<u>E-Safety Mapping – Switched on Computing</u>

At Turvey Primary School children are taught about online safety through the teaching of RHSE and Computing. The principles of positive relationships apply online especially as, by the beginning of primary school, many children will already be using the internet.

Online relationships (by the end of primary school)

Pupils should know

• That people sometimes behave differently online, including by pretending to be someone they are not.

• That the same principles apply to online relationships as to face-to face relationships, including the importance of respect for others online including when we are anonymous and what a positive, healthy and respectful relationship looks like both online and offline.

• The rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them. This also include how to recognise and display respectful and responsible behaviour online.

• That the effect of their online actions on others.

• How to critically consider their online friendships and sources of information including awareness of the risks associated with people they have never met.

• How information and data is shared and used online.

Being safe (by the end of primary school)

Pupils should know

• What sorts of boundaries are appropriate in friendships with peers and others (including in a digital context).

• About the concept of privacy and the implications of it for both children and adults; including that it is not always right to keep secrets if they relate to being safe.

• That each person's body belongs to them, and the differences between appropriate and inappropriate or unsafe physical, and other, contact.

• How to respond safely and appropriately to adults they may encounter (in all contexts, including online) whom they do not know.

• How to recognise and report feelings of being unsafe or feeling bad about any adult.

• How to ask for advice or help for themselves or others, and to keep trying until they are heard.

• How to report concerns or abuse, and the vocabulary and confidence needed to do so.

• Where to get advice e.g. family, school and/or other sources

There are a range of potential harms that come with using the internet. Categories include:

- *Content*
  Being exposed to illegal, inappropriate, or harmful content. For example: pornography, fake news, racism, misogyny, self-harm, suicide, anti-Semitism, radicalisation, and extremism.

- *Contact*
  Being subjected to harmful online interaction with other users. For example: peer to peer pressure, commercial advertising, and adults posing as children or young adults with the intention to groom or exploit them.

- *Conduct*
  Online behaviour that increases the likelihood of, or causes, harm. For example, making, sending and receiving explicit images, sharing other explicit images and bullying.

- *Commerce*
  Risks such as online gambling, inappropriate advertising, phishing and financial scams.

Year 1		
Unit	Objectives	E-Safety
We are Treasure Hunters	- Understand that a programmable toy can be controlled by inputting a sequence of instructions - Develop and record sequences of instructions as an algorithm - Program the toy to follow their algorithm - Debug their programs - Predict how their programs will work	The children learn to use simple programmable toys safely and sensibly, as well as showing respect for the work of their peers. Web access is supervised and safe practices are encouraged. Similarly, any filming is done with appropriate consent and assent.
We are TV Chefs	- Break down a process into simple, clear steps, as in an algorithm - Use different features of a video camera - Use a video camera to capture moving images - Develop collaboration skills - Discuss their work and think about how it could be improved.	The pupils learn how to use digital video cameras safely and to show respect to those they are filming, including recognising the need for consent and assent. The importance of not sharing videos more widely than is appropriate is considered, as is the need to exclude information that might identify individuals from video recordings. When using the web, pupils learn to turn the screen off and tell their teacher if they encounter material that concerns them. The pupils also start to learn about copyright, recognising that they own the copyright in their original work and that this cannot be published or copied without their permission.
We are Painters	- Use the web safely to find ideas for an illustration - Select and use appropriate painting tools to create and change images on the computer - understand how this - Use of ICT differs from using paint and paper - Create an illustration for a particular purpose - Know how to save, retrieve and change their work - Reflect on their work and act on feedback received.	In searching for images on the web, pupils work initially from a set of carefully chosen sites. They again learn that they should turn the screen off and tell their teacher if they encounter material that concerns them. If work is uploaded to a public area, the importance of protecting the children's identities is recognised, as is their intellectual property rights over their original work. An extension activity provides an initial opportunity for the children to learn some aspects of using email safely.
We are Collectors	- Find and use pictures on the web - Know what to do if they encounter pictures that cause concern - Group images on the basis of a binary (yes/no) question - Organise images into more than two groups - according to clear rules - Sort (order) images according to some criteria - Ask and answer binary (yes/no) questions about their images.	As pupils will be working with the web and searching for images, they'll need to make sure they use this technology safely, as well as showing respect for others' intellectual property through observing copyright conditions. The pupils are taught to turn the screen off and let their teacher know if they have any concerns over content they encounter. The pupils are also introduced to the school's Acceptable Use Policy, if they haven't already had this explained to them.

We are Story Tellers	• Use sound recording equipment to record sounds • Develop skills in saving and storing sounds on the computer • Develop collaboration skills as they work together in a group • Understand how a talking book differs from a paper-based book • Talk about and reflect on their use of ICT • Share recordings with an audience.	The pupils learn to use audio recorders or microphones and audio recording software safely and sensibly. The pupils need to be aware of copyright material, and show appropriate respect for the owners of intellectual property when using technology. Regard is shown for appropriate consent and assent, school policies and third party terms and conditions if the pupils' stories are uploaded to external websites.
We are Celebrating	• Develop basic keyboard skills, through typing and formatting text • Develop basic mouse skills • Use the web to find and select images • Develop skills in storing and retrieving files • Develop skills in combining text and images • Discuss their work and think about whether it could be improved.	The pupils have an opportunity to search for images on the web, and again learn to use technology safely, switching off the screen if they have concerns, and reporting these to their teacher. The pupils are taught to respect the copyright conditions associated with any third party images they use. Pupils only use photos of themselves if appropriate permission is in place. If children share their work, then attention is paid to protecting their identity and copyright. If they send cards by email they use a class address and consider some aspects of using email safely.

Year 2		
Unit	Objectives	E-Safety
We are Researchers	• Develop collaboration skills through working as part of a group • Develop research skills through searching for information on the internet • Improve note-taking skills through the use of mind mapping • Develop presentation skills through creating and delivering a short multimedia presentation.	The pupils consider how to stay safe while researching online, and show respect for others' ideas and intellectual property by citing their sources, and using licensed images. Safe search filters are in place for using Google or Bing and school internet access is filtered.
We are Zoologists	• Sort and classify a group of items by answering questions • Collect data using tick charts or tally charts • Use simple charting software to produce pictograms and other basic charts • Take, edit and enhance photographs • Record information on a digital map.	The pupils again learn that when sharing photographs and geo-location information online they need to consider the importance of keeping personal information private; they achieve this by not including names or photographs of people. The pupils are taught to respect rules for using digital equipment when out of the classroom, to ensure the equipment is kept safe and that they are not so focused on using it that they become unaware of risks around them.
We are Photographers	• Consider the technical and artistic merits of photographs • Use a digital camera or camera app • Take digital photographs • Review and reject or pick the images they take edit and enhance their photographs • Select their best images to include in a shared portfolio.	The children learn that once images are posted online, it's impossible to control what happens to them. Facial recognition software and geotagging mean that those posting images might inadvertently fail to keep some personal information private. The children learn how to minimise these risks, and learn what they should do if they have concerns about images they encounter on the web.

		The children also learn about what is acceptable and unacceptable to photograph, for example, that it is usually not a good idea to take or share photographs in which children can be identified, or that might reflect badly on the school.
We are Detectives	• Understand that email can be used to communicate • Develop skills in opening, composing and sending emails • Gain skills in opening and listening to audio files on the computer • Use appropriate language in emails • Develop skills in editing and formatting text in emails be aware of online safety issues when using email.	The pupils learn about some of the risks associated with email. They learn that attached files can contain viruses or other harmful programs, that email addresses and embedded links can be 'spoofed', and that 'spam' is a common problem. It is recommended that all emails are sent and received via a single class email address. The password for this account is not shared with children. If the children do use individual accounts, they'll need to keep their account details private and share their email address only with people they know and trust.
We are Astronauts	• Have a clear understanding of algorithms and sequences of instructions convert simple algorithms to programs • Predict what a simple program will do spot and fix (debug) errors in their programs.	The pupils must let their teacher know if they encounter inappropriate material when they search the web. If the pupils use third-party images in their projects, they should use images with public domain or Creative Commons licences. The pupils may upload their projects to the Scratch website, if they have registered for accounts using a parent's e-mail address. They learn to observe MIT's terms and condition.
We are Games Testers	• Describe carefully what happens in computer games use logical reasoning to make predictions of what a program will do • Test these predictions • Think critically about computer games and their use be aware of how to use games safely and in balance with other activities.	There are concerns about the violent nature of some games. Choosing games wisely, including observing PEGI age restrictions and playing in moderation, are aspects of the safe and respectful use of technology that pupils learn about in this unit. As in 'We are Astronauts', the pupils may upload their projects to the Scratch website, if they have registered for accounts using a parent's e-mail address. Comments on the Scratch website are not moderated before they appear, although the pupils can report any which are inappropriate. This provides an opportunity to learn about where to go for help and support when they have concerns about content or contact.

Year 3 & 4 - A		
Unit	Objectives	E-safety
We are Software Developers	Developing a Simple Education Game • Research online educational games & analyse algorithms. • Develop an educational computer game using selection & repetition. • Understand & use variables • Start to debug computer programs. • Recognise the importance of user interface design, including consideration of input & output	The pupils need to consider copyright when sourcing images or media for their programs and/or uploading their own work to the Scratch community site. Searching for content for their programs or viewing others' games also offers an opportunity to develop safe search habits. If the pupils participate in the Scratch community, they need to think about what information they can share and how to

		participate positively in an online community, as well as obtaining parental permission.
We are toy Designers	Prototyping an Interactive Toy • Design & make an on-screen prototype of a computer-controlled toy. • Understand different forms of input & output (such as sensors, switches, motors, lights & speakers.) Design, write & debug the control and monitoring program for their toy.	The pupils again need to think carefully about copyright in sourcing images and other media for their toy prototypes and presentations, or if uploading their own work to the Scratch community. If the pupils do participate in the online Scratch community, they should think through how to do so in a safe and responsible manner, and should obtain their parents' consent. If the pupils link their programs to hardware, they need to take care to work safely with a range of tools and electronic equipment
We are Musicians	Producing digital music • Use one or more programs to edit music • Create and develop a musical composition, refining their ideas through reflection and discussion • Develop collaboration skills • Develop an awareness of how their composition can enhance work in other media. • Garageband Appropriate SICT's STEM project loan box	The pupils need to think about copyright when sourcing audio or publishing their own compositions. They are encouraged to use Creative Commons licensed content if working with others' audio files. There's an opportunity to discuss how copyright relates to music performed in school as well as illegal downloading and sharing of copyrighted music.
We are HTML editors	Editing & Writing HTML • Understand some technical aspects of how the internet makes the web possible • Use HTML tags for elementary mark up • Use hyperlinks to connect ideas and sources • Code up a simple web page with useful content • Understand some of the risks in using the web	The pupils learn how easy it is to create content for the web. The unit provides an opportunity to address some of the risks of using the web, and how pupils could best keep themselves safe while doing so. They learn how easily web pages can be modified, which provides an opportunity to consider the reliability of web-based content.
We are Co-Authors	Producing a Wiki • Understand the conventions for collaborative online work, particularly in wikis • Be aware of their responsibilities when editing other people's work • Become familiar with Wikipedia, including potential problems associated with its use • Practise research skills • Write for a target audience using a wiki tool • Develop collaboration skills • Develop proof-reading skills.	The pupils learn about Wikipedia, considering some strategies for evaluating the reliability of online content as well as the rules and processes that the Wikipedia community has evolved. The pupils develop a shared wiki, thinking carefully about how to do so safely and responsibly, and considering what conduct is appropriate when collaborating on a shared resource.
We are Meterologists	Presenting the Weather • Understand different measurement techniques for weather, both analogue and digital • Use computer-based data logging to automate the recording of some weather data • Use spreadsheets to create charts • Analyse data, explore inconsistencies in data and make predictions • Practise using presentation software and, optionally, video.	The pupils consider the importance of obtaining and using accurate data for any information-processing work. If the pupils film one another, they need to ensure appropriate permission is obtained and that recordings are made, edited and shown in safe, respectful and responsible ways. The pupils should think carefully about the implications of uploading their films to the school network or to the internet.

Year 3 & 4 - B		
Unit	Objectives	E-Safety
We are Programmers	**Programming an Animation** • Create an algorithm for an animated scene in the form of a storyboard • Write a program in Scratch to create the animation • Correct mistakes in their animation programs.	The pupils need to consider copyright when sourcing images for their programs and/or uploading their own work to the Scratch community site. Searching for content for programs or viewing others' cartoons also offers an opportunity to develop safe search habits. If the pupils participate in the Scratch community, they need to think about what information they can share and how to participate positively in an online community, as well as obtaining parental permission.
We are Bug Fixers	**Finding and Correcting Bugs in Programmes** • Develop a number of strategies for finding errors in programs • Build up resilience and strategies for problem solving • increase their knowledge and understanding of Scratch • Recognise a number of common types of bug in software.	The pupils could consider the implications of bugs in software. Participating in the Scratch community would enable the pupils to help others with their projects as well as allowing them to receive help on their own. Participation requires parental permission, and the pupils should consider what behaviour is acceptable online.
We are Presenters	**Videoing Performance** • Gain skills in shooting live video, such as framing shots, holding the camera steady, and reviewing • Edit video, including adding narration and editing clips by setting in/out points • Understand the qualities of effective video, such as the importance of narrative, consistency, perspective and scene length.	In filming one another, the pupils need to ensure that the appropriate permission has been obtained, and that they act respectfully and responsibly when filming, editing and presenting their work. The pupils should think through the implications of videos being made available on the school network or more widely via the internet. They should discuss why schools and other organisations have strict policies over filming.
We are Vloggers	**Making and Sharing a short Screen cast Presentation** • Use a search engine to learn about a new topic • plan, design and deliver an interesting and engaging presentation • Search for, and evaluate, online images • create their own original images • Create a screencast video of a narrated presentation • Develop their understanding of how the internet, the web and search engines work.	Pupils learn that everything they do online leaves a trail, culminating in their digital footprint. They discover the use of safe search modes or child friendly search engines, and learn what to do if they meet inappropriate content. They also become familiar with intellectual property rights, including Creative Commons Licenses, and the importance of acknowledging other people's work. Pupils learn that they should seek permission before taking photographs.
We are Communicator	**Communicating Safely on the Internet** • Develop a basic understanding of how email works • Gain skills in using email • be aware of broader issues surrounding email, including 'netiquette' and online safety • Work collaboratively with a remote partner • Experience video conferencing	The pupils should think about the safe use of email. They learn how email can be used positively. They become aware of some of its risks, including malware attachments, hacked accounts, spam and spoofed links, but also learn how their exposure to such risks can be reduced. They consider the importance of introductions in extending circles of trust.

		They learn how video conferencing can be used positively, to support learning with a known partner.
We are Opinion Pollsters	Collecting and Analysing Data • Understand some elements of survey design • Understand some ethical and legal aspects of online data collection • Use the web to facilitate data collection • Gain skills in using charts to analyse data • Gain skills in interpreting results.	The pupils learn some of the legal and ethical requirements for designing online surveys and processing data. They also consider what information it would be appropriate for them to give in an online survey, and some implications of data processing. The pupils can use online tools for collaborating on survey design and analysis, considering how to use these appropriately. The survey itself could address issues of the pupils' attitudes to online safety.

Year 5 & 6 - A		
Unit	Objectives	E-Safety
We are Adventure Gamers	Making a text-based adventure game • Learn some of the syntax of a text-based programming language • Use commands to display text on screen, accept typed user input, store and retrieve data using variables and select from a list • Plan a text-based adventure with multiple 'rooms' and user interaction • Thoroughly debug the program.	Pupils learn to program a simple text-based adventure game in Python. It's important that pupils do not have admin privileges on their computers as Python can be used to provide access to shell/operating system commands. An alternative is to use the trinket.io online Python interpreter: the pupils need to observe terms and conditions and the usual precautions about not sharing information publicly. If the pupils base their games on published stories, they need to show respect for intellectual property in those works.
We are Computational Thinkers	Mastering algorithms for searching, sorting and mathematics • Develop the ability to reason logically about algorithms • Understand how some key algorithms can be expressed as programs • Understand that some algorithms are more efficient than others for the same problem • Understand common algorithms for searching and sorting a list • Appreciate algorithmic approaches to problems in mathematics.	The pupils learn about some common algorithms, recognising that more efficient solutions to the same problem can reduce the impact of computation on energy and other resources. They remix code on Scratch and Snap! websites, as permitted by Creative Commons licences for the code they work with, in much the same way as they might modify open source software. Pupils who wish to register for accounts on these sites need to observe the associated terms and conditions, which typically require parental consent.
We are Advertisers	Creating a short television advert • Think critically about how video is used to promote a cause • Storyboard an effective advert for a cause • Work collaboratively to shoot suitable original footage and source additional content, • acknowledging intellectual property rights • Work collaboratively to edit the assembled content to make an effective advert.	The pupils create short advertising videos. They learn the importance of observing school policy in relation to videoing, and the need to obtain consent. They think carefully about the implications of sharing content publicly on sites such as YouTube and consider how such publication would limit what they might include in their advert. They recognise the need to use video search platforms in restricted or education specific modes and bring to mind what they should do if they encounter inappropriate content. They learn to respect the intellectual property rights of others, and the need to observe licence

Unit	Objectives	E-Safety
		terms for any content they do not create themselves.
We are Network Technicians	Exploring computer networks including the internet • Appreciate that computer networks transmit and receive information digitally • Understand the basic hardware needed for computer networks to work • Understand key features of internet communication protocols • Develop a basic understanding of how domain names are converted to numerical IP addresses.	The pupils learn about how networks, including the internet, operate. They learn that data transmitted via the internet is not always encrypted. They consider some of the implications for privacy, e.g. their 'digital footprint' associated with using the internet. They become aware of the importance of DNS for safe use of the internet. They have the opportunity to use command line diagnostic tools safely and responsibly. They create posters or other documents to share their knowledge with others.
We are Travel Writers	Using media and mapping to document a trip • Research a location online using a range of resources appropriately. • Understand the safe use of mobile technology, including GPS. • Capture images, audio and video while on location • Showcase shared media content through a mapping layer.	The pupils take photographs, video and audio recordings on an educational visit. They should do so in accordance with school policy and any regulations of the venue for their visit. They should make sure they have permission if they are photographing a person, and of the landowner if on private property. Pupils learn about geotagging GPS location data in photographs and smartphone tracklogs, and consider the privacy implications of this. Pupils think carefully about what media, metadata and information it is safe, respectful and responsible to share publicly. There is the opportunity in this unit for pupils to use their own smartphones or tablet computers, which should be done in accordance with relevant school policies.
We are Publishers	Creating a yearbook or magazine • Manage or contribute to large collaborative projects, facilitated using online tools • Write and review content • Source digital media while demonstrating safe, respectful and responsible use • Design and produce a high-quality print document.	The pupils create a school magazine or yearbook. They consider carefully the implications of including photographs of pupils in their work, recognising that typically names would not be used in captions and that they should have permission to publish any pictures they use. They respect school policies and relevant legislation. They also recognise that intellectual property exists in other pupils' work and that this should be respected, so include such excerpts only with permission. They also learn that sensitive personal information should not be included in publications such as these, thinking carefully about what this means in practice.

Year 5 & 6 - B		
Unit	Objectives	E-Safety
We are Game Developers	Developing an interactive game • Create original artwork and sound for a game design and create a computer program for a computer game, which uses sequence, selection, repetition and variables	The pupils need to consider copyright when sourcing images or media for their games and/or uploading their own work to the Scratch community site.

	• Detect and correct errors in their computer game • Use iterative development techniques (making and testing a series of small changes) to improve their game.	Searching for content for their games or viewing others' games also offers an opportunity to develop safe search habits. If the pupils participate in the Scratch community, they need to think about what information they can share and how to participate positively in an online community, as well as obtaining parental permission. The pupils might also consider some personal implications of playing games, perhaps including violent computer games.
We are Cryptographers	Cracking codes • Be familiar with semaphore and Morse code understand the need for private information to be • encrypted encrypt and decrypt messages in simple ciphers • Appreciate the need to use complex passwords and to keep them secure • Have some understanding of how encryption works on the web.	The pupils learn how information can be communicated in secret over open channels, including the internet, using cryptography. They learn about the public key system used to sign and encrypt content on the web, and how they can check the security certificates of encrypted websites. They learn about the importance of password security for online identity and consider what makes a secure password.
We are Artists	Fusing geometry and art • Develop an appreciation of the links between geometry and art • Become familiar with the tools and techniques of a vector graphics package • Develop an understanding of turtle graphics • Experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers • Develop some awareness of computer-generated art, in particular fractal-based landscapes.	The unit provides an opportunity to reinforce messages around safe searching and evaluating the quality of online content. If the pupils upload their work for others to see, they should consider the importance of protecting personal information as well as recognising that they are sharing their own copyrighted work with an audience.
We are Web Developers	Creating a website about cyber safety • Develop their research skills to decide what information is appropriate • Understand some elements of how search engines • Select and rank results question the plausibility and quality of information • Develop and refine their ideas and text collaboratively • Develop their understanding of e-safety and responsible use of technology.	Online safety forms the focus of this unit, with the pupils working collaboratively to develop a website in which they present their own authoritative content on a broad range of issues around the safe and responsible use of technology. In doing so, they consider the reliability and bias of online content, how to contribute positively to a shared resource, and how to use search engines safely and effectively.
We are Bloggers	Sharing experiences and opinions • Become familiar with blogs as a medium and a genre of writing create a sequence of blog posts on a theme • Incorporate additional media comment on the posts of others • Develop a critical, reflective view of a range of media, including text	The pupils write content for their own or a shared blog, thinking carefully about what can be appropriately shared online. They consider issues of copyright and digital footprint as well as what constitutes acceptable behaviour when commenting on others' blog posts. The pupils also think about the importance of creating high-quality online content and become more discerning in evaluating content as they review others' blogs.

		If the pupils' blogs are publicly accessible, it is important that any comments are moderated by their teacher; it is worth discussing with the pupils why the comments should be moderated.
We are Architects	Creating a virtual space • Understand the work of architects, designers and engineers working in 3D • Develop familiarity with a simple CAD (computer aided design) tool develop spatial awareness by exploring and experimenting with a 3D virtual environment • Develop greater aesthetic awareness.	The pupils should observe good practice when searching for and selecting digital content. If the pupils choose to locate their 3D models geographically, they should avoid sharing private information. The pupils should think about copyright when adding content to their model or publishing images or videos of their model.

E-Safety Themes covered by a yearly, week long set of activities:

2024 - 'Inspiring change? Making a difference, managing influence and navigating change online.'

2023 - 'Want to talk about it? Making space for conversations about life online'.

2022 - 'All fun and games? Exploring respect and relationships online'.

2021 – 'An internet we trust: exploring reliability in the online world.'

Resources for these weeks are taken predominantly from https://saferinternet.org.uk and some from other reliable sources.