






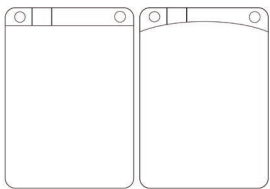


## Dash's Road Trip: F 2.1 - F 2.3

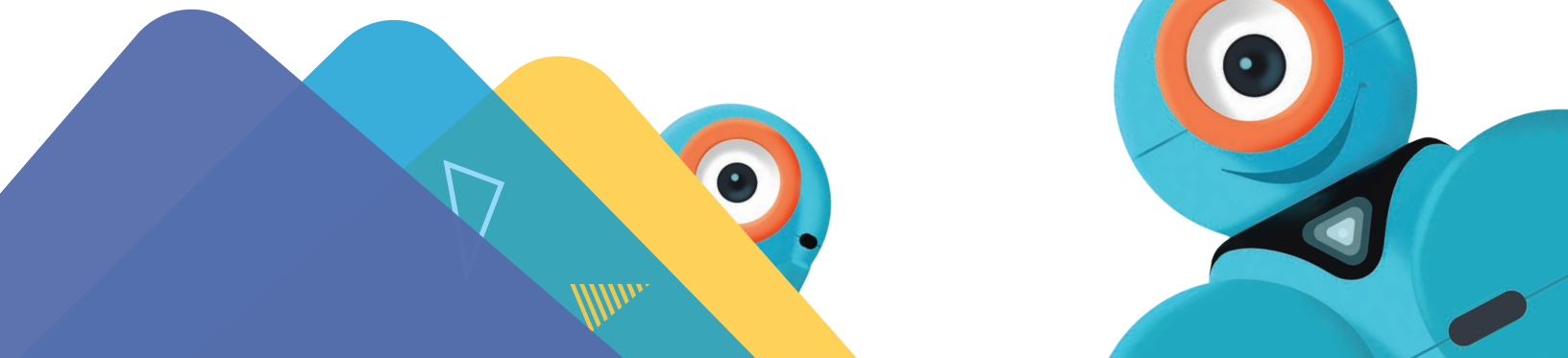
Are you ready to take on the challenge?

-  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!





## Road Trip!

Dash needs to get to the gas station to fill up before a big road trip!



1. To get to the gas station, Dash first needs to **drive 65 cm**. To drive a specific distance, **set a variable** to 65.



2. Then have Dash **drive** that distance.



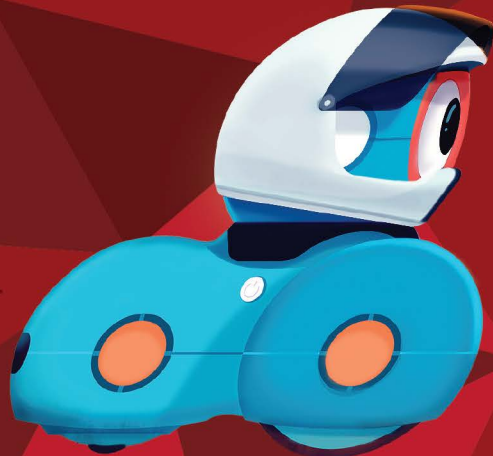
3. Almost there! Now program Dash to make a **45-degree left turn**.



4. Finally, Dash needs to **drive 35 cm**. What blocks should you use?



5. Add some **animations** for when Dash arrives at the gas station!



## Pump It Up!

Dash needs to fill up the gas tank before heading out on the open road!



- Let's help Dash get ready for the road trip! Start with **2 When** blocks:



- When the Top Button** is pressed, use a **variable** to help fill up Dash's tank,



and then use the **eye lights** to show how much gas is in the tank.



- When Button 3** is pressed, program Dash to make an engine **sound** and **drive** the distance of the **variable**. Then **set** the variable back to **0**.

Now, play the program! Press the **Top Button** several times to fill up Dash's gas tank. Then press **Button 3** to make Dash go!



## On the Road!

Dash is on the road but keeps running out of gas! How can you help Dash know when the gas in the tank is getting low?



1. Program Dash so that pressing the **Top Button**:

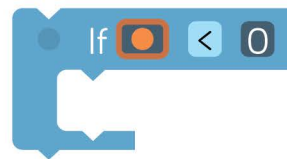


- **adds** gas to the tank and **changes** the **variable** by **+13**.
- uses the **eye lights** to **show** how much gas is in the tank.

2. Then program Dash so that pressing **Button 3**:



- has Dash **drive forward 50 cm**.
- **lowers** the amount of gas in the tank and **changes** the **variable** by **-50**.
- checks to see **if** the **variable** is **<0**.



**If** the tank is empty, then:

- turn **off** all **lights**.
- have Dash make a warning **sound**.
- **set** the **variable** back to **0**.

Now Dash knows when the gas tank needs to be filled back up! Vrooom!

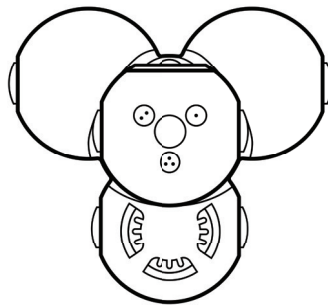
# Dash Planning Worksheet

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

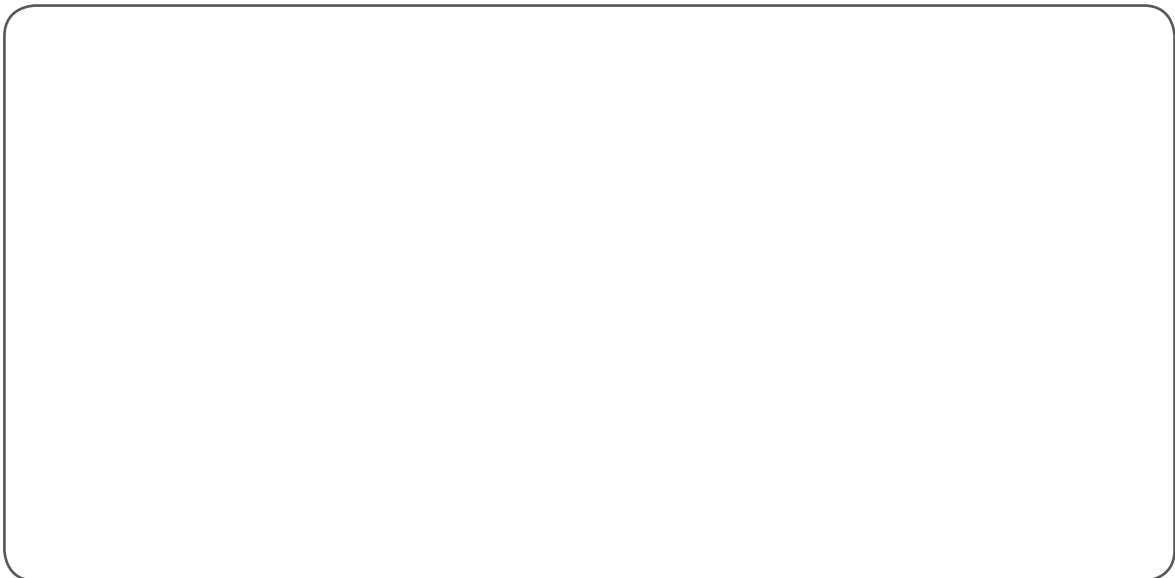
Name(s): \_\_\_\_\_ Date: \_\_\_\_\_

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?



