



Computing at Sherwood



School Vision

At Djanogly Sherwood Academy, we are an ambitious place that creates **world-changers. We cultivate a **lifelong love of learning**, helping children discover their **unique voices**, empowering them to approach their future with the confidence to **dream big**. We are a place where everyone **belongs**; that prepares children to **succeed**.**



At Djanogly Sherwood Academy, our computing curriculum equips children to become world-changers by developing the digital skills and critical thinking needed for the future. Through purposeful experiences in coding, digital literacy, and online safety, children learn to use technology confidently, creatively, and responsibly. We celebrate every child's unique voice by encouraging them to design, create, and solve problems in ways that matter to them. By exploring real-world applications and emerging technologies, children build a lifelong love of learning and a sense of belonging in an ever-changing digital world. Our computing teaching prepares children to succeed and empowers them to dream big in a connected, global society.



Intent

At Djanogly Sherwood Academy, it is our intention to enable children to find, explore, analyse, exchange and present information. We will focus on developing the skills necessary for children to be able to use information in an effective way. Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children will have opportunities to develop these skills. The Computing curriculum links directly to our cultural capital of aspirations, experiences, knowledge and school values. We intend to ensure that through the teaching of computing we will equip our children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology.



Implementation

We will fulfil our intent by applying a clear and effective, tailored cross curricular scheme of work that provides coverage in line with the National Curriculum. Teaching and learning should facilitate progression across all key stages within the strands of digital literacy, information technology and computer science. Our children will have weekly access to our wide variety of hardware and software tools. Our teaching and learning should enable progression across all key stages within the components of digital literacy, information technology and computer science. All children will have the opportunity to explore and respond to key issues such as digital communication, cyber-bullying, online safety, security, false information and social media.



Impact

At Djanogly Sherwood Academy, our Computing curriculum is designed to provide children with the skills and knowledge to confidently use technology to accomplish a wide variety of goals. Through a carefully tailored cross-curricular scheme of work aligned with the National Curriculum, we ensure that pupils progress across all key stages in the areas of digital literacy, information technology, and computer science. Weekly access to a range of hardware and software tools enables children to explore and develop their technical abilities.

The impact of our Computing curriculum is evident in pupils' growing confidence and competence in using digital tools. They not only gain the practical skills needed to navigate and create using technology but also develop a comprehensive understanding of key issues such as digital communication, cyber-bullying, online safety, security, false information, and social media. Pupils are taught to use technology responsibly and to apply critical thinking to navigate the digital world safely.

By the end of their time at Sherwood, children will have developed a secure knowledge of the implications of technology and digital systems in our rapidly evolving world. They will be able to use technology purposefully, in alignment with the school values of respect, resilience, relationships, reflection, and resourcefulness, both in school and at home. Pupils will be equipped with the skills to thrive in a technology-driven society and confidently engage with future technological advancements.

We measure the impact of our curriculum through the use of curriculum assessment quizzes, which monitor retention of key knowledge, and through pupil voice, where children articulate their understanding and enthusiasm for history. Book monitoring enables us to evaluate the progression of skills and knowledge across year groups, ensuring high-quality outcomes.



National Curriculum

At Djanogly Sherwood Academy, our Computing curriculum equips children with the knowledge, understanding, and skills outlined in the National Curriculum for Computing in Key Stages 1 and 2. Through carefully sequenced and engaging units, children develop their abilities to think computationally, solve problems, and use technology confidently and responsibly.

Children are taught to:

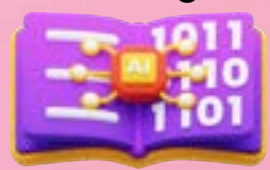
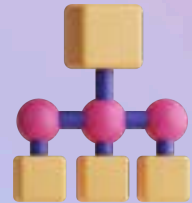
- **Understand and use algorithms to create, test, and debug programs.**
- **Develop logical reasoning and apply computational thinking to solve problems.**
- **Design and write code using sequencing, repetition, selection, and variables.**
- **Use a range of input and output devices and explore how networks and the internet function.**
- **Apply their digital skills across the curriculum by collecting, analysing, and presenting data.**
- **Recognise the role of technology in daily life and how to use it safely, respectfully, and responsibly.**

Our curriculum prepares children for the next stage of their education by introducing them to real-world computing concepts including networks, data handling, and emerging technologies. Throughout, children are supported to become digitally literate, creative thinkers who can use technology to express themselves and shape the world around them.

This curriculum fully meets the requirements of the UK National Curriculum for Computing and is tailored to meet the needs of our pupils and community.



Computing Subject Map

	 KS1 A	 KS1 B	 LKS2 A	 LKS2 B	 UKS2 A	 UKS2 B
Autumn Term	Digital Literacy - private information 	Digital Literacy - Online safety 	Information Technology - Collaboration on a digital project 	Digital Literacy - communicating online 	Computer Science - decomposition and machine learning 	Digital Literacy - permission settings 
Spring Term	Computer Science - Programming + debugging 	Information Technology - hardware and software 	Digital Literacy - respectful online behaviour Computer Science - Looping and input and output	Information Technology - presenting information 	Information Technology - collaboration across the same software 	Computer Science - if and then statements - AI 
Summer Term	Information technology - Word processors and databases 	Computer Science - algorithms 		Computer Science - Programming - testing an algorithm 	Digital Literacy - verification and deep fakes 	Information Technology - combinations and citing sources 



Computing Journey

Far transfer



- Tools have different purposes and can be chosen for specific tasks.
- Simple tools can be used safely and correctly.
- Materials can be shaped, joined, and changed using different techniques.
- Colours, patterns, and textures can be combined to create different effects.
- Different materials can be combined to make new creations.
- Finished creations can be shared and described by explaining the process used.



- The internet can be helpful but also has dangers, so children should tell an adult if they feel worried online.
- Not everyone online is who they say they are.
- Personal information like names and addresses should never be shared online.
- Spending too much time on devices can affect mental and physical health.
- Technology includes hardware (like a mouse or tablet) and software (programs that make computers work).
- Computers follow exact instructions called algorithms, and mistakes in programs are called bugs that need debugging.
- Children can use keyboards and word processors to create, change, and save documents, and collect and organise data in databases or spreadsheets.



- Online kindness means treating others with respect and thinking about how your words affect them.
- Online bullying can include insults, threats, or rumours and should be blocked or reported.
- It is important to follow the rules of any website or app used.
- Computers use hardware (like cameras and printers) and software to create and edit things like videos, presentations, and documents.
- Working with others is important when doing digital projects.
- Word processors help write, edit, and check spelling in documents.
- Data can be collected and organised using databases.
- Algorithms are clear step-by-step instructions to solve problems or reach a goal.
- Debugging means finding and fixing mistakes in computer programs.



- Anything put online may not be true and can be shared publicly without control.
- Deep fakes are videos altered to make someone look like a different person.
- It is important to check carefully if information online is accurate and trustworthy.
- Online safety includes protecting private information, keeping accounts secure, and reporting concerns to an adult.
- Collaboration online allows multiple people to work together on the same digital project at the same time.
- Different types of software and media can be combined to create presentations, reports, or videos for specific purposes.
- Computer networks connect computers through wires or wireless links.
- Algorithms can include conditions using 'if', 'then', and 'otherwise' statements to control decisions.
- Debugging and testing programs is an ongoing process to improve how well they work.
- Artificial Intelligence lets machines learn from data and make decisions independently.



Long Term Curriculum Plan – DSH 2025-28

Drivers



Geography



History

Autumn 1

Autumn 2

Spring 1

Spring 2

Summer 1

Summer 2

KS1 A



Dinosaur World

KS1 B



Exploring London

LKS2 A



Goose Fair

LKS2 B



Stone to Bronze

UKS2 A



Blitz Street

UKS2 B



Biomes of Africa



Dinosaur World



Exploring London



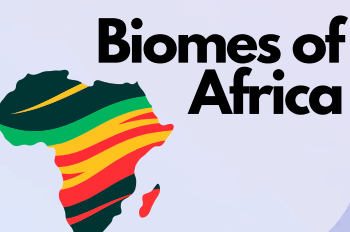
Tomb Raiders



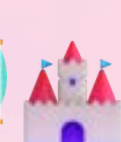
Stone to Bronze



Blitz Street



Biomes of Africa



Castle Kingdom



Exploring Nottingham



The Spice of India



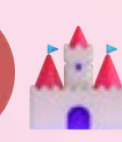
The Power of Community



Frozen Planet



Industrial Revolution



Castle Kingdom



Exploring Nottingham



People of the Indus



Plastic Peril



Frozen Planet



Saxon Stories



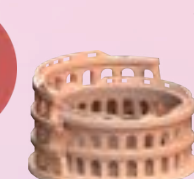
Pirate Perils



World Changers



Exploring Ancient Greece



Ancient Rome



The Golden Age of Islam



Viking Sagas



Pirate Perils



World Changers



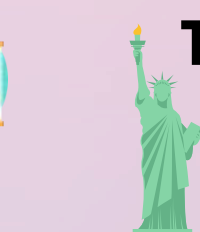
Roaming in the Rainforest



Rising Fire



The Golden Age of Islam



The Big Apple



Computing Threads

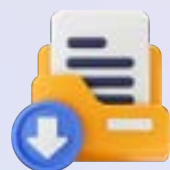
At Djanogly Sherwood Academy, our Computing curriculum is structured into three distinct strands: Digital Literacy, Computer Science, and Information Technology. These strands provide a clear and coherent progression of knowledge and skills across year groups, allowing children to build their understanding of how digital systems work, how to use technology safely and effectively, and how to solve problems through coding and logical thinking. This structured approach supports children in making meaningful connections across the computing curriculum, developing digital confidence, and preparing them to thrive in an increasingly technological world.



Computer Science



Digital Literacy



Information Technology



Digital Literacy

Substantive Knowledge Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Safely using and exploring a variety of materials, tools, and techniques. • Share their creations, explaining the process they have used.	• Children should talk to an adult if they are concerned about anything online. • Not everyone online is who they say they are. • Spending too much time on devices can have a negative impact on people's mental and physical health. • To recognise the dangers of the internet and the importance of non-screen time • To identify the benefits of the internet and the differences between the digital and physical world • Keep passwords safe and tell an adult if something feels wrong	• Private information, such as names, addresses, and dates of birth, should not be shared online. • Children should talk to an adult if they are concerned about anything online. • Not everyone online is who they claim to be. • To recognise how technology is used • To use links to websites to find information • To keep passwords safe and tell an adult if something feels wrong • To enter text using a keyboard	• It is important to be respectful online by treating others with kindness and considering the impact of your words and actions. • Online bullying can be identified by recognizing harmful behaviors such as repeated insults, threats, exclusion, or the spreading of rumours about someone. • Treat others online as you would treat them in person • Know how to block, report and not tolerate online bullying • Follow the rules of a platform you are using	• Communicating online has both advantages and disadvantages. • There are dangers associated with misunderstandings, privacy issues, and people pretending to be someone else. • Passwords help protect computer files and information and should not be shared with others. • To compare passwords and ways in which you can protect your personal data • Discuss what actions can be taken if they are uncomfortable or upset online • Comment and provide feedback on the work of classmates online	• Anything can be put online without verification of its truth. • Once something is online, it is not under the user's control and can be made public. • A deep fake is a video of a person in which their face or body has been digitally altered to make them appear as someone else. • Explore how to decipher whether information is accurate or not • To identify features that indicate that an email / link / website / message is not to be trusted	• Working online requires a level of responsibility and strategies to stay safe, including protecting private information and accounts. • Online collaborative projects can be shared with different permission settings. • Digital content can affect others and be accessible to anyone. • To analyse and fact check information found on a website • To ensure online accounts and devices are safe and secure and to communicate kindly and respectfully whilst using them • Discuss their own personal use of the internet and choices they make • Discuss how to protect devices from virus threats • Discuss the important of keeping an adult informed about what you are doing online and how to report concerns



Information Technology

Substantive Knowledge Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
- Realising that tools can be used for a purpose. - Using simple tools and techniques competently and appropriately. - Selecting appropriate brush for a given purpose. - Experimenting with colour, design, texture, form, and function. - Selecting tools and using techniques needed to shape, assemble, and join materials they are using. - Safely using and exploring a variety of materials, tools, and techniques. - Share their creations, explaining the process they have used.	- Word processors can be used to create documents that include text and images. - The font and font size in a word processor can be changed. - Data refers to information that is collected. - A database is a tool that stores data. - Save and retrieve information - To open and write on a word processor - Change how the text appears on a word processor - Input data into a spreadsheet - To create a graph from collected data	- Hardware refers to the parts of a computer that can be touched, such as a mouse, tablet, or floor robot. - Software consists of instructions that tell a computer what to do. - A word processor is software that can store written text. - Enter text via a keyboard - Save and retrieve information - Include images within a text document - Change the font and colour of the text	- Hardware and software can be used to create a video with a set agenda, adding text and filters. - Working collaboratively is essential for successfully completing a digital project. - To create, modify and present digital information differently when presenting to differing audiences - To work collaboratively with others - To create, edit and present data to others - To create and insert audio/video into a presentation	- A word processor assists with the editing process. - Text, images, animations, audio, and video clips can be added to a digital presentation. - Hardware can be used together to complete tasks, such as using a camera to take a photo, uploading it to a computer, and then printing it using a printer. - A database helps organise and manage information effectively. - To edit written work using a word processor - To use spellcheck on a word processor - To share work with others online - To use a variety of different effects and text to present work offline and online - To improve the aesthetics of a presentation - To add data to a database - To evaluate a completed database	- A variety of software, such as word processing software, image editing software, or internet services, can be selected, used, and combined to meet a goal. - Collaboration on the same software allows multiple users to work together on a project simultaneously. - To combine a range of media, recognising the contribution of each to achieve a particular outcome. - To be digitally discerning when evaluating the effectiveness of digital data - Discuss audience, atmosphere and structure of a presentation or video	- You create, select, and combine a range of texts, images, sound clips, and videos for specific purposes. - Computer networks consist of computers that are connected by cables, fibres, or wireless links. - Citing sources involves giving credit to the person or website that created the information. - To create and review content using unfamiliar technology - To create a report using a word processor which includes data, images, and text - To collect, present, and then discuss errors within a dataset - To insert data from a database into a presentation tool



Computer Science

Substantive Knowledge Disciplinary Knowledge

Explorers EYFS	Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
Understanding that different media can be combined to create new effects.	- Robots can be programmed to follow a series of instructions using algorithms. - Mistakes in programs are called bugs, and finding and fixing them is called debugging. - A computer will follow instructions precisely. - Make an object move using instructions - Find and fix a problem in an algorithms	- A computer follows instructions precisely. - An algorithm is an exact list of instructions or rules that make something happen. - Robots can be programmed to follow a series of instructions using algorithms. - Give instructions in the correct order and understand this as an algorithm - Control a robot using instructions	- A loop is a sequence of instructions that repeats continually until a certain condition is met. - Computers interact with the world using input and output devices. - To recognise that using algorithms will also help solve problems in other learning such as Maths, Science and DT - To reach a set goal (i.e. complete a circuit) - Rewrite a program to improve an algorithm	- A program is a completed set of sequencing instructions designed to achieve a specific outcome. - Debugging involves looking for errors within a line of code. - To write an algorithm to complete a goal - To test a written algorithm using Sphero Minis - To debug any erros in a written algorithm - To evaluate block coding against a set goal	- Input and output devices can be combined with programming software to control a physical system. - Decomposition is the process of breaking down a problem into smaller parts. - Machine Learning is an application of Artificial Intelligence where machines are given access to data and use that data to learn independently. - To use physical inputs (such as sensors) into my algorithms to programme a device - To debug and edit a programme when a set goal changes - To evaluate the efficiency of an algorithm whilst continually testing and debugging the programming	'If' statements can be included in an algorithm to create conditional logic. 'Then' statements can be used in an algorithm to define actions that follow conditions. - Sequences of instructions (algorithms) that contain 'if', 'then', and 'otherwise' statements are referred to as selections. - Artificial Intelligence (AI) refers to the capability of a computer program or machine to think and learn. - To write an debug an algorithm using Sphero Edu to programme a Sphero RVR - To expand an algorithm using logical thinking, imagination, and creativity



Vocabulary

Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• Private information: Information that can be used to identify you • Screen time: The time spend doing activities on a screen • Digital: Information kept electronically • Algorithms: a set of step-by-step instructions that describe how to perform a task • Debugging: finding and fixing mistakes • Word processor: using a computer to create, edit, save and print documents • Data: Information that is collected • Database: a place that stores data • Font: the style of text	• Private information: Information that can be used to identify you • Password: like a secret code that you should not share with others • Shared: Things that are used by more than one person • Hardware: parts of a computer that you can touch • Software: instructions that tell a computer what to do • Word processor: software that can store written text • Algorithm: exact list of instructions or rules that make something happen • Robot: a machine that does tasks without the help of a person	• Collaboration: the action of working with someone to produce something • Insert: allows the user to add something into a document or file • Filters: a photo effect that can be applied to images before publishing them • Cyberbullying: sending, posting, or sharing negative, harmful, false, or mean content about someone else • Age-appropriate: suitable for a particular age or age group • Digital citizen: the ability to navigate our digital environments in a way that's safe and responsible and to actively and respectfully engage in these spaces • Content: the text, visual or audio content that is made available online • Loop: repeats the same instructions until a condition is met • Condition: A state of a program that is either true or false • Debugging: Identifying and fixing errors	• Privacy: keeping your personal information or secrets safe and not share them with everyone • Database: a digital place where you can organise and find information easily • Feedback: information or advice given to help improve something • Reporting: when you share information or tell others about something that happened • Design aesthetics: the visual and sensory qualities of a designed creation • Editing: fixing and making things better in your writing or drawings • Animations: the movement or effect applied to an object • Sequence: The order in which instructions are arranged in a program • Function: a named set of instructions or a block of code designed to perform a specific task in a program • Block coding: a way to create computer programs by stacking colourful blocks together	• Decomposition: breaking down a complex problem or system into smaller parts • Artificial Intelligence: the simulation of human intelligence processes by machines • Machine Learning: the capability of a machine to imitate intelligent human behaviour • Feedback: Comments and suggestions from team members to improve the project • Problem-solving: Working together to find solutions when challenges arise in the IT project • Scam: a dishonest and illegal plan • Verification: the process of establishing the truth or accuracy of something • Deep fake: a video of a person in which their face or body has been digitally altered so that they appear to be someone else • Sceptical: to be not easily convinced	• Permission settings: like the locks and keys for your digital files, controlling who can access and change them • Virus: a harmful computer program that can damage a computer and not work properly • Malware: sneaky software that can harm your computer or steal your information • Authentication: The process of verifying the identity of a user • Selections: choosing different paths in a computer program based on certain conditions • 'If' statement: like a computer rule that says, "If something is true, do one thing, if not, do something else • 'Then' statement: what the computer does if the condition in the 'If' statement is true, like following instructions • Artifiioal Intelligence: when computers are made to think and learn like humans, to make decisions, and do tasks on their own • Wireless: using signals like Wi-Fi or Bluetooth to connect to the internet or other devices without needing wires • Computer network: like a digital club where computers talk to each other and share information • Citing sources: giving credit to where you found your information from



Curriculum Assessment

Adventurers KS1 A	Adventurers KS1 B	Pioneers LKS2 A	Pioneers LKS2 B	Trailblazers UKS2 A	Trailblazers UKS2 B
• What should you do if you are worried about something online? • Can spending too much time on devices be negative on your mental and physical health? • What is an algorithm? • What does debugging mean? • What is a word processor? • What is a database?	• Which of these is considered private information? • What is a password? • What should you do if you are worried about something you see online? • Is this an example of hardware or software? • What is a word processor? • What is an algorithm? • What is a robot? • What would this instruction cause with an Indi robot?	• Which of these can you add to a video? • Which of these tools can you work on collaboratively at the same time? • What should you do if someone is unkind to you online? • What should you do if you identify cyberbullying? • In Computing, what is a loop? • How do computers interact with the world?	• What is one advantage of communicating online? • What's a potential danger when communicating online? • Why should you not share your computer password with others? • What can a word processor help with? • Which of the following items can be added to a digital presentation? • What is a program in the context of computing? • What does "debugging" mean in programming?	• In Computing, what does decomposition mean? • How does Sphero communicate with your device? • What does machine learning mean? • What software can you use to edit a text collaboratively? • What software program can you use to create an infographic? • What is a deep fake? • Which of these email address appears genuine?	• Why is it important to protect private information and accounts when working online? • What does it mean to share online collaborative projects with different permission settings? • Why is it essential to be mindful of the digital content you create and share online? • In computer programming, what is the purpose of an 'If' statement? • What is the role of a 'Then' statement in an algorithm containing an 'If' statement? • What is Artificial Intelligence (AI)? • How are computer networks connected together? • What does citing sources involve?

Curriculum to Inspire

KS1 A Computing Autumn 1



Digital Literacy



**Marie Van Brittan
Brown - Innovator**



- Children should talk to an adult if they are concerned about anything online.
- Not everyone online is who they say they are.
- Spending too much time on devices can have a negative impact on people's mental and physical health.



- **Private information:** Information that can be used to identify you
- **Screen time:** The time spend doing activities on a screen
- **Digital:** Information kept electronically



- To recognise the dangers of the internet and the importance of non-screen time
- To identify the benefits of the internet and the differences between the digital and physical world
- Keep passwords safe and tell an adult if something feels wrong



- What should you do if you are worried about something online?
- Can spending too much time on devices be negative on your mental and physical health?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Concepetual
Strands**

Curriculum to Inspire

KS1 A Computing Spring 1



Computer
Science



**Ada Lovelace –
mathematician
and programmer**



- Robots can be programmed to follow a series of instructions using algorithms.
- Mistakes in programs are called bugs, and finding and fixing them is called debugging.
- A computer will follow instructions precisely.



- **Algorithms:** a set of step-by-step instructions that describe how to perform a task
- **Debugging:** finding and fixing mistakes



- Make an object move using instructions
- Find and fix a problem in an algorithms



- What is an algorithm?
- What does debugging mean?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Conceptual
Strands**

Curriculum to Inspire

KS1 A Computing Summer 1



Information
Technology



**Fei-Fei Li –
Computer Scientist**



- Word processors can be used to create documents that include text and images.
- The font and font size in a word processor can be changed.
- Data refers to information that is collected.
- A database is a tool that stores data.



- Word processor: using a computer to create, edit, save and print documents
- Data: Information that is collected
- Database: a place that stores data
- Font: the style of text



- Save and retrieve information
- To open and write on a word processor
- Change how the text appears on a word processor
- Input data into a spreadsheet
- To create a graph from collected data



- What is a word processor?
- What is a database?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Conceptual
Strands**

Curriculum to Inspire

KS1 B Computing Autumn 1



Digital Literacy



**Marie Van Brittan
Brown - Innovator**



- Private information, such as names, addresses, and dates of birth, should not be shared online.
- Children should talk to an adult if they are concerned about anything online.
- Not everyone online is who they claim to be.



- **Private information:** Information that can be used to identify you
- **Password:** like a secret code that you should not share with others
- **Shared:** Things that are used by more than one person



- To recognise how technology is used
- To use links to websites to find information
- To keep passwords safe and tell an adult if something feels wrong
- To enter text using a keyboard



- Which of these is considered private information?
- What is a password?
- What should you do if you are worried about something you see online?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Conceptual
Strands**

Curriculum to Inspire

KS1 B Computing Spring 1



Information
Technology



Dionne Condor-Farrell - Software Engineer



- Hardware refers to the parts of a computer that can be touched, such as a mouse, tablet, or floor robot.
- Software consists of instructions that tell a computer what to do.
- A word processor is software that can store written text.



- Hardware: parts of a computer that you can touch
- Software: instructions that tell a computer what to do
- Word processor: software that can store written text



- Enter text via a keyboard
- Save and retrieve information
- Include images within a text document
- Change the font and colour of the text



- Is this an example of hardware or software?
- What is a word processor?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Conceptual
Strands**

Curriculum to Inspire

KS1 B Computing Summer 1



Computer Science



Atlas - Boston Dynamics



- A computer follows instructions precisely.
- An algorithm is an exact list of instructions or rules that make something happen.
- Robots can be programmed to follow a series of instructions using algorithms.



- Algorithm: exact list of instructions or rules that make something happen
- Robot: a machine that does tasks without the help of a person



- Give instructions in the correct order and understand this as an algorithm
- Control a robot using instructions



- What is an algorithm?
- What is a robot?
- What would this instruction cause with an Indi robot?



Substantive
Knowledge



Disciplinary
Knowledge



Core
Vocabulary



Curriculum
Assessment



Conceptual
Strands

Curriculum to Inspire

LKS2 A Computing Autumn 2

Innovators

Information
Technology



**Serdar Ferit –
CEO Lyfta**



- Hardware and software can be used to create a video with a set agenda, adding text and filters.
- Working collaboratively is essential for successfully completing a digital project.



- **Collaboration:** the action of working with someone to produce something
- **Insert:** allows the user to add something into a document or file
- **Filters:** a photo effect that can be applied to images before publishing them



- To create, modify and present digital information differently when presenting to differing audiences
- To work collaboratively with others
- To create, edit and present data to others
- To create and insert audio/video into a presentation



- Which of these can you add to a video?
- Which of these tools can you work on collaboratively at the same time?



**Substantive
Knowledge**



**Disciplinary
Knowledge**



**Core
Vocabulary**



**Curriculum
Assessment**



**Conceptual
Strands**

Curriculum to Inspire

LKS2 A Computing Spring 1



Digital Literacy



**Dr Linda
Papadopoulos –
Anti-bullying
ambassador**



- It is important to be respectful online by treating others with kindness and considering the impact of your words and actions.
- Online bullying can be identified by recognizing harmful behaviors such as repeated insults, threats, exclusion, or the spreading of rumours about someone.



- **Cyberbullying:** sending, posting, or sharing negative, harmful, false, or mean content about someone else
- **Age-appropriate:** suitable for a particular age or age group
- **Digital citizen:** the ability to navigate our digital environments in a way that's safe and responsible and to actively and respectfully engage in these spaces
- **Content:** the text, visual or audio content that is made available online



- Treat others online as you would treat them in person
- Know how to block, report and not tolerate online bullying
- Follow the rules of a platform you are using



- What should you do if someone is unkind to you online?
- What should you do if you identify cyberbullying?



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**Disciplinary
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Innovators

Computer Science



**Katherine
Johnson –
Mathematician**



- A loop is a sequence of instructions that repeats continually until a certain condition is met.
- Computers interact with the world using input and output devices.



- **Loop:** repeats the same instructions until a condition is met
- **Condition:** A state of a program that is either true or false
- **Debugging:** Identifying and fixing errors



- To recognise that using algorithms will also help solve problems in other learning such as Maths, Science and DT
- To reach a set goal (i.e. complete a circuit)
- Rewrite a program to improve an algorithm



- In Computing, what is a loop?
- How do computers interact with the world?



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Innovators

Digital Literacy



Natalie Bazarova - Social Media Communications



- Communicating online has both advantages and disadvantages.
- There are dangers associated with misunderstandings, privacy issues, and people pretending to be someone else.
- Passwords help protect computer files and information and should not be shared with others.



- **Privacy:** keeping your personal information or secrets safe and not share them with everyone
- **Database:** a digital place where you can organise and find information easily
- **Feedback:** information or advice given to help improve something
- **Reporting:** when you share information or tell others about something that happened



- To compare passwords and ways in which you can protect your personal data
- Discuss what actions can be taken if they are uncomfortable or upset online
- Comment and provide feedback on the work of classmates online



- What is one advantage of communicating online?
- What's a potential danger when communicating online?
- Why should you not share your computer password with others?



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Information Technology



**Melanie Perkins -
CEO of Canva**



- A word processor assists with the editing process.
- Text, images, animations, audio, and video clips can be added to a digital presentation.
- Hardware can be used together to complete tasks, such as using a camera to take a photo, uploading it to a computer, and then printing it using a printer.
- A database helps organise and manage information effectively.



- Design aesthetics: the visual and sensory qualities of a designed creation
- Editing: fixing and making things better in your writing or drawings
- Animations: the movement or effect applied to an object



- To edit written work using a word processor
- To use spellcheck on a word processor
- To share work with others online
- To use a variety of different effects and text to present work offline and online
- To improve the aesthetics of a presentation
- To add data to a database
- To evaluate a completed database



- What can a word processor help with?
- Which of the following items can be added to a digital presentation?



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Computer Science



**Kimberly Bryant -
Coder**



- A program is a completed set of sequencing instructions designed to achieve a specific outcome.
- Debugging involves looking for errors within a line of code.



- **Sequence:** The order in which instructions are arranged in a program
- **Function:** a named set of instructions or a block of code designed to perform a specific task in a program
- **Block coding:** a way to create computer programs by stacking colourful blocks together



- To write an algorithm to complete a goal
- To test a written algorithm using Sphero Minis
- To debug any errors in a written algorithm
- To evaluate block coding against a set goal



- What is a program in the context of computing?
- What does "debugging" mean in programming?



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**Fei-Fei Li –
Computer Scientist**



- Input and output devices can be combined with programming software to control a physical system.
- Decomposition is the process of breaking down a problem into smaller parts.
- Machine Learning is an application of Artificial Intelligence where machines are given access to data and use that data to learn independently.



- **Decomposition:** breaking down a complex problem or system into smaller parts
- **Artificial Intelligence:** the simulation of human intelligence processes by machines
- **Machine Learning:** the capability of a machine to imitate intelligent human behaviour



- To use physical inputs (such as sensors) into my algorithms to programme a device
- To debug and edit a programme when a set goal changes
- To evaluate the efficiency of an algorithm whilst continually testing and debugging the programming



- In Computing, what does decomposition mean?
- How does Sphero communicate with your device?
- What does machine learning mean?



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Information
Technology



**Hayleigh
Chamberlain-
Content Creator**



- A variety of software, such as word processing software, image editing software, or internet services, can be selected, used, and combined to meet a goal.
- Collaboration on the same software allows multiple users to work together on a project simultaneously.



- **Feedback:** Comments and suggestions from team members to improve the project
- **Problem-solving:** Working together to find solutions when challenges arise in the IT project



- To combine a range of media, recognising the contribution of each to achieve a particular outcome.
- To be digitally discerning when evaluating the effectiveness of digital data
- Discuss audience, atmosphere and structure of a presentation or video



- What software can you use to edit a text collaboratively?
- What software program can you use to create an infographic?



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Innovator

Digital Literacy



**Tim Berners-Lee –
Computer Scientist**



- Anything can be put online without verification of its truth.
- Once something is online, it is not under the user's control and can be made public.
- A deep fake is a video of a person in which their face or body has been digitally altered to make them appear as someone else.



- Scam: a dishonest and illegal plan
- Verification: the process of establishing the truth or accuracy of something
- Deep fake: a video of a person in which their face or body has been digitally altered so that they appear to be someone else
- Sceptical: to be not easily convinced



- Explore how to decipher whether information is accurate or not
- To identify features that indicate that an email / link / website / message is not to be trusted



- What is a deep fake?
- Which of these email address appears genuine?



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Digital
Literacy



**Melanie Perkins -
CEO of Canva**



- Working online requires a level of responsibility and strategies to stay safe, including protecting private information and accounts.
- Online collaborative projects can be shared with different permission settings.
- Digital content can affect others and be accessible to anyone.



- **Permission settings:** like the locks and keys for your digital files, controlling who can access and change them
- **Virus:** a harmful computer program that can damage a computer and not work properly
- **Malware:** sneaky software that can harm your computer or steal your information
- **Authentication:** The process of verifying the identity of a user



- To analyse and fact check information found on a website
- To ensure online accounts and devices are safe and secure and to communicate kindly and respectfully whilst using them
- Discuss their own personal use of the internet and choices they make
- Discuss how to protect devices from virus threats
- Discuss the important of keeping an adult informed about what you are doing online and how to report concerns



- Why is it important to protect private information and accounts when working online?
- What does it mean to share online collaborative projects with different permission settings?
- Why is it essential to be mindful of the digital content you create and share online?



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Computer Science



**Bukola Ayodele -
Software Developer**



- 'If' statements can be included in an algorithm to create conditional logic.
- 'Then' statements can be used in an algorithm to define actions that follow conditions.
- Sequences of instructions (algorithms) that contain 'if', 'then', and 'otherwise' statements are referred to as selections.
- Artificial Intelligence (AI) refers to the capability of a computer program or machine to think and learn.



- **Selections:** choosing different paths in a computer program based on certain conditions
- **'If' statement:** like a computer rule that says, "If something is true, do one thing, if not, do something else"
- **'Then' statement:** what the computer does if the condition in the 'If' statement is true, like following instructions
- **Artificial Intelligence:** when computers are made to think and learn like humans, to make decisions, and do tasks on their own



- To write and debug an algorithm using Sphero Edu to programme a Sphero RVR
- To expand an algorithm using logical thinking, imagination, and creativity



- In computer programming, what is the purpose of an 'If' statement?
- What is the role of a 'Then' statement in an algorithm containing an 'If' statement?
- What is Artificial Intelligence (AI)?



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Women in History

Information Technology



**Hedy Lamarr -
actress and
tech developer**



- You create, select, and combine a range of texts, images, sound clips, and videos for specific purposes.
- Computer networks consist of computers that are connected by cables, fibres, or wireless links.
- Citing sources involves giving credit to the person or website that created the information.



- **Wireless:** using signals like Wi-Fi or Bluetooth to connect to the internet or other devices without needing wires
- **Computer network:** like a digital club where computers talk to each other and share information
- **Citing sources:** giving credit to where you found your information from



- To create and review content using unfamiliar technology
- To create a report using a word processor which includes data, images, and text
- To collect, present, and then discuss errors within a dataset
- To insert data from a database into a presentation tool



- How are computer networks connected together?
- What does citing sources involve?



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Computer Scientists



**Marie Van Brittan Brown -
Innovator**



**Ada Lovelace –
mathematician
and programmer**



**Fei-Fei Li –
Computer Scientist**



**Dionne Condor-Farrell -
Software Engineer**



Atlas - Boston Dynamics



**Serdar Ferit –
CEO Lyfta**



Computer Scientists



**Dr Linda Papadopoulos
– Anti-bullying
ambassador**



**Katherine
Johnson –
Mathematician**



**Natalie Bazarova -
Social Media
Communications**



**Melanie Perkins -
CEO of Canva**



**Kimberly Bryant -
Coder**



**Fei-Fei Li –
Computer Scientist**



Computer Scientists



**Hayleigh
Chamberlain-
Content Creator**



**Tim Berners-Lee –
Computer Scientist**



**Melanie Perkins - CEO of
Canva**



**Bukola Ayodele -
Software Developer**



**Hedy Lamarr -
actress and
tech developer**



SEND in Computing

Cognition and Learning		Communication and Interaction	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
• Difficulty understanding the order of steps to complete a task	• Clear instruction through scaffolding, modelling, and teacher/TA small group support • Use of visual step-by-step guides and clear sequencing of instructions	• Difficulty processing or remembering verbal instructions	• Use of visual instructions, dual coding, and clear icons to support understanding • Opportunities for peer modelling and paired working



SEND in Computing

Physical and sensory		Social Emotional and Mental Health	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
• Struggling with visual clarity or audio output • Difficulty navigating interfaces or using devices	• Access to headphones with adjustable volume and screens with adjustable brightness • Adapted input methods where necessary (e.g. touch screen use, larger keyboards)	• Frustration when facing errors or unexpected outcomes	• Calm, step-by-step guidance and reassurance when tasks don't go as expected • Clear, supportive language and error-handling routines (e.g. "If unsure, click cancel")

Non Negotiables that need to be in place in all lessons/classrooms when teaching computing

- Headphones available for every child for computers and iPads
- Adjustable brightness and sound available.
- Personal logins available for SEN children to cater to needs (visual impairment etc.)

EAL in Computing

At Djanogly Sherwood Academy, we are committed to ensuring that all children, including those who are learning English as an additional language (EAL), can fully access our curriculum. On entry, EAL children are assessed using FlashAcademy. If they are graded A or B, they continue to use FlashAcademy to support their English development until they progress to a higher level. These children are included in curriculum lessons that they can access, and are never excluded from learning opportunities. To support understanding, we use iPads for translation, dual coding on slides to combine visuals and text, and subtitles on PowerPoint presentations. Our teaching and learning approach ensures that teacher input is clear, simple, and accessible to all, enabling EAL children to thrive alongside their peers.





Teaching + Learning

Prepare

We plan from the big picture, ensuring strong subject knowledge, clear links, high expectations for behaviour, and strong relationships with our class.

Learn

We teach new knowledge using Rosenshine's principles to build understanding step by step.

Reinforce

We use rich hinterland content to deepen learning and make it memorable.

Retrieve

We regularly revisit and check knowledge to ensure it sticks over time.

Create

We give children opportunities to apply their knowledge through purposeful outcomes such as presentations, debates, or written work.



Conceptual Strands



It's important that our children learn about women in history to inspire a sense of belonging and recognise the vital contributions women have made to societal progress.



Our children learn about innovators to inspire creativity and problem-solving, helping them understand the pivotal role of innovation in the progress of the human story and its impact on society.



Our children learn about our city, Nottingham, to foster a sense of belonging and appreciation for the local history and community.



Our children learn about environmental concerns to foster a sense of belonging to the global community, inspiring them to take action and help protect the world for future generations



Our children learn about the concept of power to foster a sense of belonging to the local and global community and empower them to become world changers.



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