Year 4/5	Computer Science – Programming	Mrs Slater

ICT Skills	
Repetition in shapes	Repetition in games
Type commands into Logo and change the value of a command. Create an algorithm to write their initials and test. Fix any errors. Recognise patterns in shapes and use repeat (count-controlled loop) to shorten the sequence. Decompose tasks into smaller parts and create a procedure. Design a program with count-controlled loops to create a 2 shaped design.	Use Scratch to create shapes using a count-controlled loop. Use an infinite loop within a block of code. Animate the letters of their name using two or more loops. Modify an existing game and re-use code snippets. Design a game with repetition, sound, show/hide. Review and make any changes.
Knowledge and understanding	
Know how to use text-based programming language. Understand that an algorithm is a set of precise instructions. Understand how to use a count-controlled loop to shorten code. Understand that a procedure is a snippet of code that the computer can recall.	Recognise the similarity between text based and block-based code. Know the difference between count-controlled loops and infinite loops and be able to select which one is appropriate to the task. Know that code can be copied from one sprite to another and modified. Be able to implement algorithms to match a design. Can add other elements to their code from previous lessons. Can recognise errors in a program and debug.
Non-Negotiable Assessment	
Write commands to draw a digit. Identify syntax errors. Understand 90° and create a simple algorithm to create code. Understand 'repeat' to continue a pattern. Program code snippets to create different shapes. Understand what 'procedure' is. Plan and program a procedure. Use count-controlled loops. Debug a program.	Rearrange blocks of code into the correct sequence. Modify code using a count-controlled or infinite loop. Design an animation to include two or more loops. Reuse and modify code for another sprite. Create a design and algorithms using ideas from a given project. Test and debug program.
National Curriculum Links	
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs, work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	
Key Vocabulary	
Program, Turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure.	Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, costume, animate, event block, duplicate, modify, design, refine, evaluate.
Suggested Resources	
Turtle playground, Purple Mash 2 Go	Scratch Create, Scratch Explore

Year 4/5	Using ICT – Creating Media	Mrs Slater

ICT Skills	
Audio Production	Photo editing
Use a computer to record their voice. Edit the recordings and remove pauses and mistakes. Search for Royalty free sounds. Import sound effects to create layers. Align tracks and review the continuity. Export finished project as an audio file.	Use photo editing software to rotate and crop and image. Explore colours and filters. Improve a photo with the cloning tool – remove parts or duplicate parts. Use copy and paste within images and produce a combined image. Create their own image using the skills they have acquired. Review it against given criteria and make changes as appropriate. Add text to complete the publication.
Knowledge and understanding	
Identify input and output devices. Understand ownership of digital audio and copyright implication. Know how to edit and add multiple tracks to Audacity. To know the importance of keeping tracks separate until project is complete. Be able to evaluate work and give constructive feedback.	Know that digital images can be changed and edited. Know how to manipulate an image to improve it. Consider what parts of a photo need retouching and use techniques to make it unnoticeable. Know how to change the composition of an image using the cloning tool. Be able to consider when it is appropriate to edit an image and discuss the ethics of retouching photos.
Non-Negotiable Assessment	
Understand input and output devices. Demonstrate an understanding of copyright and implications. Select and delete audio. Align several tracks in a sequence. Import sound and set volume. Record voice and reflect on the quality. Save and reopen a project. Export a project. Evaluate other podcasts and suggest improvements.	Recognise that images can be changed. Use colour effects, crop, rotate. Explore the cloning tool. Combine images. Review against given criteria.
National Curriculum Links	
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information.	Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
Key Vocabulary	
Audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, layer, import, record, playback, selection, load, save, export, MP3	Text, images, advantages, disadvantages, font, font style, communicate, template, landscape, portrait, orientation, placeholder, layout, content, desktop publishing, copy, paste, purpose, benefits.
Suggested Resources	
Laptops and chrome books, headphones, microphone, Audacity, Royalty Free music, and sounds.	Images from Teach Computing, photo editing software.

Year 4/5	Digital Literacy – Computer systems and networks; Data and information	Mrs Slater

ICT Skills	
The internet	Data logging
Explore how a network can share messages. Look at the different routes a message may take. Identify a website or a web page. Create content on the web. Identify the owners of a website or content. Look at ranking and ad sponsored websites.	Look at a range of data tables and think about questions that the data could answer. Discuss senses, identify sensors. Use the data loggers to record sound, light, and temperature around the room. Connect the data logger to a computer and look at the graph created. Log data at hourly intervals (from video). Use graphs to analyse data. Collect data and draw conclusions from the results.
Knowledge and understanding	
To know that the www is part of the internet. Understand how information is shared across the internet. To know that the www contains websites and webpages. Know the advantages and disadvantages of adding content to the web. Know that some content cannot be taken and reused without licence. Realise that some companies pay to be at the top of a search result.	Know how to read data from a table. Know what the different readings on a data logger mean. Be able to capture and review data from the logger on a computer. Identify data sets on a graph and use them to answer questions. Talk about the benefits of using a data logger.
Non-Negotiable Assessment	
Know the different between a website and a web page. Identify devices that can be used to access the www. Understand the advantages and disadvantages of anyone being able to add to the www. Explain the rules for using and sharing content. Understand fake or inaccurate content. Know the implications of sharing.	Understand a data table and answer questions. Identify inputs and out puts on a data logger. Capture and review collected data. Record data at a set interval. Sort data using filtering in a spreadsheet. Identify a suitable location for data logging setup and identify any potential issues. Analyse and draw conclusions from data.
National Curriculum Links	
Use sequence, selection, and repetition in programs, work with variables and various forms of input and output. Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
Key Vocabulary	
Internet, network, security, network switch, server, wireless access point, router, world wide web, internet, content, website, web page, links, files, download, sharing, ownership, permission, accurate, honest, adverts.	Data, table, layout, input device, sensor, data logger, data point, intervals, analyse, data set, import, export, review, conclusion.
Suggested Resources	
Web browsers and various websites.	Data loggers