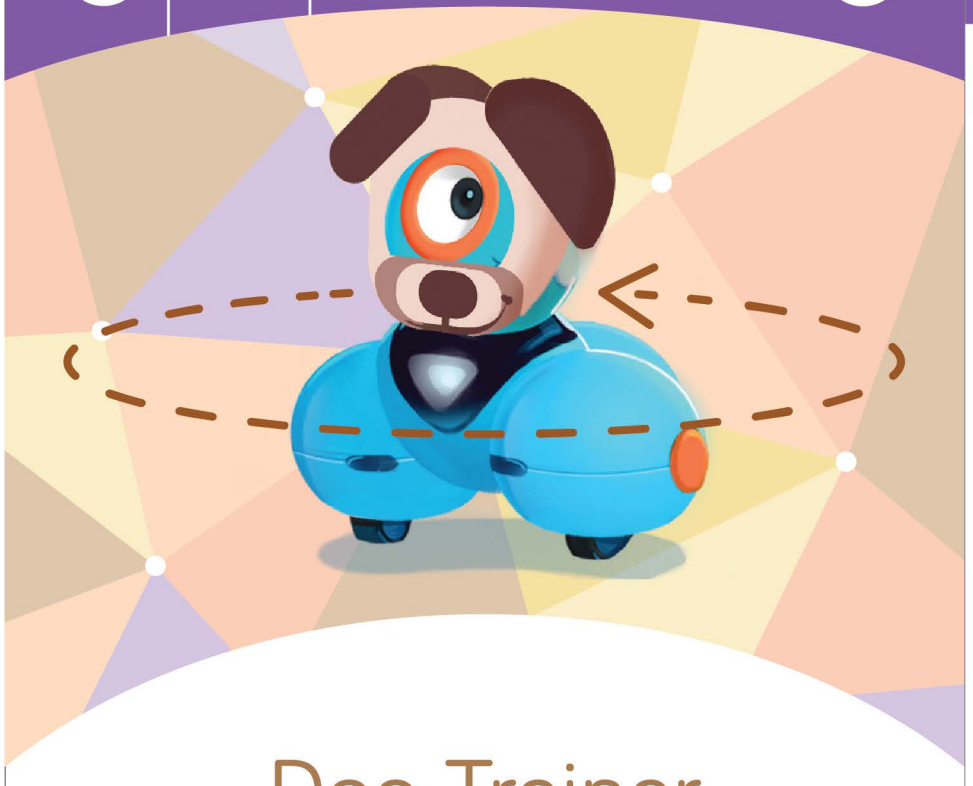


Bonus

You can design your own Challenge Card and have your friends try them out!



E 3.4 Functions



Dog Trainer

Dash is acting like a puppy
and you are the trainer.
Train Dash to turn in a circle!

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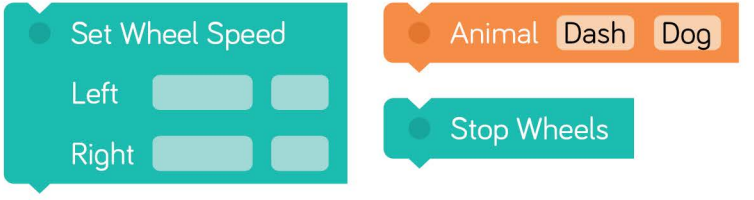
E 3.4 Functions

1. Create a **function** to teach Dash to drive in a **circle**. Give the function a name (such as **FCircle**).

2. Put a **Set Wheel Speed** block, a **sound** block, and a **Stop Wheels** block **inside** the **function**.

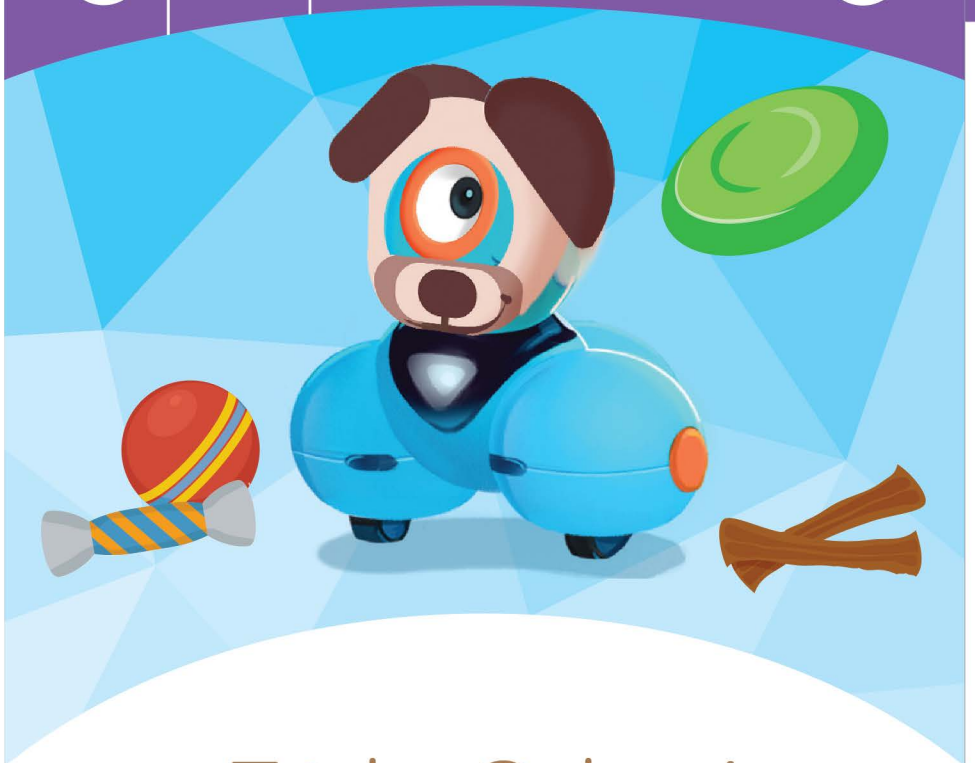


3. Under the **When Start** block, **Call** the **Circle Function**.

4. Add some **lights** and **sounds** to give Dash praise for doing a good job!

5. Then **Call** the **Circle Function** again so that Dash gets more practice.

E 3.5 Functions



Tricks Galore!

As a trainer, you are responsible for teaching a variety of tricks. Teach Dash two different tricks.

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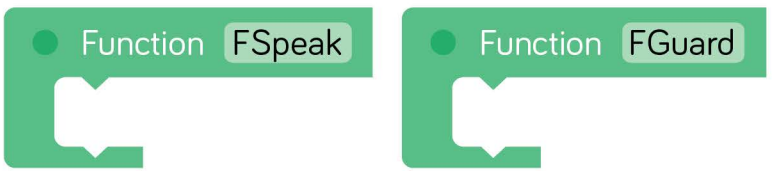
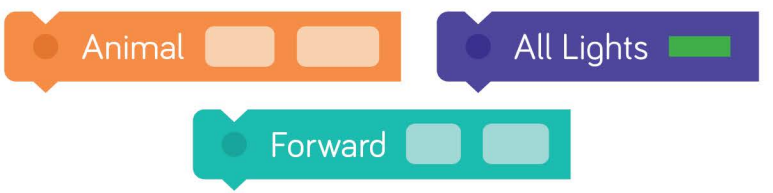
E 3.5 Functions

1. Dash needs to learn more tricks! Create **2** new **functions**.



2. Use **sound** blocks to make a function that teaches Dash to **speak**.

3. Use **sound**, **light**, and **drive** blocks to make a function that teaches Dash to **protect** you with loud noises, flashing lights, and brave moves.



4. To train Dash to do the tricks, **call** each **function** at least **3 times**. Practice makes perfect!

Obstacle Course!

Many animal trainers challenge their pets by having them go through obstacle courses. Now it's Dash's turn!

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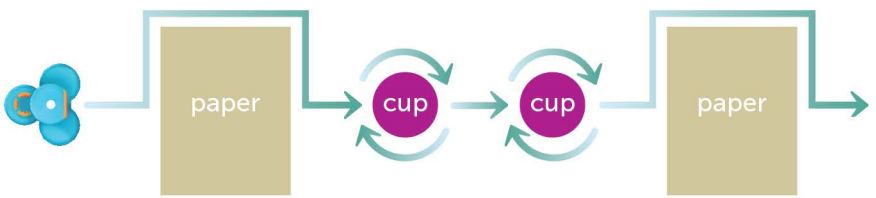
E 3.6 Functions

Materials: 2 sheets of paper, 2 cups, tape, ruler

1. Use **cups** and **paper** to set up **4 obstacles**. Place the obstacles **30 cm apart** and set Dash **in front of** them. Use **tape** to mark each obstacle's location and Dash's starting spot.



2. Program Dash to go through the obstacle course using **2 functions**—one for each obstacle type.

   Hint: You will need to **call** each function **multiple times**.

BONUS Add more obstacles to the course or change the order of the obstacles.

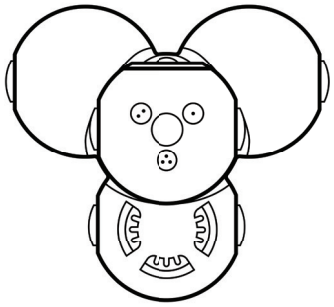
Dash Planning Worksheet

Name(s): _____ Date: _____

Coding Level: _____ Card #: _____

What do you want Dash to do?

Draw out the steps of the challenge or write a few sentences describing your goal.



General Planning Worksheet

Name(s): _____ Date: _____

Coding Level: _____ Card #: _____

1. What do you want Dash or Dot to do?

Draw out the steps of the challenge or write a few sentences describing your goal.

2. What will you do to achieve your solution?

What will each team member do? What steps will you need to take? What blocks will you use?

Reflection Worksheet

Name(s): _____ Date: _____

Coding Level: _____ Card #: _____

1. What did Dash and/or Dot do when you ran your program?

2. Did you make any mistakes? If so, how did you fix them?

Advanced Reflection Worksheet

Write a reflection entry in your Wonder Journal. Try to answer these questions as part of your reflection:

Results

- What did Dash and Dot do when you ran your program?
- Did you make any mistakes? If so, how did you fix them?

Connections

- What did you like the most about this challenge? Why?
- What was the most difficult part of the challenge? What did you learn from it?

Next Steps

- If you had more time, how would you change or add to your code?
- What are you planning to do next? Will you try another Challenge Card or start a new coding project?