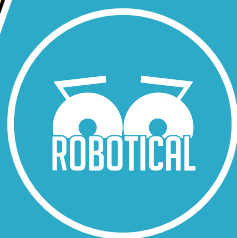
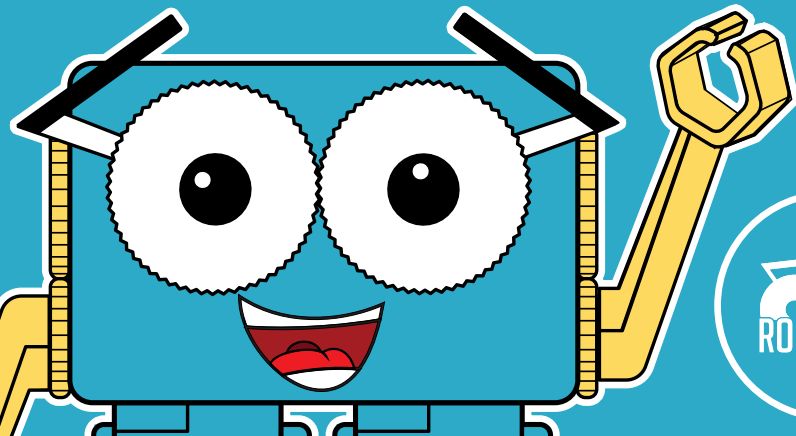
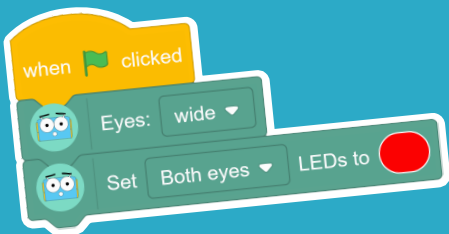




MARTY THE ROBOT

CODING ACTIVITY BOOK

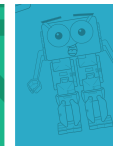


MARTY CODING CARDS

Choose a set of cards from the list below. There's a mixture of standalone cards and some that build upon the preceding card.

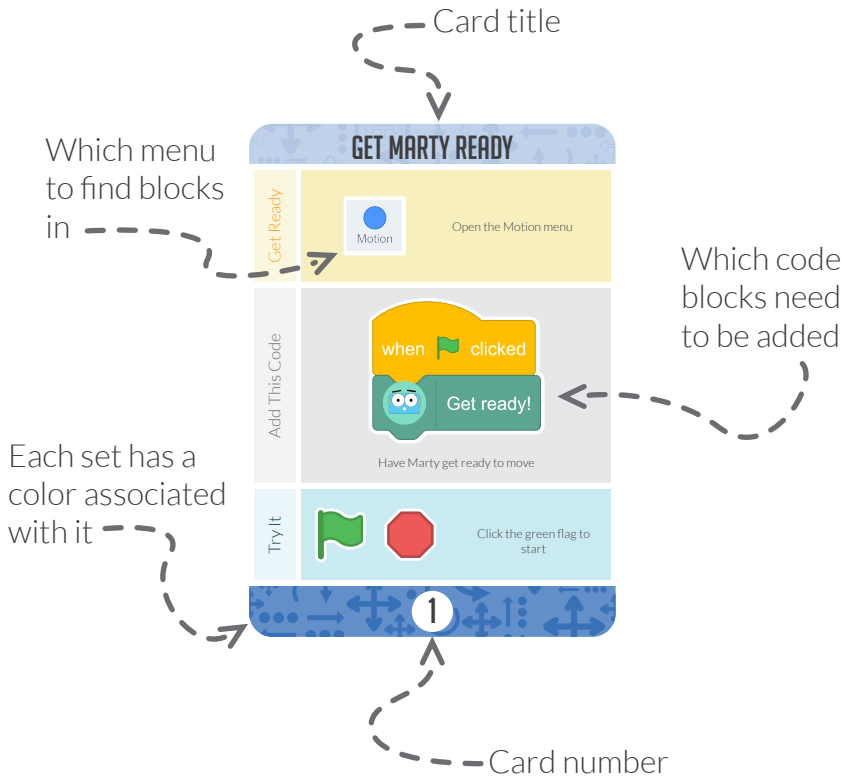
- Events*
- Motion*
- Looks
- Sound
- Control
- Sensing 1 - Color Sensing
- Sensing 2 - Obstacle Sensing
- Speech
- Marty Tells The Time - Activity 1
- Marty Etch A Sketch - Activity 2

* If you are new to Marty and coding, start with these two sets to learn the basics.



HOW TO USE THE CODING CARDS

You will need to use these cards alongside the MartyBlocks coding environment, which can be found within the Marty the Robot app.



EVENTS

These cards are designed to introduce you to the basics of MartyBlocks, and get you started on your coding journey.

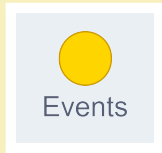
1. Getting Started
2. Keyboard Function*

* This card requires a keyboard



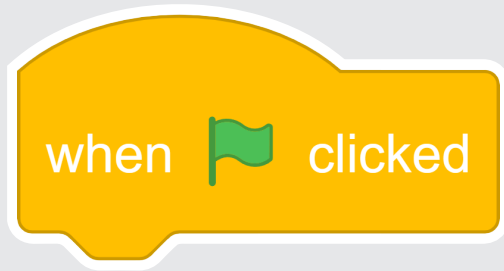
GETTING STARTED

Get Ready



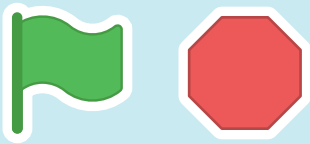
Open the Events menu

Add This Code



This will allow you to control Marty

Try It

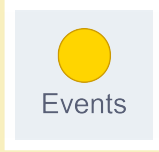


Add some code to try it out, then click the green flag to start

1

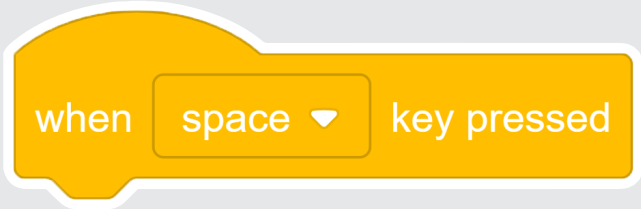
KEYBOARD FUNCTION

Get Ready



Open the Events menu

Add This Code



This will allow you to control Marty with the keyboard

* This will only work where a keyboard is available

Try It



Add some code to try it out, then push the space bar to start

MOTION

These cards can be completed in any order but it may help to do them in numerical order.

1. Get Marty Ready
2. Marty Goes Forward
3. Marty Goes Backwards
4. Slide to the Left
5. Slide to the Right
6. Marty Makes a Square
7. Marty Dances
8. Move Marty's Eyes
9. Make Marty Wave
10. Make Marty Wiggle
11. Make Marty Kick
12. Make Marty Turn



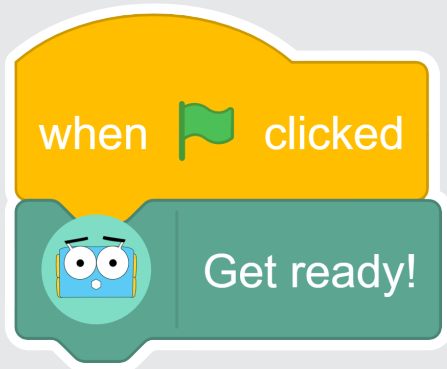
GET MARTY READY

Get Ready



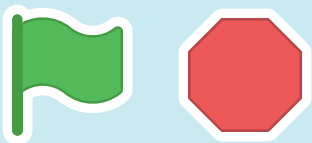
Open the Motion menu

Add This Code



Get Marty ready to move

Try It

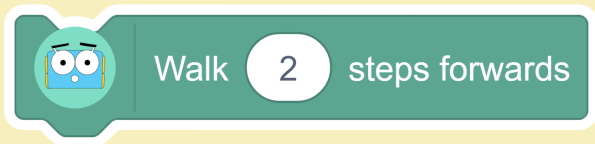


Click the green flag to start

1

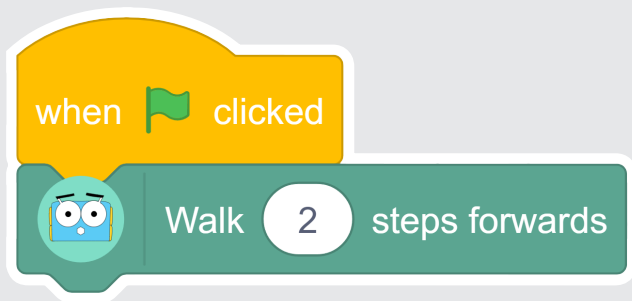
MARTY GOES FORWARD

Get Ready



Find this block in the Motion menu

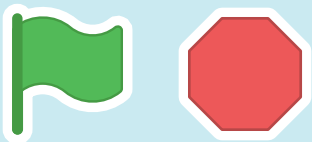
Add This Code



Challenge:

Make Marty walk a different number of steps forwards

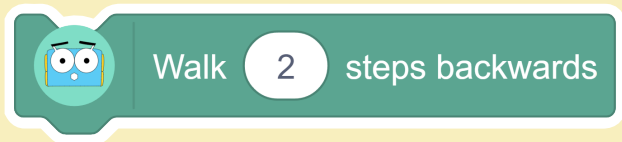
Try It



Click the green flag to start

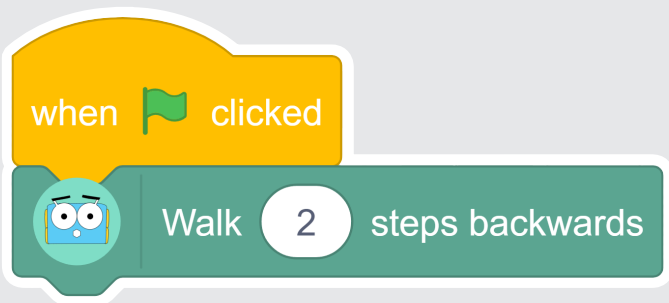
MARTY GOES BACKWARDS

Get Ready



Find this block in the Motion menu

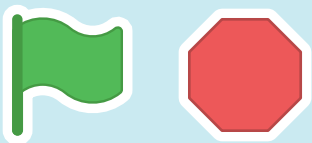
Add This Code



Challenge:

Make Marty walk a different number of steps backwards

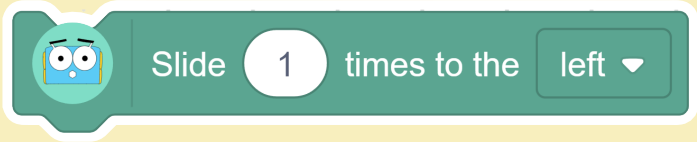
Try It



Click the green flag to start

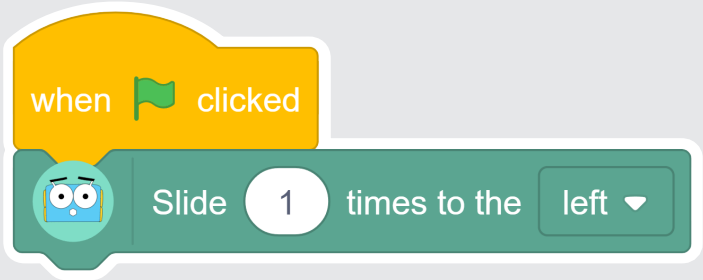
SLIDE TO THE LEFT

Get Ready



Find this block in the Motion menu

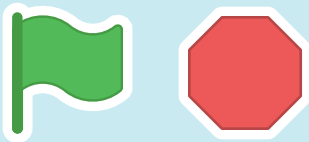
Add This Code



Challenge:

Make Marty slide a different number of times to the left

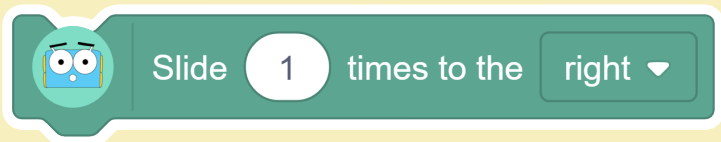
Try It



Click the green flag to start

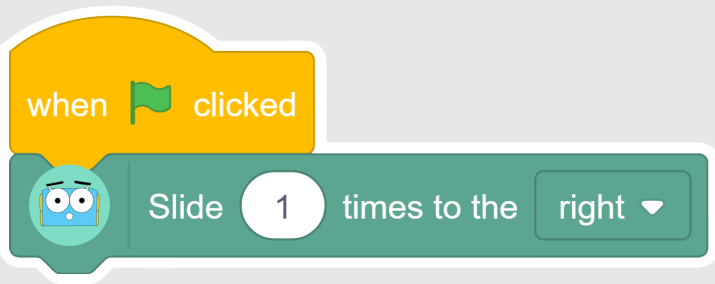
SLIDE TO THE RIGHT

Get Ready



Find this block in the Motion menu

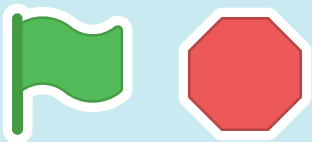
Add This Code



Challenge:

Make Marty slide a different number of times to the right

Try It



Click the green flag to start

MARTY MAKES A SQUARE

Get Ready



Walk 2 steps forwards



Slide 1 times to the left



Walk 2 steps backwards



Slide 1 times to the right

Find these blocks in the Motion menu

Add This Code



Challenge:

Make Marty create different size squares

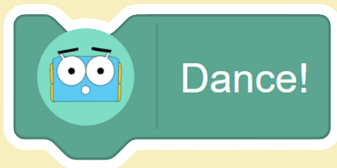
Try It



Click the green flag to start

MARTY DANCES

Get Ready



Find this block in the Motion menu

Add This Code



Make Marty dance in different locations

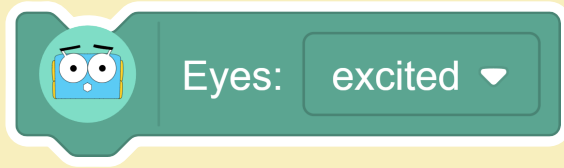
Try It



Click the green flag to start

MOVE MARTY'S EYES

Get Ready



Find this block in the Motion menu

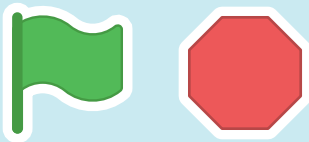
Add This Code



Challenge:

How many different eye movements can you make Marty do?

Try It



Click the green flag to start

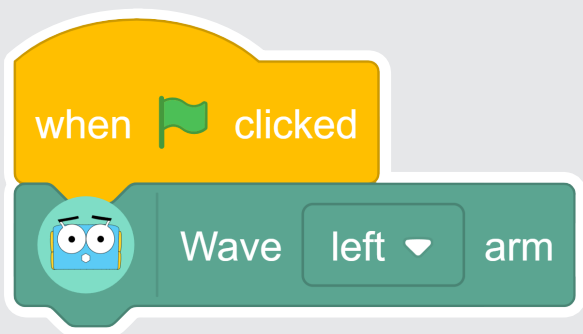
MAKE MARTY WAVE

Get Ready



Find this block in the Motion menu

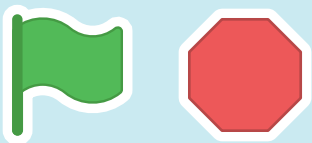
Add This Code



Challenge:

Can you make Marty wave both arms?

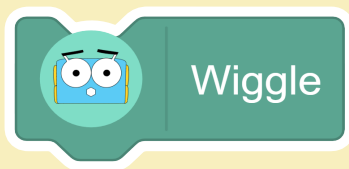
Try It



Click the green flag to start

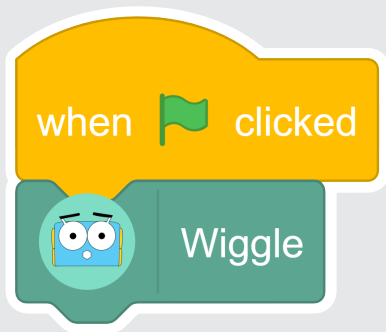
MAKE MARTY WIGGLE

Get Ready



Find this block in the Motion menu

Add This Code



Can you wiggle like Marty?

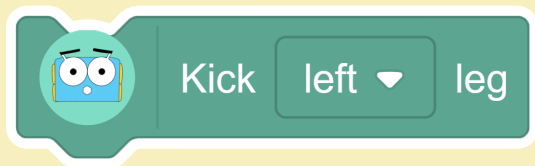
Try It



Click the green flag to start

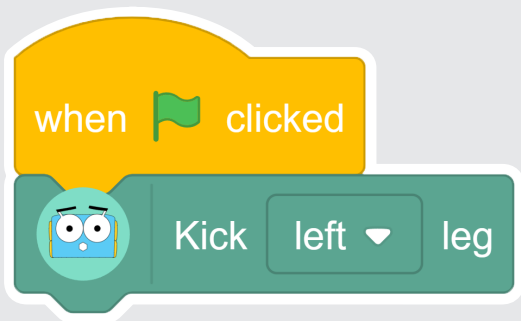
MAKE MARTY KICK

Get Ready



Find this block in the Motion menu

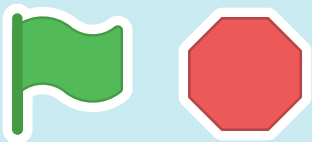
Add This Code



Challenge:

Can you make Marty kick a ball?

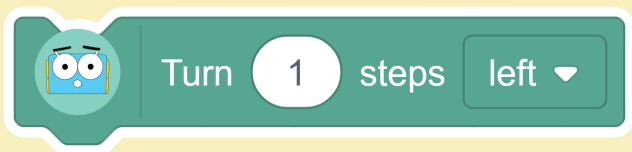
Try It



Click the green flag to start

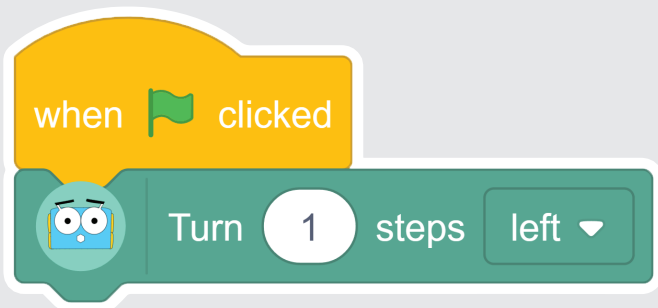
MAKE MARTY TURN

Get Ready



Find this block in the Motion menu

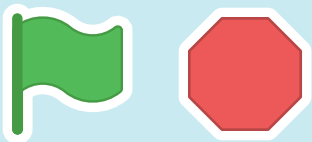
Add This Code



Challenge:

Can you make Marty turn in a circle?

Try It



Click the green flag to start

LOOKS

These cards can be completed in any order but it may help to do them in numerical order.

1. Marty's Emotions
2. Set Marty's Eyes*
3. What Color are Marty's Eyes?*
4. Marty Shows Off*

* This card requires LED eyes



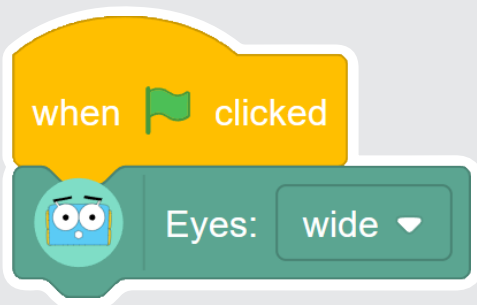
MARTY'S EMOTIONS

Get Ready



Open the Motion menu

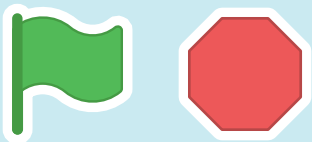
Add This Code



Challenge:

How many emotions can you get Marty to show?

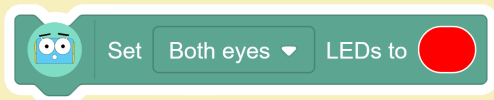
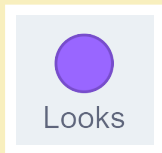
Try It



Click the green flag to start

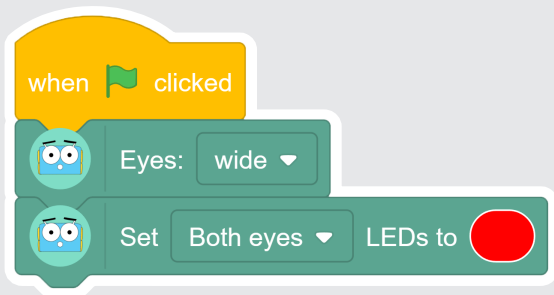
SET MARTY'S EYES

Get Ready



Open the Looks menu and find this block

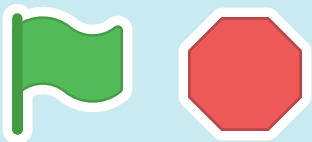
Add This Code



Challenge:

Make Marty's eyes show different colors

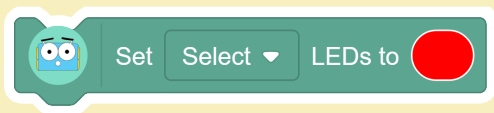
Try It



Click the green flag to start

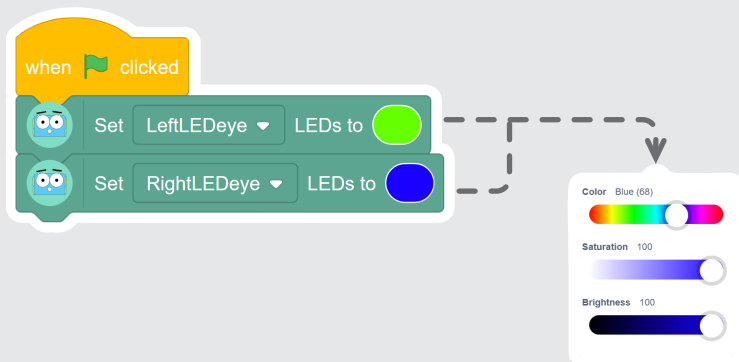
WHAT COLOR ARE MARTY'S EYES?

Get Ready



Find this block in the Looks menu

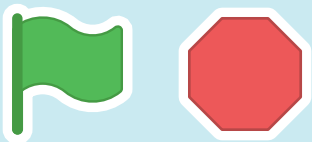
Add This Code



Challenge:

Change Marty's eyes to be your favorite color

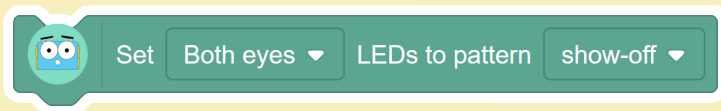
Try It



Click the green flag to start

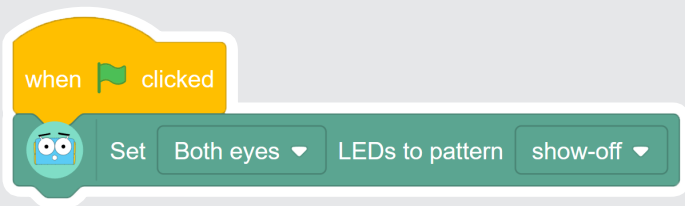
MARTY SHOWS OFF

Get Ready



Find this block in the Looks menu

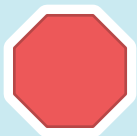
Add This Code



Challenge:

What patterns can you make Marty's eyes do?

Try It



Click the green flag to start

SOUND

These cards should be completed in numerical order.

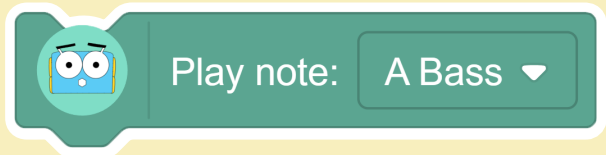
1. Pick a Note 1
2. Pick a Note 2
3. Play Your ABC's
4. Play a Tune 1*
5. Play a Tune 2*
6. Play a Tune 3*
7. Make Marty Whistle
8. Change the Pitch
9. Change the Volume

* This card requires a keyboard



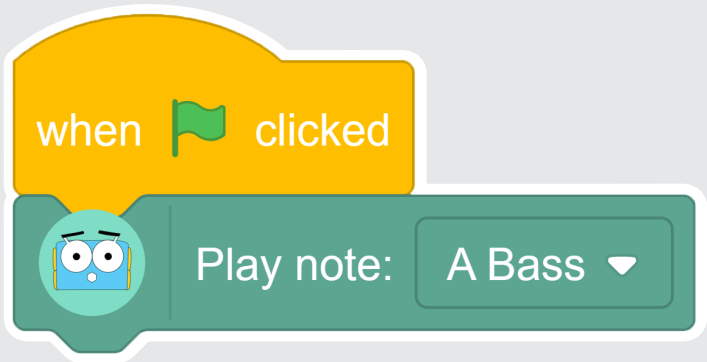
PICK A NOTE 1

Get Ready



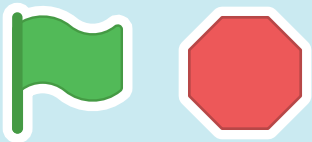
Find this block in the Sound menu

Add This Code



Make Marty play an A

Try It

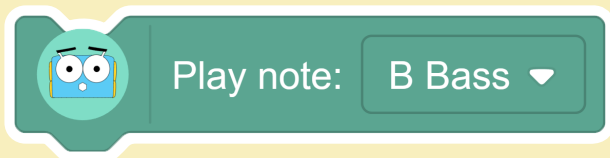


Click the green flag to start

1

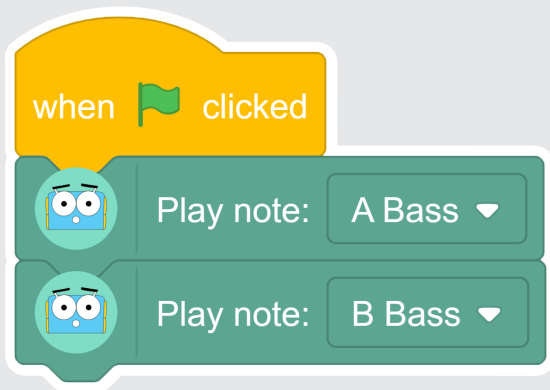
PICK A NOTE 2

Get Ready



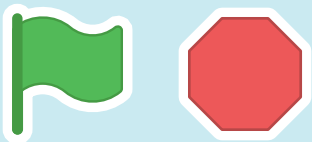
Find this block in the Sound menu

Add This Code



Make Marty play two notes

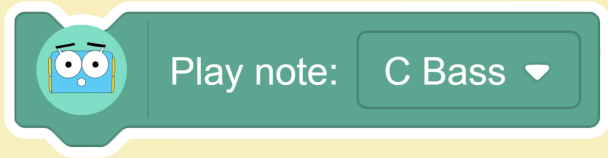
Try It



Click the green flag to start

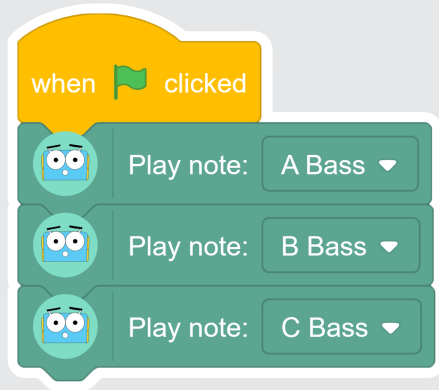
PLAY YOUR ABC'S

Get Ready



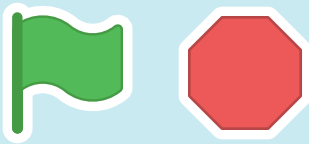
Find this block in the Sound menu

Add This Code



Make Marty play a scale

Try It



Click the green flag to start

PLAY A TUNE 1

Get Ready

when a ▼ key pressed

Find this block in the Event menu

Add This Code

when a ▼ key pressed



Play note: A Trombone ▼

Challenge:

Make Marty play the note with a keyboard

Try It



Press the A key

PLAY A TUNE 2

Get Ready

when **b** key pressed

Find this block in the Event menu

Add This Code

when **a** key pressed

Play note: **A Trombone**

when **b** key pressed

Play note: **B Trombone**

Make Marty play the notes

Try It

A


B

Press the keys


PLAY A TUNE 3

Get Ready

when key pressed

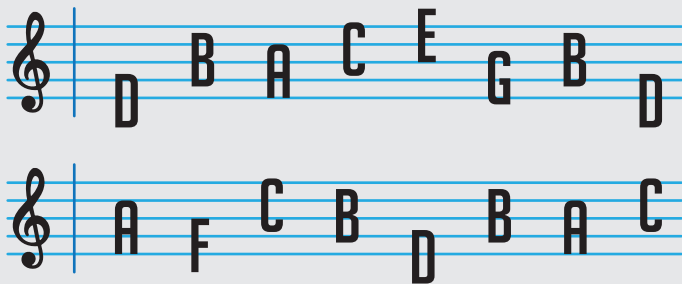
 Play note:

when key pressed

 Play note:

Create blocks for all notes: A B C D E F G

Create A Tune



Challenge:

Make Marty play a tune

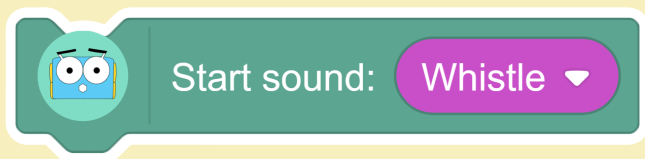
Try It



Press the keys

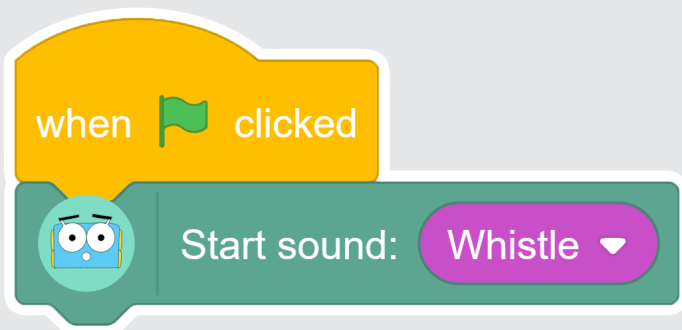
MAKE MARTY WHISTLE

Get Ready



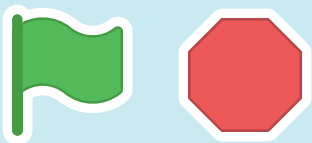
Find this block in the Sound menu

Add This Code



Make Marty make a Whistle sound

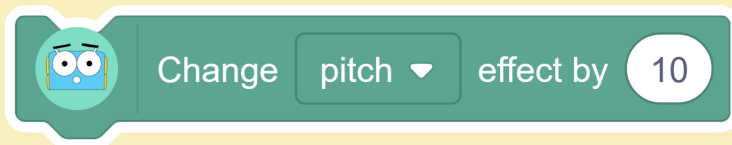
Try It



Click the green flag to start

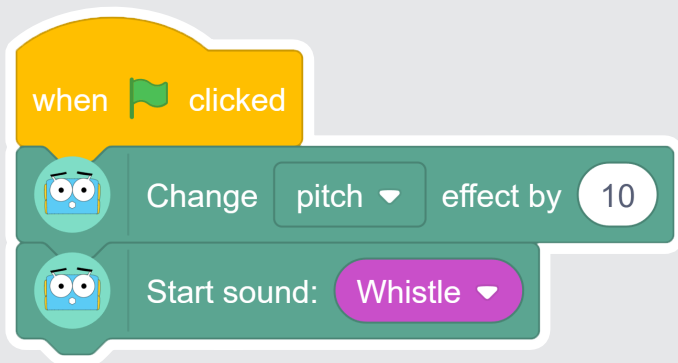
CHANGE THE PITCH

Get Ready



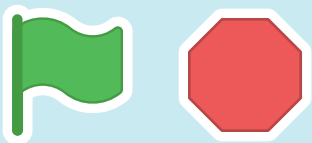
Find this block in the Sound menu

Add This Code



Make Marty change their pitch

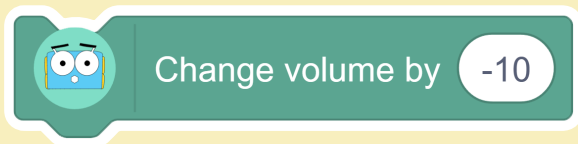
Try It



Click the green flag to start

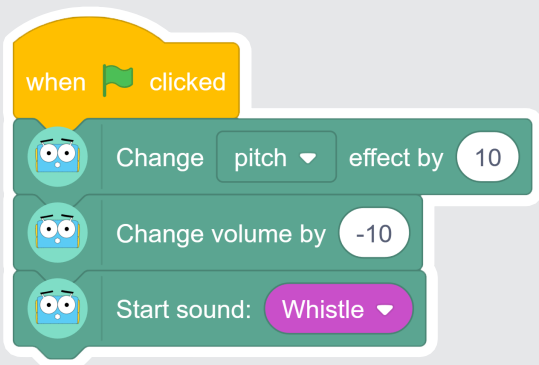
CHANGE THE VOLUME

Get Ready



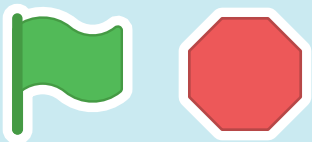
Find this block in the Sound menu

Add This Code



Make Marty change their volume

Try It



Click the green flag to start

CONTROL

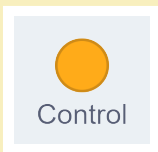
These cards can be completed in any order.

1. Marty Waits
2. Marty Repeats
3. Marty Is Stuck In A Loop



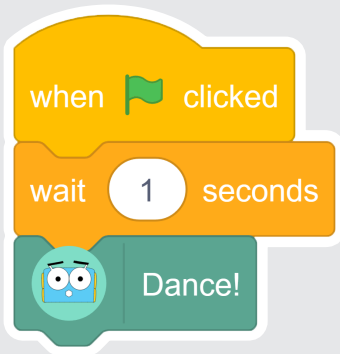
MARTY WAITS

Get Ready



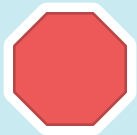
Open the Control menu and find this block

Add This Code



How long can you make Marty wait?

Try It

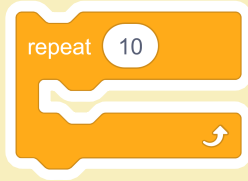


Click the green flag to start

1

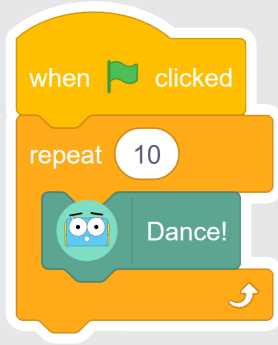
MARTY REPEATS

Get Ready



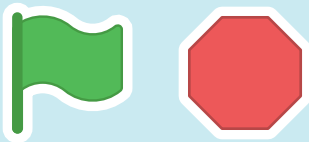
Find this blocks in the Control menu

Add This Code



Choose a different action to make Marty repeat

Try It



Click the green flag to start

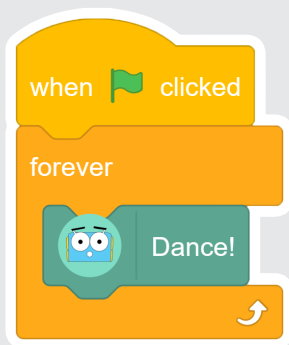
MARTY IS STUCK IN A LOOP

Get Ready



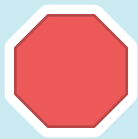
Find this block in the Control menu

Add This Code



Which action can you get Marty to repeat forever?

Try It



Click the green flag to start + click the red stop sign to stop

SENSING 1 - COLOR SENSING

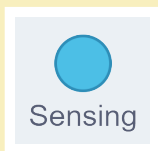
These cards should be completed in numerical order.

1. Marty Color Sensing 1
2. Marty Color Sensing 2
3. Marty Color Sensing 3
4. Marty Color Sensing 4



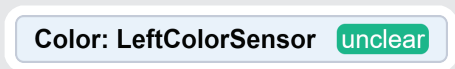
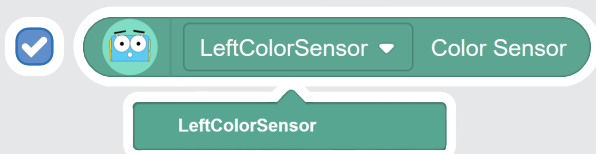
MARTY COLOR SENSING 1

Get Ready

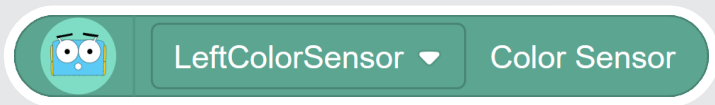


Open the Sensing menu

Add This Block



Select Color Sensor to show the color sensed

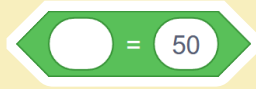
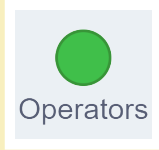


Add the Color Sensor block and select LeftColorSensor from the drop down menu

1

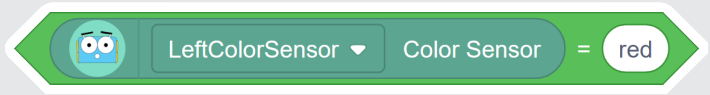
MARTY COLOR SENSING 2

Get Ready



Open the Operators menu and find this block

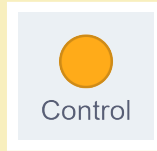
Add These Blocks



Place the Color Sensor block into one side of the Equals Block and change the other side of it to red

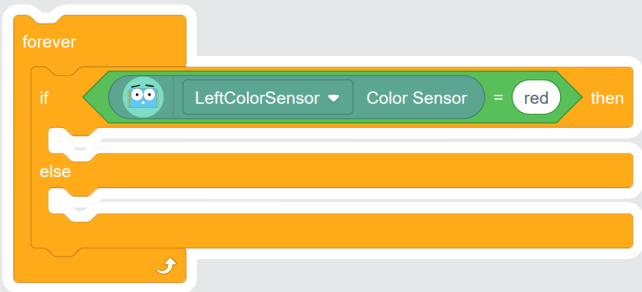
MARTY COLOR SENSING 3

Get Ready



Open the Control menu and find these blocks

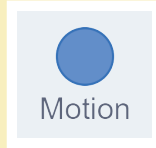
Add These Blocks



Place the previous blocks into the Control blocks

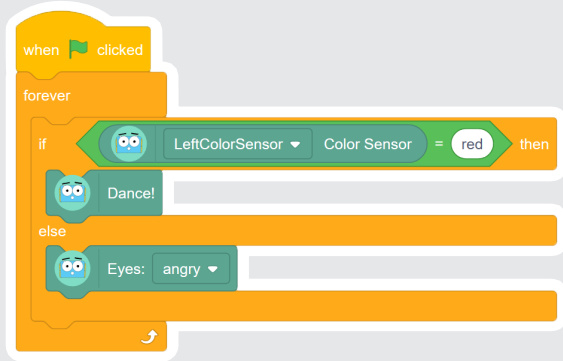
MARTY COLOR SENSING 4

Get Ready



Open the Motion menu and find these blocks

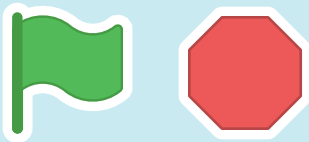
Add This Code



Challenge:

What other colors can you get Marty to detect?

Try It



Click the green flag to start

SENSING 2 - OBSTACLE SENSING

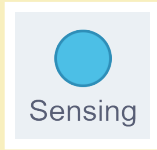
These cards should be completed in numerical order.

1. Marty Obstacle Sensing 1
2. Marty Obstacle Sensing 2
3. Marty Obstacle Sensing 3
4. Marty Obstacle Sensing 4
5. Marty Obstacle Sensing 5
6. Marty Obstacle Sensing 6
7. Marty Obstacle Sensing 7



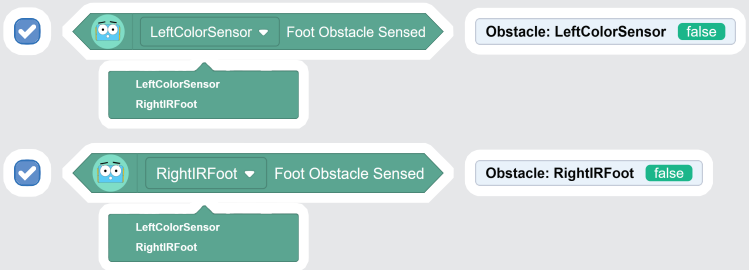
MARTY OBSTACLE SENSING 1

Get Ready

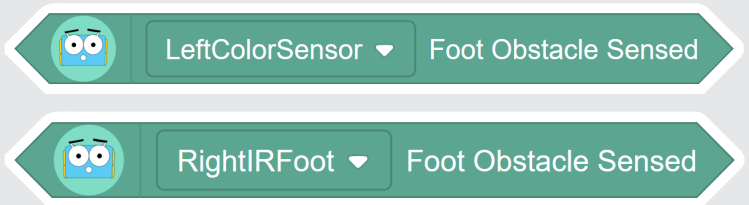


Open the Sensing menu

Add These Blocks



Select Foot Obstacle Sensed for Left and Right Sensors to display values on screen

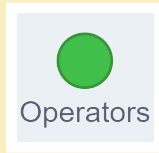


Add these blocks to the coding area

1

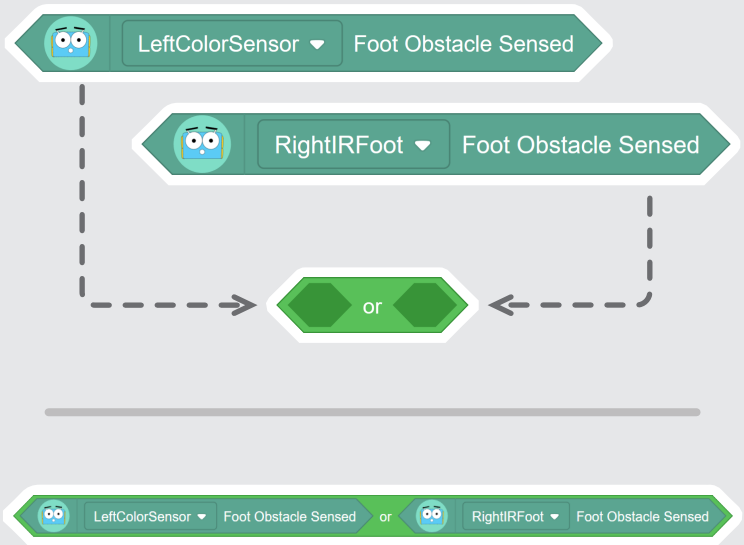
MARTY OBSTACLE SENSING 2

Get Ready



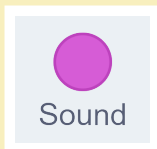
Open the Operators menu and find this block

Add These Blocks



MARTY OBSTACLE SENSING 3

Get Ready



Open the Sound and Motion menus and find these blocks

Add These Blocks

Play sound: **No Way!** until done

Stand straight in **1** s

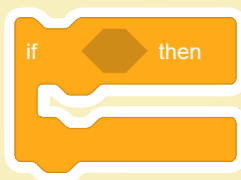
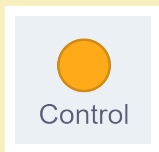
Walk **2** steps backwards

Turn **5** steps **right**

Get ready!

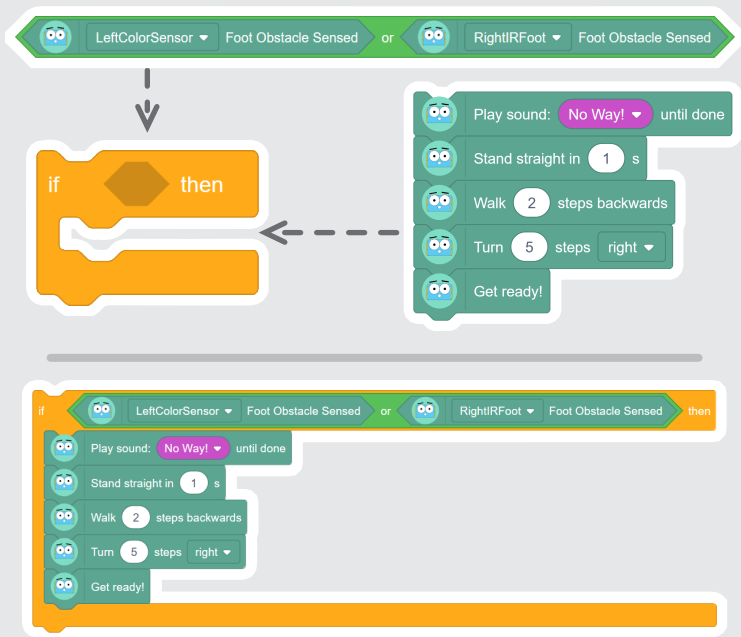
MARTY OBSTACLE SENSING 4

Get Ready



Open the Control menu and find this block

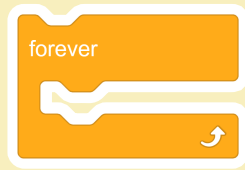
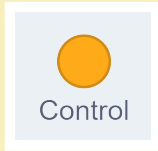
Add These Blocks



The block of code should look like this

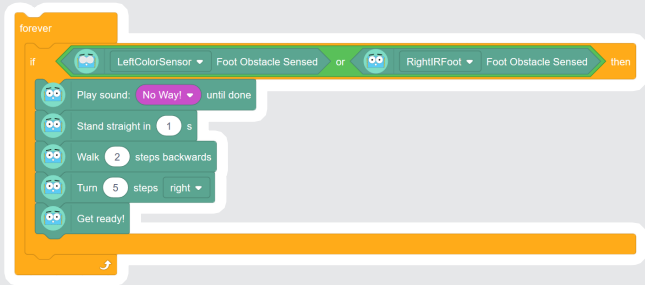
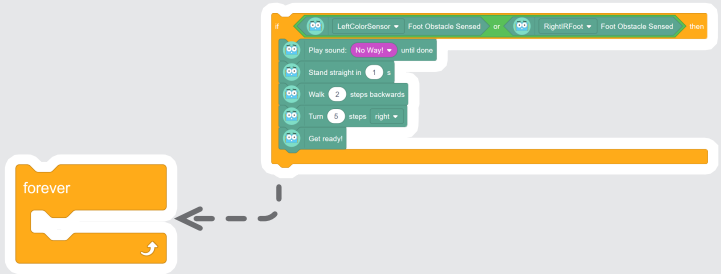
MARTY OBSTACLE SENSING 5

Get Ready



Open the Control menu and find these blocks

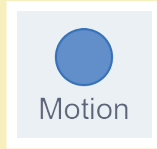
Add These Blocks



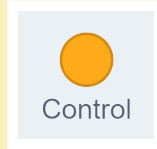
The block of code should look like this

MARTY OBSTACLE SENSING 6

Get Ready



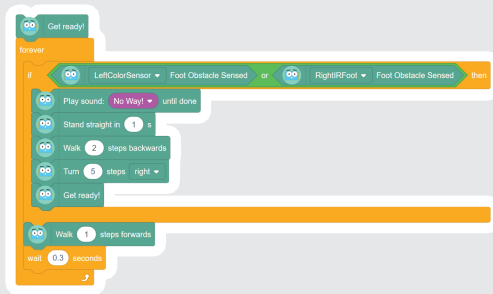
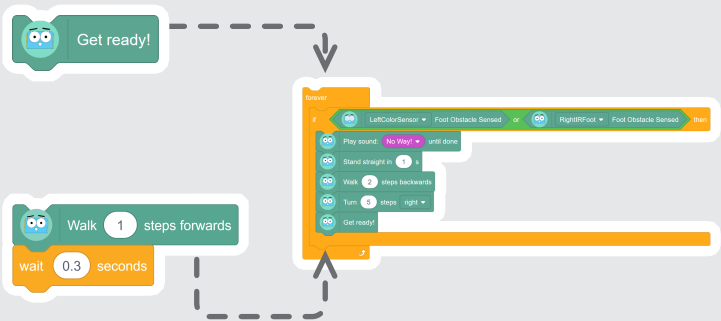
Motion



Control

Open the Motion and Control menu and find these blocks

Add These Blocks



The block of code should look like this

MARTY OBSTACLE SENSING 7

Get Ready

when  clicked

Open the Events menu and find this block

Add This Code

```
when clicked
  Get ready!
  forever
    if LeftColorSensor Foot Obstacle Sensed or RightIRFoot Foot Obstacle Sensed then
      Play sound: No Way! until done
      Stand straight in 1 s
      Walk 2 steps backwards
      Turn 5 steps right
      Get ready!
    Walk 1 steps forwards
  wait 0.3 seconds
```

Challenge:

What other objects can you get Marty to detect?

Try It



Click the green flag to start

SPEECH

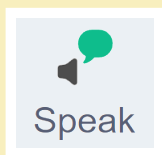
These cards should be completed in numerical order.

1. Marty Speaks
2. Set Marty's Voice
3. Set Marty's Accent
4. Marty Translates



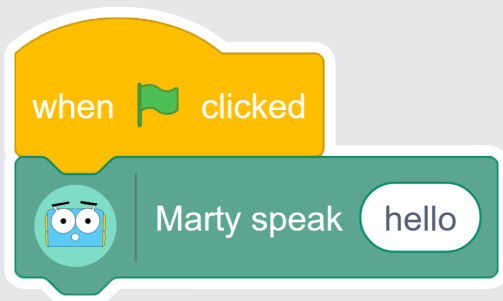
MARTY SPEAKS

Get Ready



Open the Speak menu

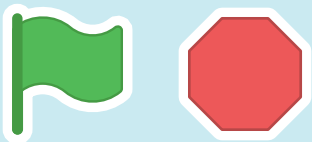
Add This Code



Challenge:

Make Marty say different words

Try It

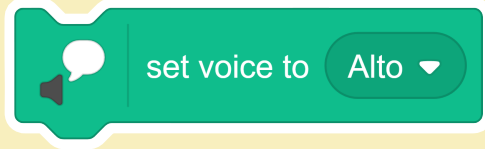


Click the green flag to start

1

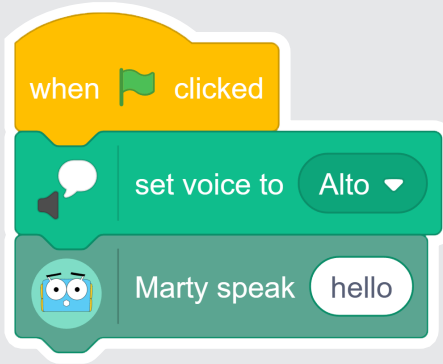
SET MARTY'S VOICE

Get Ready



Find this block in the Speak menu

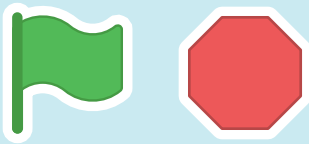
Add This Code



Challenge:

Change Marty's voice

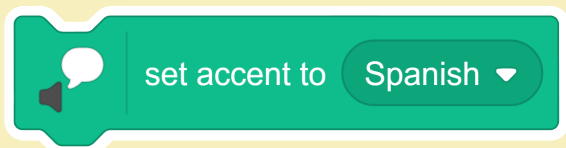
Try It



Click the green flag to start

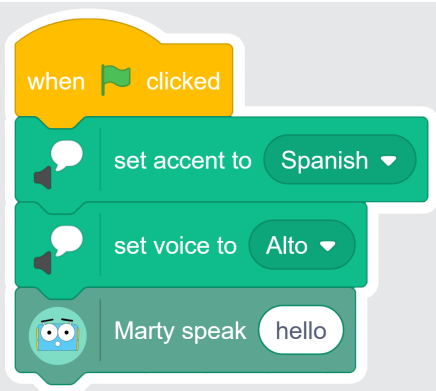
SET MARTY'S ACCENT

Get Ready



Find this block in the Speak menu

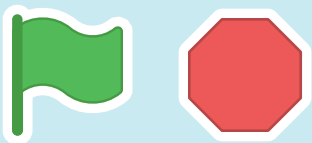
Add This Code



Challenge:

Give Marty a different accent

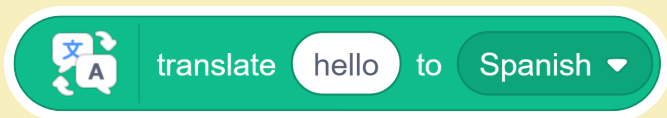
Try It



Click the green flag to start

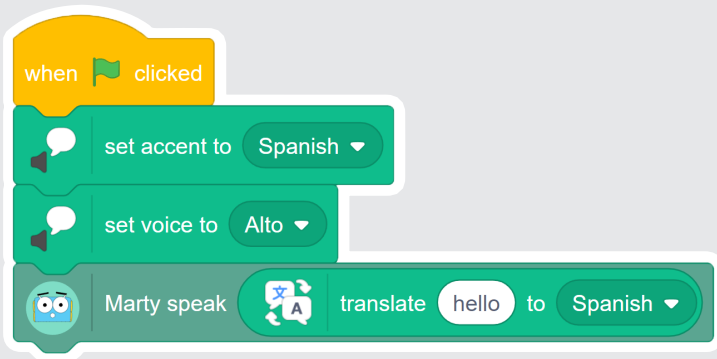
MARTY TRANSLATES

Get Ready



Find this block in the Speak menu

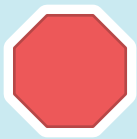
Add This Code



Challenge:

Make Marty translate words into different languages

Try It



Click the green flag to start

MARTY TELLS THE TIME

ACTIVITY 1*

These cards should be done in numerical order.

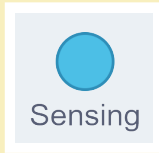
1. Marty Tells The Time 1
2. Marty Tells The Time 2
3. Marty Tells The Time 3
4. Marty Tells The Time 4
5. Marty Tells The Time 5
6. Marty Tells The Time 6
7. Marty Tells The Time 7
8. Marty Tells The Time 8
9. Marty Tells The Time 9

* This activity requires LED eyes



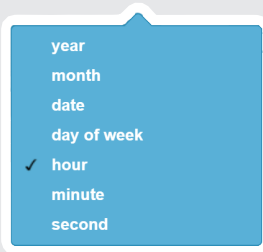
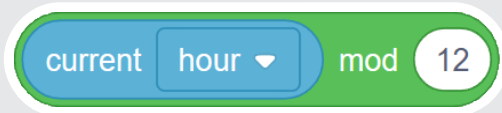
MARTY TELLS THE TIME 1

Get Ready



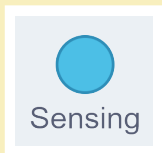
Find the blocks in the Sensing and Operators menus

Add These Blocks




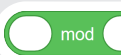

MARTY TELLS THE TIME 2

Get Ready



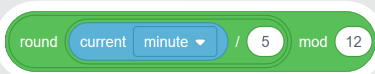
Find the blocks in the Sensing and Operators menus

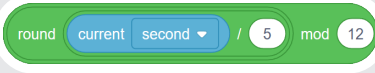
Add These Blocks

1.  →  = 

2.   = 

3.   = 





MARTY TELLS THE TIME 3

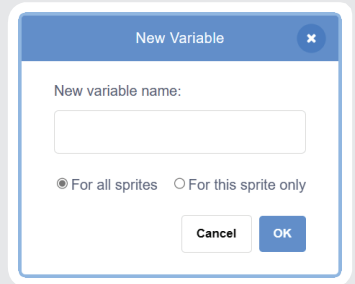
Get Ready



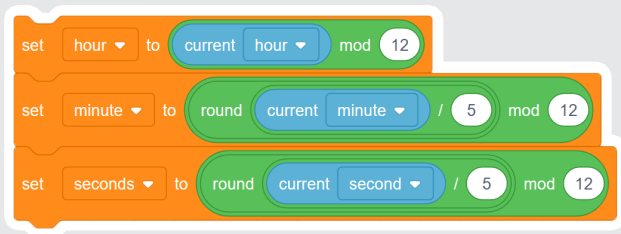
Find the blocks in the Variables menu

Add These Blocks

Make a Variable



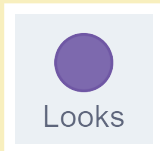
Make three new variables called **hour**, **minute**, and **seconds**



3

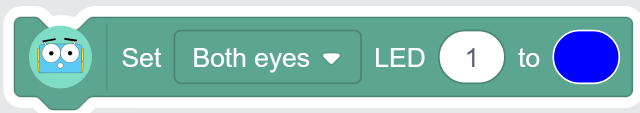
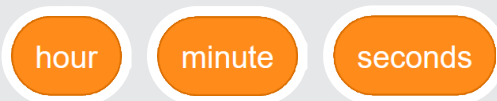
MARTY TELLS THE TIME 4

Get Ready

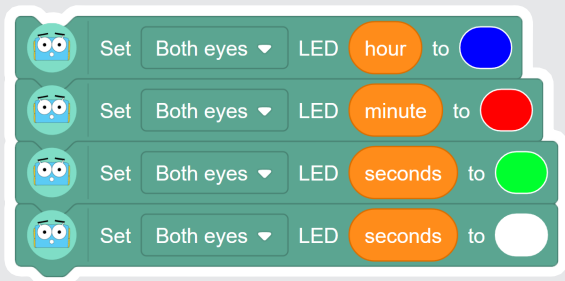


Find the blocks in the Looks and Variables menus

Add These Blocks

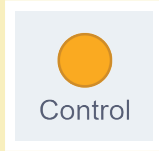


Add these blocks and edit them to match the ones below



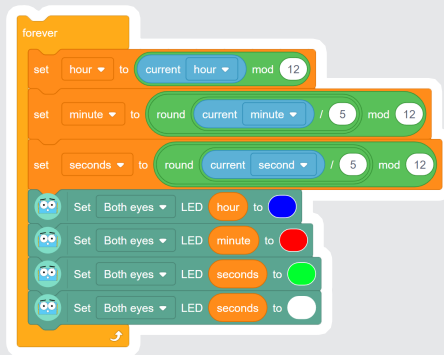
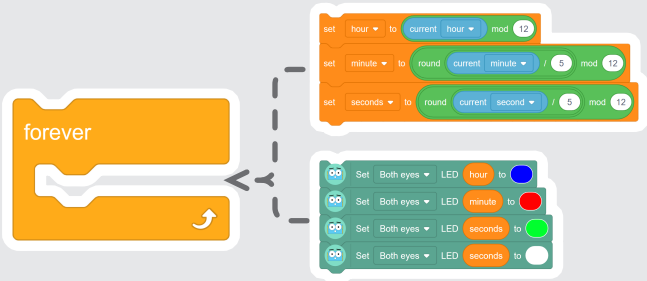
MARTY TELLS THE TIME 5

Get Ready



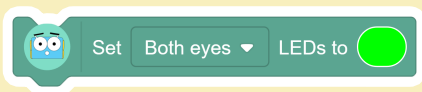
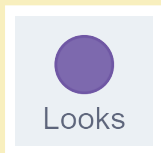
Find this block in the Control menu

Add These Blocks



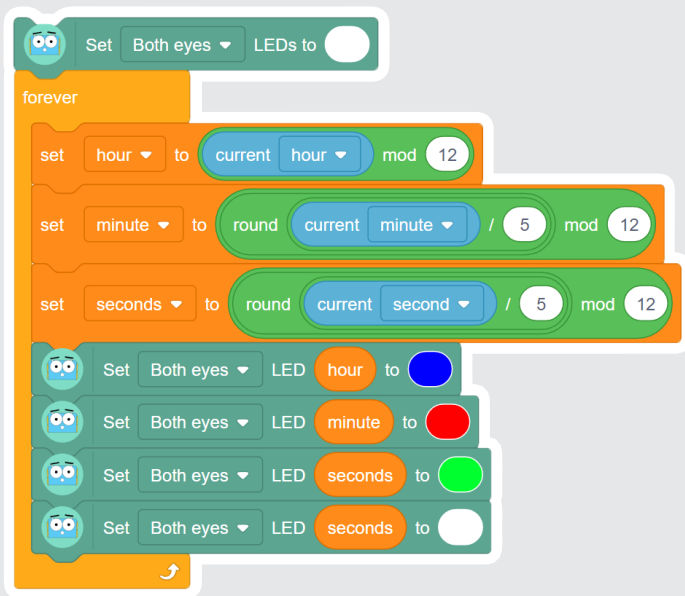
MARTY TELLS THE TIME 6

Get Ready



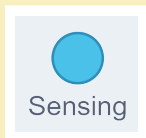
Find this block in the Looks menu

Add These Blocks

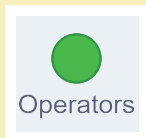


MARTY TELLS THE TIME 7

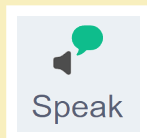
Get Ready



Sensing



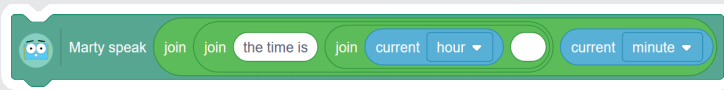
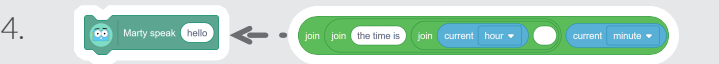
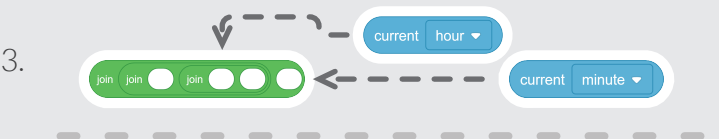
Operators



Speak

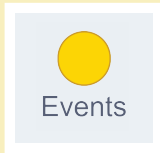
Find these blocks in the Sensing, Operators and Speak menu

Add These Blocks



MARTY TELLS THE TIME 8

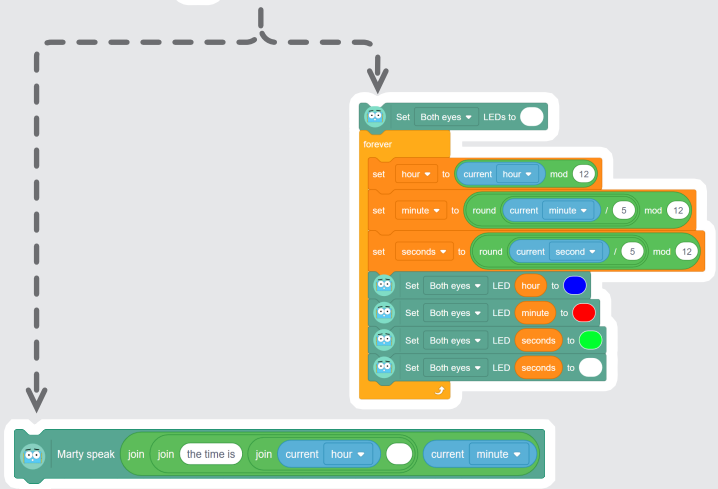
Get Ready



Open the Events menu

Add These Blocks

Add a start block to both blocks of code



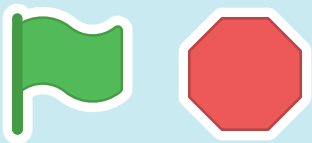
MARTY TELLS THE TIME 9

Check Blocks

The image shows a Scratch script for a character named Marty to tell the time. The script starts with a 'when clicked' block. This is followed by a 'Set Both eyes LEDs to' block with a white circle. Then, a 'forever' loop contains three 'set' blocks: 'set hour to current hour mod 12', 'set minute to round current minute / 5 mod 12', and 'set seconds to round current second / 5 mod 12'. After the loop, there are four 'Set Both eyes LED' blocks: 'hour' to blue, 'minute' to red, 'seconds' to green, and 'seconds' to white. To the right, a smaller script shows 'when clicked' followed by three 'Marty speak' blocks: 'the time is', 'current hour', and 'current minute'.

Double check you have the blocks in the correct order

Try It



Click the green flag to start

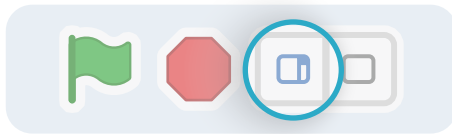
MARTY ETCH A SKETCH

ACTIVITY 2

These cards should be completed in numerical order.

1. Marty Etch A Sketch 1
2. Marty Etch A Sketch 2
3. Marty Etch A Sketch 3
4. Marty Etch A Sketch 4
5. Marty Etch A Sketch 5
6. Marty Etch A Sketch 6
7. Marty Etch A Sketch 7
8. Marty Etch A Sketch 8

*

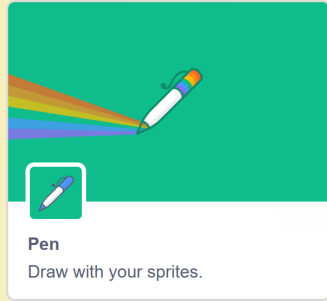


* This activity requires the sprite window to be open



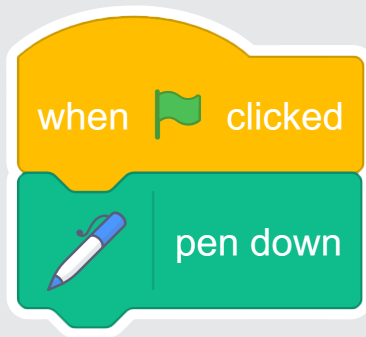
MARTY ETCH A SKETCH 1

Get Ready



Open the Add Extension menu and choose the Pen Tool

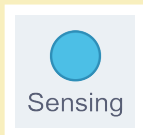
Add This Code



1

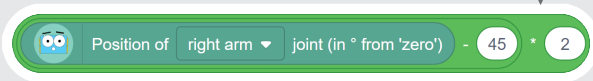
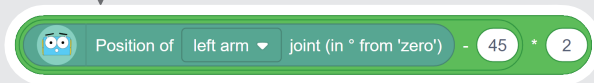
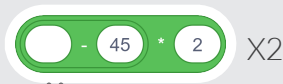
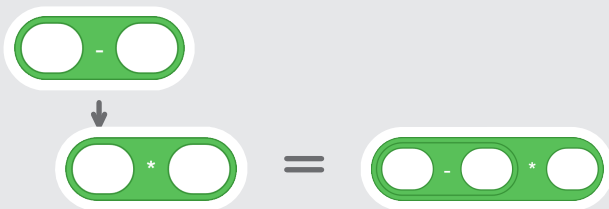
MARTY ETCH A SKETCH 2

Get Ready



Find the blocks in these menus

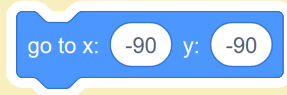
Add This Code



2

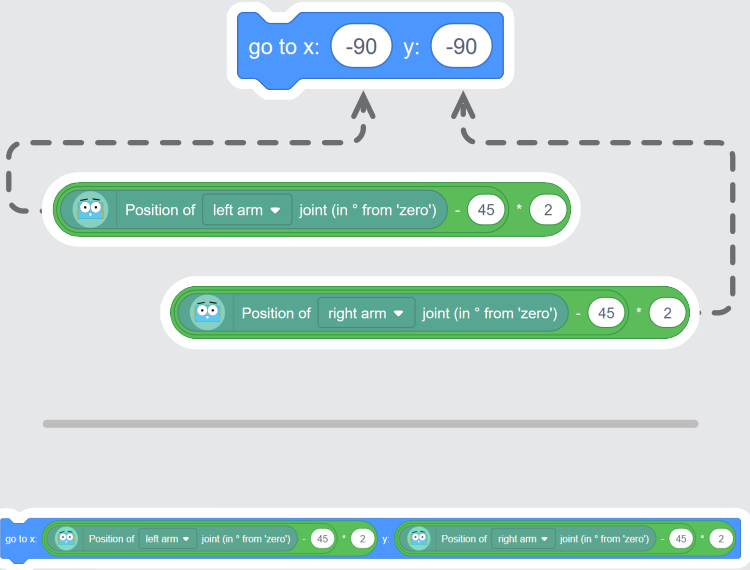
MARTY ETCH A SKETCH 3

Get Ready



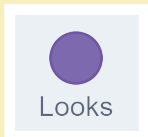
Find this block in the Motion menu

Add This Code



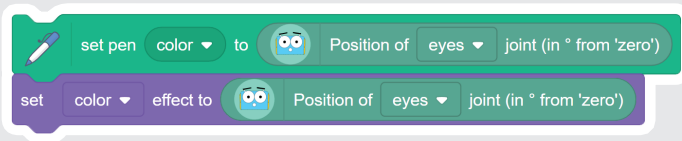
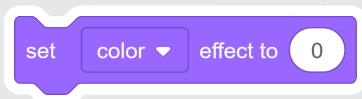
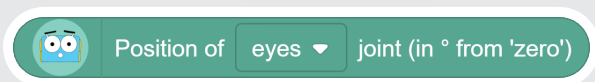
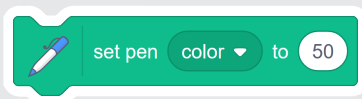
MARTY ETCH A SKETCH 4

Get Ready



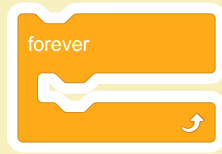
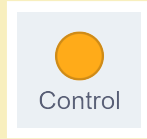
Find the blocks in these menus

Add This Code



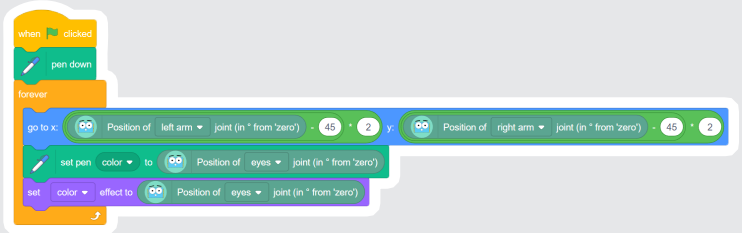
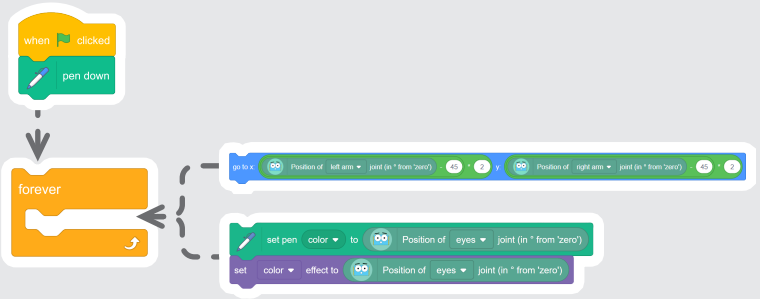
MARTY ETCH A SKETCH 5

Get Ready



Find this block in the Control menu

Add This Code

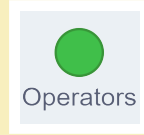
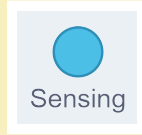
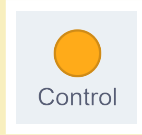


Double check you have the blocks in the correct order

5

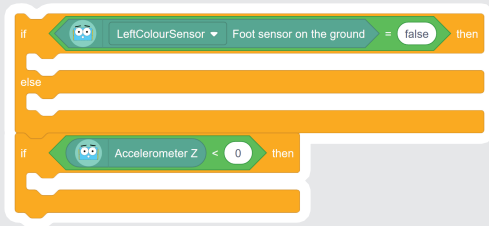
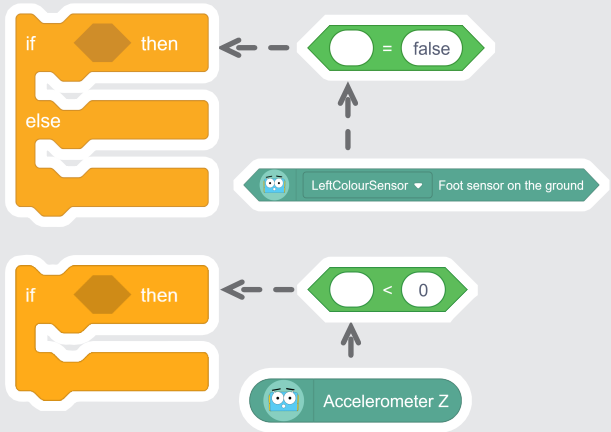
MARTY ETCH A SKETCH 5

Get Ready



Find the blocks in these menus

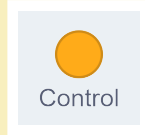
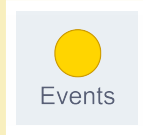
Add This Code



5

MARTY ETCH A SKETCH 7

Get Ready



Find the blocks in these menus

Add This Code

```
when clicked
  forever
    if LeftColourSensor Foot sensor on the ground = false then
      pen up
    else
      pen down
    if Accelerometer Z < 0 then
      erase all
```

MARTY ETCH A SKETCH 8

Check Blocks

```
when clicked
  pen down
  forever
    go to x: [Position of left arm joint (in "from zero") - 45 * 2] y: [Position of right arm joint (in "from zero") - 45 * 2]
    set pen color to [Position of eyes joint (in "from zero")]
    set color effect to [Position of eyes joint (in "from zero")]
```

```
when clicked
  forever
    if LeftColourSensor Foot sensor on the ground = false then
      pen up
    else
      pen down
    if Accelerometer Z < 0 then
      erase all
```

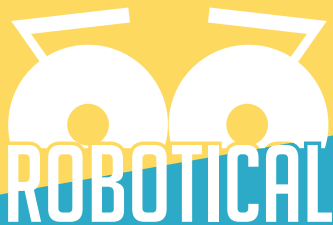
Double check you have the blocks in the correct order

Try It



Click the green flag to start

Brought to you by



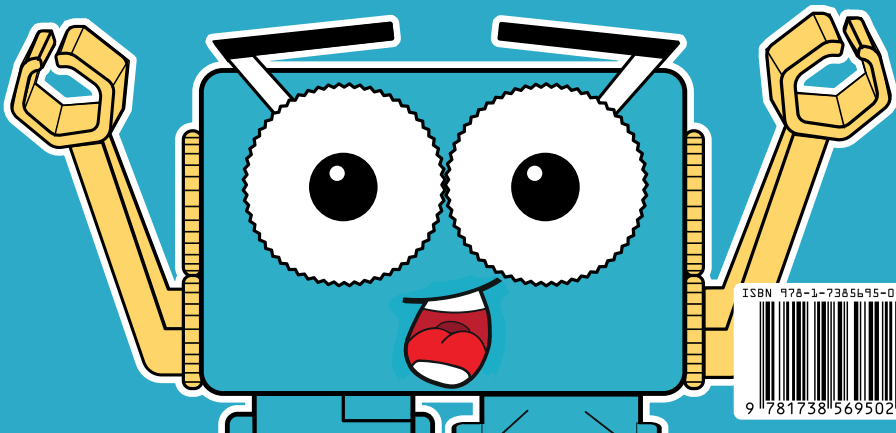
ROBOTICAL

Bring learning to life with this collection of MartyBlocks coding cards!

This collection of interactive programming projects provide structured and clear instructions that encourage independent, hands-on learning with Marty the Robot.

Students will learn vital coding concepts like variables, loops, and conditionals through fun and engaging tasks.

From controlling events and motion to exploring looks and sounds, these cards cover a comprehensive range. Delve into the world of Marty's sensors, including Color and IR Sensors, and exciting activities like "Marty Tells The Time", "Marty Etch A Sketch" and more!



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