

Computing

Purpose

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

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.

Attainment Target

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Enrichment opportunities



Objective Coverage across Key Stage

| Year Group | Objective in Bold Covered | Mode of delivery | Promotion of Literacy and Maths |
|------------|---|--|---|
| Year 3 | <ul style="list-style-type: none"> ☐ 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 | Scratch 1.4 Computing Suite Smoking Car Game (2) BVB Music Machine (4) BVB Dressing Up Game (2) BVB Exploring Right Angles (3) | Maths Decimal fractions especially tenths used in Smoking Car & Music Machine Negative numbers used as extension Right Angles |
| Year 3 | <ul style="list-style-type: none"> ☐ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | Web research via other subject focus Research List (5) | |
| Year 3 | <ul style="list-style-type: none"> ☐ 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 | Word Processing (5) Desktop Publishing (5) Presentation Media (5) Stop Motion Animation (5) | Literacy Word Processing, Desktop Publishing & Presentation Media are all digital writing tools |
| Year 3 | <ul style="list-style-type: none"> ☐ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | Circle Times Passwords | |



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| Year 4 | <ul style="list-style-type: none"> ☐ 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 | Scratch 1.4 Computing Suite Conversation (2) BVB Maths Quiz (4) BVB Slug Trail Game (2) BVB Jam Sandwich Algorithm (1) Playground Games Flowcharts Algorithms (1) Selection Investigation (3) BVB | Maths Maths questions designed in quiz Decimal Fractions in slug trail game Literacy Conversation focus could be a literacy one |
| Year 4 | <ul style="list-style-type: none"> ☐ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | Web research via other subject focus Research List (5) | |
| Year 4 | <ul style="list-style-type: none"> ☐ 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 | Google Domain Email (3) Word Processing (4) Desktop Publishing (4) Presentation Media (4) Green Screen (4) | Literacy Word Processing, Desktop Publishing & Presentation Media are all digital writing tools |
| Year 4 | <ul style="list-style-type: none"> ☐ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | Circle Times Have your say Cyber People Create Poster for Chicken Clicking | |



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|--------|--|--|---|
| Year 5 | <ul style="list-style-type: none"> ❑ 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 | Scratch 1.4 Computing Suite Counting Machine (3) BVB Perimeter (3) BVB Times Tables (3) BVB Clock (3) BVB | Maths Decimal fractions, negative numbers, multiples, perimeter, time |
| Year 5 | <ul style="list-style-type: none"> ❑ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | Web research via other subject focus Research List | |
| Year 5 | <ul style="list-style-type: none"> ❑ 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 | Connecting the Internet Tracing the Internet Packet Game Linking WWW How web search works How a school network works (6) | |
| Year 5 | <ul style="list-style-type: none"> ❑ 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 | Spreadsheets (5) Databases (4) 3D modelling (3) Animation (4) | Maths Graphing |
| Year 5 | <ul style="list-style-type: none"> ❑ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | Circle Times Images Mobile Phones Cyber Bullying Retell Penguin Pig in Different Setting | |



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| Year 6 | <ul style="list-style-type: none"> ☐ 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 | Scratch 1.4 Computing Suite Crab Maze (3) BVB Primary Games Maker (6) BVB Cartesian Coordinates (3) BVB Toilet Fan (afternoon)* Car Park Barrier (afternoon)* Tilt Switch (afternoon)* Exchange Sort Investigation (2) | Maths Decimal fractions, Cartesian coordinates, greater than less than, investigations |
| Year 6 | <ul style="list-style-type: none"> ☐ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | Web research via other subject focus Research List (5) | |
| Year 6 | <ul style="list-style-type: none"> ☐ 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 | Spreadsheets (5) Web Publishing (5) Surveying (3) Stop Motion Animation (4) | Maths Formula building in spreadsheets |
| Year 6 | <ul style="list-style-type: none"> ☐ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | Circle Times Images Keeping our identity private | |

*These also contribute towards DT curriculum aim apply their understanding of computing to program monitor and control their products

BVB = Best version in the [book](#)