Westbury on Severn CE Primary: Computing curriculum

At Westbury-on-Severn we want pupils to be masters of technology and not slaves to it. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely.
Pupils at our school understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology.
We recognise that technology can allow pupils to share, and celebrate their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils.
Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists. Staff try and embed computing across the whole curriculum to make learning creative and accessible.
We follow planning from the 'Teach Computing' curriculum provided by the National Centre for Computing education https://teachcomputing.org/curriculum . The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. Mixed year group sessions are chosen as to weight the lower year group units first in each year, and progress to the upper year groups' units.

Year A	Pre-school	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Explore how things work Return to and build on their previous learning, refining ideas and developing their ability to represent them	Computing systems and networks – Technology around us (Y1)		Creating media – Digital photography		Computing systems and networks – The Internet (Y4)		
Autumn 2				Data and information – Pictograms		Data and information – Data logging (Y4)		
Spring 1		Programming A – Moving a robot		Programming B - Programming quizzes		Computing systems and networks - Systems and searching (Y5)		
Spring 2				Computing systems and networks – Connecting computers (Y3)		Data and information – Flat-file databases (Y5)		
Summer 1		Creating media – Digital writing		Programming A - Sequencing sounds (Y3)		Creating media – Web page creation (Y6)		
Summer 2				Creating media – Desktop publishing (Y3)		Programming A – Variables in games (Y6)		

Year B	Pre-school	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Explore how things work Return to and build on their previous learning, refining ideas and developing their ability to represent them			Computing systems and networks – IT around us		Creating media - Audio production (Y4)		
Autumn 2		Creating media – Digital painting		Programming A – Robot algorithms		Programming B – Repetition in games (Y4)		
Spring 1		Data and information – Grouping data		Creating media - Digital music		Programming A – Selection in physical computing (Y5)		
Spring 2				Creating media - Stop-frame animation (Y3)		Creating media – Introduction to vector graphics (Y5)		
Summer 1		Programming B - Programming animations		Data and information – Branching databases (Y3)		Data and information – Spreadsheets (Y6)		
Summer 2				Programming B - Events and actions in programs (Y3)		Creating media – 3D Modelling (Y6)		

Year C	Pre-school	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1						Programming A – Repetition in shapes (Y4)		
Autumn 2						Creating media – Photo editing (Y4)		
Spring 1						Creating media - Video production (Y5)		
Spring 2						Programming B – Selection in quizzes (Y5)		
Summer 1						Computing systems and networks - Communication and collaboration (Y6)		
Summer 2						Programming B - Sensing movement (Y6)		

National Curriculum Coverage — Years 1 and 2	1.1 Technology around us	1.2 Digital painting	1.3 Moving a robot	1.4 Grouping data	1.5 Digital writing	1.6 Programming animations	2.1 Information technology around us	2.2 Digital photography	2.3 Robot algorithms	2.4 Pictograms	2.5 Digital music	2.6 Programming quizzes
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	✓			✓	✓		✓	✓	✓	✓		

National curriculum coverage - Years 3 and 4	3.1 Connecting computers	3.2 Stop-frame animation	3.3 Sequencing sounds	3.4 Branching databases	3.5 Desktop publishing	3.6 Events and actions in programs	4.1 The internet	4.2 Audio production	4.3 Repetition in shapes	4.4 Data logging	4.5 Photo editing	4.6 Repetition in games
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		✓		✓			✓	✓			✓	

National curriculum coverage - Years 5 and 6	5.1 Systems and searching	5.2 Video production	5.3 Selection in physical computing	5.4 Flat-file databases	5.5 Introduction to vector graphics	5.6 Selection in quizzes	6.1 Communication and collaboration	6.2 Webpage creation	6.3 Variables in games	6.4 Introduction to spreadsheets	6.5 3D modelling	6.6 Sensing movementz
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	✓	✓						✓	✓		✓	