



### Computing Subject Map - Y5

| Autumn 1                         |                                                                                                                                                                                 |                                                                                                                                                                             |                                                                                                                           |                                                                      |                         |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------|
| Project title: Dynamic Dynasties |                                                                                                                                                                                 |                                                                                                                                                                             |                                                                                                                           |                                                                      |                         |
| Lesson                           | Objective                                                                                                                                                                       | Skill                                                                                                                                                                       | Knowledge                                                                                                                 | Links to prior learning                                              | Big Idea links          |
| 1                                | <b>Online Safety</b><br>Gain a greater understanding of the impact that sharing digital content can have.<br>Review our responsibilities to each other in our online behaviour. | I can think critically about the information that they share online both about myself and others.<br>I know who to tell if I am upset by something that happens online.     | Children should think carefully about their actions when sharing digital content online with others.<br>SMART crew videos | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |
| 2                                | Show knowledge gained in my previous lesson to create a Comic Book showing advice given by the SMART Crew.                                                                      | I can discuss what I know about sharing information online.<br>I can create a comic strip to help others understand the need to be careful when sharing information online. | The children should be able to share their knowledge with others, using a comic strip 2Do created by teacher.             | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |
| 3                                | Understand how to maintain secure passwords.<br>Be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.                  | I know what a good password is.<br>I can think critically about what I share online.                                                                                        | Children should complete the Password Quiz (in their 2Dos).                                                               | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |



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| 4 | Understand the advantages of, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. | I can see how I can use images and digital technology to create effects not possible without technology.<br>I have observed how image manipulation could be used to upset myself and others. | The children should complete the Editing Images activities from the slides Activity 3)<br>Save work | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |
| 5 | Understand how to reference sources in my work.                                                                                 | I can cite all sources when researching.<br>I can select keywords and search techniques to find reliable information.                                                                        | The children should complete a Citations Writing Frame (2Dos)<br>Save work                          | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |
| 6 | Ensure reliability through using different methods of communication.                                                            | I can show an understanding of the advantages and disadvantages of different forms.                                                                                                          | Children to complete a Communication Dilemma (2Dos)                                                 | Reliable Sources<br>Search algorithms<br>Use of images<br>Plagiarism | Growth<br>Investigation |



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| Autumn 2                         |                                                                                                                 |                                                                                                                            |                                                                                                                                                         |                                                                                                                          |                      |
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| Project title: Dynamic Dynasties |                                                                                                                 |                                                                                                                            |                                                                                                                                                         |                                                                                                                          |                      |
| Lesson                           | Objective                                                                                                       | Skill                                                                                                                      | Knowledge                                                                                                                                               | Links to prior learning                                                                                                  | Big Idea links       |
| 1                                | <b>Hardware Investigators (Year 4 topic)</b><br>Understand the different parts that make up a desktop computer. | I can name the different parts of a desktop computer.<br>I know what the function of the different parts of a computer is. | Children should be introduced to the words 'Hardware' and 'software'.<br>They can then complete the Parts of a computer pairs game (Set as a 2Do)       | Use of 2Dos<br>An understanding of the software capabilities of devices that they can relate to the hardware components. | Growth Investigation |
| 2                                | See for ourselves the different parts of a computer                                                             | I can look at an old PC, or a part of an old PC, and think about how the parts fit together.                               | PRACTICAL LESSON.<br>The children should have the opportunity to look at the insides of some old PCs. (Ask the IT support to source these for teachers) | An understanding of the software capabilities of devices that they can relate to the hardware components.                | Investigation        |
| 3                                | Recall the different parts that make up a computer.                                                             | I can create a leaflet/PowerPoint to show the function of computer parts.                                                  | The children should be able to create either a leaflet or a PowerPoint about the different Parts of a computer.<br>Save work                            | An understanding of the software capabilities of devices that they can relate to the hardware components.                | Growth Investigation |
| 4                                | Recall the different parts that make up a computer.                                                             | I can continue to create a leaflet/PowerPoint to show the function of computer parts.                                      | The children should be able to create either a leaflet or a PowerPoint about the different Parts of a computer.<br>Save work                            | An understanding of the software capabilities of devices that they can relate to the                                     | Growth Investigation |



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|   |                                                             |                                                                                                              |                                                                                                                                                                                | hardware components.                 |                      |
| 5 | Create a presentation to accompany our project              | I can use PowerPoint to create a presentation about my project.<br>I can use Effective Searching techniques. | Children should be shown how to use the tools on a PowerPoint. (Choose a tool that they haven't looked at before)<br>They should create a PowerPoint.<br>Save Work             | Typing Skills<br>Effective Searching | Growth Investigation |
| 6 | Continue to create a presentation to accompany our project. | I can use PowerPoint to create a presentation about my project.<br>I can use Effective Searching techniques. | Children should be shown how to use the tools on a PowerPoint. (Choose a tool that they haven't looked at before)<br>They should continue to create a PowerPoint.<br>Save Work | Typing Skills<br>Effective Searching | Growth Investigation |



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| Spring Term 1                     |                                                                                                                            |                                                                                                                                                                            |                                                                                                                                                                          |                                                                       |                      |
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| Project title: Sow, Grow and Farm |                                                                                                                            |                                                                                                                                                                            |                                                                                                                                                                          |                                                                       |                      |
| Lesson                            | Objective                                                                                                                  | Skill                                                                                                                                                                      | Knowledge                                                                                                                                                                | Links to prior learning                                               | Big Idea links       |
| 1                                 | <b>Coding</b><br>Review existing coding knowledge.<br>Create a playable game                                               | I can use simplified code to make my programming more efficient.<br>I can use variables in my code.<br>I can create a simple playable game.                                | Review existing knowledge of coding.<br>Children can start to create a simple playable game using prior knowledge.                                                       | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |
| 2                                 | Understand what a simulation is.<br>Program a simulation using 2Code.                                                      | I can plan an algorithm modelling the sequence of traffic lights.<br>I can select the right images to reflect the simulation I am making.                                  | Build on previous knowledge to create playable simulations and games.                                                                                                    | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |
| 3                                 | Understand what decomposition and abstraction are in Computer Science.<br>To use decomposition and abstraction in my work. | I can make good attempts to break down my task into smaller, achievable steps.<br>I can recognise the need to start coding at a basic level to remove superfluous details. | Children should think carefully about what code and objects are need in order to create a program.<br>They should encounter the words 'decomposition' and 'abstraction'. | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |
| 4                                 | Understand how to use friction code.<br>Begin to understand what a function is and how functions work in code.             | I can create a program which represents a physical system.<br>I can create and use functions in my code to make it more efficient.                                         | Build on previous knowledge to create playable simulations and games. Children should think about how they can create and use functions in their program.                | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |



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| 5                                                                               | Understand what the different variable types are and how they are used differently.<br>Create a 'string'.     | I can create and use 'strings' in programming.<br>I can set/change variable values appropriately.<br>I know some ways that text variables can be used in coding. | Build on previous knowledge to create playable simulations and games.<br>The children should be introduced to 'strings' in programming.                                              | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |
| 6                                                                               | Begin to explore text variables when coding.<br>Begin to understand what 'concatenation' is and how it works. | I can create a string and use it in my program.<br>I can use strings to produce a range of outputs in my program.                                                | Build on previous knowledge to create playable simulations and games.<br>The children should be use 'strings' in programming. They should begin to understand what concatenation is. | Code, test, debug process<br>Variables<br>Sequencing in logical steps | Growth Investigation |
| <b>SAFER INTERNET DAY LESSON – USE SAFER INTERNET DAY WEBSITE FOR RESOURCES</b> |                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                                      |                                                                       |                      |



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| Spring Term 2                     |                                                                         |                                                                                                                                      |                                                                                                                                                                                                                                            |                                                                                                                      |                      |
|-----------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------|
| Project title: Sow, Grow and Farm |                                                                         |                                                                                                                                      |                                                                                                                                                                                                                                            |                                                                                                                      |                      |
| Lesson                            | Objective                                                               | Skill                                                                                                                                | Knowledge                                                                                                                                                                                                                                  | Links to prior learning                                                                                              | Big Idea links       |
| 1                                 | <b>Databases</b><br>Know how to search for information on a database.   | I can understand the different ways to search a database.<br>I can search a database to answer questions correctly.                  | The children should understand what a database is and how they are used in everyday life. i.e. Integris in school, stock control in supermarkets and stores etc.<br>They should be able to search a database to find answers to questions. | Inputting and interrogating data.<br>Presenting data<br>Share work<br>Copying and Pasting<br>Saving and opening work | Growth Investigation |
| 2                                 | Explore the sample databases to understand what fields and records are. | I can explore sample databases.<br>I know what fields and records are in databases.<br>I can edit/or add a new record to a database. | The children should be given the chance to explore the sample databases and add records to one of their choice.                                                                                                                            | Inputting and interrogating data.<br>Presenting data<br>Share work<br>Copying and Pasting<br>Saving and opening work | Growth Investigation |
| 3                                 | Contribute to a class database.                                         | I can create an avatar for the class database.<br>I can enter information into a class database.                                     | The children should be able to enter data into a class database that has been created for them in order to work collaboratively.                                                                                                           | Inputting and interrogating data.<br>Presenting data<br>Share work<br>Copying and Pasting<br>Saving and opening work | Growth Investigation |



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| 4 & 5 | Create a database around a chosen topic.                                             | I can create my own database on a chosen topic.<br>I can add records to this database.<br>I know what a database field is and can add information. | The children should be able to create a database using a topic of their choice. They should create a minimum of eight records and should ensure that each record has at least six fields. They can share their finished work with others. | Inputting and interrogating data.<br>Presenting data<br>Share work<br>Copying and Pasting<br>Saving and opening work | Growth<br>Investigation |
| 5     | <b>Animation (Year 4 Unit 4.6)</b><br>Create an animation to show how a plant grows. | I can create an animation using 2Animate.<br>I can use 2Animate carefully to show in detail how a plant grows.                                     | The children should understand how to use 2Animate. They should create a detailed animation of how a plant grows.<br>Save work                                                                                                            | Use of tools in 2Animate<br>Drawing skills<br>Add sounds, backgrounds and effects to their animation.<br>Sequence    | Growth                  |
| 6     |                                                                                      |                                                                                                                                                    |                                                                                                                                                                                                                                           |                                                                                                                      |                         |



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| Summer 1                              |                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                           |                                                                                           |                      |
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| Project title: Ground-breaking Greeks |                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                           |                                                                                           |                      |
| Lesson                                | Objective                                                  | Skill                                                                                                                                                       | Knowledge                                                                                                                                                                                                                                 | Links to prior learning                                                                   | Big Idea links       |
| 1                                     | <b>Game Creator (My Game)</b><br>Explore the 2DIY 3D tool. | I can explore the 2DIY 3D tool.<br>I can describe some of the elements that make a successful game.                                                         | The children should be given the opportunity to explore the 'Showcase Games' in the 2DIY 3D tool in order to evaluate them and decide what kind of game they would like to create.                                                        | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |
| 2                                     | Design the game environment.                               | I can design a setting for my game so that it fits the selected theme.<br>I can upload images or use the drawing tools to create the walls, floor and roof. | The children should decide what the theme of their game is going to be. They should then create the game environment, including the walls, floor and roof to fit with the theme.<br>Videos available to show the children how to do this. | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |
| 3                                     | Design the game quest to make it a playable game.          | I can design characters for my game.<br>I can decide upon, and change, the animations and sounds that the characters make.                                  | The children should start to create their game. They should decide which characters they would like on the level they are creating.<br>Videos available to show the children how to do this.                                              | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |



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| 4 | Continue designing the game quest to make it a playable game.                        | I can design characters for my game.<br>I can add levels to make it an interesting game.<br>I can decide upon, and change, the animations and sounds that the characters make.      | The children should continue to create their game. They should decide which characters they would like on the level they are creating.<br>Videos available to show the children how to do this.                          | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |
| 5 | Continue creating the games we created.<br>Start to write instructions for the game. | I can make my game unique by the selections I have made.<br>I can edit my work in order to improve the game.<br>I can start to write instructions so that others can play the game. | The children should continue to create and edit their game. They should start to add instructions so that others can play the game.<br>Videos available to show the children how to do this.                             | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |
| 6 | Self and Peer evaluate.                                                              | I can evaluate my own game.<br>I can evaluate peers' games.                                                                                                                         | The children should be given the opportunity to play their own games and to play their peers' games and evaluate them<br>Can they complete all of the levels?<br>What did they like?<br>How could the games be improved? | Sequencing to create different environments.<br>Copying and pasting<br>Save and open work | Growth Investigation |



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| Summer 2                              |                                                                               |                                                                                                                                                       |                                                                                                                                                                                                                                        |                                                                             |                         |
|---------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------|
| Project title: Ground-breaking Greeks |                                                                               |                                                                                                                                                       |                                                                                                                                                                                                                                        |                                                                             |                         |
| Lesson                                | Objective                                                                     | Skill                                                                                                                                                 | Knowledge                                                                                                                                                                                                                              | Links to prior learning                                                     | Big Idea links          |
| 1                                     | <b>Online Safety Recap</b><br>Staying safe on Social Media                    | I can name different social media platforms.<br>I can discuss why I need to stay safe when on social media.                                           | Have a class discussion on how to stay safe when on social media. Reiterate that they do not have to agree to have their photo shared with others. Explain that the pressures may change as they go to Secondary School.               | Online Safety                                                               | Growth<br>Change        |
| 2                                     | <b>3D Modelling</b><br>Understand what the 2Design and Make tool is used for. | I know what the 2Design and Make tool is used for.<br>I can explore 2Design and Make.<br>I can design a building using one of the templates provided. | Discuss what Design is and where it is used in the wider community (careers etc)<br>They should design a building using one of the building templates available.<br>Save work<br>Videos available to show the children how to do this. | Themed art<br>Art in 3D<br>Animation<br>Use of tools to create backgrounds. | Growth<br>Investigation |
| 3                                     | Explore the effects of moving points when designing.                          | I can adapt one of the vehicle models by moving the points to alter the shape whilst maintaining its form.                                            | The children should design a vehicle using one of the templates provided. They should move the points to alter its shape.<br>Save work<br>Videos available to show the children how to do this.                                        | Themed art<br>Art in 3D<br>Animation<br>Use of tools to create backgrounds. | Growth<br>Investigation |



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| 4 | Design a 3D model to fit certain criteria.         | I can explore how to edit the polygon 3D models to design a model for a purpose. | The children should edit a polygon 3D model to design a shape for a given purpose. Children should be advised what the purpose is. (Maybe packaging for something)<br>Save work<br>Videos available to show the children how to do this. | Themed art<br>Art in 3D<br>Animation<br>Use of tools to create backgrounds. | Growth<br>Investigation |
| 5 | Refine a saved 3D model                            | I can edit a saved 3D model.<br>I can decide what the 3D model will be used for. | Open saved work.<br>The children should edit a saved piece of work that they want to be printed. (When completed)<br>Save work<br>Videos available to show the children how to do this.                                                  | Themed art<br>Art in 3D<br>Animation<br>Use of tools to create backgrounds. | Growth<br>Investigation |
| 6 | Refine and finish my 3D model ready to be printed. | I can finish my 3D model.<br>I can save my work in a shared area.                | The children should complete their work and save in a shared area so that the teacher can print it.                                                                                                                                      | Themed art<br>Art in 3D<br>Animation<br>Use of tools to create backgrounds. | Growth                  |