

Computing

Year 5 and 6

Autumn 2

Topic Programming						
Rationale Children within Tilery enjoy the practical aspects of learning and seeing this translate from a screen to something visual whether that be a functioning game/ animation or a BeeBot in the classroom we believe that this can inspire any future aspiring coders or animators we may have.						
NC Objective use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs						
Links to other Subject/Topics (Year A)				Links to other Subject/Topics (Year B) Making an invasion game using coding. Writing a set of instructions on how to use scratch or how to play the created game.		
Note that E Safety, although it is taught as a topic in computing it will be referred to throughout each lesson where computing is used.						
Inspiration for Aspiration Teacher, Social Worker, Teaching, programmer, engineer, technician, content creator, coder, web designer						
Year 4 Key Content Scratch <ul style="list-style-type: none"> What is Scratch and how is it used? What does a background look like in a Scratch game? How can I add inputs to control my sprite? What are conditional commands and how can I use them in my game? (if...then..) How can I add in timings to change their codes? How can I add in start or stop buttons within my codes? <p>Some aspects are revisited and progressed further within higher year groups.</p>		Key Content Year 5 <ul style="list-style-type: none"> How can I make the game have a clear winner? How can I design my own game including sprites, backgrounds, scoring and/or timers? How can I use external triggers and infinite loops to control sprites? What variables can I create or edit to improve my work? What conditional statements can I use? 			Year 6 Key Content <ul style="list-style-type: none"> What variables can I create or edit to improve my work? What conditional statements, loops, variables and broadcast messages can I use? How can I evaluate the effectiveness of the game and debug as required? 	
Concepts						
Programming	1	2	3	4	5	6
Scratch						
Purple Mash						
BeeBots						
Skills and Knowledge Year 4 <ul style="list-style-type: none"> design write and debug programs that accomplish specific goals, solve 		Skills and Knowledge Year 5 Pupils create a computer game, using a graphical language such as Scratch or Kodu			Skills and Knowledge Year 6 Pupils write a simple algorithm, for instance to create a basic traffic light sequence. They then	

<p>problems by decomposing them in smaller parts</p> <ul style="list-style-type: none"> • use sequence, selection and repetition in programs • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Using key features of Scratch to add in start stop features with the aims of a given purpose.</p>		<p>use flowcharting software (such as Scratch) to create a simple program to control an onscreen icon. They are able to explain how their program works</p>
<p>Vocab Year 4 Navigate, scratch, background, sprite, inputs, control, timings, codes, start/stop buttons, sequence, loop, project.</p>	<p>Vocab Year 5 Design, sprites, scoring, loops, control, create, edit, variables, programming, execute, debug.</p>	<p>Vocab Year 6 Create, loops, evaluate, effectiveness, debug, execution, design, testing, testing, algorithm, collaboration, improvement</p>
<p>By the end of this topic Year 4 children will be able to: Effectively debug programs such as Scratch in order to fix their sequences. Children will be able to use logical reasoning to explain how and what their sprites will be doing and when. Children will also be able to utilise the start/stop feature within Scratch.</p>	<p>By the end of this topic Year 5 children will be able to: Make a game which will have a clear winner complete with their own background and sprites. They should be able to add in scoring systems or timers. Children will be able to use external triggers and infinite loops to control sprites and use variables to edit their work.</p>	<p>By the end of the topic Year 6 children will: Know what variables are used to edit work to make improvements. Children will be able to use conditional statements, loops, variables or broadcast messages within their games, Children will be able to evaluate the effectiveness of the game as required.</p>
<p>Assessment Ongoing assessment of ability to use and explain Scratch. Write a set of instructions on how to use Scratch</p> <p>Example Children are to create a game with regards to the war, children could put their own spin on it, and must fully demonstrate the outcome of the war as the clear winner.</p>		