SCRATCH

Lesson Plan 1
Under the Sea

Mathematical Skills / Concepts
Scratch Features
Curricular Links
Problem Solving, XY Coordinates
Moving Left and Right, Up and Down
Mathematics, Art, Science

lero *THE IRISH SOFTWARE ENGINEERING RESEARCH CENTRE*

ICS SKILLS CERTIFICATION BODY OF THE IRISH COMPUTER SOCIETY

Learning Objectives

The child will:

- Use problem solving and mathematical skills in an authentic setting.
- Create an animation incorporating movement and images.
- Create an animation of a natural habitat.

Introduction

To support the children the teacher is encouraged to follow these steps using the interactive whiteboard.

- Ask the children to choose a sprite* from the file.

Delete the cat sprite by right clicking on it and pressing delete.
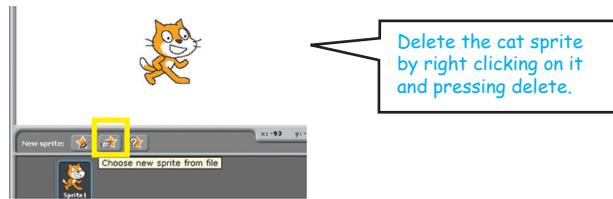
- Ask them to open the blue motion block and experiment for a few minutes.

Left and Right

- To move right add the block "move 10 steps" to the scripts area. Double click on this block to see it work.

- To move left use the same block. Highlight "10" steps by clicking on it. Change this to "-10". Double click on this block to see it work.

- Add a control to your script. Click on the control block and drag out "When space key pressed". Snap this onto your movement blocks.

- Add a repeat block to make a continuous movement. Insert the block "if on edge bounce" to stop your sprite disappearing from the screen.
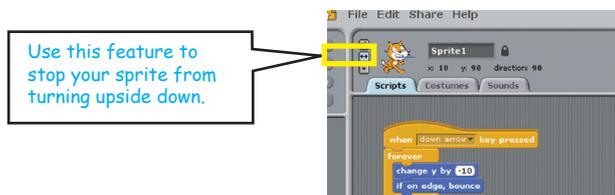
Use this feature to stop your sprite from turning upside down.

Up and Down

- To move up and down children will need to experiment with the y axis. Ask children to move the sprite on the stage. Observe the xy coordinates changing on the bottom right of the stage. Try to move the sprite to (0,0). Show the children how the x coordinates change as the sprite moves left to right, and how the y coordinates change as the sprite moves up and down.

- Use the "when space key pressed" block. Using the drop down arrow alter it to "when up arrow key pressed". Add the movement block "change y by 10".
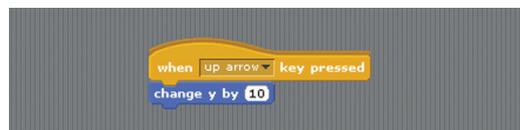
- Ask the children to demonstrate how to move their sprite downwards.

*Sprites are the objects that perform actions in a Scratch project. While the Stage can also be programmed in a project, most projects have at least one sprite as well because only sprites can move.

Ultimate Challenge!

1. Open a new Scratch project.
2. Select an underwater background.
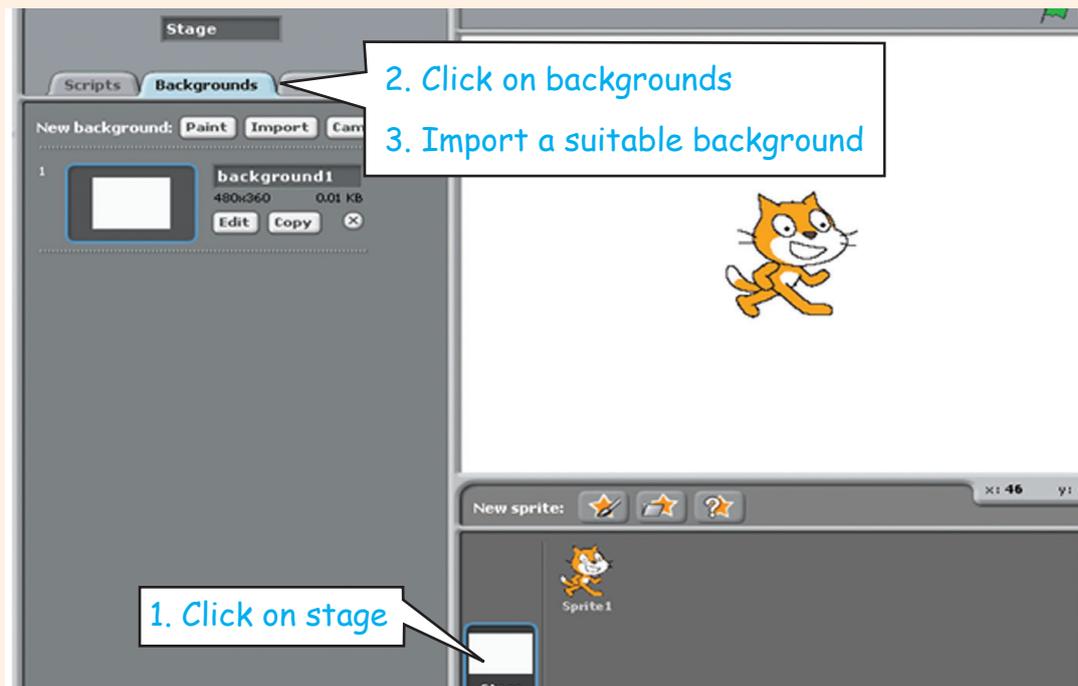
3. Select some underwater sprites.
4. Using different types of movement create an underwater animation.
5. Have your sprites move left, right, up and down.
6. Have a look at classmates projects. Tell them what you like and suggest ideas to make their project even better!

See www.scratch.ie/primary/resources for a sample project.

Notes