Computing Coverage map at Belmont school

Intent:

Our Computing curriculum is designed to foster children's curiosity and fascination with the digital world, as well as their confidence in embracing the changes that occur in this fast-paced, ever-changing environment. Computing plays an important role in Belmont School, so we have designed our Computing curriculum with the intent that:

- Pupils will be able to think about Computing as an evolving entity, how it shapes our present and contributes towards society.
- Provide each and every pupil with a broad and balanced Computing curriculum.
- Teaches pupils a skills-based curriculum that promotes individuality and creativity.
- Creates a curriculum, which also addresses those key issues associated with pupil wellbeing such as self-confidence and self-esteem.
- Encourages staff to try and embed computing across the whole curriculum to make learning creative and accessible.

Implementation:

As a school and in line with the National Curriculum's expectations, we aim to ensure that all pupils have the knowledge and skills to:
- Integrate Computing into all areas of the curriculum.
- Become proficient in using Information Technology, Computer Science and Digital Literacy.
- Evaluate and analyse learning using technical vocabulary.
- Understand and identify how technology is constantly evolving.
- Recognise the important roles Computing plays in social media, safeguarding, health, wellbeing and lifestyles.
- Become responsible and safe users of computing technology.

The Computing curriculum enables pupils to develop a range of skills. This is delivered using a range of technology such as online learning tools, iPads, computers, sound and visual recorders and classroom-based technology. The skills that are developed in Computing can be transferred across the curriculum and support learning in other areas.

Teachers use specific INSET days and afterschool CPD sessions in addition to their PPA, to plan their curriculum. As part of this planning process, teachers plan:
- A cycle of lessons for each computing subject, which carefully plans for progression and depth concentrating on the specific skills suited to the age group.
- Challenge questions for pupils to apply their learning in a philosophical/open manner.
- Trips and visiting experts who will enhance the learning experience.
- Appropriate curriculum themed home learning tasks which children complete with adults at home.

Impact:

By the time pupils leave our school they will:
- Have a secure understanding of the positive applications and specific risks associated with a broad range of digital technology.
- Confidently discuss, reflect the impact Computing has on their learning development, safety and well-being.
- Understand how to work safely and responsibly online, how to recognise and report security issues and concerns.
- Be able to evaluate real world issues by using personal experiences and real-life examples.
- Understand how to use algorithms to solve problems.

SLT and Subject Leaders monitor the impact of our Computing provision through completing regular monitoring, which includes listening to the voice of our pupils. In addition, the progress of our Computing curriculum is demonstrated through the children's outcomes. Evidence is gathered through reviewing pupil's knowledge and skills digitally through online platforms and tools like MS Teams, Purple Mash, Scratch, Teach Computing and observing learning regularly.

Computing Coverage Map 2023-24

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives:	National Curriculum Statements, KS1. Pupils should be taught to: **1.1** understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions **1.2** create and debug simple programs **1.3** use logical reasoning to predict the behaviour of simple programs **1.4** use technology purposefully to create, organise, store, manipulate and retrieve digital content **1.5** recognise common uses of information technology beyond school **1.6** 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 Statements, KS2. Pupils should be taught to: **2.1** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts **2.2** use sequence, selection, and repetition in programs; work with variables and various forms of input and output **2.3** use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs **2.4** 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 **2.5** use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **2.6** 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 **2.7** use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			

Teaching order

The order in which to teach units within a school year is not prescribed, other than for the two 'Programming' units for each year group, which build on each other. It is recommended that the 'Programming' and 'Creating media' units be revisited in two different terms within the school year, so that the concepts and skills can be revisited and consolidated. Otherwise, schools can choose the order in which they teach the units, based on the needs of their pupils and other topics or events that are happening throughout the school year, to make use of cross-curricular links wherever possible.

	Computing systems and networks	Creating media	Programming A	Data and Information	Creating media	Programming B
Year 1	Technology around us (1.1)*	Digital painting (1.2)	Moving a robot (1.3)	Grouping data (1.4)	Digital writing (1.5)	Programming animations (1.6)
Year 2	Information technology around us (2.1)	Digital photography (2.2)	Robot algorithms (2.3)	Pictograms (2.4)	Making music (2.5)	Programming quizzes (2.6)
Year 3	Connecting computers (3.1)	Stop-frame animation (3.2)	Sequencing sounds (3.3)	Branching databases (3.4)	Desktop publishing (3.5)	Events and actions in programs (3.6)
Year 4	The internet (4.1)	Audio production (4.2)	Repetition in shapes (4.3)	Data logging (4.4)	Photo editing (4.5)	Repetition in games (4.6)
Year 5	Sharing information (5.1)	Video production (5.2)	Selection in physical computing (5.3)	Flat-file databases (5.4)	Vector drawing (5.5)	Selection in quizzes (5.6)
Year 6	Internet communication (6.1)	Webpage creation (6.2)	Variables in games (6.3)	Introduction to spreadsheets (6.4)	3D modelling (6.5)	Sensing (6.6)

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 Making 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	✓		✓	✓			✓	✓	✓	✓		

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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 Sharing information	5.2 Video production	5.3 Selection in physical computing	5.4 Flat-file databases	5.5 Vector drawing	5.6 Selection in quizzes	6.1 Internet communication	6.2 Webpage creation	6.3 Variables in games	6.4 Introduction to spreadsheets	6.5 3D modelling	6.6 Sensing
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

	Pathways	Nursery	Reception
Statutory Framework outcomes:	Linked to EQUALS curriculum	To acquire basic skills in turning on and operating some ICT equipment. Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. 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.	To operate simple equipment e.g. turns on CD player and uses remote control. Knows that information can be retrieved from computers. Completes a simple program on a computer. Uses ICT hardware to interact with age-appropriate computer software. Can begin to use technology to take photographs 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.
Skills and knowledge pupils will need by the end of the year:	Linked to EQUALS curriculum	**Information technology** I can turn on ICT equipment (support to start and independent by the end of year). I can understand that ICT equipment needs to be charged to use and to independently put equipment on charge, by the end of the year. I can observe how different ICT equipment is used in school (class laptop / IWB / photocopier / taking photos from the iPad to the computer). I can recognise and press letters on an interactive whiteboard. I can move objects on a screen. I can use an interactive whiteboard for mark making I am aware that it is possible to interact with multimedia software to make something happen on screen.	**Information Technology** I know how to use iPads for a range of different purposes and select iPad tools / app for an individual purpose. (Photos / apps / software). I can begin to type in usernames and passwords to log on to a computer I can create shapes and edit objects on a screen. I can use a paint package to create a picture I can use a digital device to record images I can begin to use a keyboard and develop familiarity with letters, numbers, backspace (to delete), arrow keys and space bar. I can begin to sort, classify or group various objects progressing from practical activities to the use of ICT e.g. sorting fruit into colours, types or shapes, and then on screen.

		I can collect information e.g. by taking photographs or collecting objects. I know that some devices are connected to the internet **Computer Science** I can operate mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. I can show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. I can confidently use lift and flap books. I can demonstrate how sound books / games are used (pressing appropriate buttons). **E-Safety** I know that my name is personal information. I can ask for permission to use a device	I can develop mouse control through simple activities on-screen including click-and-drag, drag-and-drop. I can identify which devices access the internet e.g. TV, mobile phones, tablets, PC, laptop, gaming devices. **Computer Science** Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Using sound recording devices to explore the learning environment (support to start gaining independence throughout year). I can understand that pushing a button on a toy will give it an instruction I can predict what will happen when they push a button **E-Safety** I know why we need passwords. I know my name, age, address and where I go to school is personal information. I can tell an adult before I use technology. I can show an adult the websites I am using to check they are appropriate. I know that anyone can access information online. **E-Sense** I can recognise that a range of technology is used in places such as homes and school I can be kind and respectful online
Examples of how to support this:	Linked to EQUALS curriculum	Possible Resources: • Explore remote control toys.	Possible Resources • Independently using remote control toys controlling around obstacles. • Independently using story headphones.

		• Beginning to control remote control toys to a desired place; with support to start moving onto independent by the end of the year. • Using story headphones • Exploring Bee-Bots • Wind-up toys • Sound Boards to record and listen	• Independently controlling Bee-Bots. • iPads (Photos / videos / apps / games / Purple Mash) `• Classroom IWB (Paint / games) • Obtaining an iPad licence to promote safe usage and basic skills • Sound boards and microphones • Thermometer/pedometer
Suggested vocabulary:	Linked to EQUALS curriculum	Choices, Internet, Website, Equipment, Buttons, Movement, Screen, Mouse, Images, Keyboard, Paint Technology, Share, Create, Internet, Collect, Set of photos, count, Organise, e-safety, iPad, tablets, technology, instructions	