Y5 computing overview 2021-22: *Sharing Information, Vector Drawing, Selection in Physical Computing*

Computing Activity	Building Skills and Disciplinary Knowledge	Approaches to Developing Skills and Disciplinary Knowledge	Building Substantive Knowledge and Understanding	Approaches to Developing Substantive Knowledge and Understanding	Curricula Materials	Assessed through (T1 T2 T3) Exploring Responding Designing Creating Evaluating		
Algorithms and Programs	• Use sequence in programs • Use selection in programs • Work with various forms of input and output • Use repetition in programs • Work with variables • Use logical reasoning to explain how some simple algorithms work • Use sequence, selection, and repetition in programs	• Class/group tuition with technical guidance from the Switched On computing program	• Understand computer systems and how information is transferred between systems and devices • Understand and explain the input, output and process aspects of a variety of different real-world systems • Understanding what encryption is for and how it is used in modern technology • Understand how to create complex pieces of digital work using a variety of tools • Understand how to use variable to create a simulation of a scoreboard and design a game	• Class teacher showing children existing examples • Collaborate on creating and developing their own work online project	**TERM1:** Sharing Information • Explore how parts work within a system both in the analogue and digital world and explore how processes and devices are connected in systems • Recognise that data is transferred using agreed methods such as IP addresses and the rules (protocols) that computers have for communicating with one another • Work collaboratively on Google Slides to create a guide to looking after a zoo animal by communicating solely through the application	Most children will be able to... (working at)	Some children will not yet be able to...(working towards)	Some children are confidently able to... (exceeding)
Databases	• Create and edit content on digital applications • Use internet services to create content that presents information • Use internet services to create and evaluate content that presents information • Design and create content	• Class/group tuition with reference to existing databases						
Using the internet	• Use search technologies effectively • Be discerning in evaluating digital content • Be discerning in evaluating digital content	• Class/group internet browsing, followed by reflective discussion		• Teacher led creating and editing • Observing pre-existing master pieces and masters in the field	**TERM2:** Vector Drawing • Using Google Drawings, create Vector drawings • Use tools such as shape, fill, alignment and size guides, line colour and styles, zoom, layering, backgrounds and grouping to create a detailed Vector drawing.			
Problem solving	• Solve problems by decomposing them into smaller parts • Design programs that accomplish specific goals • Write programs that accomplish specific goals • Debug programs that accomplish specific goals • Use logical reasoning to detect and correct errors in algorithms and programs	• Class, then group opportunities for problem solving						
Communicating	• Understand the opportunities networks offer for communication and collaboration • Use a variety of software (including internet services) to present information	• Observational opportunities to work as part of a group		• Class teacher talk through programs and algorithms with opportunities to try different programs • Observing algorithms and debugging them	**TERM3:** Variables in Games • Using Scratch, design their own project including variables • Engage in unplugged tasks to demonstrate the process of changing variables • will apply the concept of variables to enhance an existing game in Scratch • Create a 'catching' game, which includes a score and at least three falling objects, each falling at a different speed, including own artwork, implement the algorithm as code.			
SMSC	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour • To know how to seek help – where to go, and how to set privacy settings • Recognise acceptable/ unacceptable behaviour • Knowing how to find out about website or game policies	• Teacher guidance on safe internet use and introduction to supportive websites (NSPCC)						