# Computing
## Fairfield Spencer Academy

| Statutory Framework for EYFS | | |
|---|---|---|
| Personal, Social and Emotional Development | Self-regulation | - Show an understanding of their own feelings and those of others, and begin to regulate their behaviour accordingly. |
| | Managing self | - Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.<br>- Explain the reasons for rules, know right from wrong and try to behave accordingly. |
| | Building relationships | - Show sensitivity to their own and to others' needs. |

## National Curriculum

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|

| Year 1 / Year 2 | Year 3 – Year 6 |
|---|---|
| 1.1 - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions<br>1.2 - Create and debug simple programs<br>1.3 - Use logical reasoning to predict the behaviour of simple programs<br>1.4 - Use technology purposefully to create, organise, store, manipulate and retrieve digital content<br>1.5 - Recognise common uses of information technology beyond school<br>1.6 - Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. | 2.1 - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts<br>2.2 - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output<br>2.3 - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs<br>2.4 - 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<br>2.5 - Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content<br>2.6 - 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<br>2.7 - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. |

## Digital Literacy

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|
| **Context:** Technology around us Recognising technology in school and using it responsibly.<br>NC Content: 1.4, 1.5, 1.6 | **Context:** IT around us Identifying IT and how its responsible use improves our world in school and beyond.<br>NC Content: 1.4, 1.5, 1.6 | **Context:** Connecting Computers Identifying that digital devices have inputs, processing, and outputs, and how devices can be connected to make networks.<br>NC Content: 2.2, 2.4, 2.6 | **Context:** The internet - Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.<br>NC content:<br>2.4, 2.5, 2.6, 2.7<br>, | **Context:** Sharing Information - Identifying and exploring how information is shared between digital systems.<br>NC Content: 2.1, 2.2, 2.4, 2.6, 2.7 | **Context:** Communication - Selecting reliable websites to research the life and discoveries of Charles Darwin Recognising how the World Wide Web can be used to communicate and be searched to find information. NC content: 2.4, 2.5, 2.6 |

| Information Technology | | | | | |
|---|---|---|---|---|---|
| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Context**: Digital painting -Choose appropriate tools in a program to create art, and making comparisons with working non-digitally. NC Content: 1.4 | **Context:** Digital photography - Capturing and changing digital photographs for different purposes NC Content: 1.4, 1.5 | **Context:** Stop-frame Animation - Capturing and editing digital still images to produce a stop-frame animation that tells a story. NC Content: 2.6 | **Context**: Audio editing - To create a podcast about birds - Capturing and editing audio to produce a podcast, ensuring that copyright is considered. NC content:2.5, 2.6, 2.7 | **Context:** To create and edit a video - planning, capturing and editing video to produce a short film. NC Content 2.5, 2.6, 2.7 | **Context:** To plan and create our own 3D model using computer software - planning, developing and evaluating 3d computer models of physical objects National Curriculum content: 2.1, 2.2 |
| **Context:** Digital Writing - Using a computer to create and format text, before comparing to writing non-digitally. NC Content: 1.1, 1.2, 1.3, 1.5 | **Context:** Making Music - Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. NC Content: 1.4 | **Context:** Desktop Publishing - Creating documents by modifying text, images, and page layouts for a specified purpose. NC Content: 2.5, 2.6 | **Context:** To edit a photo to improve its aesthetic - manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled. NC content: 2.5, 2.6, 2.7 | **Context:** To create a vector drawing - images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. NC Content 2.6 | **Context:** Creation of website to raise awareness of heart - designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. National Curriculum content: 2.1, 2.4, 2.5, 2.7 |
| **Context:** Grouping Data - Exploring object labels, then using them to sort and group objects by properties. NC Content: 1.4 , 1.6 | **Context:** Pictograms - Collecting data in tally charts and using attributes to organise and present data on a computer. NC Content:1.4, 1.6 | **Context:** Branching Databases Building and using branching databases to group objects using yes/no questions. NC Content: 2.6 | **Context:** Accurately collect and record data of science experiments. Recognising how and why data is collected over time, before using dataloggers to carry out an investigation. NC content: 2.2, 2.6 | **Context:** Flat File Databases - Using a database to order data and create charts to answer questions NC. Content 2.5, 2.6 | **Spreadsheets** **Context:** Using spreadsheets to compare data from the World Wars - Answering questions by using spreadsheets to organise and calculate data. National Curriculum content: 2.5, 2.6 |

| Computer Science | | | | | |
|---|---|---|---|---|---|
| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Context:** Moving a Robot - Writing short algorithms and programs for floor robots, and predicting program outcomes. NC Content: 1.4 , 1.6 | **Context:** Robot Algorithms - Creating and debugging programs, and using logical reasoning to make predictions. NC Content: 1.1, 1.2, 1.3, 1.4 | **Context:** Sequence in Music - Creating sequences in a block-based programming language to make music. NC Content: 2.1, 2.2, 2.3, 2.6 | **Context:** Create a code to build shapes - Using a text-based programming language to explore count-controlled loops when drawing shapes. NC content: 2.1, 2.2, 2.3, 2.6 | **Context-** To create a digital retrieval practice quiz - Exploring selection in programming to design and code an interactive quiz. NC Content: 2.1, 2.2, 2.3, 2.6 | **Context:** Creating adventure games using coding - Exploring variables when designing and coding a game NC content: 2.1, 2.2, 2.3 |
| **Context:** Introduction to Animation - Designing and programming the movement of a character on screen to tell stories. NC Content: 1.1, 1.2, 1.3, 1.4 | **Context:** An Introduction to Quizzes - Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. NC Content: 1.1, 1.2, 1.3 | **Context:** Events and Actions - Writing algorithms and programs that use a range of events to trigger sequences. NC Content: 2.1, 2.2, 2.3, 2.6 | **Context:** Create a code to build a game - Using a block-based programming language to explore count-controlled and infinite loops NC content: 2.1, 2.2, 2.3,2.6 | **Context -** Selection in physical computing - learn how to connect and program components (including output devices- LEDs and motors) through the | **Context**: Creating adventure games using coding -Designing and coding a project that captures inputs from a physical device. NC content: 2.1, 2.2, 2.3 |

| | | | | application of their existing programming knowledge. NC. Content 2.1, 2.2, 2.3, 2.6 | |
|---|---|---|---|---|---|
| | | | **National Online Safety** | | |
| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Context:** Self-image and identity (1) How you feel online. What makes you feel sad, embarrassed or upset? (2)What can I do if something makes me feel sad, worried, uncomfortable or frightened?<br><br>**Context**: Online relationships (2) What does permission mean? (3) When to ask for permission.<br><br>**Context:** Online reputation (1) What should I not share online?<br>**Context:** Online bullying (1) Being kind online<br><br>**Context:** Managing online information (1) Learning online (2) The main parts of a web page.<br><br>**Context:** Health, wellbeing and lifestyle (1) Being healthy online | **Context**: Self image and identity (3) What I want to look like online. (4) Who are my trusted adults?<br><br>**Context:** Online relationships (1) Online Friends. (4) Things that happen online can affect our relationships in real life<br><br>**Context:** Online reputation (2) How long does information stay online? (3) Sharing information online, Do I know who to talk to if something has been put online without my consent or if it is incorrect?<br><br>**Context:** Online bullying (2) What is bullying and what might it look like?<br><br>**Context:** Managing online information (3) I can understand if something is real or make belief. Using simple words in search engines.<br><br>**Context:** Privacy and security (1) Private information and passwords<br><br>**Context:** Copyright and ownership (1) Detailed personal information, if I have a copy of it then does it belong to me? | **Context:** Self-image and identity (1) Avatars – how people look online (2) What is identity?<br><br>**Context:** Online relationships (1) Friend match – safely connecting with people online<br><br>**Context:** Online reputation (1) Celebrity bodyguards – it is easy to find information about people online and information can be copied, created, edited and shared by others.<br><br>**Context:** Online bullying (1) Anti-bullying pledge<br><br>**Context:** Managing online information (1) Using search engines<br><br>**Context:** Health, wellbeing and lifestyle (1) Ways in which technology can sometimes distract them from other things they might or should be doing.<br><br>**Context:** Privacy and security (1) Information which is personal should not be shared with others.<br><br>**Context:** Copyright and ownership (1) Ownership - Work they have created the importance of respecting work created by others | **Context:** Self-image and identity (3) Game show – identifying what is true or false identity information<br><br>**Context:** Online relationships (2) Using emojis and acronyms (3) The difference between online and in life friends<br><br>**Context:** Managing online information (2) Fact, belief or opinion – judging online content.<br><br>**Context:** Health, wellbeing and lifestyle (2) Screen time<br><br>**Context:** Privacy and security (2) Connected devices - devices can be connected to each other and information that is present on one device will also be present on other devices (3) Passwords – correct use<br><br>**Context:** Copyright and ownership (2) Ownership and the internet | **Context:** Self-image and identity (4) My online profile - understand that identity online can be copied, modified or altered<br><br>**Context:** Online relationships (4) Being respectful online (5)Stay safe and have fun<br><br>**Context:** Online reputation (2) Class discussion - information posted about them online forms part of their digital footprint and goes towards establishing their online identify.<br><br>**Context:** Online bullying (2) Ask 5 – Answering questions to show a good understanding of online bullying.<br><br>**Context:** Health, wellbeing and lifestyle (3) Age regulated content.<br><br>**Context:** Privacy and security (4) Fake profiles and false identities<br><br>**Context:** Copyright and ownership (3) Understanding copyright and plagiarism. | **Context:** Self-image and identity (5) Gender and stereotypes<br><br>**Context:** Online relationships (6) Our online guides – safety measures to maintain privacy online (7) Handy hints - respect to others online and making a positive contribution in a range of social environments<br><br>**Context:** Online reputation (3) Making positive contributions online.<br><br>**Context:** Online bullying (3) Homework activity – looking at the apps / games they are using on their devices at home and research how to block people or content that might be harmful.<br><br>**Context:** Privacy and security (5) What app? - some of the apps may collect and share private information. |