Attleborough Primary School - Computing Curriculum: EYFS – Year 6

Attleborough Primary Curriculum Intent for Computing

At APS, the computing curriculum aims to provide children with an exciting and challenging curriculum which adapts to the ever changing world of technology and equips them with the knowledge, skills and understanding they need to thrive in the digital world of today and in the future. Through the principles of: computer science, information technology and digital literacy, pupils will gain secure understanding of the skills to encourage them to use ICT and computing in a range of different ways, including creating art, solving problems and develop computational thinking. They will understand how computers and computing systems work, how they are designed and how they are programmed. This will allow children to grow in their development and knowledge of computing. This will allow them to become digitally literate and express themselves, through developing ideas using different pieces of technology.

We want our pupils to be confident online users and be responsible digital citizens. Our online safety curriculum ensures pupils are taught about being safe online and how to report concerns when they arise.

<table>
<tr><th colspan="3">EYFS Statutory Framework Computing Related Objectives</th></tr>
<tr><td colspan="3">Although the technology strand has been removed from the EYFS curriculum, there are lots of other assessment opportunities that arise from delivering a well-planned Computing scheme. Computer science in EYFS is largely cross-curricular with strong links to communication and language, mathematics, physical development and the characteristics of effective learning in particular. This cross curricular coverage across EYFS is shown below:

Personal, Social and Emotional Development
• Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of ‘screen time’.
Physical Development
• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
ELG Personal, Social and Emotional Development Managing Self
• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
• Explain the reasons for rules, know right from wrong and try to behave accordingly.
Expressive Arts and Design Creating with Materials
• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</td></tr>
<tr><th colspan="3">RECEPTION Key content knowledge.
What knowledge children will have at the end of each unit- these will also be used for assessment</th></tr>
<tr><td>Core Knowledge
1. Pupils will know how we use technology to take pictures
2. Pupils will know how to use the IWB to play simple games
3. Pupils will know how to use the IWB to write our graphemes.</td><td>Core knowledge
1. Pupils will know what a BeeBot is.
2. Pupils will know how to set simple directions on a BeeBot.
3. Pupils will know how to use simple programmes on an iPad.</td><td>Core knowledge
1. Pupils will know that a range of technology is used in places such as homes and schools.
2. Pupils will know that technology is used for particular purposes.
3. Pupils will know how to stay safe when using the technology
4. Pupils will know what a sensible amount of screentime is</td></tr>
<tr><th colspan="3">Key Vocabulary
All children to know the meaning of these words by the end of the unit</th></tr>
<tr><td>iPad, button, screen, on, off, app, game, website, touch, click, link, unsafe, safe, technology, printer, visualiser, computer, laptop.</td><td>iPad, button, screen, on, off, app, game, website, touch, click, link, unsafe, safe, technology, printer, visualiser, computer, laptop.</td><td>iPad, button, screen, on, off, app, game, website, touch, click, link, unsafe, safe, technology, printer, visualiser, computer, laptop.</td></tr>
<tr><th colspan="3">Enrichment Opportunities
Trips / visitors/ WOW moments</th></tr>
<tr><td colspan="3">- Having access to ipads to record their work - Beebot technology - Use of age appropriate apps and games - how technology is used in school</td></tr>
</table>

National Curriculum aims:

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can 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.

Key Stage 1 National Curriculum Objectives
Pupils should be taught to: • understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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.

Year 1 Key content knowledge.					
Autumn Term		**Spring Term**		**Summer Term**	
Unit: Computing systems and networks – technology around us **Core Knowledge** 1. Pupils will know what is meant by the term technology. 2. Pupils will know how technology helps us. 3. Pupils will know the main parts of a computer. 4. Pupils will know how to use a mouse. 5. Pupils will know how to use a keyboard. 6. Pupils will know some basic rules to keep them safe when using technology. **Skills** -Pupils will recognise that technology can be used in different ways and for different purposes - Pupils will identify main parts of a computer and	**Unit:** Creating media – Digital Painting **Core Knowledge** 1. Pupils will know what different freehand tools do in digital painting. 2. Pupils will know how to use line and shape tools. 3. Pupils will know how to select a certain tool for a particular purpose. 4. Pupils will know how to use the undo feature in a digital painting program. **Skills** -Pupils will use shape, line tools, colour fill and undo -Pupils will combine tools to make a piece of artwork	**Unit**: Programming A – Moving a robot **Core knowledge** 1. Pupils will know how to run a command on a device. 2. Pupils will know how to predict the outcome of a command on a device. 3. Pupils will know how to give effective instructions to direct. 4. Pupils will know how to order commands into a sequence. 5. Pupils will know the importance of planning their programming. 6. Pupils will know how to debug a program they have created. **Skills** **-**pupils will predict the outcome of a command on a device -pupils will run a command on a floor robot	**Unit:** Data and Information - Grouping data **Core Knowledge** 1. Pupils will know why objects have labels including the purposes of these. 2. Pupils will know how to describe objects in different ways (ex: colour, size). 3. Pupils will know how to compare groups of objects. 4. Pupils will know how to record their findings. **Skills** -pupils will collect simple data -pupils will describe properties of an object -pupils will choose an attribute to group data by. - pupils will group objects to answer questions	**Unit:** Creating Media – digital writing **Core Knowledge** 1. Pupils will know the purpose of a word processor. 2. Pupils will know how to add and remove text on a word processor. 3. Pupils will know how to change the look of text on a word processor (capital letters, bold, font etc). 4. Pupils will know how to select a section of text. **Skills** -pupils will use letter, number, space, key, punctuation and special characters on a keyboard -pupils will sue backspace and undo to remove text and cursor for positioning -pupils will change the appearance of a text	**Unit:** Programming B – Introduction to animation **Core Knowledge** 1. Pupils will know how to choose a command in Scratch Jr programming. 2. Pupils will know how to join together a series of commands. 3. Pupils will know the effect of changing a value in the programming blocks. 4. Pupils will know how to create and test a program. **Skills** -pupils will choose a series of commands that can be run as a program - pupils will run a program on a device

how to use them eg: mouse, keyboard -Pupils will show how to use technology safely		-pupils will build a sequence of commands in steps			

Key Vocabulary All children to know the meaning of these words by the end of the unit		
Computer, desktop, laptop, mouse, keyboard, brush. screen, program, app, click, drag, typing, icon, file, edit, text, delete, cursor, internet, digital painting, freehand tool, fill, undo, artist, appropriate, style,	Word processor, backspace, toolbar, bold, italic, underline, font, improve, search, label, group, task, record.	Beebot, robot, program, left, right, direction, command, sequence, repeat, instruction, prediction, debug, solution, algorithm, sprite, background, block, 'run the program'.

Enrichment Opportunities
Trips / visitors/ WOW moments

- Use of technology across the school - Internet safety events - use of technology across the curriculum

Online Safety

- Pupils will know how to create, organise and store online content
- Pupils will know how to search safely online
- Pupils will know how to communicate safely online
- Pupils will know what personal information they need to keep safe
- Pupils will explore how to use email to safely communicate
- Pupils will know how apply the online safety knowledge to make good choices online

Year 2 Key content knowledge.					
Autumn Term		**Spring Term**		**Summer Term**	
Unit: Computing systems and networks – IT around us **Core Knowledge** 1. Pupils will know what a computer is. 2. Pupils will know the different purposes that computers are used for. 3. Pupils will know how different devices work together. 4. Pupils will know why we use IT. 5. Pupils will know how to stay safe online when using computers. 6. Pupils will know how different IT is suited for different activities. **Skills** -Pupils will identify technology within and outside of school -Pupils will show how to use IT safely	**Unit**: Creating Media - Digital photography **Core Knowledge** 1. Pupils will know the devices that can take photographs. 2. Pupils will know the different features of photographs. 3. Pupils will know what makes a good photograph. 4. Pupils will know how to improve a photograph. 5. Pupils will know the tools that can be used to edit photographs. **Skills** -Pupils will capture digital images -pupils will view photographs on a digital device -pupils will hold a camera still and use the zoom function	**Unit:** Programming A – Robot algorithms **Core Knowledge** 1. Pupils will know what a sequence is. 2. Pupils will know what an algorithm is. 3. Pupils will know why the same instructions can create different outcomes. 4. Pupils will know how algorithms can have artwork. 5. Pupils will know how to create an algorithm. 6. Pupils will know what debugging is. **Skills** -Pupils will choose a series of instructions that can be run as a program -Pupils will create and run a program on a device - Pupils will trace a sequence to make a prediction	**Unit**: Data and Information - Pictograms **Core Knowledge** 1. Pupils will know what a tally chart is and what the tally represents. 2. Pupils will know how objects can be represented as pictures. 3. Pupils will know what a pictogram is. 4. Pupils will know what an attribute is. 5. Pupils will know why some information should not be shared. 6. Pupils will know how computers are used to present information. **Skills** -Pupils will show how to enter data onto a computer -pupils will recognise that people, animals and objects can bye described by atributes -pupils will view data to answer questions	**Unit**: Creating Media- Making music **Core Knowledge** Pupils will know the different features of music. 1.Pupils will know how music is created and played. 2.Pupils will know how to connect images with sound. 3.Pupils will know what a musical pattern is. 5. Pupils will know the different purposes of music **Skills**. -Pupils will experiment with musical patterns and sounds using a computer -pupils will use a computer to compose a rhythm and melody -pupils will evaluate and improve a musical composition created on a computer	**Unit**: Programming B - An introduction to quizzes **Core Knowledge** 1. Pupils will know a program needs to be started. 2. Pupils will know the commands cause the outcome. 3. Pupils will know what instruction each command represents. 4. Pupils will know the features of a Scratch design. 5. Pupils will know a sequence of blocks creates an algorithm. 6. Pupils will know what debug means. **Skills** -pupils will explain what happens when we change the order of a set of instructions -pupils will choose a series of commands that can be run as a program

	-pupils will develop how to improve a photo using lighting and filters.	-Pupils will debug a program they have written			-pupils will test and debug a prediction by running a sequence

Key Vocabulary All children to know the meaning of these words by the end of the unit		
Computer, IT, online, digital, portrait, landscape, effect.	Tally, pictogram, attribute, sequence, algorithm, instruction, debug.	Sequence, program, sprite, debug, rhythm, instrument, pitch, notes.

Enrichment Opportunities
Trips / visitors/ WOW moments

- Use of technology across the school - Internet safety events - use of technology across the curriculum - musical patterns using technology
- Internet research

Online Safety

- Pupils will know that information they put online leaves a digital footprint
- Pupils will know hot to use key words to research a topic
- Pupils will know whether a website is appropriate for children
- Pupils will know how to review information websites
- Pupils will know how to identify unkind behaviour online
- Pupils will know how to apply their online safety knowledge to different situations

Key Stage 2 National Curriculum Objectives

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year 3 Key content knowledge.					
Autumn Term		**Spring Term**		**Summer Term**	
Unit: Comouting Systems and Networks- Connecting computers **Core knowledge** 1. Pupils will know how a digital device works. 2. Pupils will know what parts make up a digital device. 3. Pupils will know how digital devices help us. 4. Pupils will know how to connect devices. 5. Pupils will know how computers are connected. 6. Pupils will know what our school network will look like. **Skills** -Pupils will identify input and output devices -pupils will explain how a computer system accepts and input and processes it to produce an output	**Unit**: Creating Media - Animation **Core knowledge** 1. Pupils will know how to make a picture move. 2. Pupils will know how to make a stop frame animation using a tablet. 3. Pupils will know how to create a storyboard for a stop frame animation. 4. Pupils will know how to create their own storyboard and use their plan to create a storyboard. 5. Pupils will know how to evaluate their storyboard and make changes. 6. Pupils will know how to add effects onto their storyboard. **Skills** -pupils will plan an animation -pupils will capture an image	**Unit**: Programming A – Sequence in music **Core knowledge** 1. Pupils will know how to compare Scratch to other programming devices. 2. Pupils will know how to create a movement for more than one sprite. 3. Pupils will know how to sequence coding blocks together. 4. Pupils will know how to sequence in a correct order and create their own sequences. 5. Pupils will know how to combine motion and sounds in one sequence. 6. Pupils will know how to create musical instruments in Scratch. **Skills** -Pupils will build a sequence of commands -pupils will combine commands in a program	**Unit**: Data and Information - Branching databases **Core knowledge** 1. Pupils will know how to answer yes/no questions. 2. Pupils will know how to arrange objects into a tree structure. 3. Pupils will know how to organise objects/images in a branching database structure. 4. Pupils will know how to structure a branching database, creating a well-structured database. 5. Pupils will know how to create a branching database that will identify a given object. 6. Pupils will know how to compare 2 different ways of presenting information. **Skills** -pupils will create questions with yes/no answers -pupils will choose questions that will	**Unit**: Creating Media - Desktop publishing **Core knowledge** 1. Pupils will know how to identify the differences between 'text' and 'images'. 2. Pupils will know how to edit a text. 3. Pupils will know how to use 'templates, orientation and placeholders' to create their own magazine template. 4. Pupils will know how to add content to their magazine templates. 5. Pupils know how to change the layout on their template. 6. Pupils know how to publish on a desktop and why it is used in the wider world **Skills** -pupils will show that page orientation can be changed -pupils will add and organise text to a	**Unit**: Programming B – Events and actions **Core knowledge** 1. Pupils will know how to move a sprite in an existing project. 2. Pupils will know how to move a sprite I a left, right down and up direction. 3. Pupils will know how to use the 'pen extension' tool in Scratch. 4. Pupils will know how to add additional 'pen blocs' into an existing project. 5. Pupils will know how to debug movement and fixing errors in a program. 6. Pupils will know how to design and create their own projects. Moving a sprite around a maze in their own project. **Skills** -pupils will build a sequence of commands -pupils will combine and order commands in a program

	-pupils will use skimming tool to review image position -pupils will review a captured sequence of frames as an animation – removing frames, adding media	-pupils will order commands in a program -pupils will create a sequence of commands to produce a given output	divide objects into evenly sized subgroups -pupils will identify an object using a branching database -pupils will retrieve information from a branching datatbase	placeholder in a page layout -pupils will resize and rotate images -pupils will choose fonts and apply effects to text.	-pupils will create a sequence of commands to produce a given outout
Key Vocabulary					
Digital, device, input, process, picture, animations, flip books, style, sequence, film.		Compare, objects, develop, investigate, attribute, pictogram, Scratch, programming environments, sprites, backdrops.		Layout, template, text, images, communicate purpose, desktop, music, actions, event, size, maze, movement.	
Enrichment Opportunities Trips / visitors/ WOW moments					
- Use of technology across the school - Internet safety events - use of technology across the curriculum - Internet research					

Online Safety

- Pupils will know what cyberbullying is and how to address it
- Pupils will understand how websites use adverts to promote products
- Pupils will know how to create strong passwords and understand privacy settings
- Pupils will know hot to safety send and receive emails
- Pupils will know different ways they can communicate online
- Pupils will know how to apply their online safety knowledge to different situations

<table>
<tr><th colspan="6">Year 4
Key content knowledge.</th></tr>
<tr><th colspan="2">Autumn Term 1</th><th colspan="2">Spring Term 1</th><th colspan="2">Summer Term 1</th></tr>
<tr>
<td>Unit: Computer systems and networks - The internet

Core knowledge
1. Pupils will know how to share messages via a network that isn’t the internet.
2. Pupils will know how to connect parts of a network and how they can connect with each other to form the internet.
3. Pupils will know how to share on the world wide web and how websites are stored.
4. Pupils will know how to analyse the contents of websites, before designing their own website, offline.
5. Pupils will know how to discover who owns a website.
6. Pupils will know how to understand whether something is accurate, honest and true on the internet.

Skills</td>
<td>Unit: Creating Media - Audio editing

Core knowledge
1. Pupils will know what a digital device is and familiarise themselves with these devices.
2. Pupils will know how to record their own sounds and play back the audio recorded.
3. Pupils will know how to plan and begin to record their own podcast.
4. Pupils will know how to edit and finalise their own podcast.
5. Pupils will know how to record additional sounds for their podcasts, such as sound effects or background music.
6. Pupils will know how to evaluate their podcast and make adjustments.

Skills
-pupils will record sound using a computer
-pupils will play recorded audio</td>
<td>Unit: Programming A – Repetition in shapes

Core knowledge
1. Pupils will know how they can use programming in Logo.
2. Pupils will know how to program letters using Logo.
3. Pupils will know how everyday patterns are around us and recognise the numbers, shapes and symbols are repeated.
4. Pupils will know how to count-control loops in a range of contexts.
5. Pupils will know how to breakdown everyday tasks into smaller parts and think about how code snippets can be broken to be made easier to plan/use.
6. Pupils will know how to use their new learnt knowledge to create a program containing a count-controlled loop.

Skills
-pupils will list a set of instructions including repetition</td>
<td>Unit: Data and information - Data logging

Core knowledge
1. Pupils will know what data can be collected and how it is collected.
2. Pupils will know how computers can collect data.
3. Pupils will know how to log data onto a computer.
4. Pupils will know how use an existing data file to find out key info.
5. Pupils will know how to use questions to find out information and collect data based on this.
6. Pupils will know how to access and review the data that they have collected using a data logger.

Skills
-pupils will use a digital device to collect data automatically</td>
<td>Unit: Creating Media - Photo editing

Core knowledge
1. Pupils will know how to use an online editor and change images using a range of tools.
2. Pupils will know how to identify the changes that have been made to images.
3. Pupils will know how to use effects on images to change the colours and filters.
4. Pupils will know how to edit images using ‘retouch tools’.
5. Pupils will know how to sort images into ‘fake’ and ‘real’, creating their own fake images and provide reasons for their creation.
6. Pupils will know how to use their fake image to advertise in an imaginary place.

Skills
-pupils will recognise that digital images can be manipulated and changed for different purposes</td>
<td>Unit: Programming B - Repetition in games

Core knowledge
1. Pupils will know how to use Scratch to create shapes using count-controlled loops.
2. Pupils will know how to use infinite and count-controlled loops.
3. Pupils will know how to create designs for an animation of the letters in their names.
4. Pupils will know how to use an existing game and match parts of the game with a design.
5. Pupils will know how to look at a model project using repetition.
6. Pupils will know how to build their own games, using the designs they created in the previous lesson.

Skills
-pupils will list a set of instructions including repetition
-pupils will use an indefinite and count-</td>
</tr>
</table>

-Pupils describe how networks connect to other networks -Pupils outline how information can be shared via the World Wide Web -Pupils evaluate the reliability of content and the consequences of unreliable content	-pupils will import audio into a project -pupils will change volume of audio	-pupils will use a loop to produce a given outcome -pupils will recognise tools that enable more than one process to be run at a time -pupils will create two or more sequences that run at same time	-pupils will use a set of logged data to find information -pupils will use a compute program to sort data by one attribute -pupils will export information in different formats.	-pupils will be able to choose the most appropriate tool for a particular purpose -Pupils will consider the impact of changes made on the quality of an image	controlled loops to produce a given outcome -pupils will recognise tools that enable more than one process at a time
Key Vocabulary					
Networks, connecting, honest, accurate, reliable, internet, protecting, microphone, digital devices, Audacity, headphones, feedback.		Logo, program, computer, effect, change, snippet, algorithms, program, collecting data, capture, intervals.		Images, crop, composition, edit, publication, retouching tool, count-controlled, infinite loop, sequence.	
Enrichment Opportunities Trips / visitors/ WOW moments					
- Use of technology across the school - Internet safety events - use of technology across the curriculum - musical patterns using technology Internet research					
<u>Online Safety</u> • Pupils will know how to respond to an unkind message online • Pupils will know how to use a search engine accurately and safely • Pupils will know the term 'plagiarism' and how to avoid it • Pupils will know how to create a safe online profile • Pupils will know how to be a responsible digital citizen. • Pupils will know how to report online concerns					

<table>
<tr><th colspan="6">Year 5
Key content knowledge.</th></tr>
<tr><th colspan="2">Autumn Term</th><th colspan="2">Spring Term</th><th colspan="2">Summer Term</th></tr>
<tr>
<td>Unit: Computing systems and networks – systems and searching

Core Knowledge
1. Pupils will know that computers can be connected together to form systems.
2. Pupils will know the role of computer systems in our lives.
3. Pupils will know how information is transferred over the internet.
4. Pupils will know how sharing information online lets people in different places work together.
5. Pupils will know how to contribute to a shared project online.

Skills
-pupils will describe the input and output of a search engine
- Pupils will demonstrate that different search</td>
<td>Unit: Creating Media Video editing

Core Knowledge
1. Pupils will know what makes an effective video
2. Pupils will know how to use a digital device to film a video, experimenting with different camera angles and using a microphone.
3. Pupils will know how to capture video using a range of techniques.
4. Pupils will know how to review how effective their video is and edit it or reshoot it to make it better.
5. Pupils will know that the choices made when making a video will impact the quality of the outcome.
6. Pupils will know how to evaluate videos - review the content they have created.

Skills</td>
<td>Unit: Programming A – Selection in physical computing

Core Knowledge
1. Pupils will know how drawing tools can be used to produce different outcomes.
2. Pupils will know how to create a vector drawing by combining shapes.
3. Pupils will know how to use tools to achieve a desired effect.
4. Pupils will know how to recognise that vector drawings consist of layers.
5. Pupils will know how to group objects to make them easier to work with.
6. Pupils will know how to evaluate their vector drawing.

Skills</td>
<td>Unit: Data and Information- Flat-file databases

Core Knowledge
1. Pupils will know how to use a form to record information.
2. Pupils will know how to compare paper and computer-based databases.
3. Pupils will know that grouping and sorting data allows us to answer questions.
4. Pupils will know how tools can be used to select specific data.
5. Pupils will know how computer programs can be used to compare data visually.
6. Pupils will know how to apply knowledge of. Database to ask/answer real-world questions.

Skills
-Pupils choose different ways to view sata</td>
<td>Unit: Creating Media - Vector drawing

Core Knowledge
1. Pupils will know what makes an effective video – looking at features.
2. Pupils will know how to use a digital device to film a video, experimenting with different camera angles and using a microphone.
3. Pupils will know how to capture video using a range of techniques.
4. Pupils will know how to review how effective their video is and edit it or reshoot it to make it better.
5. Pupils will know that the choices made when making a video will impact the quality of the outcome.

Skills
-Pupils add an object to a vector drawing</td>
<td>Unit: Programming B – Selection in quizzes

Core Knowledge
1. Pupils will know how selection is used in computer programs.
2. Pupils will know why a conditional statement connects a condition to an outcome.
3. Pupils will know how selection directs the flow of a program.
4. Pupils will know how to design a program which uses selection.
5. Pupils will know how to create a program which uses selection.
6. Pupils will know how to evaluate a program.

Skills
-Pupils choose a condition to use in a program
-Pupils create a condition-controlled loop</td>
</tr>
</table>

terms produce different results -Pupils will evaluate the results of search terms	-Pupils will use different camera angles – pan, tilt, zoom -Pupils will identify features of a video recording device -Pupils will decide what changes should be made when editing -Pupils will use split, trim and crop to edit a video	-pupils create a condition-controlled loop to start an action -pupils will sue selection to switch the program flow in one or two ways.	-Pupils choose which attribute and value to search by to answer a given question -Pupils choose which attribute to sort data by to answer a given question -Pupils select an appropriate graph to visually compare data -Pupils choose suitable ways to present information to other people	-Pupils select one or multiple objects -Pupils move objects between the layers of a drawing -Pupils duplicate objects using copy and paste -Pupils modify and repat objects' -Pupils combine options to achieve a desired effect -Pupils create a vector drawing for a given purpose	-Pupils use selection to switch program flow -Pupils use 'if... then... else…' to switch program flow in one of two ways

Key Vocabulary

All children to know the meaning of these words by the end of the unit

Systems, parts, outputs, inputs, communicate, reshoot, video, quality, outcome, vector.	Microcontroller, concept, utilise, operation, components, paper-based database, information, filter, findings.	Audio, video, benefits, project, storyboard, creation, physical computing, gadgets, modify, programming environment.

Enrichment Opportunities

Trips / visitors/ WOW moments

- Use of technology across the school - Internet safety events - use of technology across the curriculum - Internet research

Online Safety

- Pupils will know how to identify a spam email and what to do with them
- Pupils will know what a 'citation' is and how to write one when researching online
- Pupils will know how to create strong passwords
- Pupils will know how to recognise why and how online photographs may have been edited
- Pupils will know how to apply online safety rules to real-life scenarios.

Year 6 Key content knowledge.					
Autumn Term		**Spring Term**		**Summer Term**	
Unit: Computing systems and networks Communication **Core Knowledge** 1. Pupils will know how to use a search engine. 2. Pupils will know how search engines select results. 3. Pupils will know how search results are ranked. 4. Pupils will know why the order of results is important, and to whom. 5. Pupils will know how we communicate using technology. 6. Pupils will know how to evaluate different methods of online communication. **Skills** -Pupils outline methods of communicating and collaborating using the internet -Pupils choose methods of internet communication and	**Unit**: Creating Media - Web page creation **Core Knowledge** 1. Pupils will know how to define a variable as something that is changeable. 2. Pupils will know how to explain why a variable is used in a program. 3. Pupils will know how to improve a game by using variables. 4. Pupils will know how to design a project that builds on a given example. 5. Pupils will know how to use my design to create a project. 6. Pupils will know how to evaluate a project. **Skills** -Pupils review an existing website (navigation bars, header) -Pupils create a new blank web page	**Unit**: Programming A – Variables in games **Core Knowledge** 1. Pupils will know how to use a computer to create and manipulate 3D digital objects. 2. Pupils will know how to compare working digitally with 2D and 3D graphics. 3. Pupils will know how to construct a digital 3D model of a physical object. 4. Pupils will know how to identify that physical objects can be broken down into a collection of 3D shapes. 5. Pupils will know how to design a digital model by combining 3D objects. 6. Pupils will know how to develop and improve a digital 3D model. **Skills** -Pupils identify a variable in an existing program -Pupils experiment with the value of an existing variable -Pupils choose a name that identifies the role of a	**Unit**: Data and Information - Spreadsheets **Core Knowledge** 1. Pupils will know how to identify questions which can be answered using data. 2. Pupils will know that objects can be described using data. 3. Pupils will know how formulas can be used to produce calculated data. 4. Pupils will know how to apply formulas to data, including duplicating. 5. Pupils will know how to create a spreadsheet to plan an event. 6. Pupils will know how to choose suitable ways to present data. **Skills** -Pupils calculate data using a formula for each operation	**Unit**: Creating Media- 3D Modelling **Core Knowledge** 1. Pupils will know how to review an existing website and consider its structure. 2. Pupils will know how to plan the features of a website. 3. Pupils will know how to consider the ownership and use of images (copyright) 4. Pupils will know how to recognise the need to preview pages. 5. Pupils will know how to outline the need for a navigation path. 6. Pupils will know how to recognise the implications of linking to content owned by other people. **Skills** -Pupils position 3D shapes relative to one another -Pupils use digital tools to modify 3D objects	**Unit**: Programming B – Sensing **Core Knowledge** 1. Pupils will know how to create a program to run on a controllable device. 2. Pupils will know that selection can control the flow of a program. 3. Pupils will know how to update a variable with a user input. 4. Pupils will know how to use a conditional statement to compare a variable to a value. 5. Pupils will know how to design a project that uses inputs and outputs on a controllable device. 6. Pupils will know how to develop a program to use inputs and outputs on a controllable device. **Skills** -pupils identify a variable in an existing program -Pupils experiment with the value of an existing variable

collaboration for given purposes -Pupils evaluate different methods of online communication and collaboration -Pupils decide what you should and should not share online	-Pupils add text to a web page -Pupils set the style of text on a web pag -Pupils embed media in a web page -Pupils insert hyperlinks between pages	variable to make it easier for humans to understand it -Pupils decide where in a program to set a variable -Pupils use a variable in a conditional statement to control the flow of a program -Pupils use the same variable in more than one location in a program	-Pupils use functions to create new data -Pupils use existing cells within a formula -Pupils choose suitable ways to present spreadsheet data	-Pupils combine objects to create a 3D digital artefact -Pupils use digital tools to accurately size 3D objects -Pupils construct a 3D model which reflects a real world object	-Pupils choose a name that identifies the role of a variable to make it more usable (to humans) -Pupils decide where in a program to set a variable -Pupils use a variable in a conditional statement to control the flow of a program

Key Vocabulary

All children to know the meaning of these words by the end of the unit

Methods, online, communicate, searching, search engines, internet, HTML code, types of media, web page layout.	Real-world variables, variable, artwork, project, organise, analyse, existing data, formulas.	3D modelling, physical objects, 2D and 3D graphics, accurate models, photo frame, microbit, scaffold, construct, controllable device.

Enrichment Opportunities

Trips / visitors/ WOW moments

- Use of technology across the school - Internet safety events - use of technology across the curriculum -Internet research – Crucial Crew trip

Online Safety

- Pupils will know good strategies to deal with cyber-bullying
- Pupils will know hot to identify a secure website
- Pupils will know information that they should never share
- Pupils will know how the media has a powerful role in shaping gender ideas
- Pupils will know how to apply their online safety knowledge to their online activities