

Saturday Mash-Up!

Make a teleporting duck



Computing topics covered		
Hardware <ul style="list-style-type: none">• Connecting a micro:bit to a laptop• Using built-in input sensors - accelerometer• Transmitting/receiving radio signals• Using the LED display output	Coding and Programming <ul style="list-style-type: none">• Sequencing• Selection and conditionals• Events and triggers• Debugging	Computational Thinking <ul style="list-style-type: none">• Logical reasoning• Decomposition• Algorithms• Abstraction
Curriculum links		
England <i>Computing NC: KS2</i> <ul style="list-style-type: none">• Select, use & combine a variety of software on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals• Design, write & debug programs that accomplish specific goals, including controlling or simulating physical systems• Work with variables & various forms of input & output <i>Design Technology KS2</i> <ul style="list-style-type: none">• Use research & develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular audience• Apply their understanding of computing to program, monitor & control their products	Northern Ireland <i>Thinking Skills & Personal Capabilities: Thinking, Problem Solving & Decision Making KS2</i> <ul style="list-style-type: none">• Generating possible solutions• Trying out alternative approaches• Evaluating outcomes <i>Using ICT: Computational Thinking and Coding (Desirable Features)</i> <ul style="list-style-type: none">• Use a range of commands including triggering commands in a program, such as when a device is shaken (L3)• In small groups, plan and storyboard their own coding project, working out what different parts of the program must do, using logical reasoning to discuss and compare the commands that are required for their algorithm and predict the outcome (L4)• Use a range of commands to create a project including triggering commands that allow scripts to continue across different devices to facilitate a more efficient method of interaction (L4)	
Wales <i>Science & Technology: Design thinking & engineering offer technical and creative ways to meet society's needs and wants Progression Step 3</i> <ul style="list-style-type: none">• I can use design thinking to test and refine my design decisions without fear of failure• I can combine component parts, materials & processes to achieve functionality and improve the effectiveness of my outcomes• I can apply my knowledge & skills when making design decisions in order to produce specific outcomes	Scotland <i>Technologies: Computing Science</i> <ul style="list-style-type: none">• I can create, develop and evaluate computing solutions in response to a design challenge TCH 2-15a	
Cross-curricular opportunities		
English <ul style="list-style-type: none">• Write a Science Fiction story about the teleporting duck• Write an instruction booklet explaining how to program the micro:bit for this activity Art <ul style="list-style-type: none">• Design different icons for the animal or object being 'teleported' using squared paper to simulate the LED display• Create animals using Tangem shapes• Explore the way symbols reduce a complex image to a much simpler one that still conveys meaning Music <ul style="list-style-type: none">• Compose and play simple sound sequences to represent an animal sound (eg. quacking duck) using both traditional and digital instruments	PSHE/PDMU/Health and Wellbeing <ul style="list-style-type: none">• Discuss the issue of people sending unsolicited messages in public places, and how to ensure personal devices are protected against receiving them History <ul style="list-style-type: none">• Find out about the discovery of Radio waves and the invention of the radio by Marconi in the late 1800s• Create a timeline of the development of technology and devices using radio waves Design technology/Technologies <ul style="list-style-type: none">• Create a decorated case for the micro:bit - use different design criteria - eg. must protect the LED screen, or must enable the micro:bit to be worn on the wrist etc. and test and evaluate the product against these criteria	