Computing Curriculum

Banham Primary School

How we teach Computing at Banham Primary School

At Banham Primary School we have aimed to create a curriculum that encourages children to become enthusiastic and engaged with Computing as well as developing strong IT skills through opportunities for practical application.

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.

In KS1 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.

In KS2 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.

In order to provide a clear framework of knowledge and skills progression we have adopted the National Centre for Computing Education's Teach Computing Curriculum which can be found below:

https://teachcomputing.org/ This is delivered during weekly year group lessons on a rotational basis with Forest schools each term. For example, this half term it is Years 2/4/6 and this will then rotate with Year 1/3/5 next half term. This enables smaller class sizes to access the materials which is taught by the class teacher. E-safety is taught through, and alongside, our PSHE lessons and in addition to whole school assemblies.

A glossary of terms can be found using the link below:

https://teachcomputing.org/primary-computing-glossary

Below is a simplified version of the skills progression document.

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science Write and debug programs	To create a simple program	Create simple programs	Can debug simple programs	Design and create programs that use sequences	Use repetition in programs	Design and debug programs that use selection	Work with variables
Computer Science Algorithms and logical reasoning	Explore programmable toys	Understand that programs follow instructions	Use logical reasoning to make predictions in programs	Use logical reasoning to detect errors in programs	Use logical reasoning to correct errors in programs	Explain how algorithms work and detect and correct errors in them	Solve problems by decomposing programs into smaller parts
Information technology Create digital content	Use IT hardware and software	Use technology purposefully to create content	Use technology to manipulate content	Choose from a variety of software to achieve a goal	Create content to achieve a goal	Design and create systems to achieve a given goal	Combine a variety of software to achieve a goal
Digital literacy	Explain what a computer is	Describe common uses of technology	Describe common uses of technology	Understand computer networks and communication	Understand how networks provide services	Understand networks and collaboration	Understands basic networks
E-safety	How to use a device safely	Use technology safely	Keep personal information private	Recognise acceptable content	Recognise acceptable online behaviour	Using technology respectfully and responsibility	How to report concerns about content and contact