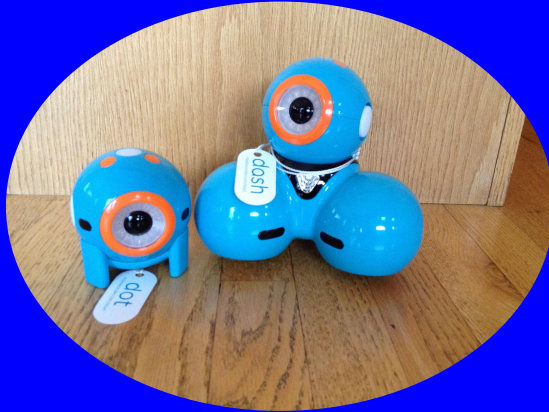


Number Line Moves

Dash -- 1st Grade



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Common Core Standards

CCSS.MATH.CONTENT.1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

CCSS.MATH.CONTENT.1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

CCSS.MATH.CONTENT.1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Computer Science Standards

ISTE Standard 4: Critical thinking, problem solving, and decision making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

- a. Identify and define authentic problems and significant questions for investigation
- b. Plan and manage activities to develop a solution or complete a project
- c. Collect and analyze data to identify solutions and/or make informed decisions
- d. Use multiple processes and diverse perspectives to explore alternative solutions

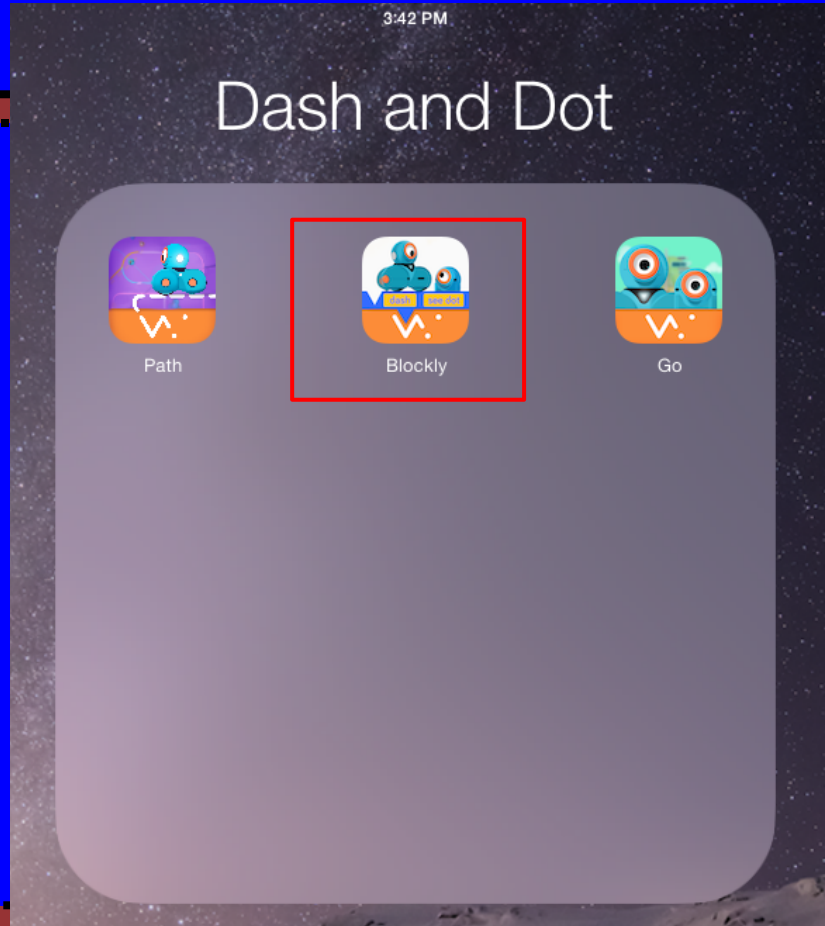
Learning Goals

- ☐ I can write a sequence of commands to create an algorithm.
- ☐ I can debug if my program doesn't work right.
- ☐ I can add and subtract multiples of 10.
- ☐ I can write an algorithm for Dash to move forward in a line.

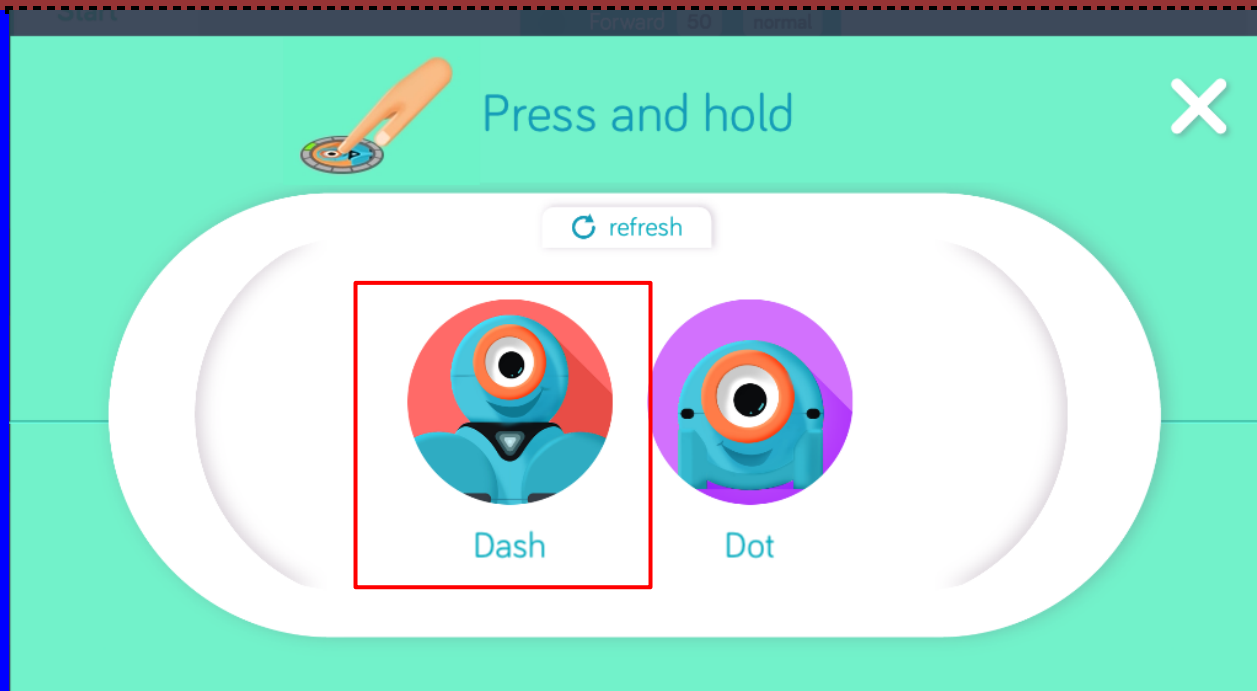
Vocabulary

algorithm
sequence
debug

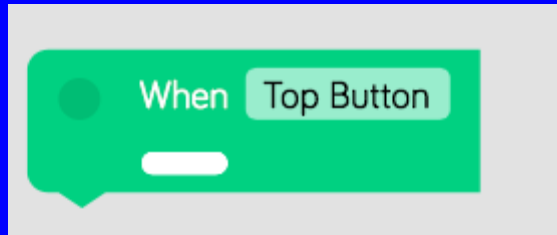
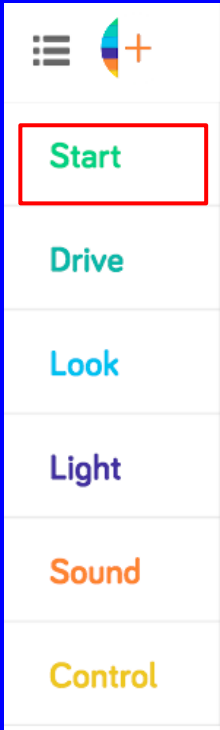
The Apps



Connecting



Starting an Algorithm



Use Drive commands to move

Start

Drive

Look

Light

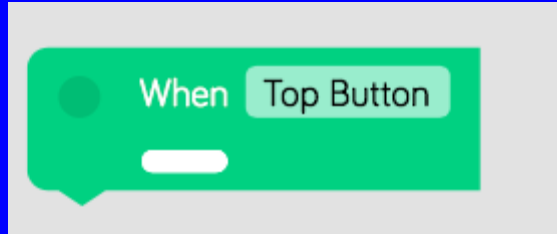
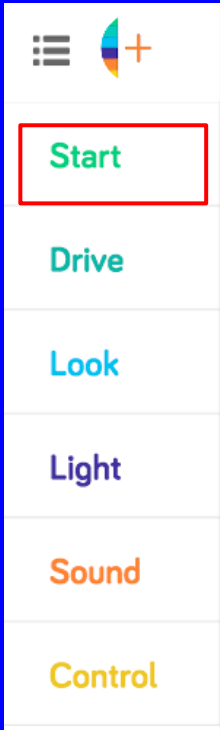
Sound

Control

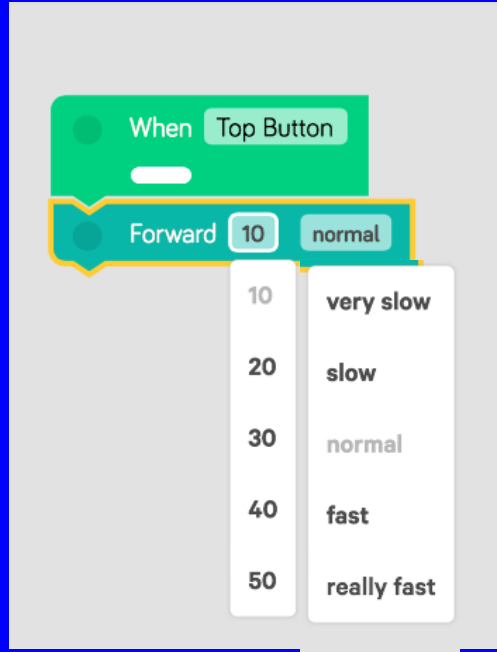
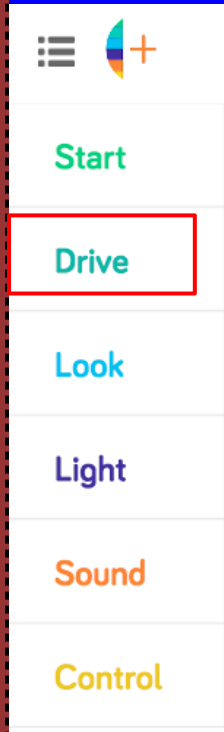
Forward 10 normal



Writing the Algorithm



Writing the Algorithm



What will this algorithm do? Change the settings. What happens?

Station 1 -- Materials

At this station you will need

- numbered dice (10, 20, 30, 40, 50)
- Number line mat
- pencil
- [recording sheet](#)
- Dash
- iPad

Station 1 -- Directions

Grouping: Pairs Partner 1 Partner 2

1. Roll the dice to find the starting point and record.
2. Roll dice to find first move and record.
3. Roll dice to find 2nd move and record.
4. Write algorithm and try it.
5. Write equation and check answer with Dash's ending point.
6. Switch roles and repeat.

Station 1 - Recording Sheet

Name _____

Roll a dice for your starting point. _____

Roll again for your moves.
Write the moves in the boxes.

Two identical buttons are shown, one above the other. Each button has a teal background with a yellow border. On the left is a teal circle with a white dot. To its right is the word 'Forward' in white. Further right is a white square box. To the right of the box is the word 'normal' in white.

Try your code.

Where did Dash end up? _____

Write an equation to show this.

____ + ____ + ____ = ____
Start Move 1 Move 2 End

Station 2 - Materials

At this station you will need

- Number line mat
- pencil
- [recording sheet](#) or [sheet 2](#)
- Dash
- iPad

Station 2-- Directions

Grouping: Pairs **Partner 1** **Partner 2**

1. **Think about the task. Use math to figure out the number you need to move and write it down. Write and try your code. Debug if needed.**
2. **Think about the task. Use math to figure out the number you need to move and write it down. Write and try your code. Debug if needed.**

Station 2 - Recording Sheet

Name _____

Start	Move	End
10	Forward normal	50
20	Forward normal	40
10	Forward normal	30
35	Forward normal	35

Station 3 -- Lights and Moves

At this station you will need

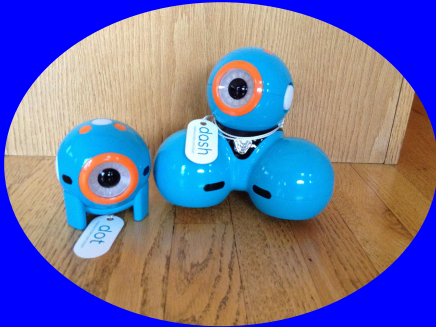
- Number line mat
- pencil
- Dash
- iPad
- [Recording Sheet](#)

Station 3-- Directions

Grouping: Pairs **Partner 1** **Partner 2**

1. **Pick a move card**
2. **Pick a light card**
3. **Pick a move card**
4. **Pick a sound card**
5. **Write your algorithm on Blockly.**
6. **Run the algorithm.**

Task Cards



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Differentiated Task Cards

Scaffolded

On Level

Challenge

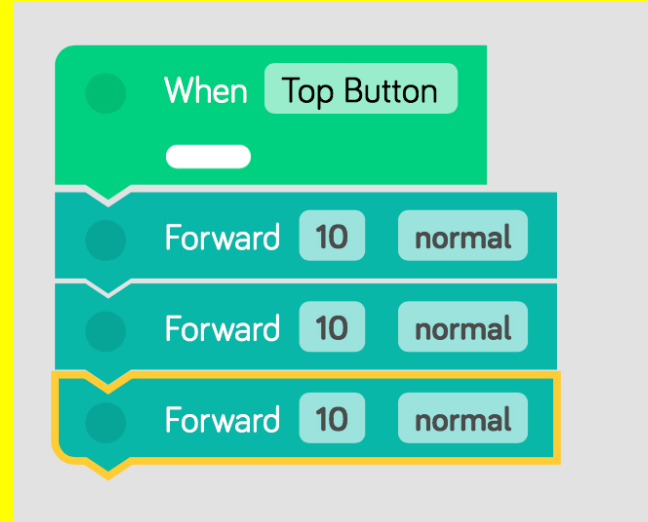
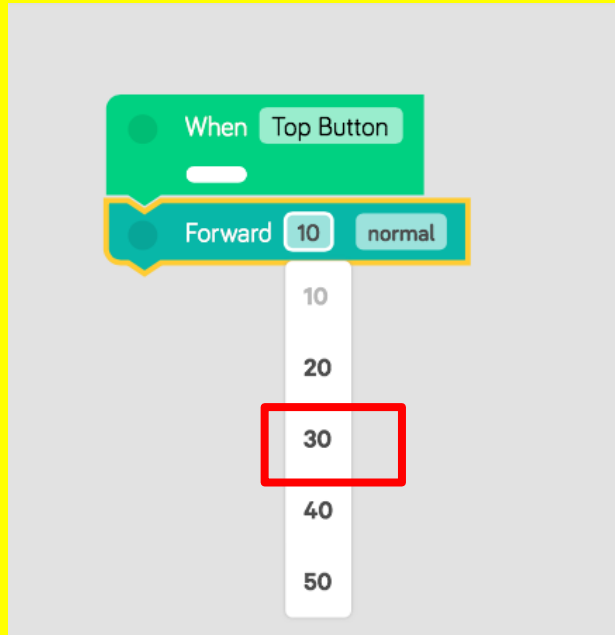
Hint

Think Beyond

Move Forward 30 cm

Can you write 2 algorithms to move forward 30 cm?

Move Forward 30 cm



Move Forward 30 cm



How many Forward 10 blocks do you need?

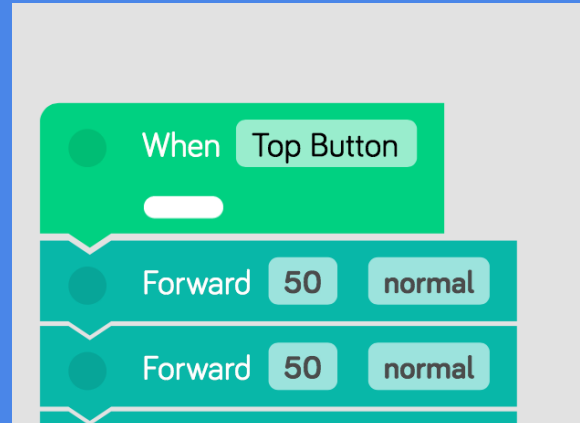


Move Forward 100 cm

Write an algorithm to move forward 100 cm.

Move Forward 100 cm

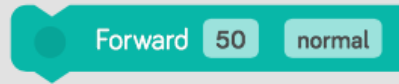
Write an algorithm to move forward 100 cm.



Move Forward 100 cm



How many Forward 50 blocks do you need?

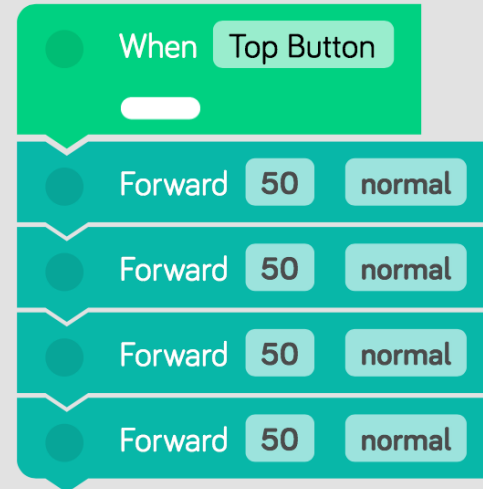


Move Forward 200 cm

- 1. Write an algorithm to have Dash move forward 200 cm.**

Move Forward 200 cm

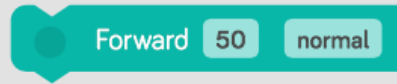
1. Write an algorithm to have Dash move forward 200 cm.



Move Forward 200 cm



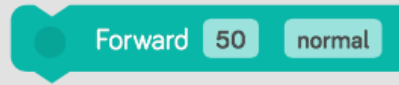
How many Forward 50 blocks do you need?



Move Forward 200 cm



How many Forward 50 blocks do you need?



$$50+50+50+50 = 200$$

Measure and Move

1. Write an algorithm to have Dash move a distance of your choice.
2. With a partner, measure draw and measure a line with a meter stick. Then write an algorithm for Dash to move on that line.