



Game Control

Scheme of Work



Key Stage 3





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About this Unit:

Students begin by understanding how instructions need to be written in a sequence using flowcharts. Students then work on creating different products in Scratch - starting with an animation then moving onto games.

Homework

Software is free from <http://scratch.mit.edu> so students can download at home to make their own creations.

Language for Learning

Sprite, if, then, else, instructions, sequence, flowchart, input, output, decision, selection, process.

Resources

- PowerPoint for each lesson outlining tasks
- Student workbook
- Scratch
- Lesson 1 - glue and scissors
- Scratch cards

Cross-Curricular Links

Numeracy - Logic and sequencing

Support & Extension

Less able students may benefit from working in pairs to complete activities and tasks may need to be extended over a longer period of time.

Extension tasks are available for more able students.

National Curriculum Links

LEVEL 2 - Students plan and give instructions to make things happen and describe the effects. They use ICT to explore real and imaginary situations.

LEVEL 3 - Students use sequences of instructions to control devices to get something specific to happen. They choose ICT-based models or simulations to help them find things out and solve problems.

LEVEL 4 - Students use ICT to control things in a pre-determined way and explore patterns and relationships. They will use ICT-based models to make predictions about what will happen if they do something.

LEVEL 5 - Students will sequences of instructions to control events and understand the need to be precise when writing instructions. They will explore the effects of changing variables in models.



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Week/ Lesson	Learning Objective	Starter	Main	Extension	Plenary	AfL
1	Learn how to recognise different flowchart symbols and how to put them together.	Write Learning Objective onto Self Assessment page of workbooks.	<p>Explanation of the importance of putting instructions into order (sequencing) and introduction to the various flowchart symbols.</p> <p>Task 1 - Cut out and stick together flowchart instructions in the correct order to make a robot work correctly.</p> <p>Task 2 - Students draw a flowchart to represent the instructions for making a cup of coffee.</p>	Play the Light Bot game on the computer. Students drag and drop the instructions together to program the "Light Bot".	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Students identify the different flowchart symbols.</p>	Self Assessment
2	Learn how to use Motion and Looks instructions in Scratch.	Lesson 2 Starter activity in workbooks. Write Learning Objective onto Self Assessment page of workbooks.	<p>Introduction to the Scratch interface.</p> <p>Task 1 - Create a script that changes the colour effect of the cat.</p> <p>Task 2 - Add motion to the script to make the cat walk.</p> <p>Task 3 - Create an animation with two sprites.</p>	Students follow the instructions on the Scratch Cards to make a new program.	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Q&A on what students can remember from the lesson.</p>	Self Assessment
3	Learn how to control sprites and create a loop in Scratch.	Write Learning Objective onto Self Assessment page of workbooks.	<p>Introduction on how to control motion using keyboard inputs. Students then make the cat move left and right using the ← and → keys on the keyboard.</p> <p>Explanation of different types of loop, students then create a project to make the cat always follow the mouse cursor.</p> <p>Students then experiment by altering the speed of the sprite, adding more sprites and one that is controlled by the keyboard at the same time.</p>	Students follow the instructions on the Scratch Cards to make a new program.	Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.	Self Assessment



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4	Learn how to sense events and keep score.	Write Learning Objective onto Self Assessment page of workbooks.	<p>Introduction and explanation of what is meant by sensing and variables.</p> <p>Students follow the instructions in their workbooks for how to make a Shark Attack game.</p>	<p>Adding features to the game to:</p> <ul style="list-style-type: none"> - Change the sharks costume so it closes its mouth to eat the fish. - Add a Game Over stage to be displayed. 	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Q&A on what students can remember from the lesson.</p>	Self Assessment
5	Learn how to, independently, make a virtual pet in Scratch	Write Learning Objective onto Self Assessment page of workbooks.	<p>Introduction and discussion on the different types of virtual pets that are available.</p> <p>Students to use the help in their workbooks to get started - making a virtual pet. Then independently add additional features.</p>	<p>Add features to the game:</p> <ul style="list-style-type: none"> - Aging - Change into a ghost when pet dies - Add a health variable 	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Q&A on what students can remember from the lesson.</p>	Self Assessment
6	Learn how to add features to a game in Scratch to make it better.	Write Learning Objective onto Self Assessment page of workbooks.	<p>Students to continue building their virtual pet, started last lesson. Adding the following features (variables):</p> <ul style="list-style-type: none"> - Health - Happiness - Appearance - Intelligence <p>Peer Assessment: Students play each others' games then assess one another in workbooks.</p>	N/A	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Q&A on what students can remember from the lesson.</p>	Self Assessment Peer Assessment
7	Learn how to carry out a self assessment.	Write Learning Objective onto Self Assessment page of workbooks.	<p>Students assess what they have done by completing statements in their workbooks.</p> <p>Students then look at games other people have made on the scratch website.</p>	N/A	<p>Students assess their achievement this lesson by drawing ☺ or ☹ on the Self Assessment page of their workbooks.</p> <p>Q&A on what students have thought about this unit of work.</p>	Self Assessment