Computing

Tanners Brook PRIMARY SCHOOL

Curriculum Booklet

Computing Intent

At Tanners Brook Primary School, we strive to support our children in developing the life skills to utilise current and new technology in a **socially responsible way** to achieve their personal best. Computer technology will play a pivotal role in our student's lives as our society becomes increasingly digital and we want them to be able to access and use it **positively and safely**.

We aim to model how to use different **programmes** and **concepts** as well as our use of **social media** (through our school social media account), so our children understand the choices which are needed to ensure they are responsible users. We want our children to become **digitally literate**, using technology to express themselves and develop their ideas and programme at an age-appropriate level.

We intend to build a computing curriculum that prepares pupils to live safely in an increasingly digital British society where pupils can **evaluate and apply** information technology, including new or unfamiliar technologies, analytically to solve problems. As a school, we recognise that our children often struggle with language and so we aim to build in the appropriate vocabulary to all Computing sessions to ensure the children use and understand the correct terminology. We aim to ensure that by the end of Key Stage 2, children have a secure understanding of a **range of digital tools** and can programme effectively, developing their independence to choose the best tool to fulfil the tasks they are set.

Computing Implementation

The computing curriculum at Tanners Brook is designed to reflect the aims of the National curriculum published in 2014 but also to address the skills our children need to achieve their personal best.

Teaching units are planned in half termly blocks and these are either taught as individual lessons or, more commonly, they are blocked into days to enable the children to focus on the computing learning and to allow them to complete the planned projects.

Computing is taught as whole class sessions, with differentiation planned as appropriate. Where possible, the children work on individual devices, but they are also able to work in pairs/groups to support each other.

Our long-term planning ensures that each of the three strands of computing are taught across all the year groups. The three strands are:

- Digital literacy
- Computer Science
- Information technology

| Computer science strand |
| Information technology strand |
| Digital literacy strand |

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Digital Literacy -E - Safety Computer Science - Bee bots	Computer Science - Bee bots	ICT - My Word (Microsoft Word)	ICT - Multimedia -Picture This! – iPad and photo story	ICT – Multimedia -Matisse Dazzle	ICT – looking back, moving forward – 2 create.
Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Digital Literacy E – safety ICT - Publishing - word	ICT - Publishing – word	ICT – Multimedia - Kandinsky – Word and Paint 3D	ICT – Multimedia - Comic Life	Data – pictograms and bar graphs	Computer Science – Programming Bee Bots and Scratch
Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Digital Literacy - E- safety IT – The Internet and Email	Computer Science – Go with the flow –Understanding algorithms and Probots bots	Programming - Lego WeDo (Getting Started) and Scratch (Crab Amazing)		ICT – databases – branching and 2 investigate	ICT – Multimedia -Presenting – PPP
Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Digital Literacy - E- safety ICT – WORD	ICT – WORD	Computer Science – Primary Logo	Computer Science – Scratch – Patterns	ICT – DATA	ICT – Multimedia -Collage SEe SAW – Art Zone App
Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Digital Literacy - E- safety ICT – WORD	ICT – WORD	Computer Science – Scratch – Maths quiz	ICT – Multimedia – PPP – Rainforests	ICT – Excel -Spreadsheets	Lego – WeDo – Speed Project
Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Science – Scratch and Lego	ICT Data – excel	Digital Literacy - E- safety ICT – Multimedia -Stop animation	ICT - Multimedia - PPP		Computer Science – HTML

Our computing curriculum is organised so that our pupils have the opportunity to develop their skills using a wide range of software and hardware. Our long-term plan (see above) maps out the units taught in each half term for each year group. These are then developed in greater detail on our medium term planning.

Digital Literacy

At Tanners Brook, the digital literacy strand focuses on teaching the children to be safe and respectful online and this underpins the rest of our teaching. E-safety is taught explicitly in Autumn 1 in Years 1-5 and in Spring 1 in Year 6 to ensure the children have the appropriate skills required and that issues which may arise in Year 6 can be addressed. E-safety is then also referred to throughout the rest of the year. Our e-safety poster is displayed in all classrooms and referred to in lessons to keep this at the forefront of our children's minds.

Specific days, for example Safer Internet Day are used as opportunities to refresh the key e-safety messages. As part of our development of e-safety across our school community, we share National Online Safety's #wakeupwednesday online guides for parents on our Facebook page each week.

Our digital literacy progression map, details how digital literacy is mapped across years 1-6, detailing the progression of skills.

Year group	1	2	3	4	5	6
Digital Literacy	I can recognise the way we use technology in our world.(S1) I can tell an adult when I see something unexpected or worrying online. (E-Safety S2) I can agree and follow sensible e-safety rules.(E-safety S2)	I can explain why I need to keep my personal information private. (E-safety S1 & S2) I can describe the things that happen online that I must tell an adult about. (E-safety S1 & S2)	I can explain why I need to keep my password and personal information private (S1) I can talk about what makes a secure password and why they are important.(S1) I can protect my personal information when I am online (S1) I can report my concerns to adults (S1) (S4) I can post positive comments on line (S1) I can tell you ways to communicate with others online (S2) I understand how to stay safe when communicating on line(S2) I can use email safely(S2) I can report my concerns to adults(S2) I can describe the World Wide Web as part of the internet that contains websites.(s3)(s5) I can talk about parts of a computer (S3) I can make good choices when on line (S4)(s5) I understand the need for rules to keep me safe when on line (S4)(s5) I can use the internet to find information(s5)	I can protect myself and my friends from harm online (S1) S2) I understand the need to keep personal information private (S1) S2) I know that anything I post online can be seen by others(S1) S2) I can report concerns to adults(S2) I know that anything I post online can be seen by others S2)	I can explain why I need to protect myself and my friends and the best way to do this, including reporting concerns to adults (s1 , 2) I know that anything I post online can be seen, used and may affect myself and others (s1, 2) I recognise the risks of using the internet, understanding why people may publish content that is not accurate (s3) I know that anything I post online can be seen, used and may affect myself and others (s3) PSHE also has a unit on 'Online well-being' in Spring 2 This covers time spent on a computer and how this impacts upon minds and lifestyle|	I recognise the risks of using social media, understanding why people may publish content that is not accurate (S1) I know that anything I post online can be seen, used and may affect myself and others (S1) Spring 2 – Recap SMART poster, internet safety before researching on line for PPP PSHE curriculum covers a unit on keeping safe online – Spring 1 which includes discussions about the dangers of being online as well as the advantages and what to do if a friend is in trouble.

Computer Science

Our computer Science units focus on the programming aspects of the curriculum. These units teach the children to programme both software and hardware and then to de bug programmes to find faults. Our progression map shows how skills are developed through each year group.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	I can give and follow instructions to give my friend. (Beebots, S1) I can predict what will happen for a short series of instructions. (Beebots, S2/S4/S5/S6/S7) I can describe what action I will need to do to make something happen and begin to use the word 'algorithm'. (Beebots, S2/S3/S4/S5/S6/S7) I can press the buttons in the correct order to make my robot do what I want. (Beebots, S2/S4/S5/S6/S7) I begin to use software/apps to create movement and patterns on a screen. (Beebots, S3) I can use the word 'de-bug' when I correct mistakes when I program. (Beebots, S4/S5/S6/S7)	I can tell you the order I need to do things to make something happen and talk about this as an algorithm. (Programming, S1) I can program a robot or software to do a particular task. (Programming, S1/S2/S3/S4/S5) I can watch a program execute and debug if necessary. (Programming, S1/S3/S4/S5)	I can break an open-ended problem in to smaller parts. (Scratch, S1/S4) I can put programming commands in to a sequence to achieve a specific outcome. (Go with the Flow, S1/2) (Scratch, S2/S3/S4/S5/S6) I can test my program and recognise when I need to debug it. (Go with the Flow, S1/2/3) (Scratch, S3/S5/S6) I can describe the algorithm I will need for a simple task. (Go with the Flow, S2/S3/S4) I can use repeat commands. (Scratch, S2/S3)	I can experiment with variables to control models. I can give on–screen robot specific instructions that takes them from A to B. I can make accurate prediction and explain why I believe something will happen (linked to programming). I can de-bug a programme. (Primary Logo, all sessions) (Scratch, all sessions)	I can combine sequences of instructions and procedures to turn devices on and off. (Lego, all sessions) I can use technology to control an external device. (Lego, all sessions) I can talk about how a computer model can provide information about a physical system. (Lego, all sessions) I can design algorithms that use repetition and 2-way selection. (Scratch, S1/2/3/4/5/6/7/8/9) I can use a variable to increase programming possibilities. (Scratch, S3/4/5/6/7/8/9/10 and Lego) I can change an input to a program to achieve a different output. (Scratch, S3/4/5/6/7/8/9/10) I can use 'if' and 'then' commands to select an action. (Scratch, S3/4/5/6/7/8/9/10)	I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. I can explain and program each of the steps in my algorithm. I can evaluate the effectiveness and efficiency of my algorithm while I continually test it. I can recognise when I need to use a variable to achieve a required output I can use a variable and operators to stop a program. I can use logical reasoning to detect errors in algorithms. I can use selection in programs. (Scratch & Lego, all sessions) I can develop and use coding. I can use a language of computing. (HTML Webpage, all sessions)

Information Technology

At Tanners Brook, we have split the information technology strand into 2 sections focusing on data and multimedia. For each section the strands are mapped out by year group to ensure progression.

Data:

Year group	1	2	3	4	5	6
Information Technology Data		I can make a chart or graph using the data I collect. (Data S2 & 3) I can talk about the data that is shown in a chart or graph. (Data S1, 2, 3) I can say what kind of information I could use to help me investigate a question. (S1, 2, 3)	I can collect information. (Databases S4) I can present information. (Databases S4) I can organise data in different ways. (Databases S3, S4) I can plan, create and search a database to answer questions. (Databases S1, S2, S3, S4) I can use a range of software for similar purposes. (S3, S4) I can talk about the different ways data can be organised. (Databases S4)	I understand that software can be used to present data. (Spreadsheets S1) I can use software to accomplish given goals. (Spreadsheets S3, S4) I can collect and present data. (Spreadsheets S3, S4) I can use software to manipulate data. (Spreadsheets S2, S3, S4)	I can manipulate data. (Data S1, S2) I can organise data in different ways. (Data S3, S4) I can collect data and identify when it is inaccurate. (Data S3, S4) I can use software to present data for a purpose. (Data S3, S4)	*I can check the data I collect for accuracy. *I can interpret the data I collect. *I use the skills I have developed to analyse a database. *I can use technology for a specific project. *To be added to MTP*

Multimedia:

Year group	1	2	3	4	5	6
Information Technology Multimedia	I can use a camera. (Picture this! S1/S2/S3/S5) I can create digital content for a purpose. (Picture this! S1/S2/S3/S5) (Matisse – Dazzle S1/S2/S3/S4/S5) (2Create S2/S3/S4/S5) I can be creative with different technology tools. (Picture this! S2/S3/S4) (Matisse – Dazzle S1/S2/S3/S4/S5) I can retrieve and manipulate digital content. (Picture this! S2/S3/S4) I can store digital content. (Picture this! S4) I can use a keyboard to enter text. (Picture this! S4) (2Create S2/S3) (My Word) I can record sound and playback. (Picture this! S5) (2Create S4/S5) I can create digital artwork. (Matisse – Dazzle S1/S2/S3/S4/S5) (2Create S1) I can use a programme to write and illustrate a short story. (2Create S2/S3/S4/S5) I can save in the right place and retrieve it again. (2Create S2/S3/S4/S5) I can use a basic word processing package. (My Word)	I can organise digital content. (Kandinsky – Word/Paint 3D S1/S2) I can be creative with different technology tools. (Kandinsky – Word/Paint 3D S1/S2/S3/S4&5) I can use technology to organise and present my ideas. (Kandinsky – Word/Paint 3D S1/S2/S4, Publishing S2, S3, S4, S6) I can save in the right place (and retrieve again). (Kandinsky – Word/Paint 3D S1/S2/S4&5) (Comic Life S1/S2, Publishing S3, S4, S5, S6) I can create a simple digital painting. (Kandinsky – Word/Paint 3D S3/S4&5) I can use technology to organise and present my ideas. (Comic Life S1/S2, Publishing S3, S4, S5) I can use the keyboard to add, delete and space text for others to read. (Comic Life S1/S2, Publishing S1, S2, S3, S4, S5, S6)	I can design and create content. (Presenting PP S1/S2/S3/S4) I can present information. (Presenting PP S1/S2/S3/S4/S5) I can create different effects using different technology tools. (Presenting PP S1/S2/S3/S4/S5) I can learn to write and deliver a presentation. (Presenting PP S1/S2/S3/S4) I can use appropriate keyboard commands to amend text on my device, including use of spellchecker. (Presenting PP S5) I can evaluate my work and improve its effectiveness. (Presenting PP S5) I can deliver my presentation. (Presenting PP S5)	I am confident to explore new media to extend what I can achieve. (See Saws) I can adapt or create images to enhance or further develop my work. (See Saws) I can create a simple animation. (See Saws) I can use software for a purpose. (Word S1/S2/S3/S4) I can create, modify and present a document for a purpose. (Word S2/S3/S4) I can use a keyboard confidently and make use of a spellchecker. (Word S2/S3/S4) I can change the appearance of text to increase its effectiveness. (Word S3/S4) I can use images to enhance my work. (Word S4)	I can write and deliver a presentation, incorporating a range of media. (Links to the Past - PP) I can select, use and combine the appropriate technology tools to create effects that will have an impact on others. (Links to the Past - PP) I can select an online or offline toll to create and share ideas. (Links to the Past - PP) I can review and improve my work. (Links to the Past – PP S3/S4) I can use photos, videos and sound to create an atmosphere when presenting to different audiences. (Links to the Past – PP S4) I can use software for a purpose. Word (S2) I can use appropriate layout, text and graphics. Word (S2) I can evaluate information Word (s3)	I can write and deliver a presentation, incorporating a range of media. (Topic PP) I can select, use and combine software on a range of digital devices. (Topic PP) I can use a range of technology for a specific project. (Topic PP) I can talk about audience, atmosphere and structure when planning. (Topic PP) I can be digitally discerning when evaluating my work and the work of other. (Topic PP Final Session)

Throughout our teaching, we have a focus on vocabulary, modelling the use of key terminology in order to support the children's understanding.