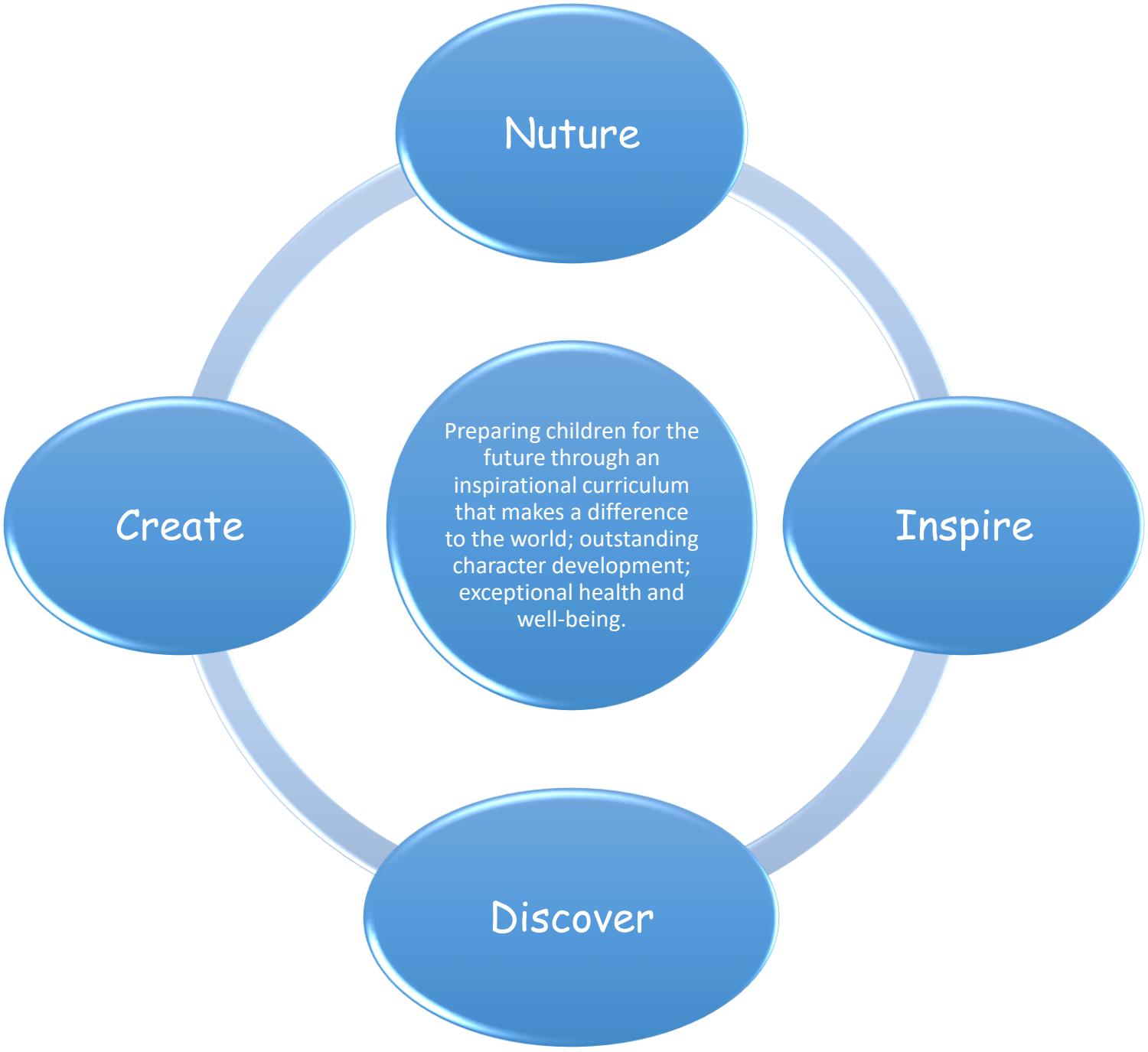
'Nurture, Inspire, Discover, Create'

Computing Curriculum Vision and Skills



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Intent and Design – What are we trying to achieve?

Vision

•As a school we aim to:

•Preparing children for the future through an inspirational curriculum that makes a difference to the world; outstanding character development; exceptional health and well-being.

•In Computing, we aim to:

•engage, inspire and challenge children to use computational thinking and creativity to undertand and change the world.

•Children will know that Computing is:

•understanding the digital world around them.

Motto

- **Nurture** – We care for each other and celebrate our differences, achievements and contributions to the world. We support each other through challenges and difficulties, recognising that the mental health and well-being of both ourselves and those around us is one of the key factors in our happiness and success.
- **Inspire** – We inspire each other to greater heights through our communication, actions, support and achievements. We take inspiration from the people, places and events all around us. We recognise that whether a situation is good or bad, there is always learning and growth to be gained. These situations inspire us to make positive change a reality.
- **Discover** – We are excited to discover new knowledge, skills, people and places. We are open to alternative ideas beyond our own and enjoy exploring the thoughts, conversations and solutions that others bring to different situations and experiences.
- **Create** – We enjoy working together to create new and exciting solutions to make our world a better place. We believe we can make a difference no matter how large or small. Our school is a place where we can experiment and take risks in order that we might better ourselves and the world we live in.

School Values

- We believe in…

- **Developing outstanding character** and attitudes to learning in preparation for future challenges in a changing world.
- **Promoting physical and mental health** in a happy caring environment that is supportive and encouraging.
- **Making a difference** to the world we live in through creating enterprising solutions to local and global issues.
- Developing social skills and an appreciation of **each person's unique strengths**, respecting and embracing different cultures, races and religions.
- Fostering a **deep sense of care and nurture** for the world we live in and the people around us.
- Creating a broad range of **inspiring experiences** that allows children to develop skills and find their place in the world.
- Working in **partnership with our school community and beyond to build brighter futures**.
- High expectations alongside a **culture of self-awareness, reflection and self-improvement**.

Aims of our Computing Curriculum

- **Our inspirational Computing curriculum will enable**
- Here at Stathern, we understand the vital role that computing plays in ensuring pupils become digitally literate at a level suitable for the future workplace and as active participants in the digital world. Through out teaching, pupils will taught the key principles of information and computation, how digital systems work and how to put this knowledge to use through programming. It is our ethos and belief that pupils build on this knoweldge and understanding in order for them to proficient in using information technology to rreate programs, systems and a range of content. .Pupils here at Stathern will also learn about how computing has deep links with mathematics, science and deisign and technology.

Learning Intentions

- Our Computing curriculum is designed to allow pupils to embody creativity. The curriculum is broken into topics that are taught progressively across both key stages.
- We aim to provide a curriculum where pupils:
- understand and apply the fundamental principles and concpets od computer science, including abstraction, logic, algorithms and data representation
- analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Stathern Primary School

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Implementation and Organisation – How will we arrange our learning?

School Focus

Reading | Challenge | Vocabulary and Communication | Progressive Skills | Transferable skills | Positive Mental Health and wellbeing

Children of all abilities, whether SEND, lower attainers or our most able, will have equal opportunities to access our amazing curriculum and personal development provision. Children will be supported to 'Dig Deeper' using the skills and knowledge taught, and will have the same high expectations of achievement and be scaffolded, supported and assisted to make the best progress possible. Staff continue to make all reasonable adjustments, to accommodate all pupils.

Computing Developmental Foci

- Texts in Computing are critically challenged, understood and discussed for meaning and moral messages
- Lessons are planned to challenge pupils both academically and developmentally
- Children are able to use the correct vocabulary to discuss emotions and themselves. They can discuss and reflect on their ideas with clarity.
- A Computing specific, progressive and challenging skill set is explicitly taught and assessed
- Work written and recorded in Computing must reflect and reinforce the key skills in Reading, Writing and Maths
- Our Computing curriculum supports SEMH by explicitly teaching children about themselves, their relationships, their Health and their Wellbeing

Contexts

Exciting, topic-based learning supported by a rich and diverse array of texts and activities.

Big questions in topics and Art and Design specific areas

Skills Progressions ↓

	Y1/2	Y3/4	Y5/6
Computing Systems and Networks			
Creating Media			
Data and Information			
Programming			

School Values British Values ↓

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Computing Networks and Systems					
Y1	Y2	Y3	Y4	Y5	Y6
IT Around Us To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly	**IT Around Us** To recognise the uses and features of information technology To identify the uses of information technology in the school To identify information technology beyond school To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology	**Connecting Computers** To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network	**The Internet** To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content	**Sharing Information** To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online	**Communication** To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology To evaluate different methods of online communication

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Creating Media					
Y1	Y2	Y3	Y4	Y5	Y6
Digital Painting To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper **Digital Writing** To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare typing on a computer to writing on paper	**Digital Photography** To use a digital device to take a photograph To make choices when taking a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that photos can be changed **Making Music** To say how music can make us feel To identify that there are patterns in music To show how music is made from a series of notes To show how music is made from a series of notes To create music for a purpose To review and refine our computer work	**Animation** To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation **Desktop Publishing** To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing	**Photo Editing** To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools To recognise that not all images are real To evaluate how changes can improve an image **Podcast** To identify that sound can be digitally recorded To use a digital device to record sound To explain that a digital recording is stored as a file To explain that audio can be changed through editing To show that different types of audio can be combined and played together To evaluate editing choices made	**Video** To explain what makes a video effective To identify digital devices that can record video To capture video using a range of techniques To create a storyboard To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video **Vector Drawing** To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To evaluate my vector drawing	**Web Page Creation** To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people **3D Modelling** To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be broken down into a collection of 3D shapes To design a digital model by combining 3D objects To develop and improve a digital 3D model

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Data and Information					
Y1	Y2	Y3	Y4	Y5	Y6
Grouping and Data To label objects To identify that objects can be counted To describe objects in different ways To count objects with the same properties To compare groups of objects To answer questions about groups of objects	**Pictograms** To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	**Branching Databases** To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To explain why it is helpful for a database to be well structured To identify objects using a branching database To compare the information shown in a pictogram with a branching database	**Data Logging** To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions	**Flat-File Databases** To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions	**Spreadsheets** To identify questions which can be answered using data To explain that objects can be described using data To explain that formulas can be used to produce calculated data To apply formulas to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data

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Programming					
Y1	Y2	Y3	Y4	Y5	Y6
Moving A Robot To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem **Introduction to Animation** To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program	**Robot Algorithms** To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written **An Introduction to Quizzes** To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved	**Sequencing Sounds** To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description **Events and Actions** To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge	**Repetition in Shapes** To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome **Repetition in Games** To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition	**Selection in Physical Computing** To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project **Selection in Quizzes** To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program	**Variables in Games** To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project **Sensing** To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device

Impact – How well are we achieving our aims?

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Impact seen in:

Teacher Assessment	Pupil Voice	Moderation
Work scrutiny	Parental surveys and feedback	Observations and Blinks
Data analysis	Progress of pupils across the curriculum	Staff Questionnaires

Our children will:

Making great progress and have high standards of achievement and attainment	Have a lifelong love of reading and learning and be able to communicate clearly	Be respectful of themselves and demonstrate excellent behaviour
Be confident, positive and independent learners with high aspirations	Have mental wellbeing and make healthy lifestyle choices	Participate in the community and have excellent attendance
know more and remember more		

Work Sample Analysis:	What do our books show?
Lesson Observations:	How is the quality of teaching, learning and use of assessment in the lesson? How good is the questioning in the lesson?
Surveys:	What do parents and children say about this subject?
Interviews:	What do the children say about their learning in this subject? What do the staff say about their learning in this subject?
Coaching and Mentoring:	Is there a need for coaching and mentoring in this subject? What support do colleagues need in this subject?
Training:	What training has taken place? What is the impact of any training given?
Leaning environment:	How does the learning environment support the learning in this subject area?