EYFS

Children in the early years setting will have been provided with many opportunities to use technology in a range of different ways. Children will view online maps and satellite images of their local area to discuss their surroundings and any physical features that they can recognise. They learn to understand and use directional language and prepositions which leads into KS1, where they use those terms to program floor robots. Children have the opportunity to use interactive whiteboards, where they can draw shapes, use the eraser tool and change the colour and style of the images they have created. Children talk about online safety and discuss what online strangers are and what to do if they encounter one.

**e-safety**

Children will know that they have to ask an adult before using the internet or any electrical device. They will know that when something worrying or unexpected happens while they are online, they must speak to an adult and not answer messages that might pop up onto their screens. Children will be able to talk about strangers and that they can be online when they are using the internet.

| **Checking for understanding:**   * What must you do before you use any electrical device or the internet? * What would you do if someone tried to send you a message on your tablet or computer? |
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Year 1

**e-safety**

Children will be taught the importance of setting a secure password when they are online. They will be able to identify a potential threat from cyber criminals and should also realise the importance of being kind and polite to others when online. Children in Year 1 will be able to explain and follow simple rules when using a device connected to the internet.

| **Checking for understanding:**   * Why should you keep your passwords private? * What would you consider to be ‘personal information’? * What would you do if a stranger tried to make contact with you whilst you were online? * Why is it important to be kind to others when you are online? * What simple rules should we use when using the internet? |
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**Programing**

Children will be able to use positional language to produce simple instructions in order to initiate people or robots to move. They will be able to describe and predict what movements a robot will make after a set of instructions are given. Children will know what the terms algorithm and debug mean, when talking about programming.

| **Checking for understanding:**   * Can you explain what the term algorithm means? * What does debugging a program mean? * Can you explain how to move a Beebot from point A to point B? What sort of instructions would you use? |
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**Multimedia**

Children will be able to use different technological tools to create art and edit them accordingly using the erase, shape and undo tools. They will become confident with a standard keyboard and be able to enter text using one. Children will also be able to save their work and be able to retrieve it at a later date.

| **Checking for understanding:**   * Do you know how and where to save your work on a computer? * Where do you retrieve work that you have previously saved? * How could you use a computer to draw a picture? * What would you do if you made an error with a drawing? * Can you change the colour of your paintbrush? * What does the undo feature do? |
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**Technology in our lives**

Children will be able to define the term ‘technology’. They will be aware of a varied range of technology that is used in school, home, shops and factories and be confident in orientating themselves around a computer, knowing where the key features are.

| **Checking for understanding:**   * What does technology mean? * What technology do you have at home? What is it used for? * What technology do we have in school? * What do you use a mouse for? * What is a screen? * What is a keyboard used for? |
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Year 2

**e-safety**

In Year 2, children will be able to explain why they need to keep their passwords and personal information safe from others. They will be able to spot a potential risk to their privacy and know that they must alert an adult if this happens. All children must be able to explain what a sensible amount of screen time looks like and they should be able to talk about why they must be kind and respectful to others when they are online and in real life. Children in Year 2 must also realise that not everyone online is kind and trustworthy.

| **Checking for understanding:**   * Why should you always keep your passwords and personal information safe and private from other people? * What would you do if someone you didn’t know tried to contact you online? * Why is it important to be kind to others when online? * Can you explain how much time you should spend online each day? Why? |
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**Programming**

Children in Year 2 will begin to use directional language to instruct and physically move people around a room. They will then be able to transfer these skills to floor robots. Children will learn to sequence instructions correctly and be able to discuss them. They will use the terms algorithm and debug confidently when talking about a programme. Children will be able to programme a robot to carry out a specific task and also look at a partner’s program and predict what might happen. Children will be able to observe a program and identify where it needs debugging.

| **Checking for understanding:**   * If you fix a program – what are you doing? * Can you look at this programme and tell me where the robot will stop? * How would you program this robot to move from point A to point B? |
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**Multimedia**

In Year 2, children will be able to confidently use a keyboard to alter text they have composed. They will also be able to open and save work that they have created on a device. They will begin to use technology to organise and present their ideas in different ways. Children will make patterns and use those patterns to make music with both percussion instruments and digital tools.

| **Checking for understanding:**   * How do you save your work on a computer? * What does instrument mean? * Can you think of any musical instruments that you can play using a computer? * What does tempo mean when we are looking at a piece of music? * What happened to your rhythms when you changed the patterns of the programs? |
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**Technology in our lives**

Children learn the term ‘information technology’ and can discuss how it’s used at home, in school or in the local community. They learn that information technology comprises of other devices and does not simply refer to computers. All children will be able to explain the benefits of information technology and the positive impact it has on all our lives.

| **Checking for understanding:**   * What does information technology mean? * What information technology do we use at home/ school / shops? * Can you name a benefit of having information technology in our lives? |
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Year 3

**e-safety**

In Year 3, children must be able to explain what makes a secure password and why they are vital in keeping themselves and their personal information secure from others. They must be able to demonstrate and discuss, in detail, why setting passwords is so important. They will be able to recognise websites and games that are appropriate to their age, and be able to ask an adult before downloading files and games from the internet. Children in Year 3 will be able to discuss and explain that what they see online is not always what they think it is.

| **Checking for understanding:**   * What makes a secure password? * How can you protect yourself and your personal information when you are online? * What should you do if you come across something that doesn’t seem right online? * What would you say is an appropriate amount of time online per day? |
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**Programming**

Children will become familiar with the Scratch program in Year 3, where they will start to put commands into a sequence to achieve specific outcomes and results. They will be able to start testing programs that they have designed and be able to recognise when they need debugging. Children will become familiar with different commands like the repeat command. Children must be able to describe an algorithm that could be used to complete a simple task and be able to detect problems that could render a programme being faulty.

| **Checking for understanding:**   * What would you use a repeat command for and why? * What is a sprite? * What is a backdrop? * What are commands? |
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**Multimedia**

In Year 3, children will be taught how to use desktop publishing in order to create documents that include both texts and images. They must be aware of its uses and be confident in demonstrating this. Children will be able to use appropriate keyboard commands in order to alter their text and be able to recognise when their work might need to be edited in order for it to be more effective and appealing to others.

| **Checking for understanding:**   * What is a font and can you change its size, colour and style? * What is desktop publishing and what can we use it for? * What is a template? * Why are templates useful documents? |
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**Technology in our lives.**

Children will be able to explain what certain parts of a computer are and their functions. They will also be able to discuss what digital devices are and explain what they do. They will be able to talk about what the input, process and output of a digital device is. Children will be able to explain what a computer network is and how it enables information to be sent to other computers.

| **Checking for understanding:**   * What is a digital device? * What does input mean? * What does output mean? * What is the difference between an input and an output? * What is a computer network? |
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Year 4

**e-safety**

In Year 4 children continue to build on work they have covered in Year 3. They learn to choose secure passwords when using websites and can explain ways of keeping themselves and their friends safe whilst using the internet. They know that if they discover any websites or encounter strangers whilst online, they must inform an adult. They are able to choose websites and games that are appropriate for their age. Children are made aware of acceptable amounts of time to spend online and can talk about why they must seek an adult's consent before they download any material from the internet. Children in Year 4 are also able to discuss what being respectful online means and the positive and negative effects it can cause.

| **Checking understanding:**   * Why is it important to make your passwords secure? * What makes a secure password? * Can you explain how to keep yourself safe whilst online? * Discuss what an acceptable time online is? * Why should you always ask an adult before downloading files and games from the internet? * Why is it important to be respectful and responsible when commenting online? |
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**Programming**

Children in Year 4 will begin to use logical thinking to solve and decipher open-ended problems by breaking them up into smaller parts. Children learn to use efficient procedures to simplify programs so that they are easier to understand. Children will start to explore Scratch in more detail and learn how to use sensors within their programs to detect change. Children should be taught the importance of constantly testing and checking their programs, and in turn, learn how to recognise mistakes and debug programs that contain them. Children are taught the importance of algorithms and how they can aid the sequencing of more intricate programs.

| **Checking understanding:**   * What does de- bugging a program mean? * Why is it important to check and test your programs while composing it? * What does infinite mean? * What is an algorithm? * What does the repeat function do in Scratch programming? |
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**Multimedia**

In Year 4, children will be taught how to edit images using the crop tool. They will become confident in altering images and text to increase their effectiveness and style. Children will learn how modifying the composition of pictures affects the overall atmosphere of an image, and will learn how to improve images and fonts. Children in Year 4 will learn how to use the undo button effectively, and will generally become more confident navigating their keyboards and picture editing software.

| **Checking understanding:**   * What does the ‘undo’ button do and when would you use it? * How and why might you use the crop function when working on images? * What does the composition of an image refer to? * How can you alter the composition of an image? * How could you alter text to make it more interesting and exciting? |
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**Technology in our lives**

In Year 4, children begin to learn the intricacies of the internet and focus on key terminology related to the internet. Children will be taught what the terms, internet, world wide web, and computer network are. They will learn what a web browser is and be able to identify what the key features of a website are including, the title, links, video and text. Children will be able to state whether a resource they are using is being viewed on the internet, the school network or their own device.

| **Checking understanding:**   * What is a network? * Can you explain what the internet is? * What is the world wide web? * What are websites? Can you list some websites you use at home? * What are the key features of a website? |
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Year 5

**e-safety**

In Year 5 children learn the importance of protecting their passwords and other personal information. They will be able to explain why they need to protect themselves and their friends when they are online and know how to report any concerns to an adult. Children must be made aware that anything they post online can be seen and used and may affect others in a negative way. Children will know what an acceptable amount of time spent online is, and be able to explain the consequences of spending too much time online or on a game. In Year 5, children must know the importance of being kind to others whilst online, and should be able to discuss the importance of choosing age appropriate websites and games.

| **Checking understanding:**   * Why must we always protect our passwords and personal information when online? * What should you do if you are contacted by a stranger whilst using the internet * Can you explain how spending too much time online might be unhealthy for us? * Why is it always important to be kind to others whilst online? |
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**Programming**

In Year 5 children are taught to break problems down into smaller parts and design algorithms to produce specific outcomes, they then use these to write their programs. Children learn to use repeat commands to improve their programs. Children are taught how to alter inputs in their programs to achieve different outcomes. Children are also taught how to use ‘if’ and ‘when’ commands when writing their own programs and how conditional statements connect conditions to an outcome.

| **Checking understanding:**   * What does debug mean? * What is a ‘repeat’ command and why would you use it when programming? * What colour are the ‘motion’ blocks in the scratch program? * What colour are ‘control’ blocks in the scratch program? |
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**Multimedia**

In Year 5, children are taught how to capture and edit videos that they have recorded. They will be able to use text and video editing tools to refine and improve their work. They will be able to use newly learnt computer skills to create content using technology that is unfamiliar to them. Children will know how to select, use and combine a range of appropriate technological tools to create effects that will have a positive impact on others. Children learn how to review and improve their creations and can work collaboratively with others to help improve their work too.

| **Checking understanding:**   * What does ‘trimming’ a video clip mean, and why might you use it to improve your clip? * How might you share a video that you have recorded with others? * In what way could you edit and improve a video that you have created? |
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**Technology in our lives**

Children are taught what the term ‘system’ means and how it can be related to everyday objects like a bicycle. They should be able to explain how simple systems lead to functions and also how digital systems work with inputs leading to outputs. Children also learn how computers communicate with other computers and that they follow ‘protocols’ just like humans do when they communicate with one another. Children are taught what IP addresses are and how they are utilised between computers to send messages.

| **Checking understanding:**   * What is a system? Can you name any systems on a bicycle? * What is a digital system? * What digital systems take place when you press the button on a pedestrian crossing? * What is an IP address? |
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Year 6

**e-safety**

In Year 6, children will be able to explain why it’s vital that their passwords and personal information are protected at all times whilst they are online. They must be able to discuss the consequences of sharing too much information about themselves whilst using the internet, and how best to avoid giving significant information to others. Children will know what good choices are whilst online and know the procedure for reporting any concerns to adults when something doesn’t seem right. Children will be able to explain what an appropriate amount of time spent online is, and the consequences of spending too much time on the internet.

| **Checking understanding:**   * Why is it vitally important that you protect your passwords and personal information from others whilst online? * Can you explain what the consequences of sharing too much personal information with others, whilst online, could be? * What are the negative effects of spending too much time online? * Can you explain what you would do if a stranger contacted you whilst you were using the internet? |
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**Programming**

In Year 6, children will be able to deconstruct problems into smaller steps. They will be confident talking about algorithms and explain the steps involved in a program. Children will be able to evaluate the effectiveness of their algorithms while continually testing the programs they have designed. Children will be able to explain what a variable refers to in programming and when they should use one to create a desired effect.

| **Checking understanding:**   * Explain what an algorithm is? * What does debug mean? * Why might you need to debug a program? * What can you control with a ‘variable’ in a scratch program? |
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**Multimedia**

Children in Year 6 will be able to describe what websites and webpages are. They will also be able to explain what a browser is and the purpose of a website. Children will be confident in explaining what the key features of websites are and what their purpose is. Children will know why certain online tools are used for specific purposes when designing and constructing websites.

| **Checking understanding:**   * What is a website and what is its purpose? * What is a web page? * What does a browser do? * What are the key features of a website? |
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**Technology in our lives**

Children will be able to discuss what internet services are available to them and what their purposes are. They will be confident in explaining how information is transported on the internet and be able to select appropriate tools for communicating and collaborating with others online. Children will be able to explain what web browsers and search engines are, and why we use them.

| **Checking understanding:**   * What is a search engine, and why would you use one? * Can you name different ways we can communicate with others online? * What is the difference between public and private communication? * When and why might you use private communication? |
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