



Ready, Set, Go!

Dash is ready to go!
Let's wait for the green stoplight.
Then Dash can start the race!



1. First, the stoplight is **yellow**. Use this block to make Dash turn yellow:



2. Now make Dash turn **red**.



3. Now make Dash turn **green**.



4. Yes! Now Dash can go! Let's add a **Race** animation.





Ready, Set, Rainbow!

Let's help Dash make
a rainbow of lights!



1. Use **light** blocks to make a rainbow with Dash!



2. Make sure Dash shows all of these colors:

red: 

orange: 

yellow: 

green: 

blue: 

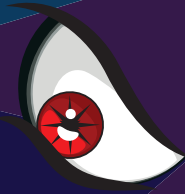
purple: 

3. Now add an **animation** block. You can choose something like this:



Add **sounds** after each color!





Dash Saves the Day!

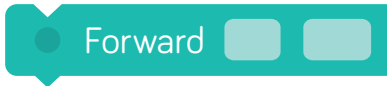
An angry monster wants
to eat Dash's toy.
Dash needs to save the toy.



Materials: 1 small toy



1. Put the **toy far away** from Dash.
2. Have Dash face the toy.
3. Use this **Forward** block to help Dash get to the toy:



4. Then have Dash scare away the monster by making this **sound**:



Move the toy to a different place. Have Dash save the toy again!



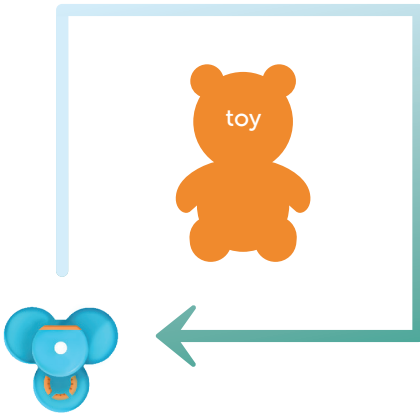
Dash the Guard

Dash needs to guard the toy
so the monster won't get it!

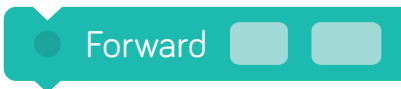


Materials: 1 small toy

1. Put Dash **next to** the **toy**.
2. Have Dash move in a **square** around the toy.
Make sure Dash doesn't move the toy!



3. You will need to use these blocks:



Have Dash make a **sound** after every **right turn**.





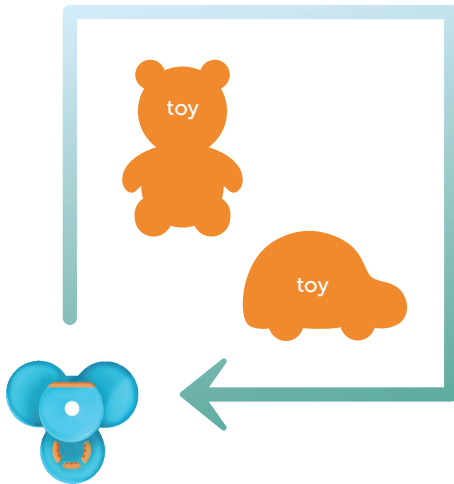
Dash Guards a Lot!

Dash is guarding the toys again!
Let's use loops to help Dash
guard the toys.

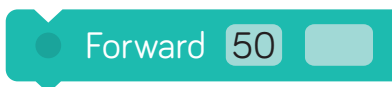


Materials: 2 small toys

1. Put Dash **next to the toys**.



2. Can you program Dash to make a **square** around the toys using only **3 blocks**?



B

2.5

Loops



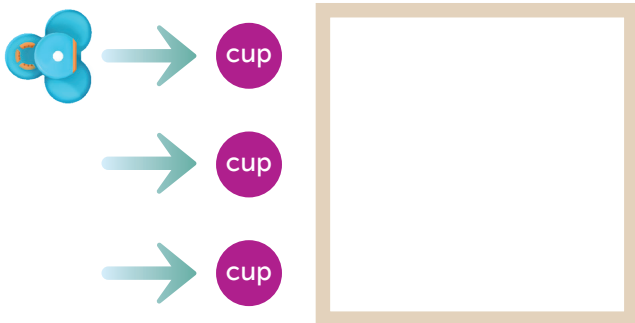
Recycling Rush

Someone left some empty cups on the lake shore. Dash needs to take them to the recycling center.

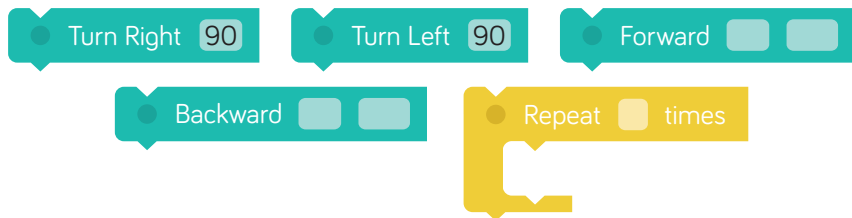


Materials: 3 cups, tape, ruler

1. Use **tape** to make a **square** on the floor. This is the recycling center. Place the **cups in front of** the recycling center.



2. Program Dash to **push** all of the cups **into** the recycling center. You will need to use some of these blocks:



3. Hint: To push all the cups into the recycling center, **repeat** these actions **3 times**.



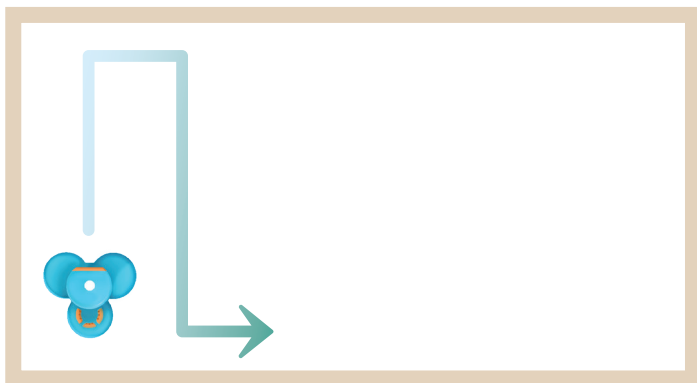
Dash's Trash

Dash needs to look in every
part of the lake for trash.
Dash can't leave any trash behind!



Materials: tape, ruler

1. Use **tape** to make a **rectangle** on the floor. This is the lake. Place Dash in **one corner** of the lake.



2. Help Dash move **back and forth** across the lake. Dash must drive over the entire lake in order to find all the trash.
3. Hint: You will need a **Repeat** block.



Add **light**, **sound**, and **animation** blocks to create a **happy dance** for Dash when the lake has been cleaned up.

B

3.1

Events



On Your Mark!

Dash wants to race with friends!
Dash is waiting for the race to start.





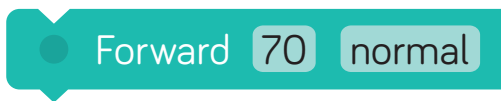
1. Have Dash **wait** until you press the **Top Button** to begin racing.



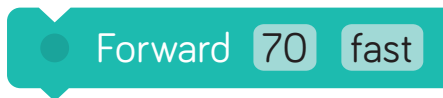
2. Now let's get this race started! Start Dash's **car engine**.



3. Now Dash can start racing! Have Dash **drive forward 70 cm**.



Make Dash go faster! How fast can Dash go?



B

3.2 Events



Get Set!

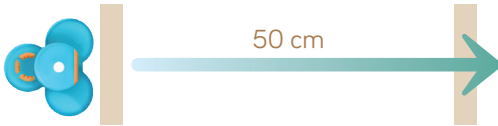
Dash won the last race!
Now Dash will compete
in the semifinals!





Materials: tape, ruler

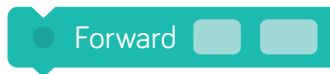
1. Use **tape** to make the starting and finish lines for the race.



2. Have Dash **wait** and start the race when you **say**, "Get set!"



3. How far does Dash need to go?



4. Record a **happy sound** for Dash to say after crossing the finish line!



-  Have Dash do a **fun dance** after finishing the race!



C

1.2

Sequences



Come Back!

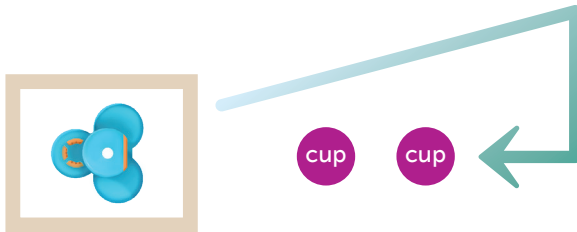
Dash must bring the children back to school to finish their homework.





Materials: 2 cups, tape, ruler

1. Place **2 cups** on the floor **in front of** Dash. These are the children. Use **tape** to make a **rectangle** on the floor around Dash. This is the school.



2. Help Dash get to the children who forgot their homework. Use the **Turn Right**, **Turn Left**, and **Forward** drive blocks.



3. Now that Dash has the children, Dash needs to **push them** back **inside the** school so they can finish their homework.



After the children are back inside the school, have Dash **drive around** the outside of the school **2 times**.



3.1

Loops



Spaceship Spinout!

Dash's spaceship is spinning out of control!





1. First, have Dash's spaceship **spin left 3 times**.

A Scratch code block containing a yellow 'Repeat' block with the number '3' and the text 'times'. Inside the repeat block is a teal 'Set Wheel Speed' block. The 'Set Wheel Speed' block has two rows: 'Left' with 'forward' and 'very slow' options, and 'Right' with 'forward' and 'really fast' options.

2. Dash knows something isn't right!

A Scratch code block containing an orange 'Say' block with the text 'Dash' and 'Uh oh!'.

3. Now have Dash's spaceship **spin right 3 times**.

A Scratch code block containing a yellow 'Repeat' block with the number '3' and the text 'times'. Inside the repeat block is a teal 'Set Wheel Speed' block. The 'Set Wheel Speed' block has two rows: 'Left' with 'forward' and 'really fast' options, and 'Right' with 'forward' and 'very slow' options.

What can Dash do to get control of the spaceship?



The Big Event!

Thanks to Dot, Dash is now ready
for the big event: to find you!



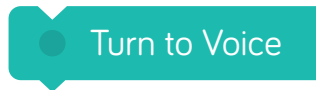
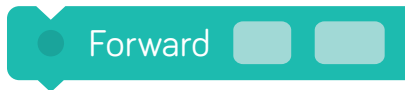
1. Sit on the floor.
2. **Record** and program Dash to **call out, "Marco!"**



3. When you **call out "Polo,"** have Dash **turn to your voice**. Then have Dash **move forward** towards you.



4. Make sure Dash keeps looking until you are found!



5. Hint: You may need **more than 1 sound** block.



When Dash finds you, have Dash **dance and cheer!**

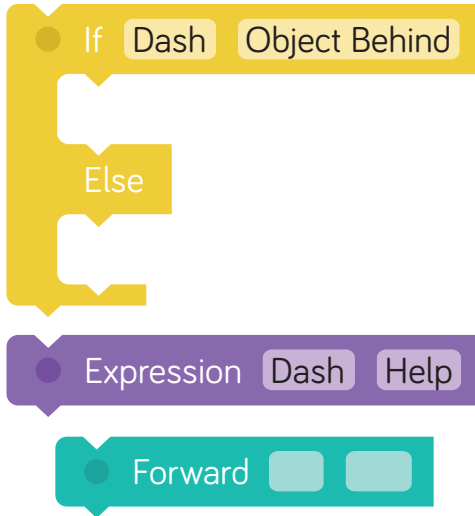


Fire Monster!

Dash looks around and sees a Fire Monster! What should Dash do?



1. **If** there is a Fire Monster behind Dash, have Dash scream for **help** and **drive away** really fast!



2. **If** there is **not** a Fire Monster behind Dash, have Dash **whistle** and wander around.



Use your own combination of **sound** and **drive** blocks to have Dash ask for help!

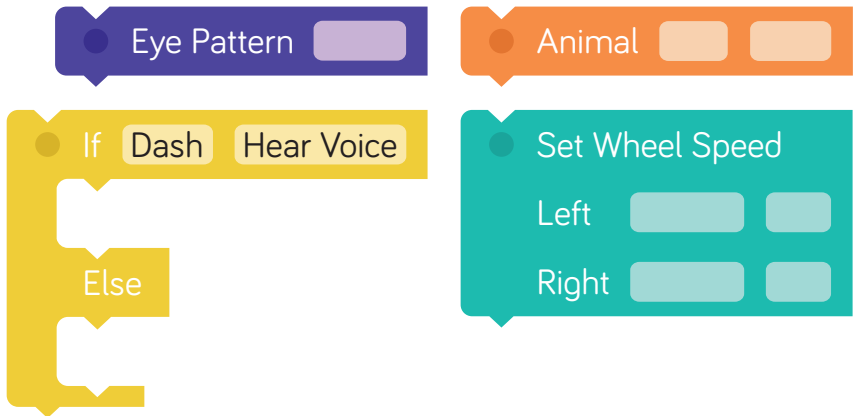


Big and Scary!

A Fire Monster roars at Dash!
Dash has to look big and scary to try
to make the Fire Monster go away.



1. **You** are the Fire Monster. **If** Dash **hears** a loud **roar**, use **light**, **sound**, and **drive** blocks so that Dash can try to scare the Fire Monster away.



2. **If** Dash does **not hear** a loud **roar**, have Dash **whistle** and relax.



Add another **If** block. What happens if Dash gets picked up by the Fire Monster?



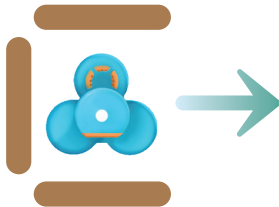
Dash's Escape!

Dash ran away from the Dot monster and accidentally headed into a scarrrrrrryyy forest. Help Dash find a way out of the forest!



Materials: 3 blocks or books

1. Put the **blocks** or **books** around Dash. These are the trees in the scarrrry forest. Have Dash face one of the trees.

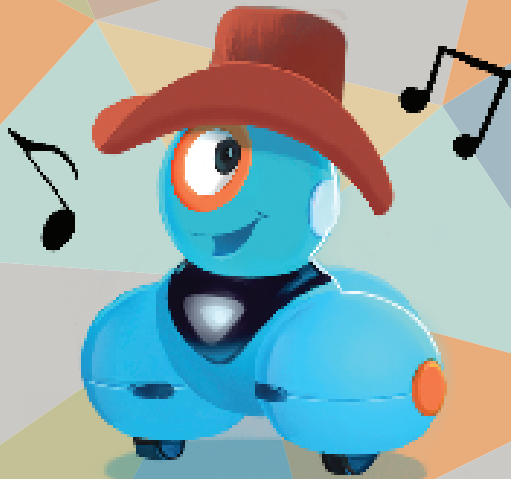


2. Program Dash to keep **turning** until Dash finds the way out! You may need to use a few **If** blocks.



Make sure your program works even when Dash is facing a different tree.

3. Once Dash finds the way out, program Dash to drive away **really fast!**



Rootin' Tootin' Line Dance!

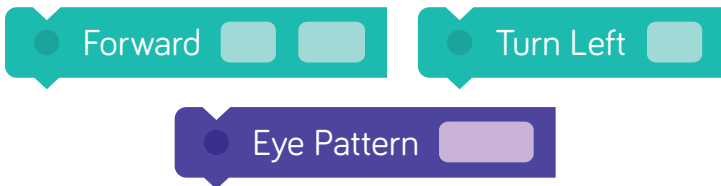
Dash wants to do a rootin' tootin' line dance! A line dance must always end with a 90-degree turn.



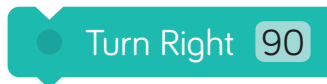
1. Dash wants to do a line dance! Add a **Repeat Until** loop. Then choose the **Top Button**.



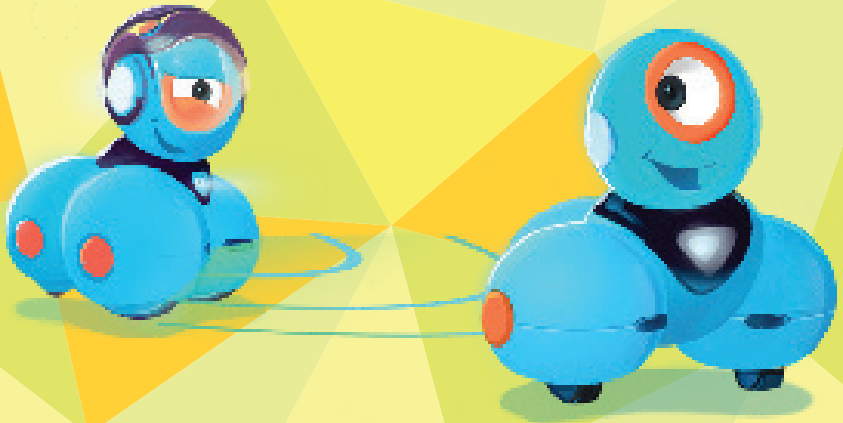
2. Add a combination of **drive**, **turn**, and **light** blocks inside the loop.



3. Make sure Dash's last dance move is a **90-degree turn**.



4. Play some **music** and watch Dash's rootin' tootin' line dance! Then press the **Top Button** when you want the dance to end.

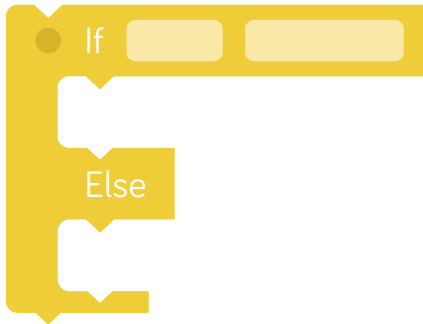


Follow the Leader

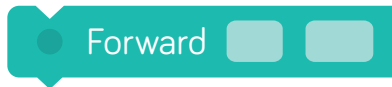
Dash wants to play Follow the Leader.
Lead the way, Dash!



1. Dash wants you to follow! Add an **If/Else** block.



2. **If** Dash senses you are following, Dash will **drive 50 cm forward** really fast.



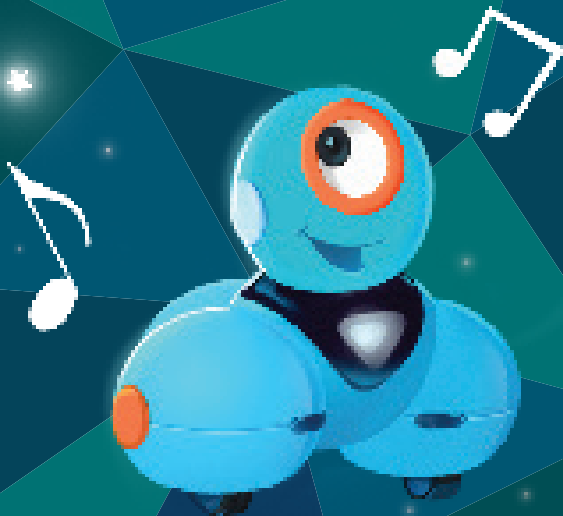
3. **If** Dash **does not** sense you following, Dash will **wait** until you get closer.



4. Put your entire program in a **Repeat Forever** block.



Have Dash make **turns** and **spins** for you to follow.



Dance Rehearsal

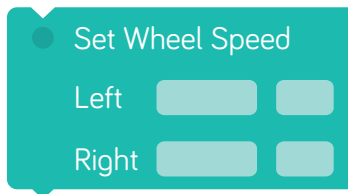
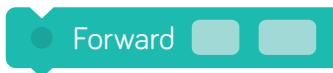
Dash is getting ready for the
Interstellar Dance Contest!
Let's create a dance move for
Dash to use in the contest.



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



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



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



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



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



Fancy Wheelwork

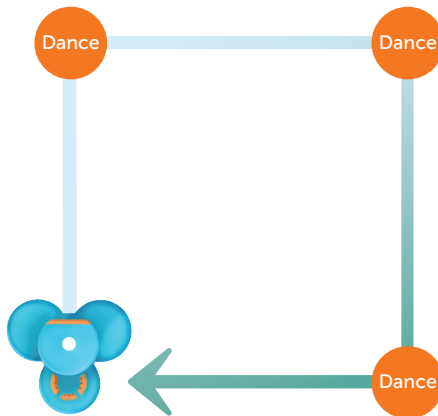
It sounds like the competition is going to be fierce at the Interstellar Dance Contest! Dash is going to need fancier moves for the performance.



1. Use a **Function** block to make a dance move for Dash. You can use **light**, **sound**, and **drive** blocks for the dance move.



2. Program Dash to dance in a **square**. Have Dash do the dance move at each **corner** of the square (see the orange dots).



Have Dash perform the dance move using different **shapes**, like a triangle or a rectangle.



Dog Trainer

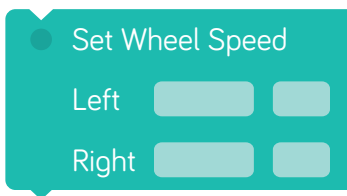
Dash is acting like a puppy
and you are the trainer.
Train Dash to turn in a circle!



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**.

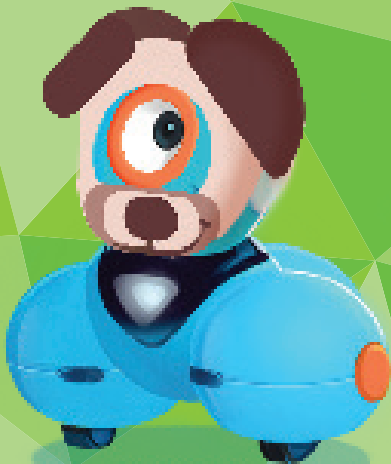


3. Under the **When Start** block, **Call** the **Circle Function**.



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.





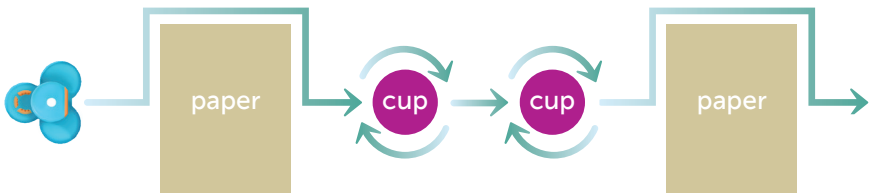
Obstacle Course!

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



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**.



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



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!

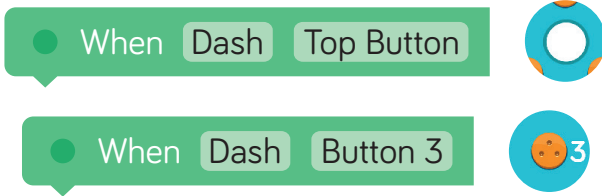


Pump It Up!

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



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



2. **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.

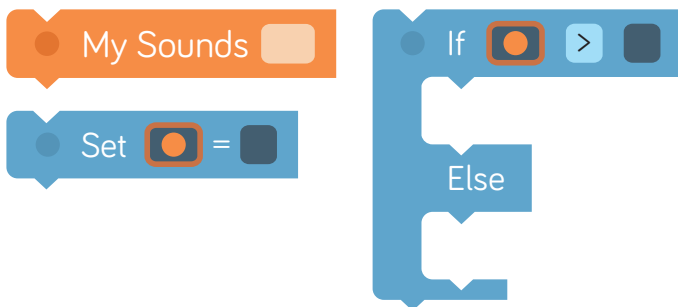


3. **When Button 3** is pressed, program Dash to make an engine **sound** and **drive** the distance of the **variable**. Then **set** the variable back to **0**.

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!



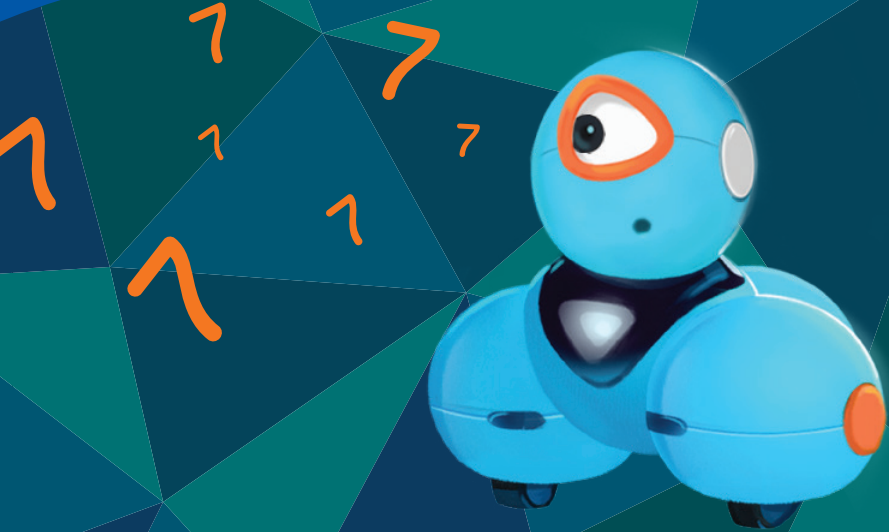
1. When Dot's **Top Button** is pressed, 
have Dot **randomly** say **"Duck"** or **"Goose."**
2. Hint: You may need to use some of the blocks below:



Now have your friends take turns pressing the **Top Button** until Dot **says**, "Goose!" That person is "it" and must chase and tag someone else!



Each time Dot says "Duck" or "Goose", have Dot make different **sounds** or change **lights**.



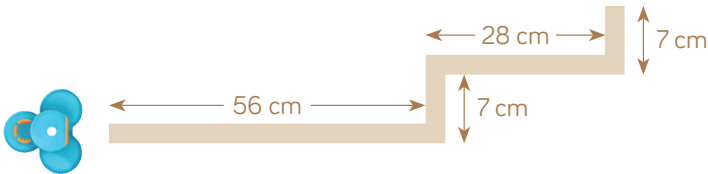
Lucky 7's

Dash is superstitious and doesn't like the number 7. Let's show Dash how 7 can be a great (and useful) number!



Materials: tape, ruler

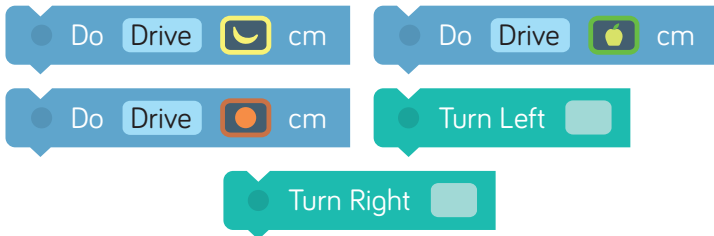
1. To help Dash learn to like the number 7, create a maze where all the **distances** from point to point are **multiples of 7**.

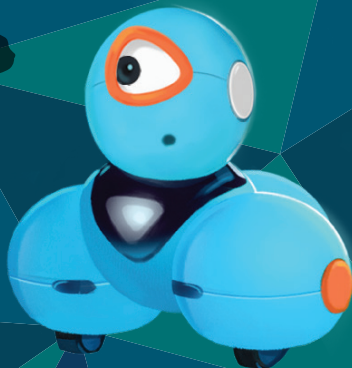


2. **Set** one **variable** to **7**, another to **28**, and one more to **56**.



3. Use the **Drive** and **Turn** blocks to help get Dash through the maze.





Black Cats!

Dash is superstitious and doesn't like black cats. If there are too many black cats, Dash gets really nervous!



Materials: 2 cups

1. Place **1 cup in front of** and **1 cup behind** Dash. These are the black cats. Move them around during the program.



2. **If** there is a cat **behind** Dash, have Dash **say**, **"Uh oh!"** and run away by **driving forward**.
3. **If** there is a cat **in front of** Dash, have Dash **say**, **"Uh oh!"** and run away by **driving backward**.
4. **When more than 3** cats have walked **in front of** or **more than 3** cats have walked **behind** Dash, have Dash **yell** for **help**.
5. **When** Dash yells for help, make Dash feel better by pressing the **Top Button 7 times**. Then have Dash **act happy** and **go to the start** of the program again.

Hint: You should start by setting **3 variables** to **0**.