# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| | Autumn | Spring | Summer |
|---|---|---|---|
| **EYFS** | | | |
| **Year 1** | **Computer Science**—Beebots/ Bluebots on algorithms and simple programs.<br><br>**Cross curricular links: IT – Digital Media**<br><br>*Animation showing seasonal change* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross curricular links: IT – Digital Media**<br><br>*Chatterkid app to take a picture, record voice and record a short video* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross curricular links: IT – Digital Media**<br><br>*Pic Collage app to manipulate images in the style of Andy Warhol* |
| **Year 2** | **Computer Science**—Algorithms, programming (Daisy the Dinosaur) and simple coding.<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Thaumatrope stop motion animation/ augmented reality with Quiver app  linked to Science* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Making a short video on a trip to a castle* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Garage Band app creating loops.* |
| **Year 3** | **Computer Science**—Algorithms, programming and block coding for Scratch Jnr.<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Brushes app to edit and improve digital content* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Garage band app making a track using a range of instruments to create composition* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Use iMovie to edit and create a video using o range of digital content* |
| **Year 4** | **Computer Science**—Algorithms and programming, writing, editing and debugging.<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Music lab creating and editing composition* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Stop motion animation* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Use iMovie to edit and create a video using o range of digital content* |
| **Year 5** | **Computer Science**—Algorithms and programming, writing, editing and debugging, including using repetition and loops.<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Create wanted poster using a range of digital content* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Create podcast using audacity software or video broadcast using a green screen* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Short stop motion animation using different camera angles* |
| **Year 6** | **Computer Science**—Algorithms and programming, writing, editing and debugging, including using repetition, loops and variables.<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Design an animation GIF using pivot animator* | **Information Technology (IT) Digital Media (Text/ Images/ Multimedia)**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Create podcast using audacity software or video broadcast using a green screen* | **Information Technology (IT) Computer systems and networks (Technology Around Us and Digital Data Handling**<br><br>**Cross Curricular Links: IT – Digital Media**<br><br>*Use iMovie to edit and create a video using a range of digital content* |

# Staniland Academy 2021-2022 Overview

# Computing/ ICT

| EYFS Term | Autumn | Spring | Summer |
|---|---|---|---|
| Theme N.C PoS | Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. It is important that all staff understand that ICT in early years is not restricted to using a computer or lap-top. | | |
| Skills to be covered | **Digital Literacy (Online Safety):**<br>• Recognise the internet can be used to communicate with others in a variety of ways<br>• Identify ways information can be put on the internet<br>• Describe how some people can be unkind and what makes someone a good friend<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Recognise the basic parts of a computer, e.g. mouse, screen, keyboard<br>• Recognise key parts of a keyboard, e.g. spacebar, numbers, letters<br>• Use a simple password when logging on, where relevant<br>• Use a mouse, touchscreen or appropriate access device to target and select options on screen<br><br>**Information Technology (Digital Media):**<br>• Use technology to explore digital content<br>• Operate a digital device with support to fulfil a task<br>• Create simple digital content e.g. digital art<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Know that information can be private or public and they can identify examples of personal information e.g. name, age<br>• Identify rules that help keep them safe and healthy in and beyond the home when using technology.<br>• Use the internet with adult support and know what not to share with others online<br>• Recognise inappropriate content and know to tell an appropriate trusted adult<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Recognise and use different digital devices<br>• Understand that you can access content on a digital device<br><br>**Information Technology (Digital Media):**<br>• Choose a digital device from a selection to complete a specific task<br>• Choose media to convey information, e.g. image for a poster<br>• Access and playback captured digital content<br><br>**Information Technology (Digital Data Handling):**<br>• Able to sort objects into 1 or more categories<br>• Able to answer basic questions about information displayed in images e.g. more or less<br>• Collect simple data on a topic e.g. likes/dislikes<br>• Able to present simple data using images e.g. number of animals, shapes | **Digital Literacy (Online Safety):**<br>• Identify how devices connected to the internet can be used to find things out and give examples eg. voice activated Smart Speakers<br>• They can name their work so others know it belongs to them<br>• Use the internet to find a picture<br><br>**Computer Science:**<br>• Explore technology<br>• Repeat an action with technology to trigger a specific outcome<br>• Follow simple instructions to control a digital device<br>• Input a short sequence of instructions to control a device<br>• Can order the steps of a known task<br>• Recognise the success or failure of an action<br>• Try alternative approaches to achieve a goal<br>• Understand that we control computers<br>• Recognise patterns in groups of objects<br><br>**Information Technology (Computer Systems and Networks):**<br>• Add text to a document using the keyboard (where appropriate)<br>• Understand you can access the same content on different devices<br>• Understand that information and media can be stored on a digital device, e.g. they ask to view a photo that has been taken on a tablet<br><br>**Information Technology (Digital Media):**<br><br>**Information Technology (Digital Data Handling):** |

# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| Year 1 Term | Autumn | Spring | Summer |
|---|---|---|---|
| Theme N.C PoS | **Computer Science:**<br>• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions<br>• Create and debug simple programs<br>• Use logical reasoning to predict the behaviour of simple programs<br>**Information Technology:**<br>• Use technology purposefully to create, organise, store, manipulate and review digital content<br>**Digital Literacy/ Online Safety:**<br>• Recognise common uses of technology beyond school<br>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. | | |
| Skills to be covered | **Digital Literacy (Online Safety):**<br>• Identify rules to keep safe and healthy when using technology in and beyond the home.<br>• Give examples of rules to keep safe and healthy when using technology in and beyond the home<br>• Discuss what are the benefits from the rules to keep safe and healthy when using technology in and beyond the home<br><br>**Computer Science:**<br>• Know that people interact with computers<br>• Understand that computers need precise instructions.<br>• Understand that programs run by following precise instructions<br>• Can run check and change programs<br>• Understand what an algorithm is and is able to represent algorithms using symbols<br>• Begins to develop care and precision to avoid errors with algorithms<br>• Know that computers have no intelligence and that computers can do nothing unless a program is run<br>• Know that all software executed on digital devices is programmed<br>• Know that digital content can be represented in many forms<br>• Knows that users can develop their own programs and demonstrate this using programmable robots<br><br>**Information Technology (Computer Systems and Networks):**<br>• Name a range of digital devices in the classroom<br>• Understand that you can share digital content<br>• Explain what the basic parts of a computer are used for, e.g. mouse, screen, keyboard<br>• Recognise and use a range of output devices e.g. printer, speakers, monitor, screen<br>• Use a simple password when logging on, where relevant<br>• Recognise and use a range of input devices e.g mouse, keyboard, microphone, touchscreen<br><br>**Information Technology (Digital Media):**<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Recognise that there may be people who could make them feel sad or upset and give examples of when and how to speak to an adult they trust<br>• Use the internet with adult support to communicate with others they know and explain why it is important to be kind and considerate to others<br>• Ask a trusted adult about what should be put online as they recognise that information ca stay online and be copied<br>• Use the internet to find things out<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Understand that you can find information on a website<br>• Understand that you can use a search engine to find information using keyword searches<br><br>**Information Technology (Digital Media):**<br>• Explore the keyboard to write and add text on a computer and remove text by using backspace<br>• Make changes to text and explain why you chose the tools you use<br>• Compare writing on a computer and writing on paper and can say which you prefer<br>• Know how to capture media (digital images, video or audio) using digital devices<br>• Begin to select basic options to change the appearance of digital content<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Recognise personal information and explain why they should ask a trusted adult before putting information online<br>• Know that the work they create belongs to them<br>• Name their work so others know it belongs to them<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Know where to save and open work<br>• Recognise that a range of devices contain computers e.g. washing machine, car, laptop<br>• Understand that all devices, program, websites, apps and games are designed and manufactured by real people to fulfill specific tasks<br><br>**Information Technology (Digital Media):**<br>• Know how to create digital content using the tools within a simple art or writing package<br>• Combine media with support to present information e.g. text and images<br>• Access and edit captured digital content<br><br>**Information Technology (Digital Data Handling):**<br>• Recognise that digital content can be represented in many forms e.g. charts, tables, or branching databases; and why we use them<br>• Distinguish between different forms of data representation and can explain different ways that they can communicate information<br>• Use specific software to create simple charts<br>• Collect data on a topic (eye colour, pets, etc)<br>• Create a branching database using pre-prepared images and questions<br>• Identify an Identify an object by asking yes/no questions object using a branching database<br>• Explain information shown in a simple chart, pictogram or database |

# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| Year 2 Term | Autumn | Spring | Summer 2 |
|---|---|---|---|
| Theme N.C PoS | **Computer Science:** <br>• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions <br>• Create and debug simple programs <br>• Use logical reasoning to predict the behaviour of simple programs <br>**Information Technology:** <br>• Use technology purposefully to create, organise, store, manipulate and review digital content <br>**Digital Literacy/ Online Safety:** <br>• Recognise common uses of technology beyond school <br>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. | | |
| Skills to be covered | **Digital Literacy (Online Safety):** <br>• Identify rules to keep safe and healthy when using technology in and beyond the home and suggest devices connected to the internet in their homes <br>• Recognise how to use technology responsibly <br>• Describe how those rules help them stay safe <br>• Give examples of issues online that might make them feel sad, worried, uncomfortable or frightened and can give examples of how they might get help <br><br>**Computer Science:** <br>• Understand that algorithms are implemented on digital devices as programs <br>• Begins to use arithmetic operators, if statements and loops within programs <br>• Can use logical reasoning to predict outcomes and the behaviour of programs <br>• Begins to use simple algorithms using loops, (repeats), and selection (if statements) <br>• Find and correct simple errors ie debugging, in algorithms <br>• Find and correct simple errors ie debugging, in programs <br>• Know that computers have no intelligence and that computers can do nothing unless a program is run <br>• Know how programs specify the function of a general purpose computer <br><br>**Information Technology (Computer Systems and Networks):** <br><br>**Information Technology (Digital Media):** <br>• Plan out digital content e.g. use a storyboard to sequence an animation <br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):** <br>• Give examples of how they can use technology to communicate with others <br>• Explain how information put online about them or by them can last a long time and be seen by others <br>• Give examples of how bullying online might look; how someone might feel and where someone can get help <br><br>**Computer Science:** <br><br>**Information Technology (Computer Systems and Networks):** <br>• Identify examples of computers and describe some uses of computers <br>• Explain the purpose of information technology in the home <br>• Identify information technology beyond school giving examples <br><br>**Information Technology (Digital Media):** <br>• Know how to edit digital content to improve it <br>• Apply edits to digital content to achieve a particular effect <br>• Identify what makes good or bad digital content, e.g. poor sound recordings, unfocussed images <br>• Select media with support to present information on a topic e.g. images, video, sound <br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):** <br>• Use keywords in search engines and explain why some information online may not be true <br>• Describe and explain rules for keeping information private such as passwords <br>• Recognise that content online may belong to other people <br><br>**Computer Science:** <br><br>**Information Technology (Computer Systems and Networks):** <br>• Explain how information technology benefits us - demonstrate how information technology is used in a shop and explain how information technology helps people <br>• List different uses of information technolog recognising how to use information technology responsibly <br>• Identify the choices that are made when using information technology <br><br>**Information Technology (Digital Media):** <br><br>**Information Technology (Digital Data Handling):** <br>• Recognise different types of data e,g, text, number <br>• Appreciate that programs can work with different types of data <br>• Recognise that data can be structured in tables to make it useful <br>• Present data in a pictogram independently <br>• Independently plan out and create a branching database <br>• Recognise an error in a branching database <br>• Evaluate a given branching database and suggest improvements <br>• Understand that questions are important when collecting data |

# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| Year 3 Term | Autumn | Spring | Summer |
|---|---|---|---|
| Theme N.C PoS | **Computer Science:**<br>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts<br>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output<br>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs<br>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>**Information Technology:**<br>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content<br>• 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>**Digital Literacy:**<br>• Understand the opportunities (networks) offer for communication and collaboration<br>• Be discerning evaluating digital content<br>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| Skills to be covered | **Digital Literacy (Online Safety):**<br>• Explain identity and how they can represent themselves in different ways online such as using an avatar<br>• Describe how people can get together online and explain some risks of communicating with others online which is different from knowing someone in real life<br>• Know what cyberbullying is and can describe rules about how to behave online<br><br>**Computer Science:**<br>• Design solutions (algorithms) that use repetition and two way selection i.e. if, then and else<br>• Create programs that implement algorithms to achieve given goals<br>• Use diagrams to express solutions<br>• Declare and assign variables<br>• Use logical reasoning to predict outputs, showing awareness of inputs<br>• Use post tested loops e.g. 'until', and a sequence of selection statements in programs including an if, then and else statement<br>• Know that users can write their own programs<br>• Use a range of input and output devices<br>• Know that a range of digital devices can be considered a computer<br><br>**Information Technology (Computer Systems and Networks):**<br>• Explain that digital devices accept inputs and produce outputs<br>• Identify input and output devices<br><br>**Information Technology (Digital Media):**<br>• Know how to edit digital content to improve it with clear purpose<br>• Edit digital content to improve it according to feedback<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Know who to ask if unsure about uploading content about themselves or others and can search for themselves online<br>• Understand why passwords are important and should be kept private<br>• Explain why they should only share information with people they know and trust and if unsure to ask a trusted adult.<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Recognise and explain how digital devices can be used for different activities<br>• Suggest differences between using digital devices and non-digital tools<br>• Explain how a computer network can be used to share information using multiple connections<br>• Explore how digital devices can be connected and explain the role of a switch, server, and wireless access point in a network<br>• Identify the physical components of a network and describe the benefits of a network<br><br>**Information Technology (Digital Media):**<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Explain why they should not copy someone else's work from the internet without permission<br>• Use key phrases in search engines with awareness of belief, fact and opinion as well as explain how the internet is used to buy and sell things<br>• Explain why too much time using technology can have a negative impact such as spending time engaged with games and videos<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br><br>**Information Technology (Digital Media):**<br>• Select media independently to present information on a topic e.g. text, images, video, sound<br>• Design and create digital content for a specific purpose<br>• Evaluate their own and existing digital content<br><br>**Information Technology (Digital Data Handling):**<br>• Appreciate that different programs work with different types of data e.g. text, number<br>• Able to explore a record database to find out information<br>• Understand the benefits of using a computer to create charts and databases<br>• Understand that search engines store information in databases<br>• Begin to present data in a number of ways to convey information<br>• Enter data into a a database package and test |

# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| Year 4 Term | Autumn | Spring | Summer |
|---|---|---|---|
| Theme N.C PoS | **Computer Science:**<br>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts<br>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output<br>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs<br>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>**Information Technology:**<br>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content<br>• 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>**Digital Literacy:**<br>• Understand the opportunities (networks) offer for communication and collaboration<br>• Be discerning evaluating digital content<br>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| Skills to be covered | **Digital Literacy (Online Safety):**<br>• Describe strategies to be safe and have fun when using online social environments; giving examples of how to be respectful to others online<br>• Explain how their online identity can be different to real life and describe the right decisions how they interact with others online<br>• Describe how others can find information about them online and explain ways that some information could be created, copied or shared by others<br>• Identify some online media technologies such as image, video, text and chat where bullying might take place and the need to consider others feelings<br><br>**Computer Science:**<br>• Show awareness of tasks best completed by humans or computers<br>• Know the difference between if, if then and else statements<br>• Appropriately use if, if then and else statements<br>• Design solutions by decomposing a problem and create a sub-solution for each of these parts (decomposition)<br>• Design, write and debug modular programs using procedures<br>• Know that different solutions exist for the same problem<br>• Know that procedure can be used to hide the detail with sub-solution (procedural abstraction)<br>• Know that computers collect data from various input devices, including sensors and application software<br>• Able to declare and assign variables<br><br>**Information Technology (Computer Systems and Networks):**<br>• Describe the internet as a network of networks and demonstrate how information is shared across the internet<br>• Explain how the internet allows us to view the World Wide Web;<br>• Outline how websites can be shared via the World Wide Web and where they are stored<br><br>**Information Technology (Digital Media):**<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Describe strategies for keeping personal information private and explain what a strong password is<br>• Explain that others online can pretend to be them or their friends<br>• Explain the need to consider who owns content on the internet and whether they have the right to use it<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Describe how content can be added and accessed on the World Wide Web<br>• Explain how websites and their content are created by people<br><br>**Information Technology (Digital Media):**<br>• Know how to edit digital content to improve it with clear purpose with some consideration for the given audience<br>• Edit existing media to make new content with an awareness of copyright<br>• Collect, organise and present information effectively using a range of media<br>• Use a range of tools to edit and enhance media for a particular effect<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Search for information within different technologies (social media, images, videos) and differentiate between opinions beliefs and facts and what makes something a fact.<br>• Describe some methods the internet uses to encourage people to buy things such as pop ups, in app purchases, offers and that some people on line may be computer programmes pretending to be real people<br>• Explain how using technology can distract them from other activities and identify ways to limit the amount of time using technology<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Explain why everything on the World Wide Web is not true and why you need to think carefully before sharing or resharing content<br><br>**Information Technology (Digital Media):**<br>• Collaborate with peers using online tools e.g. blogs, Google Drive, Office 365<br><br>**Information Technology (Digital Data Handling):**<br>• Aware of the difference between data and information<br>• Use the sort feature in a flat file to refine searches for information<br>• Begin to use filters in a database to find out information<br>• Able to perform single criteria searches for information<br>• Design a questionnaire with support and collect a range of data on a theme<br>• Draw conclusions from information stored in a database, table or chart |

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| Year 5 Term | Autumn | Spring | Summer |
|---|---|---|---|
| Theme N.C PoS | **Computer Science:**<br>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts<br>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output<br>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs<br>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>**Information Technology:**<br>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content<br>• 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>**Digital Literacy:**<br>• Understand the opportunities (networks) offer for communication and collaboration<br>• Be discerning evaluating digital content<br>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| Skills to be covered | **Digital Literacy (Online Safety):**<br>• Explain how they can collaborate positively with others online but that there are some people online who ay want to do harm to them or their friends and this is not their fault.<br>• Search for information about others online and describe ways that information can be used to make judgements about others<br>• Recognise when someone is upset, hurt or angry online and describe ways for someone being bullied online to get help<br><br>**Computer Science:**<br>• Know that iteration is the repetition of a process such as a loop<br>• Know that programming bridges the gap between algorithmic solutions and computers<br>• Know that different algorithms exist for the same problem<br>• Has practical experience of a high level textual language, including using standard libraries when programming<br>• Represent solutions using a structural notation<br>• Use a range of operators and expressions e.g. Boolean, and applies them in the context of program control<br>• Identify similarities and differences in situations and can use these to solve problems (pattern recognition)<br>• Select the appropriate data types<br>• Design solutions (algorithms) that use repetition and two way selection i.e. if, then, else<br>• Know that all software executed on digital devices is programmed<br>• Know that programs can work with different types of data e.g. text, number<br>• Be able to use post tested loops e.g. until, and a sequence of selection statements in programs, including if, then, else<br>• Create programs that implement algorithms to achieve given goals<br><br>**Information Technology (Computer Systems and Networks):**<br>• Describe that a computer system features inputs, processes, and outputs and explain that computer systems communicate with other devices<br>• Identify tasks that are managed by computer systems<br><br>**Information Technology (Digital Media):**<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Help stay safe by creating and using strong passwords<br>• Explain how identity on line can be copied, modified or altered and demonstrate responsible choices for their online identity<br>• Explain how to block abusive users and report online bullying on the apps and platforms they use including to helpline services such as Childline<br>• Explain that many free apps and services may access and share their private information e.g. contacts, lies, images, videos, messages and geolocation with others<br>• Explain why they should seek permission from a trusted adult before making payment for additional content such as in-app purchasing<br>• Assess and justify when it is acceptable to use the work of others<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br>• Recognise that data is transferred over the internet and that networked digital devices have unique addresses<br>• Recognise that connected digital devices can allow us to access shared files stored online and that the internet allows different media to be shared<br>• What are the benefits of working together in a shared project online<br>• Identify different ways of working together online and explain how the internet enables effective collaboration<br><br>**Information Technology (Digital Media):**<br>• Identify and use appropriate hardware and software to fulfil a specific task<br>• Remix and edit a range of existing and their own media to create content<br>• Understand the benefits of technology to collaborate with others<br>• Be aware of a range of Internet services to aid collaboration e.g. email, VOIP Voice Over Internet Protocol - Skype, Hangouts, FaceTime), World Wide Web, and what they do<br><br>**Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):**<br>• Use different search technologies and evaluate digital content from search results with an understanding for data, information, fact, opinion, belief, true, false, valid, reliable and evidence.<br>• Understand the difference between online mis-information and dis-information and explain what is meant by being sceptical<br>• Explain what is meant by a hoax and why some online information may not be honest, accurate or legal<br>• Describe ways technology can affect healthy sleep and describe some of the issues<br><br>**Computer Science:**<br><br>**Information Technology (Computer Systems and Networks):**<br><br>**Information Technology (Digital Media):**<br>• Recognise the audience when designing and creating digital content<br><br>**Information Technology (Digital Data Handling):**<br>• Understand the difference between data and information<br>• Know why sorting data in a flat file can improve searching for information<br>• Use filters in a database to find out specific information<br>• Present data in different ways to convey information<br>• Design a questionnaire independently and collect a range of data on a theme<br>• Analyse and interrogate data stored in a database, table or chart |

# Staniland Academy 2021-2022 Overview
# Computing/ ICT

| Year 6 Term | Autumn | Spring | Summer |
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| Theme N.C PoS | **Computer Science:** <br> • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts <br> • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output <br> • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <br> 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> **Information Technology:** <br> • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <br> • 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> **Digital Literacy:** <br> • Understand the opportunities (networks) offer for communication and collaboration <br> • Be discerning evaluating digital content <br> • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| Skills to be covered | **Digital Literacy (Online Safety):** <br> • Describe issues online that might make them or others feel sad, worried, uncomfortable or frightened and give examples of online and offline help <br> • Explain how impulsive and rash communications online may cause problems and show understanding for the need to be responsible for the well being of others <br> • Explain how they are developing an online reputation influencing others opinions of them and how to build a positive online reputation <br> • Identify messages online about gender roles from the media and others and explain why it is important to reject inappropriate messages about gender online <br><br> **Computer Science:** <br> • Create programs that implement algorithms to achieve given goals <br> • Able to declare and assign variables <br> • Able to use post tested loops e.g. until, and a sequence of selection statements in programs, including if, then, else <br> • Knows the difference between and appropriately uses if, then and else statements <br> • Use a variable and relational operators within a loop to govern termination <br> • Designs writes and debugs modular programs using procedures <br> • Designs solutions by decomposing a problem and creates a sub-solution for each of these parts (decomposition) <br> • Knows that a procedure can be used to hide the detail with sub-solution (procedure abstraction) <br> • Able to use criteria to evaluate the quality of solutions and can identify improvements making some refinements to the solution and future solutions <br> • Able to design a computing system that uses sensors <br> • Combine a variable with relational operators (<=>) to determine when a program changes e.g. if score >5, say "well done" <br> • Predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event) | **Digital Literacy (Online Safety):** <br> • Use different passwords for online services, manage those passwords and know what to do if the password is lost or stolen <br> • Describe how to evidence cyber bullying such as capturing content with screen grabs, recording URL's to enable them to report concerns in school and at home <br> • Explain what app permissions are, use privacy settings and identify illegal strategies such as scams and phishing. <br> • Know systems to regulate age related content such as PEGI ratings and use strategies to promote healthy, self regulated use of technology e.g. night shift mode, regular breaks, correct posture, sleep diet and exercise. <br><br> **Computer Science:** <br><br> **Information Technology (Computer Systems and Networks):** <br> • Use a search engine - complete a web search to find specific information, refine the search and compare results from different search engines <br> • Describe how search engines select results and recognise the role of web crawlers in creating an index <br> • Explain the different ways in which people communicate using technology <br> • Compare different methods of communicating on the internet and decide when you should and should not share information <br><br> **Information Technology (Digital Media):** <br><br> **Information Technology (Digital Data Handling):** | **Digital Literacy (Online Safety):** <br> • Use search engines effectively and explain how search engines work as well as be discerning in evaluating digital content <br> • Use search tools to access online content that can be used be others and demonstrate how to reference content from others used from the internet <br> • Describe how online information can be opinion and explain how and why some people present information as facts <br> • Define terms influence, manipulation and persuasion and how they might encounter these on line e.g advertising <br> • Model ideas using prototypes and pattern pieces. <br><br> **Computer Science:** <br><br> **Information Technology (Computer Systems and Networks):** <br> • Explain how search results are ranked and suggest some of the criteria that a search engine checks to decide on the order of results <br><br> **Information Technology (Digital Media):** <br> • Identify and use appropriate hardware and software to fulfil a specific task <br> • Remix and edit a range of existing and their own media to create content <br> • Understand the benefits of technology to collaborate with others <br> • Select, combine and use Internet services to fulfil a purpose <br> • Evaluate their own content against their own success criteria and make improvements accordingly <br><br> **Information Technology (Digital Data Handling):** <br> • Performs more complex searches for information e.g. uses Boolean and relational operators <br> • Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions <br> • Use filters in a database to find out specific information <br> • Present data in an increasing number of ways to effectively convey information <br> • Design a questionnaire independently and collect, present and analyse a range of data on a theme <br> • Analyse and interrogate data stored in a database, table or chart |