# Computing – Year 1

## Content

| NC objectives - **areas of study** | End point of area of study | Vocabulary | | |
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| | | Basic | Adventurous | Technical |
| 1. Use technology safely and respectfully, keeping personal information private; identify where to go to for help and support when they have concerns about content or contact on the internet or other online technologies.-being kind/identify that some behaviour is unkind.<br><br>Recognise common uses of information technology beyond school-identifying technology in our world.<br><br>2. create and debug simple programs/use logical reasoning to predict the behaviour of simple programs-Beebot<br>3. Use technology purposefully to create, store, manipulate and retrieve digital content. -creating a picture on Microsoft Paint | 1. Children will know how to keep themselves safe and what do to if they feel upset or uncomfortable. Children will be able to identify different technology and how it improves our world. (connect and communicate)<br>2. Children will be able to give directions using the correct, plan a simper program for a Beebot and begin to find and solve problems. (code)<br>3. Children will be able to use Microsoft paint effectively to create a picture. They will know how to save their work.(create) | <u>Communicate and connect</u><br>online, kind, unkind<br><br><u>code</u><br>beebot, solve, steps, problem<br><br><u>create</u><br>,paint, computer, save, brush, fill | <u>Communicate and connect</u><br>e-safety<br><br><u>code</u><br>solution, sequence, instructions, predict<br><br><u>create</u><br>create, tools, shape, line, undo, compare | <u>Communicate and connect</u><br>communicate, technology<br><br><u>code</u><br>program, debug, code<br><br><u>create</u><br>free hand |

## Knowledge

### Substantive Knowledge

e-safety and understanding technology-concepts- Communicate and Connect

**<u>Why do we need rules?</u>**

**<u>Lesson 1</u>**

**<u>L.O: To know what e-safety is.</u>** Vocab: e safety, online

### Disciplinary Knowledge

**Working as a junior safeguarding officer e-safety-**At the beginning of the lesson tell the children that we are learning how to keep ourselves safe within the context of the online world.

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| -Explain that e safety is about keeping ourselves online.<br>-This is can be on a phone, compute, tablet etc.<br>-What is kind and unkind behaviour? Link to being online and offline.<br>**Lesson 2**<br>**L.O: To know that there are people online who could make someone feel sad, embarrassed or upset.** Vocab: kind, unkind<br>-What is kind and unkind behaviour online?<br>-Explain that there can be people online that can be unkind and discuss how this could make you feel.<br>-Share different scenarios and children identify if someone is being purposefully unkind or not.<br>How do I treat others?<br>**Lesson 3**<br>**L.O: To know who to go to if they uncomfortable or frightened.**<br>Vocab: online, kind, unkind<br>-Share scenarios of when someone has been unkind online.<br>-Share ideas of what you could do in each situation.<br>-Explain that we have trusted adults ewe can talk to when we feel upset or frightened. Create a list of trusted adults.<br>**Lesson 4**<br>**L.O: To know rules to keep us safe when we are using technology.**<br>Vocab: e-safety, online, communicate<br>-Tell the children rules that we need to follow when using technology.<br>-Children to create a list of rules/poster of how we can keep safe.<br>**Lesson 5**<br>**L.O: To understand the term 'technology'.** Vocab: technology<br>-Explain what technology is-something that has been made with a specific purpose to help other people.<br>-Share examples of technology in the classroom.<br>-Go on technology hunt in the classroom and around school<br>-Sort pictures into technology and not technology.<br>**Week 6**<br>**L.O: To understand how technology helps us in different ways.**<br>Vocab: technology, communicate | **Reflect**-circle time- reflect on what is kind and unkind behaviour. Know who to go to if they need help.<br><br>**Evaluate**- explain how technology has improved our world. |

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| - Share pictures of technology. Recap definition. What does it do? Use sentence stem 'It helps us to….'.<br>-Children to choose pictures of different technology and write/share how it helps us. E.g. A car helps us to get to school.<br>-Explain that technology has helped to improve our world.<br>Have a sense of enjoyment to interpret responses to big questions | |
| Programming-concepts-code<br>**Are instructions important?**<br>**Lesson 1**<br>**L.O: To know what a given command will do.** Vocab: beebot,robot<br>-What are robots? What jobs might they do?-Robots are machines that can do tasks. They have been programmed by humans.<br>-Introduce bee bots and discuss what they think the different buttons will do.<br>-Children test each button by pressing one at a time and then go. Ensure they press clear each time.<br>**Lesson 2**<br>**L.O: To understand how to give instructions.** Vocab: instructions,steps<br>- Give children simple instructions to follow.<br>-Focus on language used and how precise they need to be.<br>-Children give each other instructions using directional language- forwards, backwards, turn, number of steps.<br>Have the confidence to direct others<br>**Lesson 3**<br>**L.O: To understand 'forwards' and 'backwards' commands to make a sequence.** Vocab: sequence, predict<br>-Children to program a robot using a forwards command.<br>-Children to program a robot using a backwards command.<br>-Children to use a forwards and backwards command in a sequence and predict where the beebot will end up.<br>**Lesson 4**<br>**L.O: To understand four direction commands to make sequences.**<br>Vocab: sequence, predict | **Working as a computer progammer-** Why is what we have learned today important to our understanding of using technology?<br><br>**Problem solving**- find errors in instructions and fix in different ways. Is there only one solution?<br><br>**Design** –give clear instructions and command for others to follow effectively.<br><br>**Predict**- predict what will happen to the Beebot. Where will it end up?<br><br>**Sequence-** know the importance of giving instructions in the correct order. |

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| - Children identify that left and right commands turn the robot equal amounts left or right.<br>-Children to use all commands on bee bot to move it to a given space.<br>- Children to predict where the beebot will end up from a given start position.<br>**Lesson 5**<br>**L.O: To know how to plan a simple program.**<br>Vocab: program, code, debug<br>- Children to plan a route for their beebot to follow.<br>- children to say their route before designing it as an algorithm and testing it.<br>- introduce children to the word 'debugging' and what this means.<br><br>**Lesson 6**<br>**L.O: To know more than one solution to a problem.**<br>Vocab: solution, debug, solve<br>-introduce idea of using different routes.<br>- children identify at least 2 different routes to get from the same start position to the same end square.<br>-children to plan and test algorithms for each of the routes.<br>-Children to solve any bugs that they find.<br>How does God help us to solve problems? | |
| Paint- concepts- create<br>**How can computers help us to draw?**<br>**Lesson 1**<br>**L.O: To know what different freehand tools do.**<br>Vocab: paint, brush, fill<br>-use Microsoft Paint- show children paintbrush, pencil, eraser, fill tool, spray can and undo tools.<br>-model each tool and children describe what the tool has done.<br>-children explore each tool and use to create their own picture.<br>**Lesson 2**<br>**L.O: To know how to use the shape and line tools.**<br>Vocab: tools, shape, line<br>-children learn how to use the shape and line tool. | **Working as a computer designer**- Why is what we have learned today important to our understanding of using technology to draw and design?<br><br>**Design**- use a range of appropriate tools to create a picture<br><br>**Evaluate-** explain why particular tools have been chosen. Compare paper and computer paintings.<br><br>**Sequence-** save work by following instructions in the correct sequence. |

-create a picture in the style of Mondrian.
-discuss which tools would be the most appropriate and why.

**Lesson 3**

**L.O: To understand which tools to select when painting a digital picture.** Vocab: tools, create, undo

-Look at artist Matisse and his snail picture.
-Discuss which tools could be used to create this picture and which ones are not appropriate. Explain why.
-children to select their own toold to create their own version of the picture.

**Lesson 4**

**L.O: To know and explain why I chose the tools I used.**

Vocab: tools, shape, line, brush, fill

-Look at squares with concentric circles by Kandinsky.
-Children to discuss tools they could use to recreate it. Why? Why would you not use certain tools?
-Children to create picture and explain why they have chosen the tools they have. E.g. shape tool to create circles or paintbrush to create circles as they are not perfect circles in the picture.

Do the tools I have selected make a difference to my image?

**Lesson 5**

**L.O: To understand how to select the appropriate tools to create an image.** Vocab: tools, save

-look at pointillism painting. E.g. Georges Seurat
-discuss how this could be created using different tools.
-children create their own pointillism painting of a sunflower focussing on selecting colours, changing brush size, spray can size etc.

**Lesson 6**

**L.O: To understand the difference between painting a picture on a computer and on paper.** Vocab: compare, free hand

- compare the painting process on a computer and on paper.
-Children to discuss what they like and dislike about each.

By the power of wondering, how does the influence of the computer and paper make you think?

| Concepts | | |
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| **Connect and communicate** | **Code** | **Create** |
| **ASSESSMENT**<br>**KNOW MORE, REMEMBER MORE, DO MORE...** | | |
| In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit. | | |