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3ST GRADE

3.0

SCRATCH PACK CODING PROJECTS

```
when 🏁 clicked
set rotation style  all around ▾
repeat  10
  move  10  steps
  turn ↻  15  degrees
  go to  random position ▾
  if on edge, bounce
```

start blocks

key any ▾ pressed?

when this sprite clicked

start blocks

and

say I love to ...   say

Creative Coding Book for Kids

Lesson 01 Introduction to Scratch

Students get introduced to the Scratch App interface and terminology. Students get introduced to different coding blocks in different categories.

Lesson 02 Around the Block

This lesson will teach students a new way of moving characters across the stage, diagonally, by changing the x and y positions at the same time.

Lesson 03 Beetle Race

This lesson will teach students how to save data, taken from one character, in a variable that can be used in another character.

Lesson 04 Magic Maze

This lesson will teach students how to control a character's movement and direction by programming the arrow keys.

Lesson 05 Ice Hockey

This lesson will teach students how to get a certain characteristic from one of the characters using a sensing block without having to save it in a variable.

Lesson 06 Avatar Maker

This lesson will teach students how to use the 'join' and 'letter of' blocks from the operator's menu.

Lesson 07 Habitats

This lesson will teach students how to organize the costumes of a character so that they are arranged in a way to simplify the program.

Lesson 08 Plant Parts

This lesson will teach students how to use the wait until block.

Lesson 09 Geometric Shapes

This lesson will teach students how to put to use the knowledge of all the coding blocks they learnt to use so far in a project.

Lesson 10 Mental Math

This lesson will teach students how to put to use the knowledge of all the coding blocks they learnt to use so far in a project.

Lesson 11 Clocks Time

This lesson will teach students how to put to use the knowledge of all the coding blocks they learnt to use so far in a project.

Lesson 12 Weights Scale

This lesson will teach students how to put to use the knowledge of all the coding blocks they learnt to use so far and learn about the 'not' block.

Lesson 13 Geography Map

This lesson will teach students about how to put to use the knowledge of all the coding blocks they learnt to use so far in a project.

Lesson 14 Tourism in Jordan (open project)

This lesson will have students create a whole project from scratch.

Lesson 15 Animal Classes (open project)

This lesson will have students create a whole project from scratch.

Lesson 2 – Around the block

This lesson will teach students a new way of moving characters across the stage, diagonally, by changing the x and y positions at the same time.

Using the broadcast message block, allows more than one blocks stack of actions to be activated at the same time when they receive the same cue/ message.

The send message and wait block is used to stop the program to continue to read any extra blocks added under it, until the message stack that was activated is finished.

Remember: It is always useful to create a Start Blocks stack that includes all the initial instructions for the character.

- After you start the program with the start block under the Start on Green Flag Block, you can continue your program to tell the character what to do next.

- The character says: 'My favourite kind of exercise is walking'
- Setup a broadcast message to start up 2 actions of changing the x positions and y position simultaneously together.
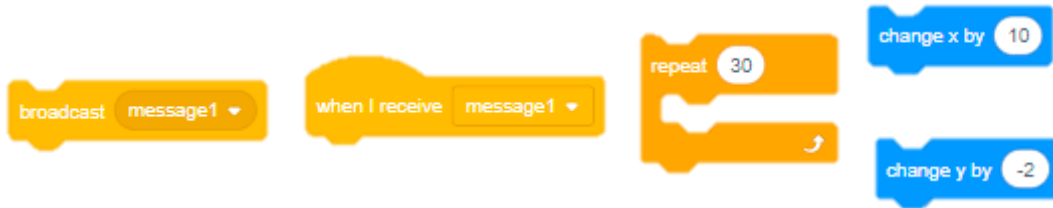
** This process will require a few trials and errors that the student will have to test to get to the best number of times to repeat the action and the amount to change the x and y values
** These movements will also only move the character down one side of the street path

- And a new broadcast message to move along the rest of the path
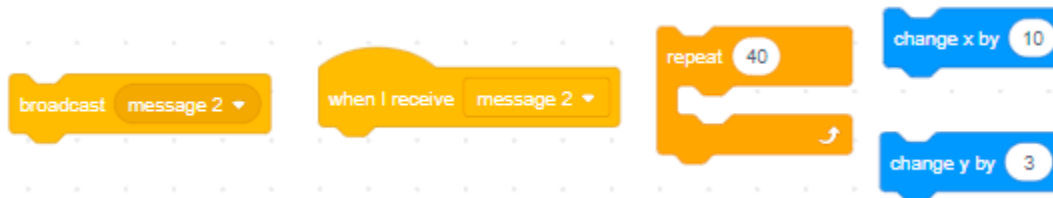
** The size of the character can also be changed as it's moving away up the path

Use a variable to control when to stop the character from changing its costume so that it looks like it is walking as its moving.

Add the variable at the start of the program. This variable can be changed by 1 at the end of the program.
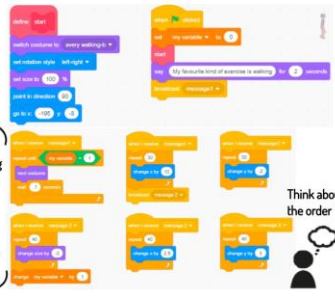
The extra challenge: the students should be able to continue the program to have the character walk back to the original place.

Add more messages to have the character walk back, change the direction the character is facing and change the place of the variable block to the end of the program.

broadcast 3

point in direction -90

broadcast 4

change my variable by 1

AROUND THE BLOCK

Create a walking exercise!
• Move your character along the road, and around the block
• The character has to walk diagonally

1 Add your characters
2 Choose a background
3 Create a plan to follow
   • decide the initial characteristics of your characters you want to start with
   • figure out how to move the character diagonally along the road

PLAN

AROUND THE BLOCK

Broadcasting a message can activate many sets of code at the same time.
To make the character move diagonally the x and y values have to be changed at the same time.

This variable is going to mange for how long the character going to keep changing its costume, until the end of the program.

These blocks will decrease the size of the character as it moves further away

4 Drag all the code blocks that you think you will need to the script area

Think about the order

AROUND THE BLOCK

Modify your program to have the character walk back to the original place

Hint: figure out how to add more messages to have the character walk back, change the direction the character is facing and change the place of the variable block to the end of the program

CHALLENGE YOURSELF!

broadcast 3

point in direction -90

broadcast 4

change my variable by 1