



**St. Wilfrid's  
Church of England  
Primary Academy**

Executive Headteacher: Mr S. Colothan



# Computing Policy

Updated January 2022

**'I can do all things through Christ who strengthens me.'**

**Phillippians 4:13**

## Our Christian Vision

*'I can do all things through Christ who strengthens me.'* Philippians 4:13

1. Our **children** will be rooted in strong faith and academic foundations to thrive and succeed, knowing that Jesus is with them, every step of their journey.
2. Our **staff** will have the highest expectations and aspirations for our children, knowing that together, we can achieve anything through Christ.
3. Our **school** will be a place where children can grow in strength, to be unique and flourish in the presence of God.



## Our Mission Statement



We will ensure that our children **achieve** exceptionally well.

We will nurture our children to **believe** in themselves and each other.

We will create a culture of love, **care** and respect for one another.

**At St. Wilfrid's, we can do all things through Christ who gives us strength.**

## Our Aims

1. To provide a distinctly Christian ethos, underpinned by our Christian Values and Scripture, where children can grow spiritually and become reflective decision-makers.
2. To provide a 'literacy-rich' curriculum of the highest quality, that engages and challenges all children in our school community.
3. To provide an environment that excites and stimulates learning, fosters personal growth and responds to the individual needs of all children.
4. To provide a rich and broad education, with enrichment and extra-curricular opportunities, and unique experiences, that prepare our children socially and mentally for their future.

## Our Christian Values

Our Christian Values, which are rooted in scripture, are threaded through our school, our decision making and everything that we do.

Love is at the heart of our Christian Values and all members of our school community aim to 'live out' our Christian Values in our actions and choices.



## **Intent**

Our Computing curriculum aims to equip children to use computational thinking and creativity, to understand and change the world. We intend to motivate and inspire children through lessons that engage and challenge all learners.

Our curriculum is designed to deepen knowledge and develop skills, ensuring effective progression within each aspect of Computing, across all year groups. Our Christian Values and Distinctiveness, alongside our School Mission Statement of 'Achieve, Believe and Care', are at the heart of our curriculum and all that we do at St. Wilfrid's.

## **Implementation**

In Computing, we implement an inclusive curriculum that meets the requirements of the National Curriculum. Our curriculum is well-planned and provides cross-curricular opportunities.

The Computing Curriculum has three strands: Computer Science, Digital Literacy and Information Technology, and children develop their knowledge and skills in these areas. They are taught the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.

Children analyse problems in computational terms and have practical experience of writing computer programs, in order to solve problems. They evaluate and apply information technology, including new or unfamiliar technologies. By instilling creativity and enthusiasm in our children, learning can be extended by accessing a range of software at home.

It is vital that children develop research, investigational and many other cross-curricular skills during their studies. The computing curriculum is a fun, exciting and dynamic subject, where children learn to use a range of programs, thinking skills and a wide variety of new and innovative equipment.

Our curriculum is delivered through highly effective 'quality first teaching'. Children have dedicated computing lessons in our computing suite and they are taught computing skills across other curriculum areas. Enrichment opportunities, including inspirational visitors and working within the community, provide our children with rich experiences and enhance teaching, learning and knowledge.

Our Computing curriculum promotes children's Spiritual, Moral, Social and Cultural development, ensuring that they are reflective and responsible citizens. Fundamental British Values are actively promoted in Computing lessons in order to prepare the children for life in Modern Britain.

## **Impact**

Our Computing curriculum enables children to become both users and creators. Across all phases of the school, children understand algorithms and programming and how this all fits into our digital world.

We pride ourselves on using and implementing new and innovative technologies to prepare children for the ever-changing digital world we live in, whilst embedding the safe, respectful and responsible use of technology, recognising both acceptable and unacceptable online behaviour and identifying a range of ways to report concerns about content or contact.

Children are responsible, competent, confident and creative users of information and communication technology.

## **Rationale**

**At St Wilfrid's, we embrace current and emerging technologies and embed them in our curriculum in order to provide our pupils with the learning they need today, to build their future tomorrow.**

The 2014 National Curriculum introduced a new subject, Computing, which replaced ICT. We have had the chance to review and enhance our current approaches in order to provide an even more exciting and rigorous curriculum that addresses the challenges and opportunities offered by the technologically rich world in which we live.

Computing is concerned with how computers and computer systems work, and how they are designed and programmed. Pupils studying Computing will gain an understanding of computational systems of all kinds, whether or not they include computers. Computational thinking provides insights into many areas of the curriculum, and influences work at the cutting edge of a wide range of disciplines.

The new National Curriculum has a focus on computational thinking and creativity, as well as opportunities for creative work in programming and digital media. There are three aspects of the Computing curriculum: computer science (CS), information technology (IT) and digital literacy (DL).

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.

### **Computing at St. Wilfrid's will enable children to:**

- Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. See glossary.
- Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.
- Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- Be responsible, competent, confident and creative users of information and communication technology.

We aim to enable pupils of all abilities to take greater control of their learning through the application of Computing in and out of school. This will be supported by the use of Computing in a balanced way throughout the curriculum. Pupils will develop the skills to know when and when not to use Computing, and have the ability to use it effectively when needed. They will have access to high quality digital learning resources whenever and wherever they are needed and have links to their classmates and teachers while studying out of school. Pupils, following the National Curriculum, will reach levels of attainment and Computing capability at the end of each Key Stage that match or exceed national expectations, or where necessary or appropriate, other measures of achievement.

**Computing** teaches us how to make sense of the technological world in which we now live. It enables pupils to communicate and handle information and develop confidence satisfaction and understanding in the use of Computing. Through their growing knowledge and understanding, pupils learn to appreciate and make informed judgements about Computing applications and their effect on the quality of life for society and the individual.

The aims of Computing are:

- To promote enjoyment and enthusiasm and learning through practical activity, exploration and discussion;
- To promote confidence and competence with Computing in many contexts;
- To broaden pupils' understanding of the effects of the use of Computing;
- To enable pupils to take greater responsibility for their own learning and provide opportunities for them to decide when it is appropriate to use Computing in their work;
- To develop a practical understanding of the ways in which information can be gathered and stored.
- To encourage the flexibility needed for pupils to adjust to and take advantage of future developments.
- To continue to take part in new initiatives to aid in the development of Computing within the school such as handheld iPads, robots, gaming devices, portable notebooks etc;
- To encourage the pupils to explore new experiences, new technology and initiatives;
- To ensure the safe use of Computing throughout the school and to promote the safe use of Computing; beyond the school.
- To instil in our pupils the confidence to experiment ('tinker') and explore new technologies to enhance their learning experience at school and at home.

## **Computing Subject Leadership**

Subject Leaders are responsible for raising attainment and improving the standards of teaching and learning in their subject. They ensure that a carefully planned, broad and balanced curriculum is implemented for Computing, champion the subject and demonstrate its importance to pupils and staff.

Subject Leaders demonstrate a good understanding of how Computing progresses over time and how it connects with the school's curriculum as a whole. Computing Leaders have high levels of subject pedagogical content knowledge for the age range that they are teaching, and an understanding of the critical endpoints that come before and after.

Subject Leaders at St. Wilfrid's Church of England Primary Academy, work alongside other schools within The Learning Together Trust. This provides opportunities to work collaboratively and creatively with colleagues across the key stages, thus moving the Computing curriculum forward, and further developing the subject. Subject Leaders lead by example, setting high standards in their own teaching and ensuring that high-quality teaching and learning of Computing takes place across the school, with the achievement and engagement of all pupils being their utmost priority.

### **Computing Subject Leaders will:**

- raise the profile of Computing at St. Wilfrid's Primary Academy
- lead and manage the Computing effectively and have an 'expert' knowledge of the Computing curriculum overview, including all unit/topics across the whole school
- confidently articulate the Computing curriculum design and have a clear and ambitious vision for Computing (Intent, Implementation and Impact)
- monitor, evaluate and enhance the quality of teaching, learning and assessment in Computing
- ensure that there is clear progression in knowledge, skills and vocabulary in Computing, across school
- support, guide and motivate colleagues in their CPD, as well as build capacity across the school
- identify the subject's needs in the context of whole school priorities and produce a Computing School Development Plan annually, reviewing this termly
- audit Computing resources and identify resource needs and costings in Computing School Development Plans, managing allocated budgets effectively.
- provide strategic direction and development of Computing across the school.
- develop their own expertise through training and evidence-based research and investigate how implementations are embedding
- effectively communicate with the Computing link Governor, sharing and celebrating Computing
- review and update the Computing Policy, as necessary

## **Computing Curriculum**

### **Early Years and Foundation Stage**

In the Early Years Foundation curriculum, the children are offered learning opportunities using technology to express their understanding of the world in a creative manner. ICT is accessible at all times and is used as a valuable resource to teach the Early Learning Goals. Pupils are assessed informally throughout the year by the class teacher and this formative assessment informs annual and termly planning.

### **Key Stage 1 & Key Stage 2**

The National Curriculum states that pupils should be taught to:

#### **Computer Science**

- 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

- 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
- Appreciate how [search] results are selected and ranked

### **Information Technology**

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Use search technologies effectively
- 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

### **Digital Literacy**

- 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
- Understand the opportunities [networks] offer for communication and collaboration
- Be discerning in evaluating digital content
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

### **Delivery of Computing within our Curriculum**

The school uses a variety of teaching and learning styles in Computing lessons. Our principle aim is to develop pupils' knowledge, skills and understanding in Computing and by encouraging the use of Computing across the curriculum. During these lessons we encourage pupils to solve problems independently and develop their skills in the use of Computing. They have the opportunity to use a wide range of resources such as computers, Ipads, online resources, laptops, roamers, inter-active whiteboards, control devices, tape recorders, digital cameras, electronic musical instruments etc. to support their work. Pupils use Computing across the curriculum where it will enhance their learning as in modelling ideas and methods or in the construction of professional style publications of their work. Wherever possible, we encourage the pupils to use and apply their learning in everyday situations.

We provide suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – In some lessons through differentiated work and in other lessons by organising pupils to work in pairs on open ended problems and tasks.

Computing is delivered through a variety of teaching methods and approaches. At St Wilfrid's we use Adobe Photoshop, Purple Mash, Microsoft Office, Scratch and a variety of other software.

Pupils are given the opportunity to:

- Develop Computing skills to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- Use Computing equipment to manipulate and present written word, images and sounds to convey a message effectively;
- Use Computing equipment to store information, and retrieve then present it in ways which enhance interpretation and analysis;
- Develop an awareness of the role of Computing in daily life in the control of equipment and potential careers;
- To be able to talk about their use of Computing and its place within real live contexts;
- Follow a range of alternative methods to develop their confidence in making choices in the Computing equipment and programs they use to complete a task.

Our medium-term Computing plans give details of the main teaching objectives and define what we teach. They ensure an appropriate balance and development of skills across each year and these skills are developed as pupil's progress through the school.

Lesson plans list the specific learning objectives for each lesson, give details of how lessons are to be taught and highlight cross curricular elements. Teachers are encouraged to annotate their lesson plans after they have been utilised to create a reference point for the process of self-evaluation and self-improvement regarding Computing teaching at St Wilfrid's. These plans are stored centrally on the server held in school backed up four times a day. Access to the server is password protected and the class teacher and subject leaders discuss them on an informal basis.

## **Computing across the Curriculum**

### **English**

We will ensure that Computing contributes significantly to the teaching of English in our school by actively promoting and supporting the skills of reading, writing, speaking and listening. For example, we encourage pupils to express themselves through a written form using a range of Computing programs and to explore different ways of communicating and presenting information. The pupils explain and present their work to others during plenary sessions and through inter-active presentations using programs such as Power Point, inter-active whiteboards, tape recorders etc. Younger pupils enjoy practical work, where they are encouraged to use Computing language in a range of situations.

### **Mathematics**

We will ensure that Pupils use and apply Computing to Maths in a variety of ways when solving problems. Younger pupils will use Computing to communicate results with appropriate mathematical symbols. Older pupils will use it to produce graphs, tables, spreadsheets and databases when explaining and organising their results or when creating repeating patterns such as tessellations. When working on control, pupils use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships. All pupils also have access to our online resources—Purple Mash, MathsWhizz and Times Tables Rockstars. These programs are used to supplement homework.

### **Science**

The ability for pupils to observe, predict and form their own conclusions from virtual experiments furthers their understanding of investigations which time or the confines of the classroom would not allow. The opportunity for pupils to further their research through the use of the internet is encouraged to extend pupils' knowledge. Programs such as Purple Mash and Excel are used to record in a variety of forms. Digital and video cameras are also used to record observations in a visual form.

### **Personal, Social and Health Education (PSHE) and Citizenship**

Computing contributes to the teaching of PSHE and citizenship. The work that pupils do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. Older pupils are encouraged to make choices as to when and how they use Computing to develop and extend their work. The planned activities that pupils do within both the classroom and Computing suite encourage them to work together, to solve problems and tasks and respect each other's views. We present older pupils with real life situations in their work on databases, power point presentations and graphic modelling. Online-Safety is embedded in the PSHE and Citizenship curriculum.

### **Spiritual, Moral, Social and Cultural development**

The teaching of Computing supports the social development of our pupils through the way we expect them to work with each other in lessons. Pupils often work in pairs or groups to achieve a task, and we give them the chance to discuss their ideas and results. The use of the internet contributes to the cultural development of our pupils as it gives them the opportunity to explore other parts of the world and interact with people in different countries.

## **Inclusion**

At St. Wilfrid's Church of England Primary Academy, we teach Computing to all children, whatever their ability and individual needs. Computing forms part of our school curriculum policy, to provide a broad and balanced education to all children. We are very mindful of the learning needs of all of our children and those with Special Educational Needs are supported via effective planning, quality first teaching and assessment, differentiated activities as necessary, high expectations, suitable resources and recording formats. We consider the targets set for individual children in their Individual Education Plans (IEPs) and Education Health and Care plans (EHCPs).

Through our Computing teaching, we provide learning opportunities that enable all pupils to make good progress within each lesson.

We strive to meet the needs of pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

We believe that the curriculum should be accessible to all children. This is made possible through scaffolded support, small group work, use of Knowledge Organisers and word banks, or extra time to complete learning tasks.

Advice is sought from outside agencies as appropriate, to ensure an inclusive approach. If teaching staff require additional support to meet the needs of any child, they consult our SENDCo.

## **Equal Opportunities and Diversity**

All children at St. Wilfrid's Church of England Primary Academy, are offered a broad and balanced curriculum, differentiated to meet their needs as necessary. There is equality of access to the whole curriculum. No child is denied access to any part of the curriculum unless specific physical needs or religious/cultural considerations make it inappropriate.

At St. Wilfrid's, we are committed to providing all children with a curriculum that provides equality of opportunity and freedom from discrimination. Staff ensure that all children are treated fairly, equally and with respect. We do not discriminate against any child.

All staff challenge any incidents of prejudice or racism. We record any serious incidents on CPOMS and draw them to the attention of the Executive Headteacher.

We plan Computing lessons and activities to challenge and involve all pupils appropriately, according to age and capability, ethnic diversity, gender, culture, race, special educational needs or disability, and language background. Teachers use a range of strategies to ensure inclusion, and to maintain a positive ethos where children demonstrate positive and respectful attitudes towards others. Care is taken when selecting resources to ensure that a range of perspectives and viewpoints are represented, including those of men and women from different racial, national and religious groups. Careful consideration is taken to avoid stereo-typing, and bias, towards race, gender, role or disability. Through the teaching of Computing, we aim to develop awareness of ethnic, cultural and economic diversity of human society and to foster positive attitudes to all people.

We deal with any issues clearly and sensitively, if they arise.

## **Resources**

There are a wide range of resources to support the teaching of Computing across the school. Computing materials, equipment and resources are located in a central store with the Computing subject leader and in a designated Computing suite. Teachers are made aware of the location of all Computing resources in the school and the procedures in which the equipment is logged in and out and is cared for. This system is managed by the ICT technician. Each classroom is equipped with at least one computer and has access to a printer. Further computers are available in designated work areas between classrooms.



We have banks of iPads available for use in class and outside, e.g. clubs and lunchtime activities. Inter-active whiteboards are found in every classroom in each year group and each class teacher has a mini iPad for use as a resource for the staff and pupils and to replace a camera. The designated Computing suite has the capacity for 32 pupils sharing computers in pairs and is complete with an inter-active whiteboard for demonstration and modelling. The Computing suite is timetabled but is also available for teachers to book during non-designated times. Staff have access to a long-term loaned laptop and mini iPad, which is used in accordance with the schools' Acceptable Use Policy.

### **Assessment and Recording**

Assessment of pupils' work in Computing is ongoing in line with St Wilfrid's Church of England Primary Academy assessment model.

Achievement is reported to parents at the end of each academic year. Pupils' work is saved to the server for reference throughout the year. This is accessible by teaching staff only. Folders are kept from Y1 to Y6 then 12 months after.

We use ongoing assessments to measure pupils' achievements and progress against the key objectives. These assessments are tracked using the St Wilfrid's assessment model and are used to assess progress against school and national targets. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the next school year. We also make annual assessments of pupils' progress measured against the level descriptions of the new National Curriculum.

The Computing subject leaders maintain an online portfolio of pupils' work. This demonstrates what the expected level of achievement is in each year of the school. Subject leaders meet regularly to review individual examples of work against the level descriptions of the National Curriculum. Pupils will also be tracked digitally and this will follow pupil achievement and highlight any areas for development.

### **Monitoring and Evaluation**

Monitoring and evaluation will be carried out by the:

- Senior Leadership Team
- Head of School Improvement
- Computing Subject Leaders
- Computing Governor
- Class teachers

All teachers are responsible for monitoring standards in their class. Computing Subject Leaders, under the direction of the Senior Leadership Team, take the lead in this. Monitoring will take place according to current school cycle. Using whole school priorities, identified by the Senior Leadership Team, subject leaders are responsible for producing a School Development Plan for Computing, to allow for progression and development of the subject.

Computing Subject Leaders will also monitor children's work books and long term and medium-term plans, to ensure that the Programmes of Study are being effectively taught and match the needs and abilities of the pupils. Subject leaders have curriculum release time and directed time, in which to fulfil their role.

Computing subject leaders are responsible for:

- monitoring the standard of work and the quality of teaching and learning in Computing and pupils' progress and standards
- supporting colleagues in the planning, teaching and assessment of Computing (through the use of 'book looks', pupil voice, lesson observations, discussion with teachers, subject audit, data analysis, and other monitoring activities that may be required), providing a strategic lead and direction for the subject in school
- monitoring and reviewing the implementation of policy and units of work

- ensuring there are rigorous assessment systems in place to enable teachers and pupils to monitor progress and attainment in Computing
- monitoring and analysing assessments, holding teachers to account
- liaising with the Executive Headteacher and Governors to feedback on the monitoring and impact of Computing across the school

### **Staff Support and Training**

St. Wilfrid's Church of England Primary Academy believes that all staff should be involved in a continuing process of improvement. Our school is committed to fostering a positive ethos of continuous learning. Continuing Professional Development (CPD) is the means by which a school is able to motivate and develop its staff community. CPD is intended to support teachers and to equip them with the skills and knowledge required to keep pace with the rapidly changing educational and professional environment.

This development takes place at a number of levels: individual, team, whole school and through wider networks. CPD supports and reflects the ethos, Christian Values and vision of the school.

The Computing subject leader's role is to provide professional leadership and management for the subject to secure high-quality teaching, effective use of resources and improved standards of learning and achievement for all pupils.

### **Health and Safety**

- To avoid continuous focus on the screen, teachers should direct attention away from the screen at regular intervals by the use of discussions and demonstrations.
- Staff and pupils should avoid standing directly in front of the whiteboard projector.
- The projector beam should not be looked at directly at any time.
- Pupils are constantly reminded of our Online-Safety rules to keep them safe on the computers. (See separate Online-Safety policy for more details).
- Everyone should know how to report faults or concerns with the functioning of ICT equipment. Pupils to inform member of staff. Staff to use online ICT help desk.

### **Other Policies linked to the Computing Policy:**

- Online-safety policy and Guidance
- Acceptable Use Policy
- Acceptable use posters displayed for the pupils

**Subject Leaders:** Miss. K. Banks, Mrs. L. Hope, Mr. R. Jones and Miss. R. Bullen

**Executive Headteacher:** Mr. S. Colothan

**Date:** January 2022

## Appendix 1

### Glossary of Computing Terms (with thanks to 2 Simple Software)

**Actions:** Actions are types of commands which are run on a particular object, and cause it to alter its behaviour. Actions could be used to move an object, for example "UP" "DOWN" or "STOP". Actions are often called "methods". See also (object)

**Algorithm:** A precise step by step set of instructions used to solve a problem or achieve an objective.

**Assignment operator:** A type of operator that is used to assign or reassign (or change) the value of a variable. Examples are "set to" which changes a variable to a new value. For example the code:"A SET TO 2" will change the value of the variable A to 2. See also (variable)

**Block:** A group of commands that are grouped together and are run when a specific condition is met or when an event occurs. For example one could have a "WHEN CLICKED" command and the commands in the "WHEN CLICKED" block would be run when the mouse click occurs. In 2Code, commands in a block are given the same indentation and background shading to indicate they are part of the same block. In real code mode and in many other computer languages blocks of code are indicated with the use of curly brackets { }. See also (events)

**Bug:** A mistake in computer code that prevents the computer program from behaving in the way the coder intended. See also (debugging, debugger)

**Button:** An element on the screen that the user can click on. Usually click on a button generates an event that runs some code. See also (user interface)

**Coder:** A person who writes computer code.

**Collision detection:** Detecting when two sprites on the screen bump into each other. They are often used in a game to detect when a character hits a 'baddy'. See also (sprite)

**Command:** A command is a single instruction within a computer program. A computer program usually contains several commands. Sometimes commands are called 'statements'.

**Condition:** This is the 'trigger' for an 'IF' or 'REPEAT UNTIL' command, and is the test that must be fulfilled to trigger the next stage. The test result determines whether or not to run the "IF" or "ELSE" block in an "IF/ELSE" command or whether to keep repeating in a "REPEAT UNTIL" command. For example in the snippet:  
If A EQUALS B THEN PRINT... A EQUALS B" is the condition See also (selection, IF/ELSE)

**Conditional operator:** An operator (symbol) which evaluates to either true or false depending on the values either side of it. It is used as part of a condition. Examples are "equals" (as in: 'IF A=B') which will evaluate to true if the values either side of the operator are the same. Other examples include "not equals" or "less than" or "greater than" See also (operator, condition, selection, if/else, repeat until)

**Console log:** The console log is an output 'window' for the computer program that used purely for debugging purposes. It typically is a scrolling list of messages. The messages could contain information about what the program is doing or they could be notification of errors or problems within the program. See also (debugging, debugger)

**Debugger:** A tool that helps coders fix problems in their code. Debuggers often contain a console log, the ability to pause a program, step through a program line by line and the ability to inspect variables. See also (debugging, coder)

**Debugging:** Fixing problems in code. Often computer programmers spend as much time debugging code as writing code. See also (debugger, coder)

**Events:** An event is an occurrence that causes a block of code to be run. The event could be time related (see timer) or could be some kind of user input such as the user pressing a key or clicking the screen. In 2Code, the event commands are used to create blocks of code that are run when events happen. See also (block)

**Functions:** Sometimes a coder wants a group of commands to be run many times within the same program. To save having to repeat the group of commands the coder can put the commands into a 'function' and can give the function a name. Then the coder can 'call' the function (use its name within the program), which will run all the commands in that function.

**IF/ELSE:** An "IF/ELSE" command tests a condition. If the condition is true then the commands inside the "IF" block are run. If the condition is not true and there is an "ELSE" block then the commands inside the "ELSE" block are run. See also (condition, block)

**Input:** Input is information going into the computer. An input could be user the moving or clicking the mouse, or the user entering characters on the keyboard. On tablets there are other forms of input such as finger swipes, touch gestures and tilting the device.

**Method:** Another word for an action. See also (action)

**Object:** An object is an element in a computer program that can be created and manipulated using the object's actions or properties. In 2Code all the elements on the screen are objects. See also (action, properties)

**Operator:** A symbol that represents a process to apply to the objects on either side, for example "+", "=", or "AND". For example, "a+b" or "IF a=b". In 2Code there are four types of operators: assignment operators, conditional operators, mathematical operators and logical operators. See also (assignment operator, conditional operator, mathematical operator, logical operator)

**Properties:** Properties are qualities that are associated with an object. Examples include colour, speed or angle. Properties of an object can be changed in a similar way to variables using assignment operators. See also (operators, actions, variable)

**Repeat:** a "repeat" command can be used to make a block of commands run a set number of times. See also (sequencing)

**Repeat Until:** a "repeat until" command will repeat a block of commands until a condition is met. See also (condition, sequencing)

**Selection:** A decision command, where a program chooses a different outcome depending on a condition, such as "REPEAT...UNTIL" or "IF...ELSE".

**Sequencing:** When a computer program repeats a sequence of commands. This could be done using "REPEAT", "REPEAT UNTIL" or using a "Timer". See also (repeat, repeat until, timer)

**Sprite:** An element on the screen that is typically an image. Sprites are often animated and they can be set to move around the screen and can be used, for instance, to represent characters within a game. See also (user interface)

**Statement:** Another word for a command. See also (command)

**Strings:** In code, pieces of text are often called strings.

**Timer:** The timer is a command that allows a block of commands to be run either after a timed delay or at regular timed intervals. Real programming languages often have a similar type of command. See also (sequencing, block)

**User interface:** The part of the computer program that the user sees on the screen. Usually this consists of various visible elements such as buttons, sprites or input fields. See also (design mode)

**Variable:** Variables are used for storing pieces of information within a program. The coder gives a variable a name and this name is used in other parts of the program to refer to the information stored within the variable. Variables can also be manipulated using assignment operators. In 2Code a variable can either contain a piece of text or a number. See also (operators, object, properties, assignment operators)