Hawley Primary School

WHOLE SCHOOL Long Term Overview
Computing

EYFS Development Matters:

• Completes a simple program on a computer.
• Uses ICT hardware to interact with age-appropriate computer software.

Early Learning Goal
Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

Statutory Content Coverage

Key stage 1
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

Key stage 2
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

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A and B						
EYFS	**Finding our Feet** **Is There Room on a Broom for a Gruffalo**	**In with a bang** **Celebrating You**	**Once upon a time**	**Eggcellent!**	**It's a bugs life**	**Join our journey**
Year 1/2 Topic	**Hooray for Hawley**	**Up up and away**	**Victorious Victorians**	**Into the Toy Box**	**To the rescue**	**Going for Gold!**
Computing concept year 1	**Technology 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.	**Creating media- 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.	**Programming A- 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.	**Data and information- Grouping 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.	**Creating media- 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.	**Programming B- Programming animations.** 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.
Computing concept year 2	**Computing systems and networks- 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.	**Creating media- 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.	**Programming A- 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. To explain that programming projects can have code and artwork. To design an algorithm. To create and debug a program that I have written.	**Data and information- 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.	**Making music.** To say how music can make us feel. To identify that there are patterns in music. To experiment with sound using a computer. To use a computer to create a musical pattern. To review and refine our computer work.	**Programming B- Programming 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.
Year 3/4 Topic	**Were the Romans really rotten?**	**The Power of Words**	**Lights, Camera, Action!**		**Walk like an Egyptian!**	
Computing concept year 3	**Computing systems and networks- Connecting computers.**	**Creating media- Stop frame animation.**	**Programming A- Sequencing sounds.**	**Data and information- Branching databases.**	**Creating media- desktop publishing.**	**Programming B- Events and actions in programs**

	To explain how digital devices function. To identify input and output devices To recognise how digital devices can change the way that 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	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.	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	To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database To explain why it is helpful for a database to be well structured To plan the structure of a branching database To independently create an identification tool	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	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
Computing concept year 4	**Computing systems and networks- 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	**Creating media- audio production.** To identify that sound can be recorded To explain that audio recordings can be edited To recognise the different parts of creating a podcast project To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio	**Programming A- 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	**Data and information- 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 recognise how a computer can help us analyse data To identify the data needed to answer questions To use data from sensors to answer questions	**Creating media- photo editing** To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image	**Programming B- 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
Year 5/6	**Coastal Adventures**	**Sensational Shang** The First Chinese Superpower	**We Rule!**		**Ever Evolving**	
Computing Concept year 5	**Systems and searching** To explain that computers can be connected together to form systems. To recognise the role of computer systems in our lives. To identify how to use a search engine. To describe how search engines select results. To explain how search results are ranked.	**Creating media- video production.** To explain what makes a video effective. To use a digital device to 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.	**Programming A- Selection in phsyical 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.	**Flat-file databases** To use a form to record information. To compare paper and computer-based databases. To outline how you can answer questions by grouping and then sorting data. To explain that tools can be used to select specific data. To explain that computer programs can be used to compare data visually.	**Introduction to vector graphics.** 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.	**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 that uses selection. To create a program that uses selection. To evaluate my program.

	To recognise why the order of results is important, and to whom.	To consider the impact of the choices made when making and sharing a video.	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.	To use a real-world database to answer questions.	To group objects to make them easier to work with. To apply what I have learned about vector drawings.	
Computing concept year 6	**Communication and collaboratiom** To explain the importance of internet addresses. To recognise how data is transferred across the internet. To explain how sharing information online can help people to work together. To evaluate different ways of working together online. To recognise how we communicate using technology. To evaluate different methods of online communication.	**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.	**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.	**Introduction to spreadsheets** To create a data set in a spreadsheet. To build a data set in a spreadsheet. To explain that formulas can be used to produce calculated data. To apply formulas to data. To create a spreadsheet to plan an event. To choose suitable ways to present data.	**3D modelling** To recognise that you can work in three dimensions on a computer. To identify that digital 3D objects can be modified. To recognise that objects can be combined in a 3D model. To create a 3D model for a given purpose. To plan my own 3D model. To create my own digital 3D model.	**Programming B- sensing movement** 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.