

Children should be taught how to:

Area:	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
e-safety	<ul style="list-style-type: none"> Ask an adult when wanting to use the Internet. Tell an adult when something worrying or unexpected happens whilst using the Internet. Be kind to others when online. Talk about the amount of time spent using a computer / tablet / game device. Be careful with technology devices. 	<ul style="list-style-type: none"> Keep passwords private. Explain what personal information is. Tell an adult when they see something unexpected or worrying online. Talk about why it's important to be kind and polite. Recognise an age appropriate website. Agree and follow sensible e-Safety rules 	<ul style="list-style-type: none"> Explain why they need to keep their password and personal information private. Describe the things that happen online that they must tell an adult about. Talk about why they should only go online for a short amount of time. Talk about why it is important to be kind and polite online and in real life. Know that not everyone is who they say they are on the Internet. 	<ul style="list-style-type: none"> Talk about what makes a secure password and why they are important. Protect personal information when they do different things online. Use the safety features of websites as well as reporting concerns to an adult. Recognise websites and games that are age appropriate. Make good choices about how long they spend online. Ask an adult before downloading files and games from the Internet. Post positive comments online. 	<ul style="list-style-type: none"> Choose secure passwords and appropriate screen names when using a website. Talk about the ways they can protect themselves and their friends from harm online. Use the safety features of websites as well as reporting concerns to an adult. Know that anything shared online can be seen by others. Choose websites, apps and games that are age appropriate. Help others make good choices about the time they spend online. Talk about why they need to ask a trusted adult before downloading files and games from the Internet. Comment positively and respectfully online and through text messages. 	<ul style="list-style-type: none"> Choose a secure password and screen name. Protect passwords and other personal information. Explain why they need to protect themselves and others and the best ways to do this, including reporting concerns to an adult. Know that anything posted online can be seen, used and may affect others. Talk about the dangers of spending too long online or playing a game. Explain the importance of communicating kindly and respectfully. Discuss the importance of choosing an age-appropriate website, app or game. Explain why they need to protect their computer or device from harm. 	<ul style="list-style-type: none"> Protect their password and other personal information. Explain the consequences of sharing too much about themselves online. Support their friends to protect themselves and make good choices online, including reporting concerns to an adult. Explain the consequences of spending too much time online or on a game. Explain the consequences to themselves and others of not communicating kindly and respectfully. Protect their computer or device from harm on the Internet.

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Programming	<ul style="list-style-type: none"> • Make a floor robot move. • Use simple software to make something happen. • Make choices about the buttons and icons they press, touch or click on. 	<ul style="list-style-type: none"> • Give instructions to a friend and follow their instructions to move around. • Describe what happens when they press buttons on a robot. • Press the buttons in the correct order to make a robot do what they want. • Describe what actions they will need to do to make something happen and begin to use the word algorithm. • Begin to predict what will happen for a short sequence of instructions. • Begin to use software/apps to create movement and patterns on a screen. • Use the word debug when correcting programming mistakes . 	<ul style="list-style-type: none"> • Give instructions to a friend (using forward, backward and turn) and physically follow their instructions. • Tell someone the order needed to do things to make something happen and talk about this as an algorithm. • Program a robot or software to do a particular task. • Look at a friend's program and tell them what will happen. • Use programming software to make objects move. • Watch a program, execute and spot where it goes wrong so that they can debug it. 	<ul style="list-style-type: none"> • Break an open- ended problem up into smaller parts. • Put programming commands into a sequence to achieve a specific outcome. • Keep testing their program and recognise when they need to debug it. • Use repeat commands. • Describe the algorithm they will need for a simple task. • Detect a problem in an algorithm which could result in unsuccessful programming. 	<ul style="list-style-type: none"> • Use logical thinking to solve an open-ended problem by breaking it up into smaller parts. • Use an efficient procedure to simplify a program. • Use a sensor to detect a change which can select an action within their program. • Know that they need to keep testing their program whilst putting it together. • Use a variety of tools to create a program. • Recognise an error in a program and debug it. • Recognise that an algorithm will help them to sequence more complex programs. • Recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. 	<ul style="list-style-type: none"> • Decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • Refine a procedure using repeat commands to improve a program. • Use a variable to increase programming possibilities. • Change an input to a program to achieve a different output. • Use 'if' and 'then' commands to select an action. • Talk about how a computer model can provide information about a physical system. • Use logical reasoning to detect and debug mistakes in a program. • Logical thinking, imagination and creativity to extend a program. 	<ul style="list-style-type: none"> • Deconstruct a problem into smaller steps, recognising similarities to solutions used before. • Explain and program each of the steps in their algorithm. • Evaluate the effectiveness and efficiency of their algorithm while they continually test the programming of that algorithm. • Recognise when they need to use a variable to achieve a required output. • Use a variable and operators to stop a program. • Use different inputs (including sensors) to control a device or onscreen action and predict what will happen. • Use logical reasoning to detect and correct errors in a algorithms and programs.

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Data	<ul style="list-style-type: none"> Tell someone about different kinds of information such as pictures, video, text and sound. 	<ul style="list-style-type: none"> Talk about the different ways in which information can be shown. Use technology to collect information, including photos, video and sound. Sort different kinds of information and present it to others. Add information to a pictograph and talk to someone about what they have found out. 	<ul style="list-style-type: none"> Talk about the different ways they use technology to collect information, including a camera, microscope or sound recorder. Make and save a chart or graph using the data they collect. Talk about the data that is shown in their chart or graph. Start to understand a branching database. Tell someone what kind of information they could use to help them investigate a question. 	<ul style="list-style-type: none"> Talk about the different ways data can be organised. Search a ready- made database to answer questions. Collect data help them answer a question. Add to a database. Make a branching database. Use a data logger to monitor changes and talk about the information collected. 	<ul style="list-style-type: none"> Organise data in different ways. Collect data and identify where it could be inaccurate. Plan, create and search a database to answer questions. Choose the best way to present data to their friends. Use a data logger to record and share their readings with friends. 	<ul style="list-style-type: none"> Use a spreadsheet and database to collect and record data. Choose an appropriate tool to help them collect data.. Present data in an appropriate way. Search a database using different operators to refine their search. Talk about mistakes in data and suggest how it could be checked. 	<ul style="list-style-type: none"> Plan the process needed to investigate the world around them. Select the most effective tool to collect data for an investigation. Check the data they collect for accuracy and plausibility. Interpret the data they collect. Present the data they collect in an appropriate way. Use the skills they have developed to interrogate a database.

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Multimedia	<ul style="list-style-type: none"> • Move objects on a screen. • Create shapes and text on a screen. • Use technology to show their learning. 	<ul style="list-style-type: none"> • Be creative with different technology tools. • Use technology to create and present their ideas. • Use the keyboard or a word bank on their device to enter text. • Save information in a special place and retrieve it again. 	<ul style="list-style-type: none"> • Use technology to organise and present their ideas in different ways. • Use the keyboard on their device to add, delete and space text for others to read. • Tell someone about an online tool that will help them to share their ideas with other people. • Save and open files on the device they use. 	<ul style="list-style-type: none"> • Create different effects with different technology tools. • Combine a mixture of text, graphics and sound to share their ideas and learning. • Use appropriate keyboard commands to amend text on their device, including making use of a spellchecker. • Evaluate their work and improve its effectiveness. • Use an appropriate tool to share their work online. 	<ul style="list-style-type: none"> • Use photos, video and sound to create an atmosphere when presenting to different audiences. • Be confident to explore new media to extend what they can achieve. • Change the appearance of text to increase its effectiveness. • Create, modify and present documents for a particular purpose. • Use a keyboard confidently and make use of a spellchecker to write and review their work. • Use an appropriate tool to share their work and collaborate online. • Give constructive feedback to their friends to help them improve their work and refine their own work. 	<ul style="list-style-type: none"> • Use text, photo, sound and video editing tools to refine their work. • Use the skills they have already developed to create content using unfamiliar technology. • Select, use and combine the appropriate technology tools to create effects that will have an impact on others. • Select an appropriate online or offline tool to create and share ideas. • Review and improve their own work and support others to improve their work. 	<ul style="list-style-type: none"> • Talk about audience, atmosphere and structure when planning a particular outcome. They can confidently identify the potential of unfamiliar technology to increase their creativity. • Combine a range of media, recognising the contribution of each to achieve a particular outcome. • Tell someone why they select a particular online tool for a specific purpose. • Be digitally discerning when evaluating the effectiveness of their own work and the work of others.

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Technology in the world	<ul style="list-style-type: none"> Tell someone about technology that is used at home and in school. Operate simple equipment. Use a safe part of the Internet to play and learn. 	<ul style="list-style-type: none"> Recognise the ways people use technology in their classroom. Recognise ways that technology is used in their home and community. Use links to websites to find information. Begin to identify some of the benefits of using technology. 	<ul style="list-style-type: none"> Tell someone why they use technology in the classroom. Tell someone why they use technology in their home and community. Start to understand that other people have created the information they use. Identify benefits of using technology including finding information, creating and communicating. Talk about the differences between the Internet and things in the physical world. 	<ul style="list-style-type: none"> Save and retrieve work on the Internet, the school network or their own device. Talk about the parts of a computer. Tell someone ways to communicate with others online. Describe the World Wide Web as the part of the Internet that contains websites. Use search tools to find and use an appropriate website. Think about whether they can use images that they find online in their own work. 	<ul style="list-style-type: none"> Tell someone whether a resource they are using is on the Internet, the school network or their own device. Identify key words to use when searching safely on the World Wide Web. Think about the reliability of information they read on the World Wide Web. Tell someone how to check who owns photos, text and clipart. Create a hyperlink to a resource on the World Wide Web. Recognise that websites use different methods to advertise products. 	<ul style="list-style-type: none"> Describe different parts of the Internet. Use different online communication tools for different purposes. Use a search engine to find appropriate information and check its reliability. Recognise and evaluate different types of information they find on the World Wide Web. Describe the different parts of a webpage. Find out who the information on a webpage belongs to. Know which resources on the Internet they can download and use. Describe the ways in which websites advertise their products. 	<ul style="list-style-type: none"> Tell someone the Internet services they need to use for different purposes. Describe how information is transported on the Internet. Select an appropriate tool to communicate and collaborate online. Talk about the way search results are selected and ranked. Check the reliability of a website. Tell someone about copyright and acknowledge the sources of information that people find online. Know that websites can use people's data to make money and target their advertising.