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|  | **THREADS OF LEARNING** Highlighted text links to the same knowledge thread of the same colour across year groups | | | |
| **FS1** | **1. Computing systems and networks – The world around us** | **2.Creating Media – Mark making** | **3.Programming – Toy exploration** | **4.Data and information – Exploring the world around us** |
| **Substantive Knowledge Threads:**  To know that there are resources/ technology in their familiar environment and can say the obvious physical differences between them.  To differentiate between pictures and texts in books and through technology.  To know some letters e.g. letters in their name.  **Disciplinary Knowledge Threads:**  Explore the book corner in the classroom.  Practice writing their own name.  Self register – finding their own name on a card. | **Substantive Knowledge Threads:**  To know what it means to mark make.  To know their marks have a purpose.  To know that different tools have a different effect e.g. paint in comparison to pencil.  To know that marks can be big, small and different shapes.  To name some 2D shapes.  To know the words big and small.  **Disciplinary Knowledge Threads:**  Copy gross motor actions in the air and show a good sense of movement, direction and shape.  Mark make using a variety of art tools e.g. paint, crayons, felt tips, whiteboard pens.  Play shape games and go on a shape hunt in the environment. | **Substantive Knowledge Threads:**  To know that toys all have a different use and purpose.  To know that technology may need to be activated by them.  To know some positional language vocabulary e.g. up, down, backwards, forwards, turn.  **Disciplinary Knowledge Threads:**  Explore technology with support e.g. pressing a button – showing curiosity for how things work/move/change.  Press a button on a toy/computing resource and cause a reaction, and then be able to repeat this on a different occasion.  Push and pull cars/toys across a surface.  Ride a tricycle and turn in different directions. | **Substantive Knowledge Threads:**  To name the colours.  To count and recognise a big group of objects compared to a small group.  To transport objects in groups.  To know that objects have a place.  **Disciplinary Knowledge Threads:**  Tidy up classroom resources back into the right box.  Sort common and familiar objects into colour groups such as unifix cubes – being able to group them into the same colour.  With support, be able to count out objects to match a number. |
| **FS2** | **1. Computing systems and networks – The world around us** | **2.Creating Media – Purposeful mark making with different mediums** | **3.Programming – Cause and effect** | **4.Data and information – Collecting data** |
| **Substantive Knowledge Threads:**  To know the alphabet in both lower and upper case.  To know what numbers 0-9 look like.  To know the names of some familiar technology.  To know there are many uses for technology.  To know that you can use technology for different purposes e.g. a camera for photos, an ipad for drawing.  **Disciplinary Knowledge Threads:**  Take part in daily phonics lessons to learn the grapheme/phoneme correspondence.  Explore number cards and put them into order – play games such as find the missing number.  Draw pictures/write on the interactive whiteboard. | **Substantive Knowledge Threads:**  To know that the marks they make have purpose.  To know how to write the majority of lowercase letters and capital letters.  To draw different shapes.  To know that we can use technology for mark making.  To know and choose which art tool they need for each job.  **Disciplinary Knowledge Threads:**  Use a range of classroom art tools to create a physical picture.  Draw pictures/write on the interactive whiteboard.  Handwriting practice linked to the graphemes learnt in phonics.  Practice writing their own name successfully. | **Substantive Knowledge Threads:**  To know and follow a simple verbal instruction when directed by and adult.  To say a verbal instruction to a peer.  To know and use positional language when talking about an object.  To know that technology needs to be activated.  **Disciplinary Knowledge Threads:**  Explore new toys/technology such as pressing buttons on the programmable mice, pressing icons on an interactive whiteboard.  Taking part in board games and following the rules and once confident to then explain the rules to a friend. | **Substantive Knowledge Threads:**  To know that objects can be grouped by a set criteria e.g. colour, shape, size.  To have a secure understanding of numbers to 10.  To know 1:1 correspondent counting.  To name 2D shapes.  To name the colours..  **Disciplinary Knowledge Threads:**  Explore maths resources such as the sorting sets and sort them into their corresponding coloured bowls.  ‘Choose it, use it, put it away’ – tidy up resources into the right area.  Talk about the differences and similarities between themselves and their friends. |
| **YEAR 1** | **1. Computing systems and networks – Technology Around Us** | **2.Creating Media – Digital Painting/Digital Writing** | **3.Programming**  **- Moving a robot/Animations** | **4.Data and information – Grouping data** |
| **Substantive Knowledge Threads:**  To identify and name different technology.  To know what a keyboard is and know that it can be used for typing.  To know how to use a keyboard and a mouse.  To begin to know that technology needs to be used responsibly to ensure their own safety.  **Disciplinary Knowledge Threads:**  Explore the technology in their classroom environment and take part in the Teach Computing lessons.  Practice using the laptop mouse for navigating around the computer system.  Practice finding letters/numbers on a keyboard and use this to then be able to log onto a computer. | **Substantive Knowledge Threads:**  To know there are a range of digital tools to create a picture on a programme.  To know that tools can be selected using the mouse pad and cursor.  To know that programmes serve different purposes e.g. paint for creating pictures, notebook for typing.  **Disciplinary Knowledge Threads:**  Use the paint programme on the laptops to draw a picture, exploring the different tool options and colours.  Type words, their name or a simple phrase on the notebook app or Microsoft word. | **Substantive Knowledge Threads:**  To follow 2 or more verbal instructions.  To know how to verbally give 2 or more instructions in a sequence.  To know positional language (as learnt in EYFS) and specific positions such as left, right, north, south, east, west.  To know how to make a Beebot move in a certain direction.  **Disciplinary Knowledge Threads:**  Play with Beebots – use them on a floor mat and programme in a sequence of commands. | **Substantive Knowledge Threads:**  To name a criteria that objects could be grouped by.  To group physical objects by set criteria.  To know data can be collected and presented in a bar chart.  **Disciplinary Knowledge Threads:**  Take part in a class vote – count the votes for each choice and present it in a tally/bar chart. |
| **YEAR 2** | **1. Computing systems and networks – IT around us** | **2.Creating Media – Digital photos/Digital music** | **3.Programming – Robot algorithms/quizzes** | **4.Data and information –**  **Pictograms** |
| **Substantive Knowledge Threads:**  To identify and name technology and to know its function/purpose.  To know how to use technology for its given purpose.  To know how to use technology safely and responsibly.  **Disciplinary Knowledge Threads:**  Look at technology in our environment – use of the internet to discuss and learn about different types of technology which is not accessible in our environment.  Log onto the laptops independently using a password.  Individual log-ons for code.org. – modules. | **Substantive Knowledge Threads:**  To know there are different tools that can be used to alter a photograph to change its effect.  To know the functions of some of the tools and the impact they make.  To know that a photograph can be landscape or portrait.  To know that technology can create a piece of music.  **Disciplinary Knowledge Threads:**  Using PowerPoint children change and edit a photograph – children copy and paste a photo from the internet into the PowerPoint and then use editing tools.  Take photos using an ipad. | **Substantive Knowledge Threads:**  To know that an algorithm is a set of instructions.  To know what a code is.  To know that a bug is an error.  To problem solve a bug.  To know that algorithms can be used in different contexts.  To know how to make their own algorithm and be able to program a Bee-Bot with a set of instructions.  **Disciplinary Knowledge Threads:**  Use code.org to complete the modules and mini tasks for coding.  Use J2E for programming and for animation – online BeeBot. | **Substantive Knowledge Threads:**  To know that there are different ways that data can be represented on computer programmes.  To know the different representations.  To group data by a set of criteria.  To create their own criteria to group data.  **Disciplinary Knowledge Threads:**  J2E – data collection/bar graph software.  Linked to maths. |