

The Bramble Academy Computing Progression Map

| | Algorithms | Programming and | Data and Data | Hardware and | Communication and | Information |
|------------------------------|--|--|---|---|---|--|
| | | Development | Representation | Processing | Networks | Technology |
| Foundation Stage Emerging | Understands simple instructions. Begins to follow simple procedures. | Uses a simple program on a computer or a device. | Begins to recognise the different forms of data. Graphs, lists, webpages and tables. Begins to collect and interpret simple sets of data. | Begins to operate simple equipment e.g. turns on CD player and uses a remote control. | Begins to understand how computers can be linked together. Begins to understand email and websites. | Begins to know that information can be retrieved on computers. |
| Foundation Stage | Can understand and follow | Completes a simple | Uses data to answer | Uses ICT hardware to | Uses digital devices and | Use computer devices and |
| Expected/Year 1 Emerging | instructions and begin to | program on a computer or | questions e.g. favourite | interact with age | computers to | software to create, |
| | write own algorithms. | device. | colour of class. | appropriate computer | communicate e.g. | research and store data. |
| | | Begins to write own | Uses computers to make a | software. | webcams. | Uses drawing software to |
| | | program/sequences. | table or list of data. | Start to recognise that | Accesses and saves | design a poster for a |
| | | | Begins to collect data on a | computers need programs | information on a class | purpose. |
| | | | data logging device. | to function. | network folder. | Knows some common uses |
| | | | Begin to recognise that | | Begins to obtain content | of information technology |
| | | | digital content can be in | | from the world wide web | beyond the classroom. |
| | | | many forms. | | using a web browser. | |
| Foundation Stage | Begin to understand what | Knows that users can | Recognises that digital | Understands that | Obtains content from the | Uses software under |
| Exceeding/Year 1 | an algorithm is. | develop their own | content can be | computers have no | world wide web using a | supervision to create, |
| Expected | Begin to write a simple set | programs. | represented in many | intelligence and can do | web browser. | store and edit digital |
| | of instructions for a | Demonstrates this by | forms. | nothing unless a program | Understand the | content using appropriate |
| | purpose using symbols. | creating simple programs | Begins to distinguish | is used. | importance of | files and folder names. |
| | | e.g. on programmable | between some of these | Recognises that all | communicating safely and | Understands that people |
| | | robots. | forms and can explain the | software executed (used) | respectfully on line and the | interact with computers. |
| | | Executes, checks and | different ways that they | on digital devices is | need for keeping personal | Shares their use of |
| | | changes programs. | communicate information. | programmed (look at | information private. | technology in school. |
| | | Understands that programs | Organises, stores, edits | examples) | Knows what to do when | Knows common use of |
| | | execute by following precise instructions. | and manipulates data in | | concerned about content | information technology outside school. |
| | | precise instructions. | different digital formats. | | or being contacted. | Talks about their work and |
| | | | | | | makes changes to improve |
| | | | | | | it. |
| Year 1 Exceeding/Year 2 | Understands what an | Knows that users can | Recognises that digital | Understands that | Obtains content from the | Uses technology with |
| Emerging | algorithm is. | develop their own | content can be | computers have no | world wide web using a | increasing independence |
| | Writes a set of instructions | programs. | represented in many | intelligence and can do | web browser. | to purposely organise |
| | for a purpose using | - | forms. | | | digital content. |

| words | ools, numbers and | Demonstrates this by | | | | |
|-----------------------|-------------------------|----------------------------|---|-----------------------------------|------------------------------|---|
| word: | lc I | creating simple programs | Begins to distinguish between some of these | nothing unless a program is used. | Understand the importance of | Shows awareness of the quality of digital content |
| Linda | erstands that | creating simple programs | forms and can explain the | | • | |
| | | e.g. on programmable | · · | Recognises that all | communicating safely and | collected. |
| | outes need precise | robots,. | different ways that they | software executed (used) | respectfully on line (e- | Uses software to |
| | uctions. | Executes, checks and | communicate information. | on digital devices is | safety) and the need for | manipulate and present |
| | vs care and precision | changes programs. | Organises, stores, edits | programmed (look at | keeping personal | digital content: data and |
| to avo | roid errors. | Understands that programs | and manipulates data in | examples) | information private. | information. |
| | | execute by following | different digital formats. | Begin to recognise and use | Knows what to do when | Shares their experiences of |
| | | precise instructions. | | a range of input and | concerned about content | technology in school and |
| | | Begins to use logical | | output devices e.g | or being contacted. | outside school. |
| | | reasoning to predict the | | robotics. | Begins to carry out simple | Talks about their work and |
| | | behaviour of programs. | | Starts to understand how | web searches to collect | makes some |
| | | | | programs specify the | digital content. | improvements to solutions |
| | | | | function of a general | | based on feedback |
| | | | | purpose computer. | | received. |
| Year 2 Expected Under | erstands what an | Develops their own | Recognises the different | Recognises that a range of | Navigates the web and can | Uses technology with |
| algori | rithm is and is able to | programs e.g. robots. | types of data e.g. text and | digital devices can be | carry out simple web | increasing independence |
| expre | ess simple linear (non- | Uses arithmetic operators | number. | considered a computer | searches to collect digital | to purposely organise |
| branc | ching) algorithms as | and what if statements and | Appreciates that programs | (look at examples). | content. | digital content. |
| symbo | ools. | loops within programs. | can work with different | Recognises and uses a | Demonstrates use of | Shows awareness of the |
| Unde | erstands that | Uses logical reasoning to | types of data. | range of input and output | computers safely and | quality of digital content |
| comp | outers need precise | predict the behaviour of | Recognises that data can | devices (e.g. robotics) | responsibly, knowing a | collected. |
| instru | uctions. | programs and detects and | be structured in tables to | Understands how | range of ways to report | Uses software to |
| Demo | onstrates care and | corrects simple semantic | make it useful. | programs specify the | unacceptable content and | manipulate and present |
| precis | sion to avoid errors. | errors i.e. debugging. | Confidently organises, | function of a general | contact when online. | digital content: data and |
| Unde ⁻ | erstand that | | stores, edits and | purpose computer. | | information. |
| algori | ithms are used on | | manipulates data in a | | | Shares their experiences of |
| digita | al devices as | | range of digital formats. | | | technology in school and |
| progra | rams. | | Begins to recognise the | | | outside school. |
| Simpl | le algorithms using | | difference between data | | | Talks about their work and |
| loops | s and selection (as | | and information . | | | makes some |
| stater | ments). | | | | | improvements to solutions |
| Uses | logical reasoning to | | | | | based on feedback |
| | ict outcomes. | | | | | received. |
| Detec | cts and corrects errors | | | | | |
| | ugging) in algorithms. | | | | | |

| Year 2 Exceeding/End of | Understands what an | Develops their own | Recognises the different | Recognises that a range of | Navigates the web and can | Uses technology with |
|-------------------------|---------------------------------|----------------------------|------------------------------|----------------------------|------------------------------|-----------------------------|
| Key Stage | algorithm is and is able to | programs e.g. robots. | types of data e.g. text and | digital devices can be | carry out simple web | increasing independence |
| , , | express simple linear (non- | Uses arithmetic operators | number. | considered a computer | searches to collect digital | to purposely organise |
| | branching) algorithms as | and what if statements and | Appreciates that programs | (look at examples). | content. | digital content. |
| | symbols. | loops within programs. | can work with different | Recognises and uses a | Demonstrates use of | Shows awareness of the |
| | Understands that | Uses logical reasoning to | types of data. | range of input and output | computers safely and | quality of digital content |
| | computers need precise | predict the behaviour of | Recognises that data can | devices (e.g. robotics) | responsibly, knowing a | collected. |
| | instructions. | programs and detects and | be structured in tables to | Understands how | range of ways to report | Uses software to |
| | Demonstrates care and | corrects simple semantic | make it useful. | programs specify the | unacceptable content and | manipulate and present |
| | precision to avoid errors. | errors i.e. debugging. | Confidently organises, | function of a general | contact when online. | digital content: data and |
| | Understand that | Begins to create programs | stores, edits and | purpose computer. | Begins to understand the | information. |
| | algorithms are used on | that implement algorithms | manipulates data in a | Begins to recognise that | difference between the | Shares their experiences of |
| | digital devices as | to achieve given goals. | range of digital formats. | computers collect data | internet and internet | technology in school and |
| | programs. | | Recognises the difference | from various input devices | services e.g. world wide | outside school. |
| | Designs simple algorithms | | between data and | e.g. sensors. | web. | Talks about their work and |
| | using loops and selection | | information. | | | makes some |
| | (as statements). | | | | | improvements to solutions |
| | Uses logical reasoning to | | | | | based on feedback |
| | predict outcomes. | | | | | received. |
| | Detects and corrects errors | | | | | Begins to create digital |
| | (debugging) in algorithms. | | | | | content to achieve a given |
| | Begins to use design | | | | | goal through combining |
| | solutions e.g. repetition to | | | | | software e.g. blogs. |
| | improve algorithms. | | | | | |
| Year 3 Emerging | Designs some solutions | Begins to create programs | Understands the difference | Begins to recognise that | Understands the difference | Collects, organises and |
| | (algorithms) that use | that implement algorithms | between data and | computers collect data | between the internet and | presents data and |
| | repetition and two way | to achieve given goals. | information. | from various input devices | internet services e.g. world | information in digital |
| | selection (i.e if, then, else.) | Identifies and assigns | Knows why sorting data in | e.g. sensors and | wide web. | content. |
| | Uses diagrams to express | variables in programs. | a 'flat file' can improve | application software. | Shows some awareness of, | Creates digital content to |
| | solutions. | Uses loop commands | searching for information. | Begins to understand the | and can use some internet | achieve a given goal |
| | Starts to use logical | "until" and sequences of | Begins to use filters or can | difference between | services such as VOIP. | through combining |
| | reasoning to predict | selection statements in | perform single criteria | hardware and application | Recognises what is | software, packages and |
| | outputs, showing some | programs, including if, | searches for information. | software and their roles | acceptable and | internet services to |
| | awareness of inputs. | then, else statements. | | within a computer system. | unacceptable behaviour | communicate with a wider |
| | | | | | when using technologies | audience e.g blogging. |
| | | | | | and online services. | Makes some appropriate |
| | | | | | | improvements to solutions |
| | | | | | | based on feedback |

| | | | | | | received and can comment on the success of the solution. |
|------------------|---|---|---|---|---|---|
| Year 3 Expected | Designs solutions (algorithms) that use repetition and two way selection (i.e if, then, else.) Uses diagrams to express solutions. Uses logical reasoning to predict outputs, showing some awareness of inputs. | Create programs that implement algorithms to achieve given goals. Identifies and assigns variables in programs. Uses loop commands "until" and sequences of selection statements in programs, including if, then, else statements. | Understands and can explain the difference between data and information. Knows why sorting data in a 'flat file' can improve searching for information. Uses filters or can perform single criteria searches for information. | Recognise that computers collect data from various input devices e.g. sensors and application software. Understand the difference between hardware and application software and their roles within a computer system. | Understands the difference between the internet and internet services e.g. world wide web. Shows awareness of, and can use some internet services such as VOIP. Recognises what is acceptable and unacceptable behaviour when using technologies and online services. | Confidently collects, organises and presents data and information in digital content. Creates digital content to achieve a given goal through combining software, packages and internet services to communicate with a wider audience e.g blogging. Makes effective improvements to solutions based on feedback received and can commen on the success of the solution. |
| Year 3 exceeding | Designs solutions (algorithms) that use repetition and two way selection (i.e if, then, else.) Uses diagrams to express solutions. Uses logical reasoning to predict outputs, showing some awareness of inputs. Begins to show an awareness of tasks best completed by humans or computers. | Create programs that implement algorithms to achieve given goals. Identifies and assigns variables in programs. Uses loop commands "until" and sequences of selection statements in programs, including if, then, else statements. Begins to understand the difference between 'if' and 'if', then and else statements. | Understands and can clearly explain the difference between data and information. Knows why sorting data in a 'flat file' can improve searching for information. Uses filters and can perform single criteria searches for information. Starts to perform more complex searches for information e.g. relational operators. | Recognise that computers collect data from various input devices e.g. sensors and application software. Understand the difference between hardware and application software and their roles within a computer system. Begins to understand why and when computers are used. | Understands the difference between the internet and internet services e.g. world wide web. Shows awareness of, and can use some internet services such as VOIP. Recognises what is acceptable and unacceptable behaviour when using technologies and online services. Produces safety guidance on viruses, cyber bullying and stranger danger. | Collects, organises and presents data and information in digital content. Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wide audience e.g blogging. Makes effective improvements to solution based on feedback received and can comment on the success of the solution. |

| Year 4 Emerging | Shows an awareness of tasks best completed by human or computers. Begins to design solutions by decomposing a problem. Begins to recognise that there is more than one solution to a problem. | Begin to understand differences between 'if' and 'if', then and else statements. Uses some variable and relational operators within a loop to control 'endings' in programs. Designs, writes and debugs (modular) programs using procedures (algorithms). Begins to know that a procedure can be used to hide details in programs. | Understands and can clearly explain the difference between data and information. Knows why sorting data in a 'flat file' can improve searching for information. Uses filters and can perform single criteria searches for information. Starts to perform more complex searches for information e.g. relational operators. Begins to analyse and evaluate data and information and recognises | Begins to understand why and when computers are used. Understands the main functions of the operating systems. Begins to know the difference between physical, wireless and mobile networks. Look at examples e.g. internet: how they provide multiple services such as the world wide web. | Understands how to effectively use search engines and knows how search results are selecting including that search engines are 'web crawler programs' Selects, combines and uses some internet services. Demonstrates responsible use of technologies and online services and knows how to report concerns. | Makes judgements about the effectiveness and suitability of the digital content for the targeted audience. Begins to make judgements about digital content when evaluating and assigning it for a given audience. Recognises the audience when designing and creating digital content. Understands the potential of information technology for collaboration when computers are networked. Uses criteria to evaluate the quality of solutions. |
|-----------------|--|---|--|---|--|--|
| Year 4 Expected | Knows which tasks best completed by human or computers. Designs solutions by decomposing a problem and creates a sub-solution for each part of the problem (decomposition) Recognises that there is more than one solution to a problem. | Understands differences between and appropriately uses 'if' and 'if', then and else statements. Uses variable and relational operators within a loop to control 'endings' in programs. Designs, writes and debugs (modular) programs using procedures (algorithms). Knows that a procedure can be used to hide details in programs. | leads to unreliable results. Understands and can clearly explain the difference between data and information. Knows why sorting data in a 'flat file' can improve searching for information. Performs more complex searches for information e.g. using Booleam and relational operators. Analyses and evaluates data and information and recognises that poor | Understands why and when computers are used. Understands the main functions of the operating systems. Knows the difference between physical, wireless and mobile networks. Look at examples e.g. internet: how they provide multiple services such as the world wide web. | Understands how to effectively use search engines and knows how search results are selecting including that search engines are 'web crawler programs' Selects, combines and uses internet services. Demonstrates responsible use of technologies and online services and knows a range of ways to report concerns. | Makes judgements about digital content when evaluating and assigning it for a given audience. Recognises the audience when designing and creating digital content. Understands the potential of information technology for collaboration when computers are networked. Uses criteria to evaluate the quality of solutions. |

| | | | quality data leads to | | | Can identify |
|------------------|----------------------------|------------------------------|----------------------------|----------------------------|------------------------------|-----------------------------|
| | | | unreliable results and | | | improvements, making |
| | | | inaccurate conclusions. | | | some refinements to the |
| | | | | | | solution and future |
| | | | | | | solutions. |
| Year 4 Exceeding | Knows which tasks are | Understands differences | Clearly explain the | Understands why and | Understands how to | Makes sound judgements |
| | best completed by human | between and appropriately | difference between data | when computers are used. | effectively use search | about digital content when |
| | or computers, giving | uses 'if' and 'if', then and | and information, giving | Understands the main | engines and knows how | evaluating and assigning it |
| | examples. | else statements. | examples. | functions of the operating | search results are selecting | for a given audience. |
| | Designs solutions by | Uses variable and | Knows why sorting data in | systems. | including that search | Recognises the audience |
| | decomposing a problem | relational operators within | a 'flat file' can improve | Knows the difference | engines are 'web crawler | when designing and |
| | and creates a sub-solution | a loop to control 'endings' | searching for information. | between physical, wireless | programs' | creating digital content. |
| | for each part of the | in programs. | Performs more complex | and mobile networks. Look | Selects, combines and uses | Understands the potential |
| | problem (decomposition). | Designs, writes and debugs | searches for information | at examples e.g. internet: | internet services. | of information technology |
| | Recognises that there are | (modular) programs using | e.g. using Booleam and | how they provide multiple | Demonstrates responsible | for collaboration when |
| | several solutions to the | procedures (algorithms). | relational operators. | services such as the world | use of technologies and | computers are networked. |
| | same problem and various | Knows that a procedure | Analyses and evaluates | wide web. | online services and knows | Uses criteria to evaluate |
| | algorithms exist for | can be used to hide details | data and information and | Begins to recognise the | a range of ways to report | the quality of solutions. |
| | different purposes. | in programs. | recognises that poor | function of the main | concerns. | Can confidently identify |
| | | Begins to recognise that | quality data leads to | internal parts of basic | Begins to understand how | improvements, making |
| | | programming bridges the | unreliable results and | computer designs | search engines rank | some refinements to the |
| | | gap between algorithms | inaccurate conclusions. | (architecture.) | results. | solution and future |
| | | and computers. | Starts to understand key | | | solutions. |
| | | | vocabulary e.g. binary and | | | |
| | | | bit patterns. | | | |
| Year 5 Emerging | Knows which tasks are | Begins to recognise that | Knows why sorting data in | Understands why and | Begins to understand how | Makes sound judgements |
| | best completed by human | programming bridges the | a 'flat file' can improve | when computers are used. | search engines rank search | about digital content when |
| | or computers. | gap between algorithms | searching for information. | Understands the main | results. | evaluating and assigning it |
| | Designs solutions by | and computers. | Performs more complex | functions of the operating | Understands how to | for a given audience. |
| | decomposing a problem | Has some practical | searches for information | system. | construct static web pages | Recognises the audience |
| | and creates a sub-solution | experience of high level | e.g. using Booleam and | Knows the difference | using HTML and CSS. | when designing and |
| | for each part of the | textural languages e.g. | relational operators. | between physical, wireless | Begins to understand data | creating digital content, |
| | problem (decomposition). | standard libraries when | Analyses and evaluates | and mobile networks. Look | transmission between | (makes examples and tests |
| | Recognises that there are | programming. | data and information and | at examples e.g. internet: | digital computers over | them). |
| | several solutions to the | Uses some operators and | recognises that poor | how they provide multiple | networks including the | Understands the potential |
| | same problem. | expressions e.g. Booleam. | quality data leads to | services such as the world | internet i.e. IP addresses | of information technology |
| | | | unreliable results and | wide web. | and packet switching. | for collaboration when |
| | | | inaccurate conclusions. | | | computers are networked. |

| | Understands that various | | Starts to understand key | Recognise the function of | | Uses criteria to evaluate |
|------------------|-----------------------------|------------------------------|----------------------------|----------------------------|-----------------------------|--------------------------------|
| | algorithms exist for | | vocabulary e.g. binary and | the main internal parts of | | the quality of solutions. |
| | different functions. | | bit patterns. | basic computer designs | | Confidently identify |
| | | | Begins to understand that | (architecture.) | | improvements, making |
| | | | digital computers are | | | some refinements to the |
| | | | binary to represent all | | | solution and future |
| | | | data. | | | solutions. |
| Year 5 Expected | Knows and can explain | Understands that | Knows why sorting data in | Recognise the function of | Understands how search | Evaluates the |
| | which tasks are best | programming bridges the | a 'flat file' can improve | the main internal parts of | engines rank search results | appropriateness of digital |
| | completed by human or | gap between algorithmic | searching for information. | basic computer designs | and test some of these | services, internet services |
| | computers. | solutions and computers. | Performs more complex | (architecture.) | systems. | and application software |
| | Designs solutions by | Has practical experience of | searches for information | Begins to understand the | Understands how to | to achieve given goals. |
| | decomposing a problem | high level textural | e.g. using Booleam and | concept behind the fetch- | construct static web pages | Recognises ethical issues |
| | and creates a sub-solution | languages e.g. standard | relational operators. | execute cycle. | using HTML and CSS. | surrounding the |
| | for each part of the | libraries when | Analyses and evaluates | Starts to appreciate that | Understands data | application of information |
| | problem (decomposition). | programming. | data and information and | there is a range of | transmission between | technology beyond school. |
| | Recognises that there are | Uses some operators and | recognises that poor | operating systems and | digital computers over | Designs criteria to critically |
| | several solutions to the | expressions e.g. Booleam. | quality data leads to | application software for | networks including the | evaluate the quality of |
| | same problem. | Starts to apply these in the | unreliable results and | the same hardware. | internet i.e. IP addresses | solutions. |
| | Understands that various | context of program control | inaccurate conclusions. | | and packet switching. | Uses the criteria to identify |
| | algorithms exist for | (e.g. | Begins to understand that | | | improvements, and can |
| | different functions. | input/process/output.) | digital computers are | | | make appropriate some |
| | Begins to identify patterns | | binary to represent all | | | refinements to the |
| | in algorithms that help to | | data. | | | solution. |
| | solve specific problems. | | Begins to understand how | | | |
| | | | bit patterns represent | | | |
| | | | numbers and images. | | | |
| Year 5 Exceeding | Explains confidently which | Understands that | Knows why sorting data in | Recognises and | Understands how search | Evaluates the |
| | tasks are best completed | programming bridges the | a 'flat file' can improve | understands the function | engines rank search results | appropriateness of digital |
| | by human or computers. | gap between algorithmic | searching for information. | of the main internal parts | and test and evaluate | services, internet services |
| | Designs solutions by | solutions and computers. | Performs more complex | of basic computer designs | some of these systems. | and application software |
| | decomposing a problem | Has practical experience of | searches for information | (architecture.) | Understands how to | to achieve given goals. |
| | and creates a sub-solution | high level textural | e.g. using Booleam and | Understands the concepts | construct static web pages | Recognises ethical issues |
| | for each part of the | languages e.g. standard | relational operators. | behind the fetch-execute | using HTML and CSS. | surrounding the |
| | problem (decomposition). | libraries when | Analyses and evaluates | cycle. | Understands data | application of information |
| | Recognises that there are | programming. | data and information and | Starts to appreciate that | transmission between | technology beyond school. |
| | several solutions to the | | recognises that poor | there is a range of | digital computers over | |
| | same problem. | | quality data leads to | operating systems and | networks including the | |

| | Understands that various | Uses a range of operators | unreliable results and | application software for | internet i.e. IP addresses | Designs criteria to criticall |
|-----------------|------------------------------|------------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|
| | algorithms exist for | and expressions e.g. | inaccurate conclusions. | the same hardware. | and packet switching. | evaluate the quality of |
| | different functions. | Booleam. | Knows that digital | | | solutions. |
| | Identifies patterns in | Starts to apply these in the | computers use binary to | | | Uses the criteria to identif |
| | algorithms that help to | context of program control | represent all data. | | | effective improvements, |
| | solve specific problems. | (e.g. | Understands how bit | | | and can make appropriate |
| | | input/process/output.) | patterns represent | | | some refinements to the |
| | | | numbers and images. | | | solution. |
| Year 6 Emerging | Begins to understand that | Understands that | Knows that digital | Recognises and | Understands how search | Begins to justify the choic |
| | iteration is the repetition | programming bridges the | computers use binary to | understands the function | engines rank search results | of, combines and uses |
| | of a process such as a loop. | gap between algorithmic | represent all data. | of the main internal parts | and test and evaluate | multiple digital devices, |
| | Recognises that different | solutions and computers. | Understands how bit | of basic computer designs | some of these systems. | internet services and |
| | algorithms exist for the | Has practical experience of | patterns represent | (architecture.) | Understands how to | application software to |
| | same problem. | high level textural | numbers and images. | Understands the concepts | construct static web pages | achieve given goals. |
| | Detects errors in | languages e.g. standard | Begins to know that | behind the fetch-execute | using HTML and CSS. | Starts to evaluate the |
| | algorithms. | libraries when | computers transfer data in | cycle. | Understands data | trustworthiness of digital |
| | Rewrites own tests and | programming. | binary (code). | Knows that there is a | transmission between | content. |
| | sequences. | Uses a range of operators | Starts to recognise the | range of operating systems | digital computers over | Begins to consider how th |
| | Is able to identify some | and expressions e.g. | relationship between | and application software | networks including the | use of technology can |
| | similarities and differences | Booleam. | binary and file size | for the same hardware. | internet i.e. IP addresses | impact on society. |
| | in situations and can use | Starts to apply these in the | (uncompressed) | Tests, compares and | and packet switching. | |
| | these to solve problems | context of program control | Defines data types: real | contrasts the effectiveness | Begins to know the names | |
| | (pattern recognition.) | (e.g. | numbers and booleam. | of operating systems (eg. | of hardware e.g hubs and | |
| | | input/process/output.) | Queries data on one table | Windows android) | routers. | |
| | | Starts to select the | using typical query | | | |
| | | appropriate data types. | language. | | | |
| Year 6 Expected | Understand that iteration | Understands that | Knows that digital | Recognises and | Understands how search | Justifies the choice of, |
| | is the repetition of a | programming bridges the | computers use binary to | understands the function | engines rank search | combines and uses |
| | process such as a loop. | gap between algorithmic | represent all data. | of the main internal parts | results. | multiple digital devices, |
| | Recognises that different | solutions and computers. | Understands how bit | of basic computer designs | Clearly evaluates these | internet services and |
| | algorithms exist for the | Has practical experience of | patterns represent | (architecture.) | systems. | application software to |
| | same problem. | high level textural | numbers and images. | Understands the concepts | Understands how to | achieve given goals. |
| | Detects errors in | languages e.g. standard | Knows that computers | behind the fetch-execute | construct static web pages | Evaluates the |
| | algorithms. | libraries when | transfer data in binary | cycle. | using HTML and CSS. | trustworthiness of digital |
| | Rewrites and tests own | programming. | (code). | Knows that there is a | Designs and creates own | content. |
| | tests and sequences. | Uses a range of operators | Recognises the | range of operating systems | web pages for a purpose. | Knows how the use of |
| | Is able to identify | and expressions e.g. | relationship between | and application software | Understands data | technology can impact or |
| | similarities and differences | Booleam and applies them | | for the same hardware. | transmission between | society. |

| | in situations and can use | in the context of program | binary and file size | Tests, contrasts and | digital computers over | Begins to design criteria |
|------------------|------------------------------|------------------------------|----------------------------|-----------------------------|----------------------------|------------------------------|
| | these to solve problems | control (e.g. | (uncompressed) | evaluates the effectiveness | networks including the | for users to evaluate the |
| | (pattern recognition.) | input/process/output.) | Defines data types: real | of operating systems (eg. | internet i.e. IP addresses | quality of solutions and |
| | | Starts to select the | numbers and Booleam. | Windows android) | and packet switching. | uses the feedback to |
| | | appropriate data types. | Queries data on one table | | | identify some |
| | | | using typical query | | | improvements. |
| | | | language. | | | |
| Year 6 Exceeding | Understands that iteration | Understands that | Knows that digital | Recognises and | Understands how search | Justifies the choice of, and |
| | is the repetition of a | programming bridges the | computers use binary to | understands the function | engines rank search | independently combines |
| | process such as a loop. | gap between algorithmic | represent all data. | of the main internal parts | results. | and uses multiple digital |
| | Recognises that different | solutions and computers. | Understands how bit | of basic computer designs | Clearly evaluates these | devices, internet services |
| | algorithms exist for the | Has practical experience of | patterns represent | (architecture.) | systems. | and application software |
| | same problem. | high level textural | numbers and images. | Understands the concepts | Understands how to | to achieve given goals. |
| | Detects errors in | languages e.g. standard | Knows that computers | behind the fetch-execute | construct static web pages | Evaluates the |
| | algorithms. | libraries when | transfer data in binary | cycle. | using HTML and CSS. | trustworthiness of digital |
| | Rewrites and tests own | programming. | (code). | Tests, contrasts and | Designs and creates own | content and considers the |
| | sequences. | Uses a range of operators | Recognises the | evaluates a range of | web pages for a purpose. | usability of visual design |
| | Is able to identify | and expressions e.g. | relationship between | operating systems and | Understands data | features when designing |
| | similarities and differences | Booleam and applies them | binary and file size | application software that | transmission between | and creating digital |
| | in situations and can use | in the context of program | (uncompressed) | is often used for the same | digital computers over | artefacts for a known |
| | these to solve problems | control (e.g. | Defines data types: real | hardware. | networks including the | audience. |
| | (pattern recognition.) | input/process/output.) | numbers and Booleam. | Begins to understand the | internet i.e. IP addresses | Identifies and explains how |
| | Begins to recognise that | Starts to select the | Queries data on one table | Von Neuman architecture | and packet switching. | the use of technology can |
| | some problems share the | appropriate data types. | using typical query | in relation to the fetch- | Knows key names of | impact on society. |
| | same characteristics and | Starts to appreciate the | language. | execute cycle, including | hardware e.g. hubs, | Designs criteria for users |
| | use the same algorithms to | need for and writes their | Begins to understand how | how data is stored in | routers, switches and the | to evaluate the quality of |
| | solve both (generalisation) | own "custom" functions to | numbers, images, sounds | memory. | names of protocols | solutions and uses the |
| | | improve programs. | and character sets use the | Understand the basic | e.g.SMTP, IMAP, POP, FTP, | feedback to identify some |
| | | Starts to detect and correct | same bit patterns. | function and operation of | TCP/IP associated with | improvements and can |
| | | syntactical errors. | | location addressable | computer systems. | make appropriate |
| | | | | memory. | | refinements to the |
| | | | | | | solution. |