



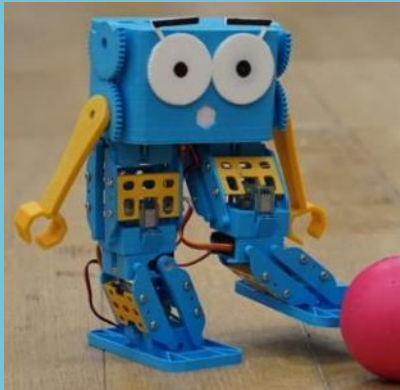
**ROBOTICAL**

Where Learning Comes Alive



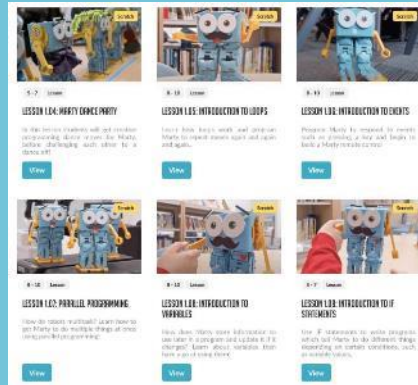
# MARTY THE ROBOT

## OVER 7,000 SOLD IN 65 COUNTRIES



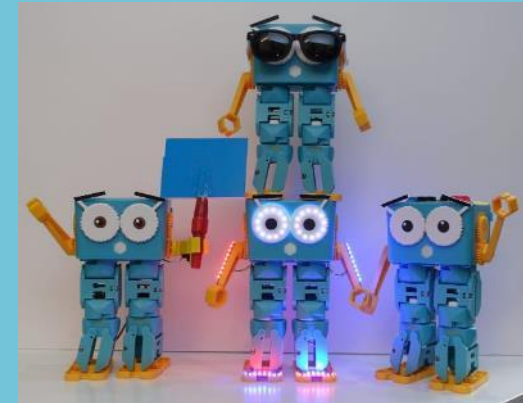
2016

Robotical founded in Scotland  
Marty V1 Indiegogo campaign



2018

Standards-aligned lessons



2020

Marty V2 robots ship

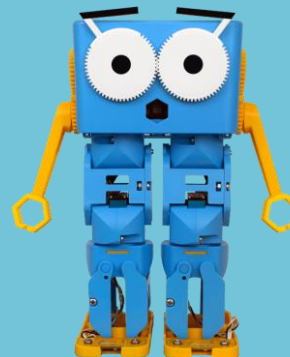
2017

Marty V1 kits ship



2019

Marty V2 Kickstarter campaign



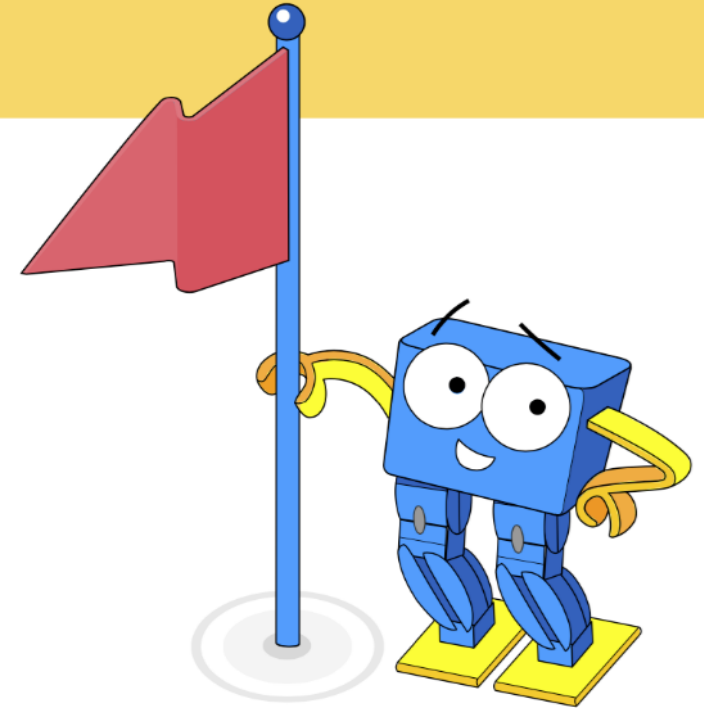
2021

Marty V2 arrives in N. America





# ROBOTICAL'S MISSION



To deliver real-world learning to all, opening a gateway to the future, helping people think differently about science, technology, engineering and maths (STEM).

**Ignite a passion for learning.**



# WHAT DO TEACHERS THINK ABOUT MARTY

[https://youtu.be/li\\_LZg15ieU](https://youtu.be/li_LZg15ieU)

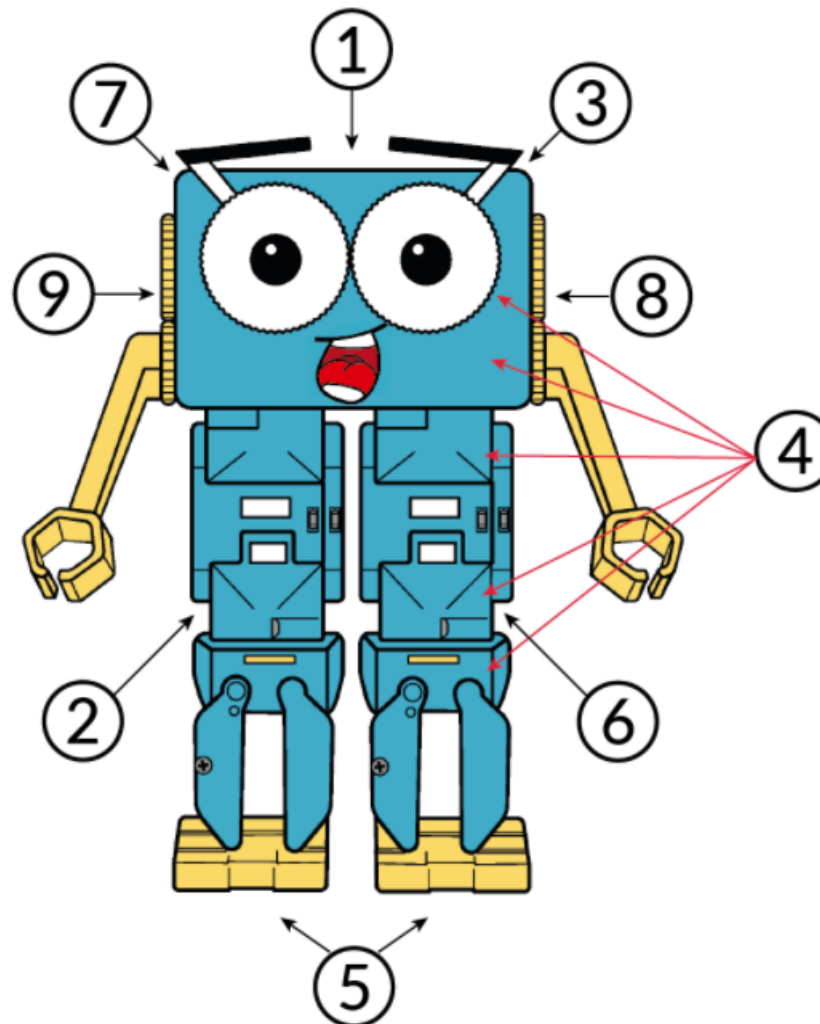




# MEET MARTY

*Pre-assembled*

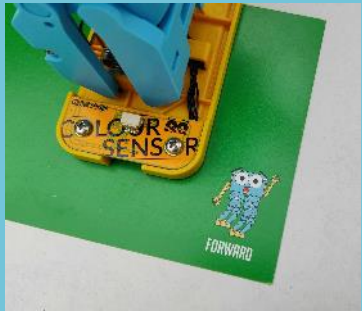
A real walking, dancing, programmable robot that's full of personality



- 1 - Humanoid Form  
Marty has a personality and is full of character!
- 2 - Unique Walking Mechanism  
Walk, turn, dance, sidestep, kick a ball, wiggle
- 3 - Range of Expressions  
Marty's eyebrows move to express emotions
- 4 - Motors with Position Sensors  
Nine metal-g geared smart servo motors (in legs, arms & eyes)
- 5 - Foot Sensors  
Infrared (IR) Sensor & Color Sensor for screenless coding
- 6 - Quality Moulded Plastic Parts  
Classroom-ready, robust and built to last
- 7 - Acceleration & Tilt Sensor  
Found in the control board in Marty's head
- 8 - Rechargeable Battery  
With run time of 2-3 hours when fully charged
- 9 - Speaker  
Marty speaks and plays sounds



# HOW TO PROGRAM MARTY



```
robotical@pop-os:~$ python3
Python 3.8.6 (default, Sep 27 2020, 13:05:17)
[GCC 10.2.0] on linux
Type "help", "copyright", "credits() or help() for more
>>> import marty
>>> marty.__version__
'2.2.0'
>>>
```

Unplugged

Controller +  
Sequencer

MartyBlocks Jr

MartyBlocks

Python

No device  
needed

Uses color  
cards

Apple & Android App

Works best on tablets, or Chromebooks that  
have access to the Play Store

Connects via Bluetooth

PIP install  
marty on  
local system

Connects via  
WiFi

Coming Soon – Browser version of MartyBlocks that connects via Bluetooth

# LEARNING PROGRESSION *with* MARTY THE ROBOT

App-based - iOS & Android/Chrome OS

| CODING ENVIRONMENT | PRE-K/K | 1ST GRADE | 2ND GRADE | 3RD GRADE | 4TH GRADE | 5TH GRADE | 6TH-8TH GRADE |
|--------------------|---------|-----------|-----------|-----------|-----------|-----------|---------------|
| Unplugged          | ✓       | ✓         |           |           |           |           |               |
| Remote Control     |         | ✓         | ✓         |           |           |           |               |
| MartyBlocks Jr     |         |           | ✓         | ✓         |           |           |               |
| MartyBlocks        |         |           |           |           | ✓         | ✓         | ✓             |
| Python             |         |           |           |           |           |           | ✓             |



# LEARNING PROGRESSION *with* MARTY THE ROBOT

| LEARNING CONCEPT       | PRE-K/K | 1ST GRADE | 2ND GRADE | 3RD GRADE | 4TH GRADE | 5TH GRADE | 6TH-8TH GRADE |
|------------------------|---------|-----------|-----------|-----------|-----------|-----------|---------------|
| Sequencing             | ✓       | ✓         | ✓         | ✓         | ✓         | ✓         | ✓             |
| Computational Thinking | ✓       | ✓         | ✓         | ✓         | ✓         | ✓         | ✓             |
| Directional Language   | ✓       | ✓         | ✓         | ✓         | ✓         | ✓         | ✓             |
| Debugging              | ✓       | ✓         | ✓         | ✓         | ✓         | ✓         | ✓             |
| Events                 |         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓             |
| Arguments              |         |           |           | ✓         | ✓         | ✓         | ✓             |
| Conditionals           |         |           |           | ✓         | ✓         | ✓         | ✓             |
| Loops                  |         |           |           |           | ✓         | ✓         | ✓             |
| Logic                  |         |           |           |           | ✓         | ✓         | ✓             |
| Sensors                |         |           |           |           | ✓         | ✓         | ✓             |
| Variables              |         |           |           |           |           | ✓         | ✓             |
| Parallel Programming   |         |           |           |           |           | ✓         | ✓             |
| Compound Conditionals  |         |           |           |           |           |           | ✓             |
| Nested Loops           |         |           |           |           |           |           | ✓             |
| Integrating Components |         |           |           |           |           |           | ✓             |
| Functions              |         |           |           |           |           |           | ✓             |





# DEMONSTRATION



# STANDARDS ALIGNMENT

- Computer Science Teachers Association (CSTA)
- ISTE
- Common Core – Math
- Next Generation Science Standards (NGSS)
- Texas TEKS – Technology Applications
- Georgia GSE – Computer Science, ELA, Math, Science





# LEARNING PORTAL

Our hands-on, comprehensive lesson plans span a range of levels. Browse our free STEM and coding learning resources.



[← Go back to all Lesson Types](#)

Search Title

Your Location <sup>?</sup>

USA

Marty Version

Resource Type

Lesson (73)

Lesson Pack (10)

Education Standards

Topics

Environments

Challenge

Marty Add-on

[Education Standards](#)

1 2 3 4 5 6

Lesson

Unplugged

0.01: WHO IS MARTY THE ROBOT?

[View](#)

Lesson

Unplugged

0.02: WHAT IS A PROGRAM?

[View](#)

Lesson

Unplugged

0.03 MARTY'S FIRST MOVES

[View](#)

Lesson

Unplugged

0.04 MARTY FINDS AND FIXES MISTAKES

[View](#)

Lesson

Marty Controller

0.05 INTRODUCING THE MARTY CONTROLLER

[View](#)

Lesson

Marty Controller

0.06 ESTIMATING THE STEPS

[View](#)

<https://learn.robotical.io/>



# EXAMPLE LESSON

[← Back to all lessons](#)

## CONTENT SECTIONS

[Learning Objectives](#)

[Warm-up](#)

[Get Learning](#)

[Time for Practice](#)

[Cool Down](#)

[Extensions & Challenges](#)

[Extend](#)

[Support](#)

[Additional Reading](#)



## 2.03: USING REPEAT BLOCKS TO IMPROVE CODE

60 Minutes

[Print Lesson](#)

### LESSON OVERVIEW

Learners will already have been introduced to loops and what they do. This lesson takes learning from other areas, the arguments from the previous lesson, and encourages the use of loops to make the code more efficient and easier to read. Students will understand that they can use loops to reduce the number of lines of code that they have to write, using a combination of computational thinking and the MartyBlocks editor.

**Key vocabulary:** *code blocks , loops , repetition , shapes , angles,*

**Prerequisite Knowledge:** Awareness of arguments; knowledge of block names, knowledge of loops

**Device Compatibility:** Tablet with Bluetooth 4.2+

**Necessary resources & equipment:** Marty the Robot v2, Tablets, Access to the MartyBlocks editor, Completed workbooks from arguments and parameters lesson

### LEARNING OBJECTIVES

- Simplify your code with a loop block.
- Change a loop block's argument in order to complete a challenge.

### EDUCATOR RESOURCES —

[Teacher Guide](#)

[Presentation for Using Repeat Blocks to Improve Code](#)

### LEARNER RESOURCES —

[Workbook for Using Repeat Blocks to Improve Code](#)

[Collection of shapes](#)

# LESSONS & RESOURCES



## Lesson Plans

Learning plans with measurable objectives



## Teacher Guides

Support to enhance learning activities



## Curriculum Links

Alignment to various curricula, including CSTA



## Additional Content

All resources and solutions included



## Presentation Slides

Content for learners and notes to support



# WHY HUMANOID? RESEARCH PAPER

- Humanoid robots are characterized by their human form and behavior
- In education, they have been shown to help **develop computational thinking** in young learners
- **Foster greater engagement** from pupils across a wide array of subjects in the curriculum
- They are a wonderful education aid in **teaching children on the autistic spectrum**
- Having a human form has been proven to **invoke a stronger connection and sense of ownership**





# CLASS 5-PACK

(also 10, 15, 30, and 50-packs)

5x Marty the Robot V2

Color sensor

IR sensor

Stickers

Zipper storage case with handle

10x removable batteries

1x battery charger (5 slots)

1x distance sensor

2x color card packs

2 year warranty

Starting at \$2,225





# FUNDING & GRANTS



## FEDERAL GRANTS:

A collection of funding opportunities issued by the US government is available on a needs or competitive basis.



## STATE GRANTS:

Thousands of grant opportunities are provided for STEM projects, directly from your state government's revenue.



## PRIVATE GRANTS:

A number of organizations allocate funds to support community needs with many centering on STEM pathways.



## CROWDFUNDING:

A little goes a long way! Raise money for your STEM project with smaller donations from a large number of people.

## Online resources for finding and applying for sources of funding and grant writing



<https://robotical.io/about/educators/funding-and-grants/>





**Q & A**