

ROBOTICAL

Where Learning Comes Alive



FREE TWO-WEEK TRIAL FOR SCHOOLS IN THE UK

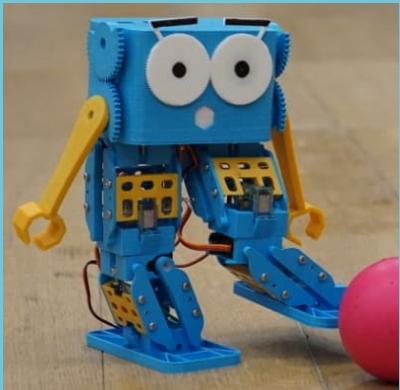
robotical.io/free-trial/





MARTY THE ROBOT

OVER 10,000 SOLD IN 65 COUNTRIES



2016

Robotical founded in Scotland
Marty V1 Indiegogo campaign

LESSON 1: MARTY DANCE PARTY

At this lesson students will get creative programming dance moves for Marty, before challenging each other to a dance-off!

View

LESSON 2: INTRODUCTION TO LOOPS

Learn how loops work and program Marty to repeat moves again and again...

View

LESSON 3: INTRODUCTION TO EVENTS

Program Marty to respond to events such as pressing a key or begin to build a Marty remote control!

View

LESSON 4: PARALLEL PROGRAMMING

How do robots multi-task? Learn how to get Marty to do multiple things at once using parallel programming!

View

LESSON 5: INTRODUCTION TO VARIABLES

How does Marty store information to use later in a program and what are variables? Then have a go at using them!

View

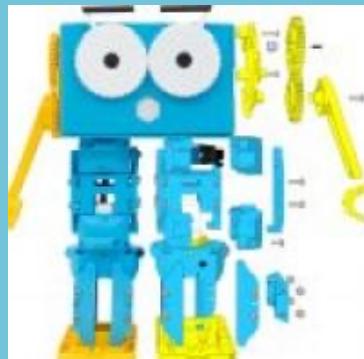
LESSON 6: INTRODUCTION TO IF STATEMENTS

Use IF statements to write programs with different outcomes depending on certain conditions, such as variable values.

View

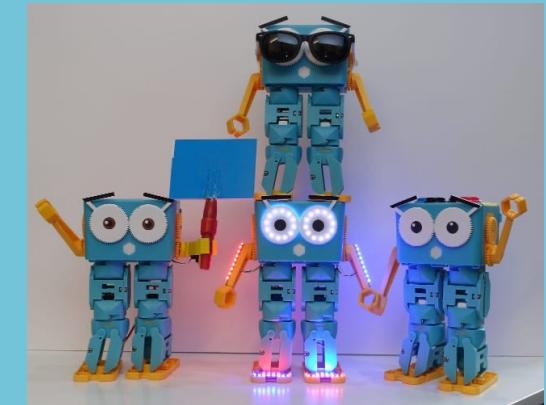
2017

Marty V1 kits ship



2018

Standards-aligned lessons

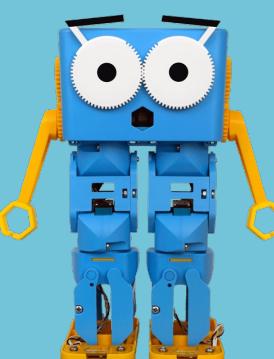


2020

Marty V2 robots ship

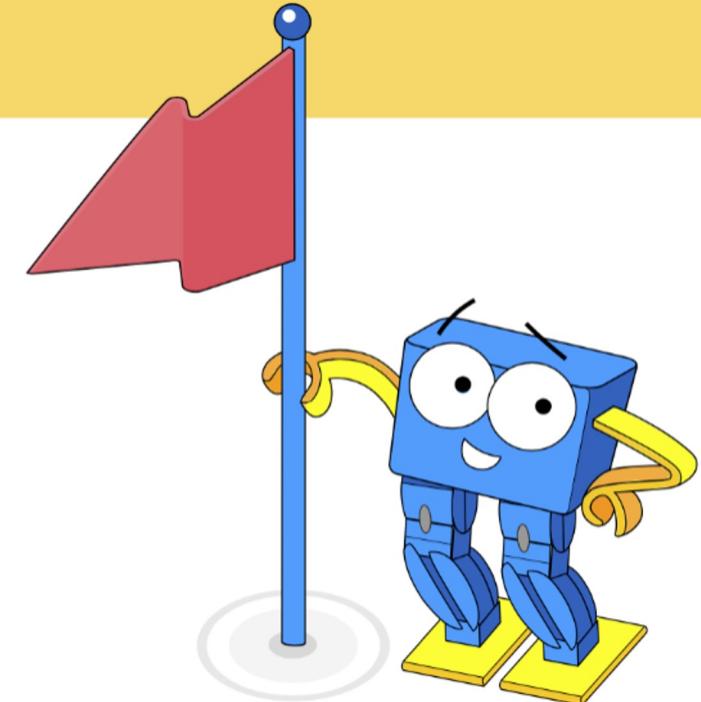
2019

Marty V2 Kickstarter campaign





ROBOTICAL'S MISSION



To ignite a passion for learning by delivering hands-on experiences, preparing young learners for the real world in a fun and engaging way.

*We want to change attitudes in STEM and make people see that **anyone can do it**.*



WHAT DO TEACHERS THINK ABOUT MARTY

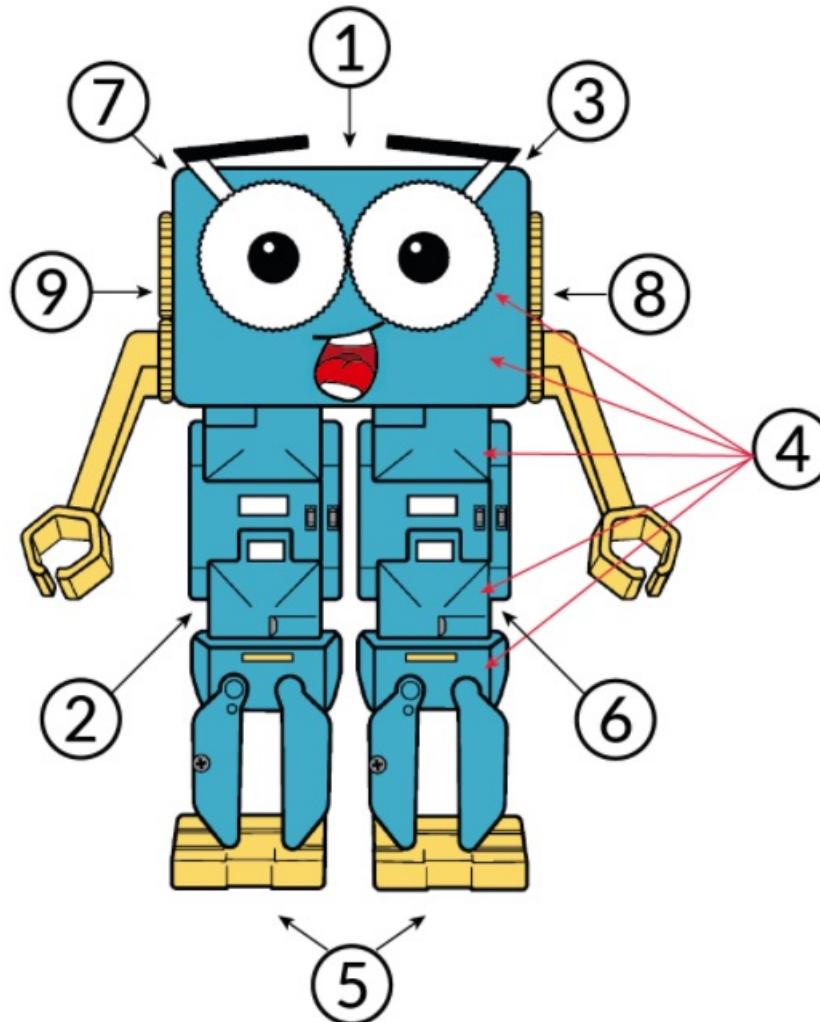
https://youtu.be/li_LZg15ieU



MEET MARTY

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

pre-assembled



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-gearied 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

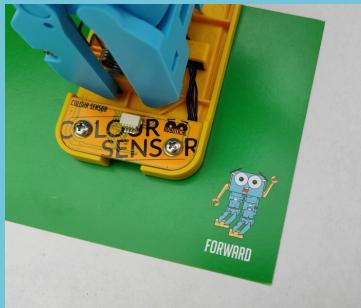
With run time of 2-3 hours when fully charged

9 - Speaker

Marty speaks and plays sounds



HOW TO PROGRAM MARTY



Unplugged

No device
needed

Uses color
cards



Controller +
Sequencer



MartyBlocks Jr



MartyBlocks

```
robotical@pop-os:~$ python
Python 3.8.6 (default, Sep [GCC 10.2.0] on linux
Type "help", "copyright",
>>> import martypy
>>> martypy.__version__
'2.2.0'
>>>
```

Python

Apple & Android app for tablets

Browser for Chromebooks, Windows & Mac
app.robotal.io

Connects via Bluetooth

PIP install
martypy on
local system

Connects via
WiFi

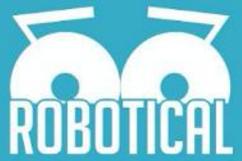
LEARNING PROGRESSION *with* MARTY THE ROBOT

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

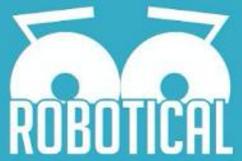
LEARNING CONCEPT	PRE-K/K	1ST GRADE	2ND GRADE	3RD GRADE	4TH GRADE	5TH GRADE	6TH-8TH GRADE
Sequencing	✓	✓	✓	✓	✓	✓	✓
Computational Thinking	✓	✓	✓	✓	✓	✓	✓
Directional Language	✓	✓	✓	✓	✓	✓	✓
Debugging	✓	✓	✓	✓	✓	✓	✓
Events		✓	✓	✓	✓	✓	✓
Arguments				✓	✓	✓	✓
Conditionals				✓	✓	✓	✓
Loops					✓	✓	✓
Logic				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



STANDARDS ALIGNMENT

Curriculum for Excellence and many other global and national ones





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](#)

Your Location ⓘ
USA

Marty Version ▾

Resource Type
 Lesson (73)
 Lesson Pack (10)

Education Standards ▾

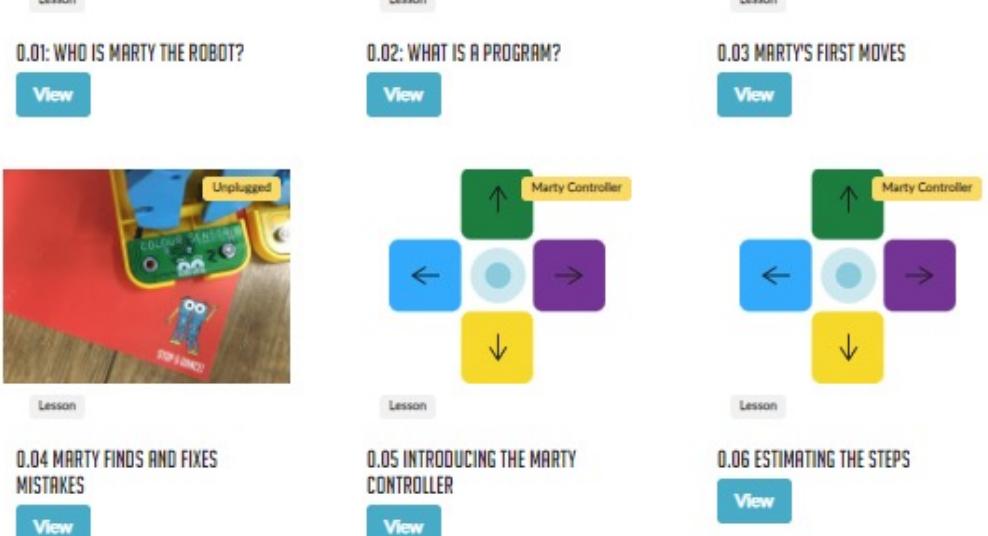
Topics ▾

Environments ▾

Challenge ▾

Marty Add-on ▾

[Education Standards](#)





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](#)

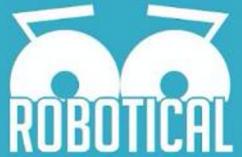
Presentation for
[Using Repeat Blocks
to Improve Code](#)

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

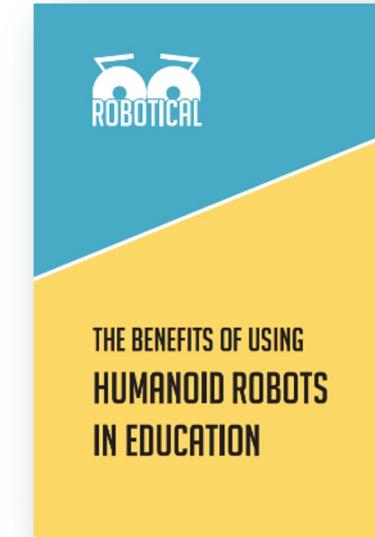


Presentation Slides

Content for learners and notes to support

WHY HUMANOID? RESEARCH PAPER

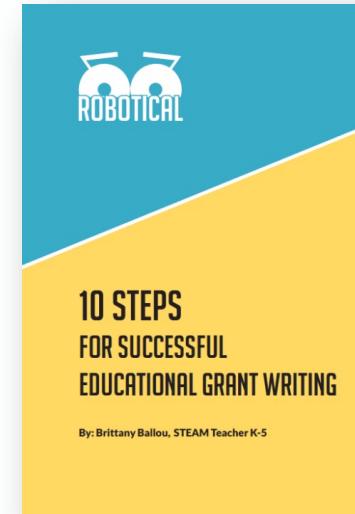
- Humanoid robots are characterised by their human form and behaviour
- In education, they have been shown to help **develop computational thinking** in young learners
- **Foster greater engagement** from pupils across a wide array of subjects in the curriculum
- They are a wonderful **education aid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





FUNDING & GRANTS

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



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



CLASSROOM PACKS OF 5, 10 OR 15

<https://www.robotlab.com/store/marty-robot-classroom-pack>

5x Marty the Robot V2

Each robot:

- Colour sensor
- IR sensors
- Set of paper colour cards
- Ping pong ball
- Stickers
- Zipper storage case with handle

10x rechargeable batteries

1x battery charger (5 slots)

1x set of premium colour cards

1x distance sensor

2 year warranty

Starting at £1,995





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