



Sheerness West Federation

Progression in Computing



Curriculum Aims & Subject Content

- 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 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.

| | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---------------------------------------|--|--|--|--|---|---|---|
| Computers | <ul style="list-style-type: none"> • I can recognise that a range of technology is used in places such as homes and schools. | <ul style="list-style-type: none"> • I can recognise how I use technology in my home and school | <ul style="list-style-type: none"> • I can recognise how others use technology outside of school. | <ul style="list-style-type: none"> • I know what input and output devices are and how they are used • I can use a range of input and output devices efficiently | <ul style="list-style-type: none"> • I can use more complicated input devices | | |
| Using computers | <ul style="list-style-type: none"> • I can you use ICT hardware to interact with age-appropriate computer software. | <ul style="list-style-type: none"> • I can use a program to create a simple document | <ul style="list-style-type: none"> • I can use different software programs and discuss the benefits for their usage. • I can find, open, edit and save files I am working on. | <ul style="list-style-type: none"> • I can make choices on which program is best for a given task. | <ul style="list-style-type: none"> • I can use different software programs and different types of hardware. • I can use a range of programs to complete a task. | <ul style="list-style-type: none"> • I can select appropriate software to use for a given task. • I can confidently use a range of software tools. | <ul style="list-style-type: none"> • I can use more than one piece of software to complete a task. • I can design a program for a given audience. • I can use software to help me analyse and present data and information. |
| Net searching | | | | <ul style="list-style-type: none"> • I can use a search engine to find web pages • I understand that not all websites are as reliable as others | <ul style="list-style-type: none"> • I understand how search engines order their search results | <ul style="list-style-type: none"> • I can use more advanced features when searching online • I can use a range of search tools to find exactly what I'm looking for | <ul style="list-style-type: none"> • I can recognise trustworthy sources of information on the internet • I can use a broad range of resources online to find exactly what I'm looking for |
| Networks | | | | <ul style="list-style-type: none"> • I understand that computer networks allow data to be transferred and shared • I understand that the internet is a large network that enables computers to share information | <ul style="list-style-type: none"> • I understand that some computers on a network serve particular functions, such as controlling printers or sharing files | <ul style="list-style-type: none"> • I can use the internet to allow me to share data with another person | <ul style="list-style-type: none"> • I understand how computers are able to communicate and share information |
| Coding | <ul style="list-style-type: none"> • I can operate simple equipment, e.g. turns on CD player and uses remote control. | <ul style="list-style-type: none"> • I can predict the behaviour of a programmed toy • I can explain that an algorithm is a step by step set of instructions | <ul style="list-style-type: none"> • I can predict the behaviour of a programmed toy, clearly relating each action to part of an algorithm • I can create a simple program to perform a task • I can create and debug simple programs • I can find and fix simple bugs in programs • I can understand that programs run by following clear instructions | <ul style="list-style-type: none"> • I can explain how simple algorithms solve a given problem • I can produce a simple program that completes a given task | <ul style="list-style-type: none"> • I can break programs up into smaller parts • I can use logical thinking to identify and solve potential bugs during coding • I can use other programs as I code | <ul style="list-style-type: none"> • I can explain how increasingly complex algorithms solve a given problem • I can write increasingly complex programs • I can control external hardware from within my programs • I can use loops to repeat tasks within a program • I can use IF statements to alter the way my programs run | <ul style="list-style-type: none"> • I can store and retrieve variables in a program • I can use loops, variables and IF statements to alter the way my programs run • I can break code up into related instructions, making debugging easier and quicker • I can combine software and hardware to solve real life problems |
| E-Safety | <ul style="list-style-type: none"> • I can gain an effective understanding or risks of digital technology, social media and internet use. | <ul style="list-style-type: none"> • I know to tell an adult if I see anything worrying online | <ul style="list-style-type: none"> • I know I need to keep my personal information private | <ul style="list-style-type: none"> • I know I need to keep my password and personal information secure • I can recognise acceptable and unacceptable behaviour online | <ul style="list-style-type: none"> • I understand that what I say or post on the internet might be copied, shared and stored by others • I know what to do if I see anything worrying online | <ul style="list-style-type: none"> • I understand how to choose online content for my age group | <ul style="list-style-type: none"> • I understand how to protect my computer or device from harm on the internet • I understand how to report concerns about content and contact in and out of school |
| Links to SMSC Cultural Capital | <ul style="list-style-type: none"> • Preparing the children for the challenges of living and learning in a technologically enriched, increasingly interconnected world. • Making clear the guidelines about the ethical use of the internet and how we keep ourselves and others safe e.g. discussing the moral and social implications of cyber-bullying. • Acknowledging advances in technology and appreciation for human achievement. | | | | | | |