**Richard Bonington Primary & Nursery School: Whole School Computing Curriculum 2021 – iCompute**

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|  | | Autumn 1 – 6 weeks | Autumn 2 – 7 weeks | Spring 1 - 6 weeks | Spring 2 – 6 weeks | Summer 1 – 6 weeks | Summer 2 – 8 weeks |
| Foundation Stage 1 | |  |  |  |  |  |  |
| Foundation Stage 2 | |  |  |  |  |  |  |
| **Year 1** |  |  |  |  |  |  |  |
| i safe (e-safety) |  | iWatch - | iPlay | iShare | iPlay more |  |
| Element of Computing | iAlgorithm – 6 weeks | iWrite- 4 weeks | iData – 4-5 weeks | iProgram – 5-6 weeks | iProgram (2) – 4-6 weeks | iModel – 4-5 weeks |
| Overview | Predominantly unplugged activities to introduce the concept of algorithms being a set of instructions that need to be followed in order. | An introduction into the basics of word processing. The focus is on entering and printing text, saving and retrieving work. | A range of unplugged/ computer and tablet lessons to reinforce the collection of data and its uses. Links to maths and data handling. | An introduction to algorithms and programming. Using physical and virtual toys to perform actions and understanding that computers are controlled by instructions. | Introduction to Scratch jr to design and program animated stories. This will serve as the foundation for their ongoing work in computing. | An introduction to computer modelling to represent real and imaginary environments. The children can make choices and investigate alternatives whilst creating their own representations. |
| App/ programs required | Unplugged worksheets | Word, online links | Unplugged worksheets and online links | Programmable toys (beebots), online links. | Scratch Jr, Online links | Online links |

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| **Year 2** |  |  |  |  |  |  |  |
| i safe (e-safety) | iDetail | iCarnival | iGame | iInfo | iHero |  |
| Element of Computing | iSearch – 5-6 weeks | iAnimate – 6 weeks | iPub – 6 weeks | iProgram (unit 1) – 6 weeks | iProgram (unit 2) 6 weeks | iBlog – 6 weeks |
| iDo mail – 3-4 weeks |
| Overview | Children will learn how to use the internet to find out answers to questions, learning the importance of accuracy and checking multiple sources. | Exploring stop frame animation through story telling. | Research into the advances of technology over time. Presentation of findings and development of digital literacy skills through interactive e-books | An introduction to visual programming language using Scratch. Creative development of simple animations | Children will create projects, add characters and learn how to use programming blocks to make characters animate on screen. Exploration of coding and computational thinking. | Children will learn that a blog is an online conversation with an audience that can respond. Develop writing and digital literacy skills. Create and respond to blog posts. / |
| An introduction to emails. Exploring how emails are transmitted and how they can be used to transmit communication over distance. Development of reading, writing and digital literacy skills. |
| App/ programs required | Unplugged worksheets/ Online links/ | Unplugged worksheets/ Lenovo tablets / craft resources for creating a scene/ mini figures. | Computers/ Lenovo’s/ online links/ presentation software. | Unplug worksheets/ Scratch | Computer/ Lenovo  Class email account/ online links | Unplugged worksheets/ online links/ Computers or Lenovo’s |

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| **Year 3** |  |  |  |  |  |  |  |
| i safe (e-safety) | iBlock | iFind out | iFriend | iFeel | iProtect | iChat |
| Element of Computing | iConnect 7 weeks | iNetwork 4-5 weeks | iData 4-5 weeks | iProgram 6 weeks | iPodcast 6 weeks | iSimulate 5-6 weeks |
| Overview | Explore the differences between the internet and the world wide web. Involving online surfing, searching and evaluation. Include a range of online tutorials that teach children how to use the web and search engines safely and effectively. | Introduction to networks, explore real world examples of networks. Children will learn how digital devices are connected together to form networks and how computer networks are connected together with the internet. | Children learn how information in databases is organised and interrogated. Following a theme of an imaginary travel website. Use databases to find out about holidays and add records using info found online | An introduction to visual programming language. Using the context of game development. Children will creatively develop their own simple animations | Children will explore, develop and edit audio by podcasting. Using technology to capture and manipulate sound, amend and modify their work and explore various podcasting features and audio effects. | Children begin to understand that computer simulations can represent real and imaginary situations. Chance to explore simulations, investigate options and test predictions. Evaluation of usefulness of simulation. |
| App/ programs required | Links, worksheets, post it notes, PowerPoint | Drawing software link, craft resources, worksheet, links | Worksheets, links, resources from website, google earth | Scratch, resources from website, | Links, technology capable of playing and recording sound, headphones, online resources | Simulation games (links), worksheets, Scratch |

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|  |  | Autumn 1 – 6 weeks | Autumn 2 – 7 weeks | Spring 1 - 6 weeks | Spring 2 – 6 weeks | Summer 1 – 6 weeks | Summer 2 – 8 weeks |
| **Year 4** |  |  |  |  |  |  |  |
| i safe (e-safety) | iPrivate | iPower | iSearch | iRespect | iSecure  iKnow spam | iCommunicate iBeat cyber bullying |
| Element of Computing | iAnimate 6 weeks | iData 6 weeks | iMail 5-8 weeks | iProgram (unit 1) 8 weeks | iProgram (unit 3) 2 weeks | iProgram (unit 4) 5-6 weeks |
| Overview | Introduction to designing and creating computer animations. The children will create narratives and combine them with artwork to make their own animated stories. | Introduction to the concept of data being represented digitally on computers. Children will begin to understand that data is represented using numbers. They will also learn how data is stored and manipulated. | Children learn to use email to send and receive messages. They will learn about communicating over distances and how to use email safely. | Introducing children to visual programming language which uses the context of art for children to express themselves creatively. Also introduces text-based language. Children use knowledge of both to investigate angles and negotiating mazes. | An extension of children’s experiences developing algorithms and programs to solve puzzles. | Children will develop their storytelling skills through a variety of design and programming activities on scratch. |
| App/ programs required | Links, worksheets, paper to create flipbook, tracing paper, animation software (links), computers or tablets, | Worksheets, beads and bead strings, online resources. | Communication devices or photos of them, email account with new emails in (can be done through 365) resources. | Worksheets, Turtle art software, robomind, resources, links | Lightbot links, stackable bricks, | Scratch, links, resources (online) |

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| **Year 5** |  |  |  |  |  |  |  |
| i safe (e-safety) | iCommunicate | iPersonal | iStay safe | iTrust | iChat | iKnow bullying |
| Element of Computing | iDraw 5-6 weeks | iCrypto – 6 weeks | iWeb- 6 weeks | iProgram (unit 1) 8 weeks | iProgram (unit 2) – 8 weeks | iModel – 6 weeks |
| Overview | An introduction to graphical drawing using digital tools. Explore how images are constructed from shapes and use a variety of geometric shapes, lines and colours, effects and layering to create graphic images. | Introduction to cryptography. Children will learn how to communicate securely over distances. Explore a number of different methods of cryptography and understand the need for secure communication. | Explore how the world wide web allows people to connect, work together and share information. Includes working with the basic components of website programming HTML and how webpages are constructed. | Return to the visual programming language in scratch. Context of games development to design games and explore the concepts of conditionals (true and false) data iteration (repeat of instructions until a condition is met) and incremental development. (adding a little at a time to a design until it is correct) | Introduction to visual programming language – Microsoft Kodu which allows children to create computer games using a pc or x-box. Children will develop algorithm and programming skills and use storytelling and problem solving to design and program 3D games. | Introduce children to graphical modelling in 3D explore working with 3D shapes and design and build a model of their ideal school playground. |
| App/ programs required | Computers/ tablets, Sketchup (links) | Links, worksheets, spreadsheet software, books, | Printed and laminated resources, links, well known song, worksheet, information books. | Scratch, cups and sticky notes, worksheets, | Kodu (app), worksheets, online resources. | Lego, links, graph paper, rulers, protractors, worksheets, online resources |

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| **Year 6** |  |  |  |  |  |  |  |
| i safe (e-safety) | iSecure/ iPrivate | iPlay / iKind | iUpstand/ iNice | iTone | iGet help | iReport |
| Element of Computing | iNetwork - 6 weeks | iData 5-6 weeks | iApp (unit 1) 6 weeks | iProgram (unit 1) – 6 weeks | iProgram (unit 2) 6 weeks | iApp (unit 1) 6 weeks |
| Overview | Explore how computers connect people to allow them to work together to share information and resources. How do the internet and search engines work? | Introduction to spreadsheets, finding out how information is entered into a spreadsheet and how formulae can be used to calculate totals. Moving on to producing charts and creating own spreadsheets. | Extend programming skills by introducing mobile app development using MTI’s app inventor. Computer science learning in context that is meaningful to children’s digital lives. The children learn the value and uses of apps and develop own. | Return to the visual programming language of scratch. Context of games development to design games and explore the concepts of conditionals (true and false) data iteration (repeat of instructions until a condition is met), incremental development. (adding a little at a time to a design until it is correct) and systematic testing. | Introduction to new programming environment ‘Looking glass’ create animations and games through creative exploration to develop the fundamental principles of programming. | Extend app development skills from block based to programming apps with text. Using simplified Java script language. Children apply skills to understand the importance of syntax in programming. |
| App/ programs required | Plastic cups, string, masking tape, links, online resources, computers | Spreadsheet app, online resources | Links, smart phone, App inventor 2, paper cups, labels, worksheets, | Scratch, worksheets, online resources | Computers, looking glass app, worksheets, links, online resources. | Links, smart phone, worksheets, brits box. Online resources. |