SAMPLE SOLUTIONS
INTRODUCTION TO MARTY THE ROBOT

LESSON 1 - INTRODUCTION TO MARTY THE ROBOT

1   Write down your own definition of a *robot*

There are no right or wrong answers here since there is no official definition for a robot. Students should take into account what they have seen of robots and what they might think robots will be like in the future to help them answer this question.

Getting students to discuss and share their definitions with peers in the class might help them to explore other ways of describing a robot that they might not have already considered.

2   Research your favourite robot

Again, there are no right or wrong answers for this activity. Students are free to choose anything that they might have decided is a robot - they might want to look back at their definition to see if that agrees with the example that they have chosen.
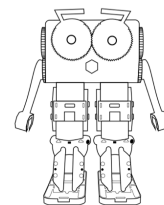
If you have students who are struggling to come up with a robot then they may want to use one from this list: Marty the Robot, Pepper, BB8 (from Star Wars), Nao or Valkyrie.

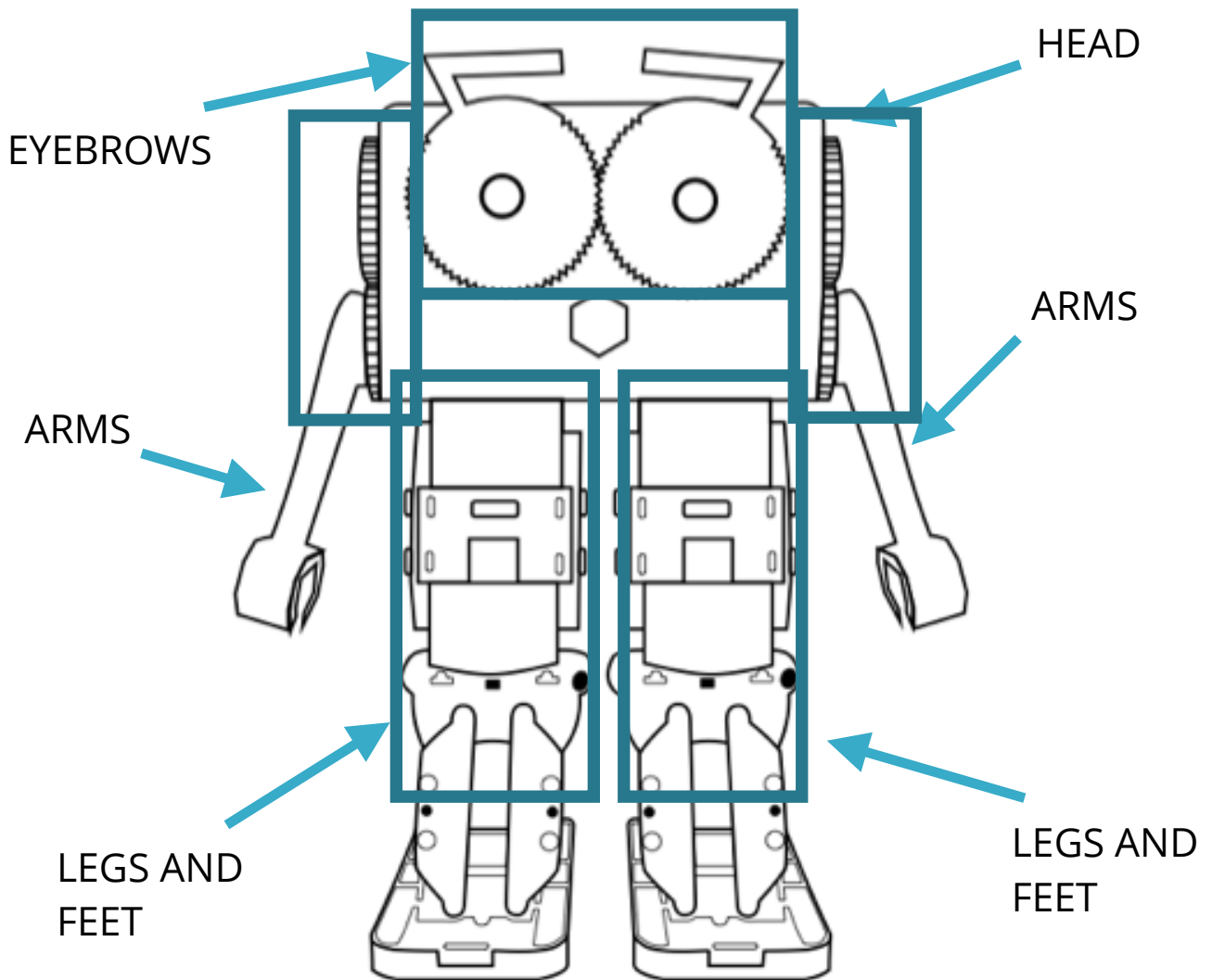Robot Name: Marty the Robot

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What does it do?

Teaches people all over the world all about coding and robotics whilst making STEAM subjects exciting.

Draw a picture

Why it's my favourite robot

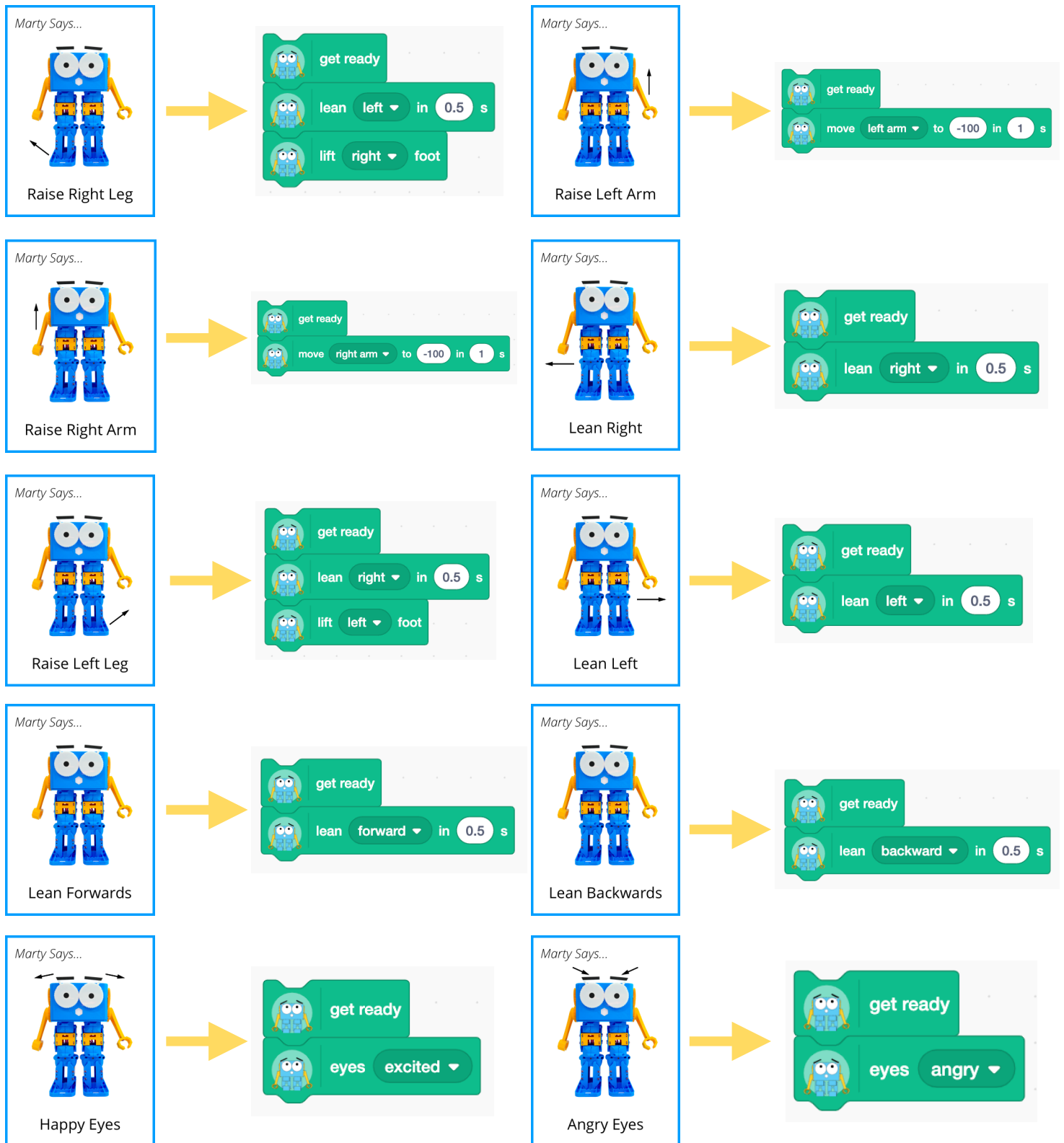Because teaching people about coding and robotics is really important for the future

HEAD

EYEBROWS

ARMS

ARMS

LEGS AND FEET

LEGS AND FEET

The body parts that have a rectangle around them are the ones that Marty can move and should be coloured in by the students!

LESSON 2 - INTRODUCTION TO PROGRAMMING

How do the action cards map to Scratch blocks?

Marty Says...

Raise Right Leg

→ get ready / lean left in 0.5 s / lift right foot

Marty Says...

Raise Left Arm

→ get ready / move left arm to -100 in 1 s

Marty Says...

Raise Right Arm

→ get ready / move right arm to -100 in 1 s

Marty Says...

Lean Right

→ get ready / lean right in 0.5 s

Marty Says...

Raise Left Leg

→ get ready / lean right in 0.5 s / lift left foot

Marty Says...

Lean Left

→ get ready / lean left in 0.5 s

Marty Says...

Lean Forwards

→ get ready / lean forward in 0.5 s

Marty Says...

Lean Backwards

→ get ready / lean backward in 0.5 s

Marty Says...

Happy Eyes

→ get ready / eyes excited

Marty Says...

Angry Eyes

→ get ready / eyes angry

1 Create your own Marty Says action cards

To complete this activity in the workbooks, students will need to think about what kind of movements they have already seen Marty do and using this work out what other moves could be programmed.

Some students might want to think about popular dance moves that they know and think about if Marty could do poses from the routine. Note here that a lot of students might think up different actions involving body parts like elbows that Marty does not have - they will need to compare movements they can do with what Marty can do to design their own action cards.

LESSON 3 - GETTING COMFORTABLE WITH SCRATCH

1   What does *debugging* mean?

Students will each have their own slightly definition for what *debugging* means. It is important that the main message behind their definitions involves finding and fixing problems in your code. These problems are usually called bugs, meaning that they are an error within your program.

2   Debugging with Marty
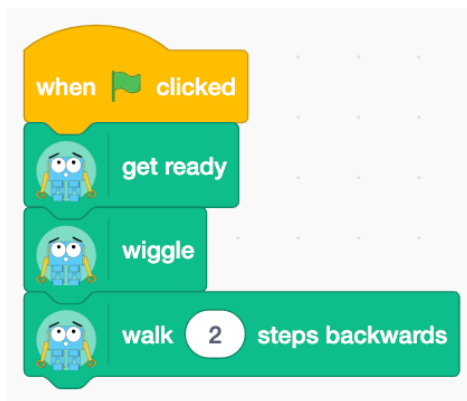
In this example, the program is missing a *GET READY* block at the start.

There is also a *WALK BACKWARDS* block being used at the end of the program but we want Marty to walk forwards. In order to achieve this, we must swap the *WALK BACKWARDS* block for a *WALK FORWARDS* block!

This program is a little trickier to find the problem with. Students might want to act it out in a small team to work out why this will not program Marty to walk in a square.

The second *TURN* block is telling Marty to turn *RIGHT* instead of *LEFT*.
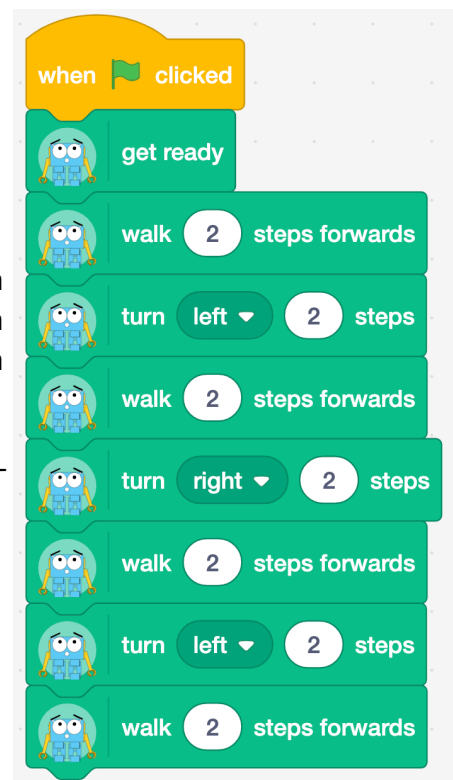
PLEASE NOTE THAT THIS EXAMPLE IS IN THE POWERPOINT ONLY

The issue with this small program occurs in the first Marty block where we tell Marty to turn off the motors. Turning off the motors will mean that Marty will not be able to do any other actions.

To fix this program, we must remove the *TURN OFF* MOTORS block and replace it with a *GET READY* block.

LESSON 4 - MARTY DANCE PARTY

1 Plan your dance routine out

In this activity, students have the freedom to create their own dance routine program for Marty. Students should be challenged to continue to explore and develop their dance routine and one way of doing this is through seeing other groups in the class demonstrate their program. This will allow for students to share ideas with each other.

You might want to put together a checklist of different actions for students to incorporate into their dance routine or create a competition to see who can include as many different moves as possible in their routines!