



YEAR 5 COMPUTING PROGRESSION IN SKILLS AND KNOWLEDGE STATUTORY REQUIREMENTS



AUTUMN N.C Objectives in bold	SPRING N.C Objectives in bold	SUMMER N.C Objectives in bold
<p><u>AUTUMN 1: USE LOGICAL REASONING TO EXPLAIN HOW SOME SIMPLE ALGORITHMS WORK AND TO DETECT AND CORRECT ERRORS IN ALGORITHMS AND PROGRAMS</u></p> <p><i>Coding – (unit 5.1 Purple Mash)</i></p> <ul style="list-style-type: none"> -To represent a program design and algorithm. -To create a program that simulates a physical system using decomposition. -To explore string and text variable types so that the most appropriate can be used in programs. -To use the Launch command in 2Code Gorilla -To program a playable game with timers and scorepad. <p><u>AUTUMN 2: USE SEQUENCE, SELECTION, AND REPETITION IN PROGRAMS; WORK WITH VARIABLES AND VARIOUS FORMS OF INPUT AND OUTPUT</u></p> <p><i>Spreadsheets (unit 5.3 Purple Mash)</i></p> <ul style="list-style-type: none"> -Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. -To copy and paste within 2Calculate. -Using 2Calculate tools to test a hypothesis. -To add a formula to a cell to automatically make a calculation in that cell. -Using a spreadsheet to model a real-life situation and answer questions. <p><u>USE TECHNOLOGY SAFELY, RESPECTFULLY AND RESPONSIBLY; RECOGNISE ACCEPTABLE/UNACCEPTABLE BEHAVIOUR; IDENTIFY A RANGE OF WAYS TO REPORT CONCERNS ABOUT CONTENT AND CONTACT</u></p> <p><i>Online safety (unit 5.2 Purple Mash)</i></p>	<p><u>SPRING 1: 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</u></p> <p><i>Databases – (unit 5.4 Purple Mash)</i></p> <ul style="list-style-type: none"> -To learn how to search for information in a database. -To contribute to a class database. -To create a database around a chosen topic. <p><u>SPRING 2: 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</u></p> <p><i>Game Creator – (unit 5.5 Purple Mash)</i></p> <ul style="list-style-type: none"> -To set the scene. -To create the game environment. -To create the game quest. -To finish and share the game. -To evaluate their and peers' games. 	<p><u>SUMMER 1: 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</u></p> <p><i>3D Modelling (Unit 5.6 Purple Mash)</i></p> <ul style="list-style-type: none"> -To be introduced to 2Design and Make and the skills of computer aided design. -To explore the effect of moving points when designing. -To understand designing for a purpose. To understand printing and making. <p><u>SUMMER 2: 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</u></p> <p><i>Concept Maps (Unit 5.7 Purple Mash)</i></p> <ul style="list-style-type: none"> -To understand the need for visual representation when generating and discussing complex ideas. -To understand and use the correct vocabulary when creating a concept map. -To create a concept map. -To understand how a concept map can be used to retell stories and present information.



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<p>-To gain a greater understanding of the impact that sharing digital content can have.</p> <p>-To review sources of support when using technology and children’s responsibility to one another in their online behaviour.</p> <p>-To know how to maintain secure passwords.</p> <p>-To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this.</p> <p>-To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.</p> <p>-To learn about how to reference sources in their work -</p> <p>To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information</p>		<p>-To create a collaborative concept map and present this to an audience.</p>
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KNOWLEDGE TO BE LEARNED BY THE END OF EACH UNIT (WHAT DO WE WANT THE CHILDREN TO KNOW AND REMEMBER?)

<p><u>AUTUMN 1</u> <u>Coding – (unit 5.1 Purple Mash)</u></p> <ul style="list-style-type: none"> • A simulation is a real life process replicated using a computer. • Decomposition is breaking a process down into manageable parts. • Abstraction is decluttering a program – removing unnecessary parts - to get the program functioning. • Friction can be used in a computer simulation to create more lifelike effects. [to slow objects down] 	<p><u>SPRING 1</u> <u>Databases – (unit 5.4 Purple Mash)</u></p> <ul style="list-style-type: none"> • A database is a set of data that can be held in a computer in a format that can be searched and sorted for information. • Data is a collection of information. • A field is the heading in a database record against which information is entered. • Sort Organising data by a rule such as alphabetical or numerical. 	<p><u>SUMMER 1</u> <u>3D Modelling (Unit 5.6 Purple Mash)</u></p> <ul style="list-style-type: none"> • CAD – Computer aided Design A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles. • Pattern Fill A tool where you can add a customised repeating pattern to the surface of the net. • Points The points on a 3D net which create the corners of the 3D shape.
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- A **function** is a chain of code that can be recalled. This means you don't need to keep rewriting sections of code.
- **Variables** are values in a program that can change during use e.g. numbers
- **String** – a sequence of characters in order – e.g. a word.
- **Concatenation** - linking a mixture of **strings, variable values** and numbers together in a series.

AUTUMN 1/2

Online safety (unit 5.2 Purple Mash)

- Sharing digital content can be very useful but also harmful if not done appropriately.
- It is very important to maintain secure passwords
- Manipulating digital photos can have advantages and disadvantages.
- Sharing inappropriate material online can have long-lasting negative effects.
- It is important to check the validity of material found online.

AUTUMN 2

Spreadsheets (unit 5.3 Purple Mash)

- Spreadsheets can be used to help record and analyse data
- Formulae can be used to complete mathematical problems quickly.

- **Statistics** The study and manipulation of data, including ways to gather, review, analyse, and draw conclusions from data.

SPRING 2

Game Creator – (unit 5.5 Purple Mash)

- **Animation** Creating an illusion of movement.
- **Customise** Modify (something) to suit an individual or task.
- **Interactive** Responding to a user's input on a computer or device.
- **Texture** High frequency detail or colour information on a computer-generated graphic.
- **Playability** A measure of either the ease by which a video game may be played, or of the overall quality of its gameplay

- **3D Printing** The action or process of making a physical object from a three dimensional digital model, typically by laying down many thin layers of a material in succession.
- **Template** Something that serves as a model for others to copy and edit.

SUMMER 2

Concept Maps (Unit 5.7 Purple Mash)

Concept An idea in the form of a question.

Concept Map A tool for organising and representing knowledge. They form a web of ideas which are all interconnected.

Node A way to represent concepts or ideas. Can contain text and/or an image.

Connection Represent a relationship or link between two nodes or ideas.



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Children working at below Age Related Expectations in COMPUTING at the end of Year 5: