

# **Think, Compute, Grow!**

**A strategy for teaching computing  
and ICT through sustainable  
agriculture**

## **PART 4- LESSON PLANS – FOUNDATION STAGE**



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## USING THESE LESSON PLANS

### Developmental goals

The lessons in this strategy all aim to further children's knowledge and understanding in the **nine development goals**. These goals aim to prepare children to use technology to succeed in their community and in the wider, digital world.

| Foundational academic skills       | Goal 1                           | Goal 2                                      | Goal 3                             |
|------------------------------------|----------------------------------|---------------------------------------------|------------------------------------|
|                                    | Foundational academic excellence | Functional and professional English         | Geographic information and mapping |
| Understanding and using technology | Goal 4                           | Goal 5                                      | Goal 6                             |
|                                    | Introduction to software logic   | Understanding computer systems and networks | Digital literacy, E-safety and AI  |
| Applying technology to agriculture | Goal 7                           | Goal 8                                      | Goal 9                             |
|                                    | Agricultural financial literacy  | Agricultural science                        | Modern marketing and business      |

### Selecting lesson plans

The lessons plans in this strategy cover all nine developmental goals.

It is recommended that teachers **do not teach all of the lessons sequentially**, but instead select and use lessons to use as they see fit. Teachers may decide to spend two lessons teaching a lesson from this strategy. They may decide to repeat lessons within a year or in other years.

At the end of each group of lessons, an **objective coverage grid** highlights the skills that the lessons have covered by teaching each development goal.

## THREE STAGES

Teaching is split into three stages of development These are:

### Stage 1: Foundation stage (ages 7 – 9)

**Description:** Students become familiar with operating laptops. They enjoy being creative, solving problems and discovering familiar resources for research and learning.

**Focus:** Core computer problem solving, English language discovery, basic nature observation. Growing understanding of digital literacy.

**Tools:** Typing.com, E-Paath (grades 1 – 3), Scratch desktop (animation), Google Earth.

### Stage 2: Intermediate stage (ages 10 – 12)

**Description:** Students grow in confidence at solving problems using technology. They make connections to their local environment and the technology they use. Children use digital tools to support their knowledge across subjects.

**Focus:** Structured document and presentation creation. Independent programming and problem solving using logical structures. Developing digital literacy.

**Tools:** Typing.com (focus on speed), E-Paath (grades 4 – 6), Scratch, Makecode, (virtual blocks), LibreOffice Writer.

### Stage 3: Advanced stage (ages 13 – 16)

**Description:** Students apply their knowledge of hardware, software and online services to solve increasingly complex problems related to their environment.

**Focus:** Advanced programming logic (programming with Python), building automation hardware (Microbit), organising finances using spreadsheets, word-processing and presentational skills. Digital and AI literacy.

**Tools:** LibreOffice Calc (spreadsheets), Python programming (text-based programming), Microbits (programming using Microbit Python).

## YEARLY PLANNING

This is an example of how a teacher might select and teach lessons from this strategy.

| Week | Strategy lesson            | Lesson focus                                                                                   |
|------|----------------------------|------------------------------------------------------------------------------------------------|
| 1    | <b>Introduction lesson</b> | Introduction to the year. Agreeing ICT acceptable use. Lesson routines. Touch typing practice. |
| 2    | <b>Lesson 2</b>            | Typing skills.                                                                                 |
| 3    | <b>Lesson 3</b>            | Developing English vocabulary of everyday words                                                |
| 4    | <b>Lesson 4</b>            | Searching digital libraries                                                                    |
| 5    | <b>Lesson 1</b>            | Counting and grouping objects (academic skills)                                                |
| 6    | <b>Lesson 10</b>           | Programming a sprite to move left and right (continued)                                        |
| 7    | <b>Lesson 10</b>           | Programming a sprite to move left and right (continued)                                        |
| 8    | <b>Lesson 10</b>           | Programming a sprite to move left and right (continued)                                        |
| 9    | <b>Lesson 11</b>           | Programming the appearance of a sprite to change                                               |
| 10   | <b>Lesson 11</b>           | Programming the appearance of a sprite to change (continued)                                   |
| 11   | <b>Lesson 12</b>           | Programming the appearance of a sprite to change (continued)                                   |
| 12   | <b>Lesson 15</b>           | Programming a Microbit step counter (continued)                                                |
| 13   | <b>Lesson 15</b>           | Programming a Microbit step counter (continued)                                                |
| 14   | <b>Lesson 15</b>           | Programming a Microbit step counter (continued)                                                |
| 15   | <b>Lesson 19</b>           | E-safety                                                                                       |
| 16   | <b>Lesson 20</b>           | E-safety                                                                                       |
| 17   | <b>Lesson 30</b>           | English skills                                                                                 |
| 18   | <b>Lesson 31</b>           | English skills                                                                                 |
| 19   | <b>Lesson 25</b>           | Creating presentations                                                                         |
| 20   | <b>Lesson 26</b>           | Creating presentations                                                                         |
| 21   | <b>N/A</b>                 | Preparation of a presentation about computing work this year                                   |
| 22   | <b>N/A</b>                 | Delivering a presentation about computing work this year.                                      |

This example teacher has selected lessons from a variety of topics, giving children enough time to explore topics in depth while also covering a variety of content.

## ONLINE RESOURCES

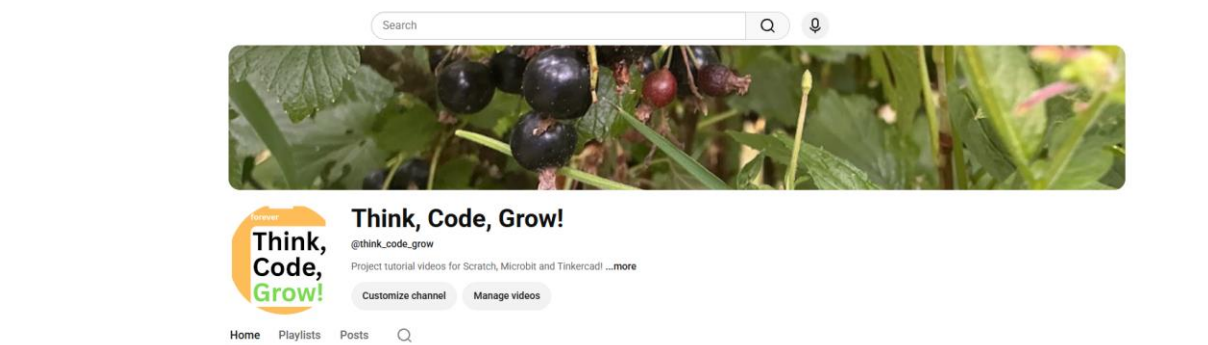
To support teachers and students in delivering and learning with his strategy, a bank of online resources is available.

### YouTube videos

The YouTube channel, '[Think, Code, Grow!](#)' features video tutorials for projects created using **Scratch**, **MakeCode** (for Microbit) and **Python** (for Microbit and onscreen using Mu).

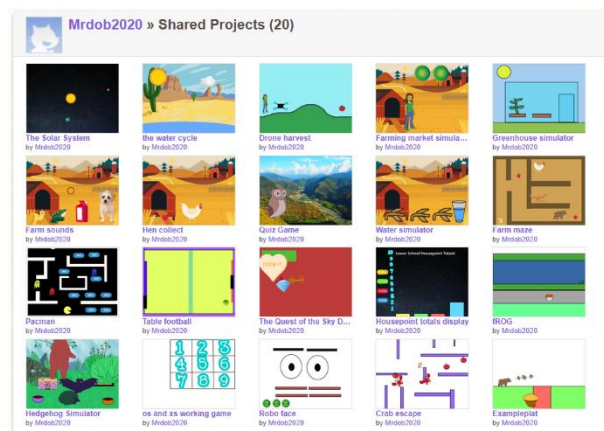
Teachers can use these video tutorials as part of their teaching to the class, playing and pausing videos to discuss them.

Teachers can also make the videos available to students, so that they can learn at their own pace. It is recommended that children watch a video the whole way through once, before using it to help them work on a project.



### Scratch project examples

The **Scratch** channel, [MrDob2020](#), contains examples of all of the Scratch projects featured in this strategy. These examples are useful for teachers to show students before they embark on projects.



## FOUNDATION-STAGE ASSESSMENT

| Assessment Sheet – Foundation Stage                                               |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Student name:                                                                     |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
| Date of assessment:                                                               |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
| Best fit assessment – for each of the six sections, choose the closest descriptor |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
|                                                                                   | Working towards expectations                                                                                                                          | Achieving expectations                                                                                                                               | Exceeding expectations                                                                                                                   |
| <b>ICT Skills</b>                                                                 |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
| <b>Understanding and controlling computers</b>                                    | Needs help switching on a computer and logging in to access work. Still typing mostly with index fingers. Can sometimes open apps by double clicking. | Switches a computer on and logs in independently. Types with all fingers from the home row, uses a mouse to open programs and navigate the internet. | Connects and controls peripherals (i.e. speakers, USB devices). Uses mouse and keyboard shortcuts to manipulate content.                 |
| <b>Creative and effective digital expression</b>                                  | Includes text and images in a document and is starting to change looks and layout.                                                                    | Types and selects text, changing font, colour, size and layout. Combines text with images in documents and presentations.                            | Formats text and images, showing awareness of design principles. Navigates to familiar websites and searches for information and images. |
| <b>Digital literacy, AI literacy and E-safety</b>                                 |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
| <b>Digital citizenship and online safety</b>                                      | Is aware of school ICT rules and why we follow these. Gives some examples of unkind behaviour online and examples of personal information.            | Confidently refers to ICT rules in school. Gives examples of unkind behaviour online. Differentiates personal and non- personal information,         | Explains the importance of school ICT rules. Finds and uses reliable information online.                                                 |
| <b>Media literacy, AI literacy and ethics</b>                                     | Can give an example of an AI tool. Understands that AI is a machine and not a human. Knows that online information can be false.                      | Gives examples of AI tools in the world around them. Recognises false or misleading digital information.                                             | Explains how AI tools work as an algorithm. Identifies signs of AI generated content.                                                    |
| <b>Programming and computational thinking</b>                                     |                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                          |
| <b>Programming logic and computational thinking</b>                               | Uses an event block to start code. Programs simple code with several similar blocks.                                                                  | Places events in a sequence. Programs precise movement. Uses loops and conditions to structure code.                                                 | Recognises and uses variables. Creates smooth animations by changing costumes.                                                           |
| <b>Understanding computer systems and networks</b>                                | Needs support to open and navigate the internet. Can work within one window or tab but needs help managing several.                                   | Understand the term 'internet browser' and can open and navigate a browser independently. Uses windows and tabs.                                     | Uses bookmarks in an internet browser. Connects devices to the internet.                                                                 |



## INTRODUCTORY LESSONS

# *Introduction lessons*



## INTRODUCTION TO COMPUTING THIS YEAR

| <b>Lesson 1 – Rules and routines</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Introduction to computing this year (rules and routines)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Learning objective</b>              | We are learning the routines and rules for computing lessons this year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>UN Sustainable Development Goal</b> |  <p><b>SDG 4: Quality Education</b><br/> <b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br/>           Learning to use computers safely and effectively</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can explain the routines for the start of the lesson</li> <li>• I can explain and agree to follow the ICT acceptable use rules</li> <li>• I can switch on and log into my computer</li> <li>• I can open Word and create a new document.</li> <li>• I can name and save my work in the right place.</li> <li>• I can log off the computer at the end of the lesson</li> </ul>                                                                                                                                                                                                                                                                                                                                   |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Gather the children in the classroom and introduce yourself and the subject of computing. Give children an overview of some of the projects they will do this year. This could include showing them the YouTube channel or Scratch project page.</li> <li>2. Explain what you would like children to do when they come into computer lessons (sit in assigned places, log on, open the touch-typing website, possible open last piece of work).</li> <li>3. Read and discuss the ICT acceptable use agreement with children. Ask all children to sign a paper copy of this. Ensure this agreement is displayed clearly in the room. Explain that we have ICT rules to keep use and other people safe.</li> </ol> |
| <b>Main lesson</b>                     | <p><b>Step 1: Logging on (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Instruct the children to log onto their computers. Ask the to double click on the Chrome shortcut.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <p><b>Step 2: Accessing typing.com (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show children how to navigate to Typing.com by typing this URL in. Show children how to save this as a bookmark in Chrome.</li> <li>• Show children how to open a new tab, open a new window, close a tab and window, use forwards and back buttons and refresh a page. Ask children to practise these things.</li> </ul> <p><b>Step 3: Opening and working on a document (15minutes)</b></p> <ul style="list-style-type: none"> <li>• Show students how to open Word and create a new document.</li> <li>• Show an example of a teacher-created document called 'About Me'. This should include some basic sentences about interests and an introduction.</li> <li>• Students create their own documents to introduce themselves. Depending on ability, this can include adding bold effects, titles, changing size and colour of text, and even adding an image from the internet.</li> </ul> <p><b>Step 4: Typing practice (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show students how to name and save their documents and which folder they should save work into.</li> <li>• Students name and save their work and save it into a folder.</li> </ul> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Celebrate students' success this lesson and recap rules and procedures.</li> <li>2. If possible, the teacher can open some of the children's work and offer feedback.</li> <li>3. Students log off their computers and follow class exit procedure.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| <b>Lesson 2 – Creating a document</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Introduction to computing this year (opening work)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Learning objective</b>              | We are learning to open and continue with a piece of work                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>UN Sustainable Development Goal</b> |  <p><b>SDG 4: Quality Education</b><br/> <b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br/>           Learning to use computers safely and effectively</p>                                                                                                                                                                                                                  |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can log onto my computer</li> <li>• I can open a piece of work from a folder</li> <li>• I can open an internet browser</li> <li>• I can navigate to Pixabay.com and search for an image</li> <li>• I can copy and paste an image into a document</li> <li>• I can save a piece of work</li> </ul>                                                                                                                                                                  |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Show the children how to open a piece of work saved in a folder.</li> <li>2. Show the children an example of a piece of work called 'About Me', with a title, text and images.</li> <li>3. Model navigating to Pixabay.com and searching for an image about an interest, (i.e. football). Model copying and pasting the image, ensure it is not a sponsored image.</li> <li>4. Model pasting the image into the About me document and adding text to it.</li> </ol> |
| <b>Main lesson</b>                     | <p><b>Step 1: Logging on (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Instruct the children to log onto their computers. Ask them to double click on the Chrome shortcut.</li> </ul> <p><b>Step 2: Accessing Pixabay.com and searching for an image (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Direct the children to access Pixabay.com and to search for an image.</li> </ul>                                                                                            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <ul style="list-style-type: none"><li>• Direct them to copy and paste an image into their document.</li></ul> <p><b>Step 3: Adding text and an image to a document (15minutes)</b></p> <ul style="list-style-type: none"><li>• Show students how to open Word and load their Word document from last lesson.</li><li>• Students add their picture from Pixabay to their documents.</li><li>• They add further text about themselves, their interests and their personality.</li><li>• Students save their work in the correct place.</li></ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"><li>1. Celebrate students' success this lesson and recap using Pixabay to search for images.</li><li>2. If possible, the teacher can open some of the children's work and offer feedback.</li><li>3. Students log off their computers and follow class exit procedure.</li></ol>                                                                                                                                                                                              |

| <b>Lesson 3 – Touch typing</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Introduction to computing this year (touch typing)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Learning objective</b>              | We are learning to find, position and rest our fingers on the keyboard's 'home row' to type letters accurately without looking at our hands.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Improving typing skills to make digital expression faster and more accurate                                                                                                                                                                                                                                                                                              |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can open the Chrome browser and navigate to the shortcut for Typing.com</li> <li>• I can position my fingers correctly on the F and J keys</li> <li>• I can complete the introductory 'Home row' module correctly</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Ask a question to spark curiosity: "How do people write books or send text messages without looking at their hands?"</li> <li>2. Explain the secret: Muscle memory. Make analogies like swimming, walking or playing musical instruments</li> <li>3. Introduce the rules of the Typing Club software. Have every child feel their keyboards to learn where the bumps are.</li> <li>4. Introduce the extra challenge of covering up hands with a cloth. This will help develop muscle memory, as it prevents eyes from looking at the keys!</li> </ol> |
| <b>Main lesson</b>                     | <b>Time: 35 minutes</b><br><br><b>Step 1: Software launch (5 minutes)</b> <ul style="list-style-type: none"> <li>• Ask students to open the Typing.com website via the shortcut on the desktop. They could also access this through a bookmark.</li> </ul>                                                                                                                                                                                                                                                                                                                                      |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Step 2: Resting posture (5 minutes)</b></p> <ul style="list-style-type: none"><li>• Guide children through the physical setup for their typing. Ask them to rest their left index finger on F and their right index finger on J. Explain that their hands should stay in these positions. Ask them to try reaching for other letters on this row with their other fingers.</li></ul> <p><b>Step 3: Guided typing practise (15 minutes)</b></p> <ul style="list-style-type: none"><li>• As this is the first lesson of this unit, the children will spend the whole lesson practising their typing. In future lessons, they might only do 15 minutes typing at the start of the lesson.</li><li>• Children work through the beginner module: Beginner: Home Row.</li><li>• Teacher role – the teacher should watch the children closely for signs that children are using their index fingers for all letters. Remind the children about good posture and looking at the screen at all times. If agreed, the teacher can cover children's hands with cloths.</li></ul> <p><b>Step 4: Skill application (10 minutes)</b></p> <ul style="list-style-type: none"><li>• Ask students to open Libre Office Writer via the shortcut on the desktop.</li><li>• Ask children to type some simple words relating to farming, i.e. Sada, Alal, Fall. Ask them to type each word 5 times clearly.</li></ul> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Plenary</b> | <b>Time: 10 minutes</b><br><br>Ask the children why the designers of keyboards placed the bumps on the F and J keys.<br><br>Celebrate the children's success; have them log into their Typing.com dashboards to view their statistics.<br><br>Ask the children to save their documents in Libre Office and close the computers down safely. |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Teaching objectives covered in this unit

| <b>Introduction lessons – Objectives covered</b>                                                      |                             |
|-------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                                     | <b>Taught in lesson(s):</b> |
| <b>1. Turn a computer on and off safely. Log in and open apps and own work.</b>                       | <b>1</b>                    |
| <b>2. Use a mouse to left and right click and draw boxes to select items</b>                          | <b>1, 2</b>                 |
| <b>3. Use design tools to change shape and colour. Erase mistakes, use 'undo'</b>                     | <b>2</b>                    |
| <b>4. Type full sentences, using 'shift' to capitalise.</b>                                           | <b>2, 3</b>                 |
| <b>5. Copy and paste with the mouse and keyboard shortcuts.</b>                                       | <b>5</b>                    |
| <b>6. Open the internet, access bookmarks and type in a URL.</b>                                      | <b>5</b>                    |
| <b>7. Create a word document with a title, appropriate layout and style.</b>                          | <b>6, 27</b>                |
| <b>8. Create a PowerPoint presentation, adding pictures and a clear layout.</b>                       | <b>28, 29, 31</b>           |
| <b>Digital literacy and E-safety</b>                                                                  | <b>Taught in lesson(s):</b> |
| <b>1. Describe ICT rules in the school and at home</b>                                                | <b>1, 2, 19</b>             |
| <b>2. Gives examples of being kind and unkind online, talk about why this matters.</b>                | <b>21</b>                   |
| <b>3. Describe how technology can be used as part of a balanced lifestyle.</b>                        | <b>19</b>                   |
| <b>4. Give examples of personal information and say who we would not share this with.</b>             | <b>20</b>                   |
| <b>5. Explain what to do if inappropriate content is viewed online, or if you feel uncomfortable.</b> | <b>20, 21</b>               |
| <b>6. Name different ways of reporting problems or contact online.</b>                                | <b>20, 22</b>               |
| <b>7. Perform an internet search and select reliable results.</b>                                     | <b>23</b>                   |
| <b>8. Gather information from websites provided by the teacher.</b>                                   | <b>4, 5, 7, 26</b>          |
| <b>9. Gives real-world examples of AI and explain AI as a machine algorithm.</b>                      | <b>24</b>                   |
| <b>Programming and computational thinking</b>                                                         | <b>Taught in lesson(s):</b> |
| <b>1. Describe events that start programs (clicking on the green flag, sensors, touch).</b>           | <b>9, 12, 13, 14</b>        |
| <b>2. Place commands in the correct sequence, explain the effects of changing a sequence.</b>         | <b>9, 12</b>                |
| <b>3. Program precise movement, using distance, degrees and x and y.</b>                              | <b>9, 12</b>                |
| <b>4. Program looks to change over time creating smooth animations.</b>                               | <b>9, 11</b>                |
| <b>5. Notice commands and sequences that repeat, optimise code using loops.</b>                       | <b>9, 16, 17</b>            |
| <b>6. Recognise and use conditional language in an 'if/else' structure</b>                            | <b>9, 10, 15, 16</b>        |
| <b>7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.</b>           | <b>10</b>                   |
| <b>8. Use computational thinking to approach problems logically, including debugging.</b>             | <b>9, 16, 17</b>            |

GOAL 1 - FOUNDATIONAL ACADEMIC EXCELLENCE (VIA E-PAATH)

# Goal 1



## FOUNDATIONAL ACADEMIC EXCELLENCE

| Lesson 4 – Using E-Paath               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 1 – Foundational academic excellence (via E-Paath)</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Learning objective</b>              | We are learning to count, add and group objects up to 20 using local agricultural terms (fruits, vegetables and livestock)                                                                                                                                                                                                                                                                                                                                                              |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Learning to use computers to develop academic skills (maths)                                                                                                                                                                                                     |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can launch the E-Paath application from my desktop shortcut</li> <li>• I can drag and drop items correctly within the interactive maths panels</li> <li>• I can solve addition equations up to 20 using visual crop items</li> </ul>                                                                                                                                                                                                         |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Gather the children around the main board. Ask a hook question: <i>“If your family picks 5 ears of corn on the morning and 4 more in the evening, how many do you have in total to sell?”</i></li> <li>2. Ask children to count on their fingers together.</li> <li>3. Introduce today’s digital tool: “Today, we are going to use our laptops to visit a digital farm where we can practise counting and sorting piles of crops!”</li> </ol> |
| <b>Main lesson</b>                     | <p><b>Step 1: System navigation (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Instruct the children to gently open their laptops, navigate to the desktop and double click on the green ‘E-Paath’ icon.</li> </ul> <p><b>Step 2: Module selection (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Guide students to click on the Mathematics section and select the primary Addition/Counting (Grades 1-2 interactive lesson panel)</li> </ul>              |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <p><b>Step 3: Active simulation play (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Students interact with the E-Paath Maths games. They complete modules where they must visually drag baskets, count individual apples, potatoes, farm animals and type the correct numbers into the boxes</li> <li>• Teacher role – walk around the room and ensure students keep their hands on the mice and keyboards. Guide them with your voice if they get stuck.</li> </ul> <p><b>Step 4: Local worksheet work (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Students take a break from their screens. Teacher gives them a piece of paper. They wrote down one addition problem that they just solved on the screen but rewrite it as a crop grown by their family.</li> </ul> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask two students to stand up and share the real-world agricultural maths problem they wrote on their paper</li> <li>2. Celebrate success by highlighting how quickly students used the computers today</li> <li>3. Instruct the students to shutdown the computers safely (click 'x' to close the internet, close the laptops gently and place them back on the storage shelf.)</li> </ol>                                                                                                                                                                                                                                                                                                                                     |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 9. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |

GOAL 2 – FUNCTIONAL AND PROFESSIONAL ENGLISH

# Goal 2



## FUNCTIONAL AND PROFESSIONAL ENGLISH

| <b>Lesson 5 – Using Google Translate</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                              | <b>Goal 3 – Functional and professional English</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Learning objective</b>                | We are learning to identify, spell and translate the names of core agricultural tools and local crops between Nepali and English                                                                                                                                                                                                                                                                                                                                                                  |
| <b>UN Sustainable Development Goal</b>   |  <b>SDG 4: Quality Education</b><br><b>(Target 4.6: ...A substantial proportion of adults...achieve literacy and numeracy)</b><br>Learning to use computers to develop English literacy                                                                                                                                                                                                                          |
| <b>Success Criteria</b>                  | <ul style="list-style-type: none"> <li>• I can use the Google Translate desktop shortcut to verify English words</li> <li>• I can correctly match 5 local farming terms to their English counterparts</li> <li>• I can type a complete English descriptive phrase, i.e. “This is a healthy potato”</li> </ul>                                                                                                                                                                                     |
| <b>Introduction</b>                      | <b>Time: 15 minutes</b> <ol style="list-style-type: none"> <li>1. Gather the children and pull up a vegetable or tool, or write its name in Nepali on the board, like Alu or Kodalo</li> <li>2. Ask the children how if an international buyer comes to the village, how do we tell them what we grow?</li> <li>3. Explain that English asks as a global language for business and farming.</li> <li>4. Explain that today we are going to build a personal English farming dictionary</li> </ol> |
| <b>Main lesson</b>                       | <b>Time: 35 minutes</b><br><b>Step 1: Set up of Google Translate (5 mins)</b> <ul style="list-style-type: none"> <li>• Ask students to double click on the icon for Google Translate on their desktops.</li> <li>• Ensure that the input language is set to Nepali and the output language to English.</li> </ul>                                                                                                                                                                                 |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <p><b>Step 2: Set up of Google Translate (15 mins)</b></p> <ul style="list-style-type: none"> <li>• The teacher writes 10 common words related to agriculture in Nepali on the board.</li> <li>• Children type the words into Google Translate and discover the English translations.</li> <li>• Encourage children to use the speaker tool to listen to and practise pronunciation.</li> </ul> <p><b>Step 3: Creating a dictionary (15 mins)</b></p> <ul style="list-style-type: none"> <li>• Direct students to open Libe Office Writer through the shortcut on their desktops.</li> <li>• Ask them to type out their newly discovered translations of Nepali and English words. They could insert these into a table.</li> <li>• Challenge older students to include a descriptive sentence for each word, i.e. “The tomato is red” or “The shovel is strong”</li> </ul> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Play a quick game of “Show me”, where the teacher calls out a word in Nepali and the children shout it out in English, or vice versa.</li> <li>2. Remind the children why learning English is important. When you read ingredients on a seed packet, they are very often written in English.</li> <li>3. Perform lesson exit procedures: save work in Libe Office Writer and shut down computers safely.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                |



| <b>Lesson 6 – Adding to a dictionary</b> |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                              | <b>Goal 3 – Functional and professional English</b>                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Learning objective</b>                | We are learning to open and add words to an electronic dictionary.                                                                                                                                                                                                                                                                                                                                                      |
| <b>UN Sustainable Development Goal</b>   |  <b>SDG 4: Quality Education</b><br><b>(Target 4.6: ...A substantial proportion of adults...achieve literacy and numeracy)</b><br>Learning to use computers to develop English literacy                                                                                                                                                |
| <b>Success Criteria</b>                  | <ul style="list-style-type: none"> <li>• I can log onto the computer and open my electronic dictionary from last lesson</li> <li>• I can open Google Translate through the Chrome browser</li> <li>• I can add 5 more terms relating to farming to my electronic dictionary</li> <li>• I can add images from Pixabay.com by copying and pasting these</li> <li>• I can save my work and log off the computer</li> </ul> |
| <b>Introduction</b>                      | <ol style="list-style-type: none"> <li>1. Recap what we learned last lesson about adding words to a Word document.</li> <li>2. Remind children that we used a table. Show the children additional ways to format the table (i.e. changing the size or colour of cells.)</li> <li>3. Model adding additional words to the table, using Google Translate to translate between Nepalese and English words.</li> </ol>      |
| <b>Main lesson</b>                       | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Software launch (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask students to log onto their computers and navigate to the folders where they saved their work last lesson.</li> <li>• Ensure that children know how to access Google Translate, ideally using a bookmark, or a shortcut on their desktops.</li> </ul>                                      |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <p><b>Step 2: Using Google Translate (20 minutes)</b></p> <ul style="list-style-type: none"> <li>• Guide children through the process of using Google translate to add to their dictionaries.</li> </ul> <p><b>Step 3: Extension task (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• As an extension task, ask children to open Pixabay.com and search for images to copy and paste into their electronic dictionary. They may need to add another column to their tables.</li> <li>• As an extension task, children could be challenged to write a sentence in English using the words they discover.</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Celebrate the children's success. Ask the children if they would like to share any particularly interesting words.</li> <li>2. Remind the children that they can keep adding to their dictionaries throughout the year.</li> <li>3. Ensure that children save their work correctly and log off laptops.</li> </ol>                                                                                                                                                                                                                                      |

| <b>Lesson 7 – Accessing the British Council website</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                             | <b>Goal 3 – Functional and professional English</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Learning objective</b>                               | We are learning to access the British Council website and use the activities there to develop our vocabulary                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>UN Sustainable Development Goal</b>                  |  <b>SDG 4: Quality Education</b><br><b>(Target 4.6: ...A substantial proportion of adults...achieve literacy and numeracy)</b><br>Learning to use computers to develop English literacy                                                                                                                                                                                                                                                                                                              |
| <b>Success Criteria</b>                                 | <ul style="list-style-type: none"> <li>• I can log into my computer</li> <li>• I can search for the British Council short stories website:<br/> <a href="https://learnenglishkids.britishcouncil.org/listen-watch/short-stories">https://learnenglishkids.britishcouncil.org/listen-watch/short-stories</a> </li> <li>• I can complete the vocabulary activities before and after playing the stories</li> </ul>                                                                                                                                                                      |
| <b>Introduction</b>                                     | <ol style="list-style-type: none"> <li>1. Ask the children what their favourite short stories are. Record some vocabulary on the board under the headings ‘characters’, ‘settings’, ‘objects’</li> <li>2. Explain that in this lesson, we are going to be hearing some stories and developing our vocabular in English.</li> </ol>                                                                                                                                                                                                                                                    |
| <b>Main lesson</b>                                      | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Website launch (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Direct the children to log onto their computers.</li> <li>• Model loading the website:<br/> <a href="https://learnenglishkids.britishcouncil.org/listen-watch/short-stories">https://learnenglishkids.britishcouncil.org/listen-watch/short-stories</a> (either through a Google search or by a shortcut on the desktop). If possible, ask children to create a bookmark to this website.</li> </ul> <p><b>Step 2: Vocabulary activities (5 minutes)</b></p> |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <ul style="list-style-type: none"> <li>• Guide children to select a story and model completing the vocabulary activity prior to watching the story.</li> </ul> <p><b>Step 3: Story listening (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask children to listen to the story carefully, emphasising that it may be needed to listen to the story more than once to hear all of the new vocabulary.</li> </ul> <p><b>Step 4: Vocabulary application (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask students to complete the post-listening activity for the story.</li> <li>• If there is time in the lesson, ask them to select a second story and repeat the exercise.</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children which new words they have learned from the stories.</li> <li>2. Ask if anyone can explain one of the stories that they listened to.</li> <li>3. Ask children to log off their computers.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 1 17                     |

GOAL 3 – GEOGRAPHIC INFORMATION AND MAPPING

# Goal 3



## GEOGRAPHIC INFORMATION AND MAPPING

| <b>Lesson 8 – Using Google Earth</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 3 – Geographic information and mapping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Learning objective</b>              | We are learning to look at a landscape from a “bird’s eye view” and identify natural land elements like rivers, mountains and farm plots on a digital map                                                                                                                                                                                                                                                                                                                                     |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 11: Sustainable Cities and Communities</b><br><b>(Target 11.a: Support positive economic, social and environmental links)</b><br>Using digital mapping tools to navigate the local area                                                                                                                                                                                                              |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can use the mouse wheel or on-screen slider to zoom in and out of a map view</li> <li>• I can type “Nepal” into the search query bar to find my location</li> <li>• I can visually point out the difference between a mountain ridge and a flat agricultural field.</li> </ul>                                                                                                                                                                     |
| <b>Introduction</b>                    | <b>Time: 15 minutes</b> <ol style="list-style-type: none"> <li>1. Ask the children to close their eyes. “Imagine you are a bird flying up in the clouds above our school. What do you think you would see from all the way up there?”</li> <li>2. Draw a rough plan on the whiteboard to represent the school and local features</li> <li>3. Introduce the application: Today we are going to use Google earth which uses satellite photos to see our entire country from the sky!</li> </ol> |
| <b>Main lesson</b>                     | <b>Time: 35 minutes</b><br><b>Step 1: Accessing Google Earth (5 mins)</b> <ul style="list-style-type: none"> <li>• Instruct the children to double click on Google earth on the desktop link</li> </ul>                                                                                                                                                                                                                                                                                       |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <ul style="list-style-type: none"> <li>• Show children how to click and drag the spinning globe to turn it around</li> </ul> <p><b>Step 2: Zooming in (5 mins)</b></p> <ul style="list-style-type: none"> <li>• Show the children how to click on the search bar and type “Nepal” into the search bar.</li> <li>• Watch the camera automatically zoom into the Himalayan mountains</li> </ul> <p><b>Step 3: Exploring topography (15 mins)</b></p> <ul style="list-style-type: none"> <li>• Show the students how to use the mouse wheel scroll or on screen +/- buttons to zoom further in</li> <li>• Guide children to trace the rough textures of mountain elevations or river systems</li> <li>• Show the children how to zoom in to see fields and agricultural plots</li> <li>• Ask the children to count how many separate farm fields they can see and what other buildings they can see</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the class why farmers care about looking at their land from the sky? (It shows use where water is, how big fields are, where roads are)</li> <li>2. Celebrate children’s success</li> <li>3. Safely close Google Earth and close down computers</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

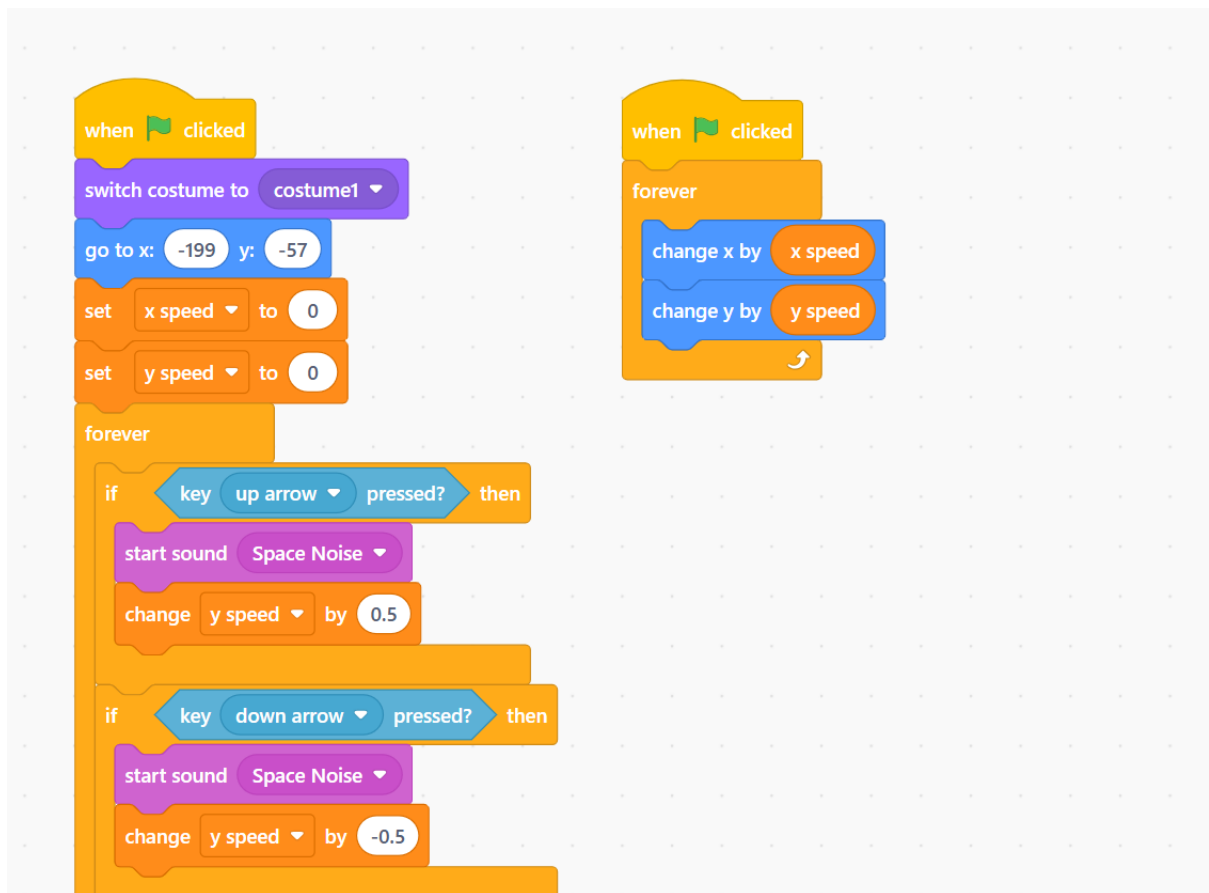


## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |

## GOAL 4 – INTRODUCTION TO SOFTWARE LOGIC

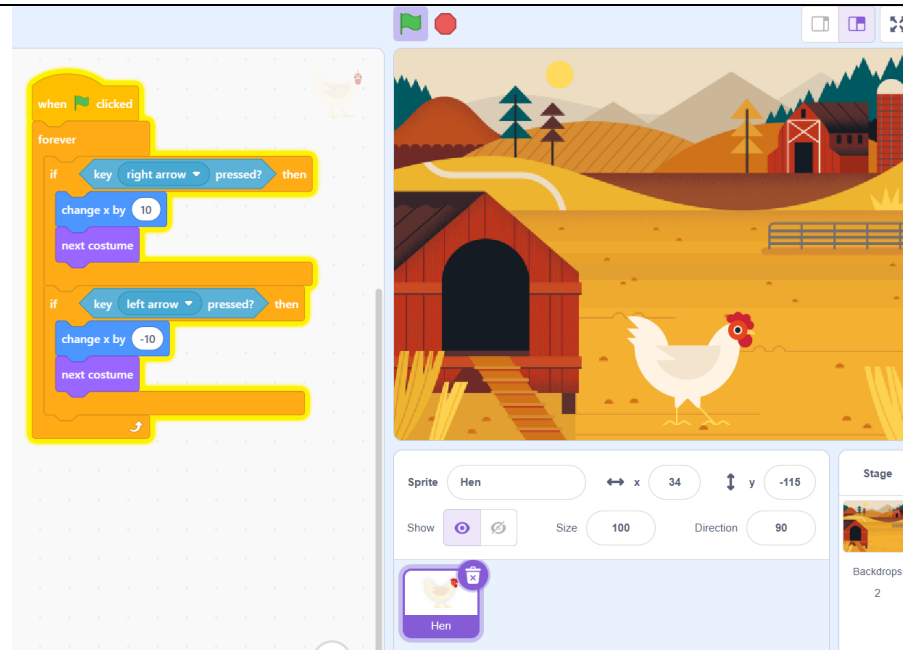
# Goal 4



## INTRODUCTION TO SOFTWARE LOGIC

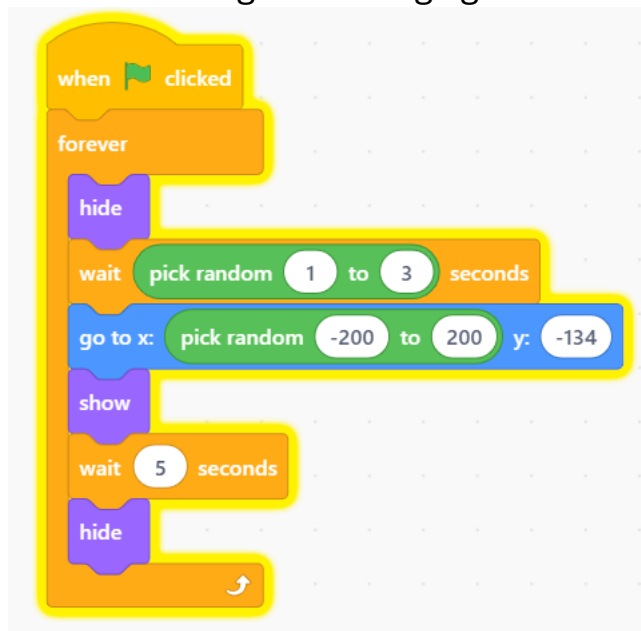
| Lesson 9 – Programming a sprite to move |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal                                    | <p><b>Goal 5 – Introduction to software logic (Scratch)</b></p> <p><a href="#">Video tutorial available here</a></p> <p><a href="#">Finished examples of Scratch projects are available here</a></p>                                                                                                                                                                                                                                                               |
| Learning objective                      | We are learning to program a sprite to move on the x axis (left and right)                                                                                                                                                                                                                                                                                                                                                                                         |
| UN Sustainable Development Goal         | <div>  <p><b>SDG 2: Zero Hunger</b><br/> <b>(Target 2.3: Double agricultural productivity...through resources, inputs, knowledge, financial services)</b><br/>           Consider the needs that animals have living on a farm</p> </div>                                                                                                                                         |
| Success Criteria                        | <ul style="list-style-type: none"> <li>• I can open Scratch and start a new project</li> <li>• I can delete the cat sprite and add the chicken sprite and background I need</li> <li>• I can use 'change x' to make the chicken sprite move left and right</li> <li>• I can use clone, show and hide to make items appear.</li> <li>• I can use a wait block and random around of time</li> <li>• I can add a score variable and program this to change</li> </ul> |
| Introduction                            | <p><b>Time: 15 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children what animals do on a farm (they eat everything!)</li> <li>2. Draw a chicken on the board and ask the children what instruction it might need (move left and right when we press the keys). Explain that for programming, left and right is called 'change x'. Ask if this happens once, or forever? (forever)</li> </ol>                                                 |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <p>3. Draw some vegetables on the board and ask the children what instructions these might need. Elicit that they need to show and hide.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Opening Scratch and starting a new project (5 mins)</b></p> <ul style="list-style-type: none"> <li>• Show the children how to open Scratch and start a new project. Delete the cat sprite and add a chicken. Add a farm background.</li> </ul> <p><b>Step 2: Programming the chicken sprite (10 mins)</b></p> <ul style="list-style-type: none"> <li>• Add a green flag block and an 'if' block. Add a 'when right arrow pressed' sensing block into the space. Place 'change x by 10' inside the if block area. Elicit that this needs to happen forever, so add a forever loop. Add a next costume block after the sprite moves.</li> <li>• Once children have programmed the sprite to move right, elicit that to move left, it would be the same code, but change x by -10.</li> <li>• Encourage children to test their program and try different amounts to 10 and p-10. Make the connection between moving 10 and 10 pixels on the screen.</li> </ul> |

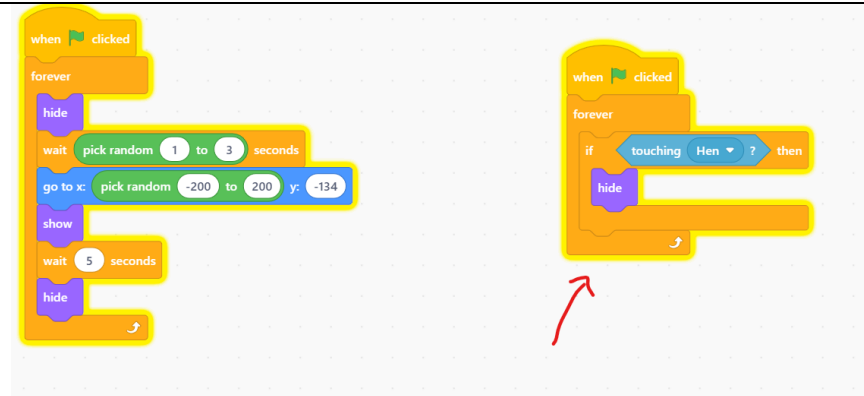


### Step 3: Programming the vegetable sprites (10 mins)

- Add a vegetable sprite. Elicit the sequences it needs to follow: hide → go to a random x position, show, wait, hide again.
- Elicit that it needs to wait a random amount of time before showing and hiding again.

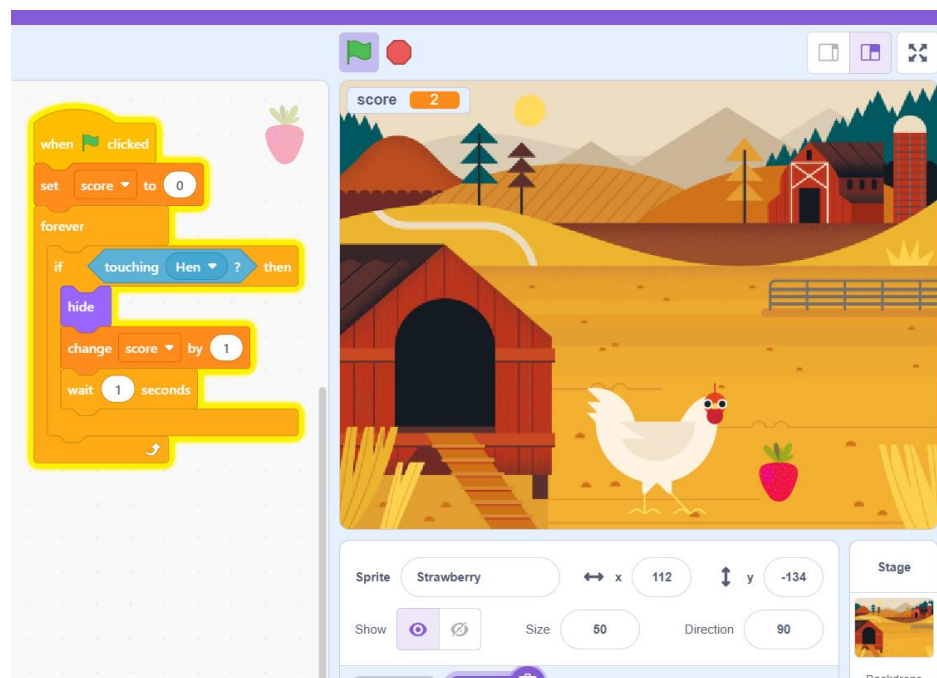


Add a separate script to make the strawberry hide when it touches the chicken: (Point out the forever loop)



#### Step 4: Programming the score (10 mins)

- Create a variable called 'food'. Set the variable to 0 at the start of the program. Program the variable to change and wait if it touches the chicken. The wait avoid the score changing repeatedly each time.



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| <b>Plenary</b> | <b>Time: 10 minutes</b><br><br><ol style="list-style-type: none"><li>1. Were the games fun to play?</li><li>2. How could we make them easier or harder, or more interesting? (Add other types of vegetable, add sounds, add a sprite for a second player.)</li><li>3. Ask students to save their work and shut down their computers.</li></ol> |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Lesson 10 – Programming a quiz game |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal                                | <p><b>Goal 4 – Introduction to software logic (Scratch)</b></p> <p><a href="#">Video tutorial available here</a></p> <p><a href="#">Finished examples of Scratch projects are available here</a></p>                                                                                                                                                                                                                                                                                    |
| Learning objective                  | We are learning to program a quiz game, using a conditional structure                                                                                                                                                                                                                                                                                                                                                                                                                   |
| UN Sustainable Development Goal     | <div>  <p><b>SDG11 Sustainable Cities and Communities</b><br/> <b>(Target 11.4: Strengthen efforts to protect and safeguard the world’s cultural and natural heritage)</b><br/>           Creating quiz games to promote the local culture and environment</p> </div>                                                                                                                                  |
| Success Criteria                    | <ul style="list-style-type: none"> <li>• I can start a new Scratch project by choosing a sprite and a background.</li> <li>• I can think of some questions to ask</li> <li>• I can use the light blue ‘sensing’ block to ask questions.</li> <li>• I can use a conditional ‘if/else’ structure to respond to user input</li> <li>• I can add a score that changes depending on answers.</li> <li>• I can use an ‘or’ block to allow for different answers, or a ‘not’ block.</li> </ul> |
| Introduction                        | <p><b>Time: 15 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children why we do quizzes? (to test our knowledge)</li> <li>2. Ask the children what kind of questions we could ask in a quiz about our local area</li> <li>3. Write down some of these questions and the answers on the board</li> </ol>                                                                                                                                                             |

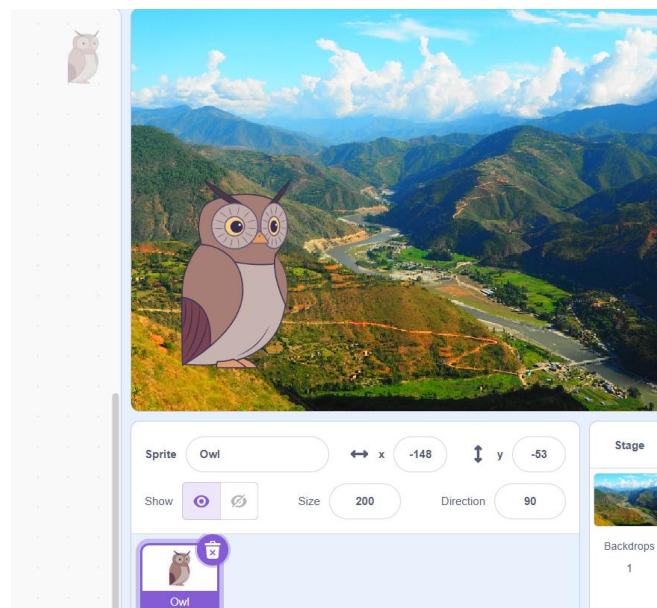


## Main lesson

**Time: 35 minutes**

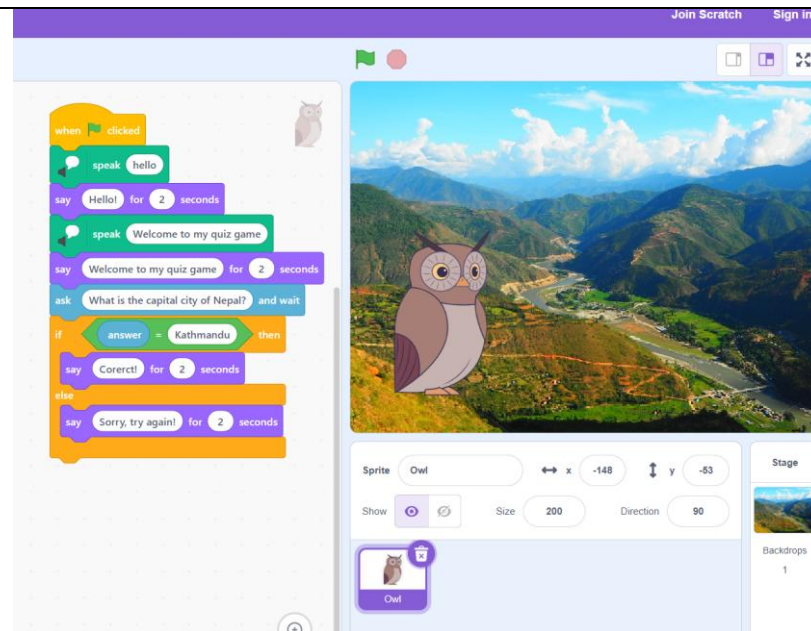
### Step 1: Opening Scratch and setting up a project (5 mins)

- Ask the children to open a new Scratch project. Ask them to add a sprite and a background. If they have a picture of their local environment on their computer, saved from the internet, this could be their background.



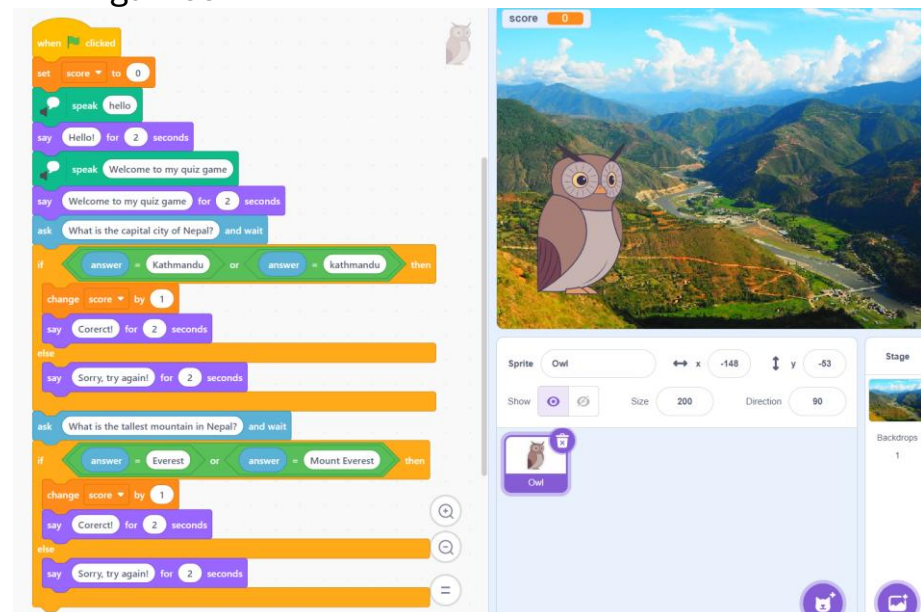
### Step 2: Asking a question and waiting for the response (10mins)

- Show the children how to program the sprite to speak (purple blocks) and how to ask a question (light blue blocks)
- Children could also go to extensions and use the text to speech extension as well as the purple blocks.
- Show the children how to add an 'if'/'else' block to deal with the user's answer.



### Step 3: Adding a score (10 mins)

- Click on variables and create a variable called 'score'
- Set the score to 0 and program the score to change when the answer is correct for each question.
- Point out that we can use 'or' or 'not' blocks to change the score too!
- Challenge children to add 5 questions to their quiz games.



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| <b>Plenary</b> | <b>Time: 10 minutes</b><br><br><ol style="list-style-type: none"><li>1. Ask the children to try out each other's games and give feedback. Are they fun to play?</li><li>2. How could we improve the games? (By adding a game over screen)</li><li>3. Ask students to save their work and log off their computers.</li></ol> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

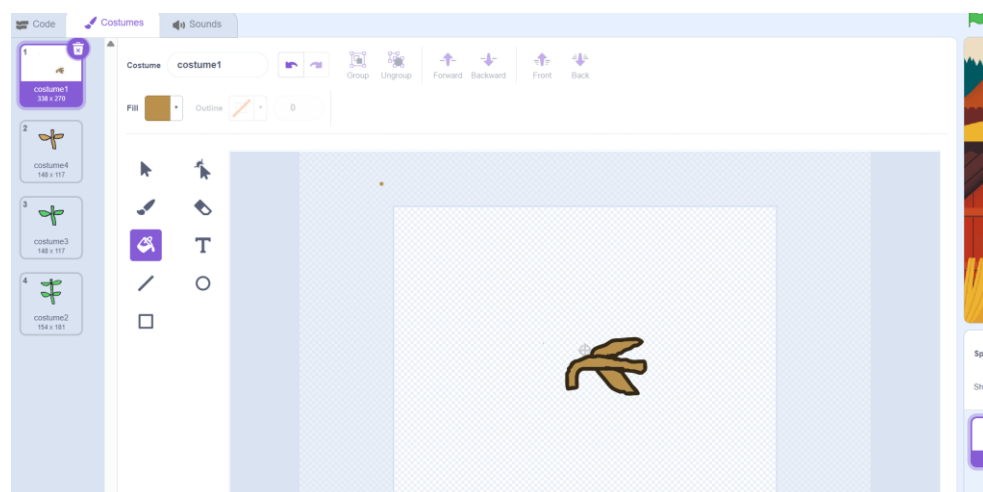
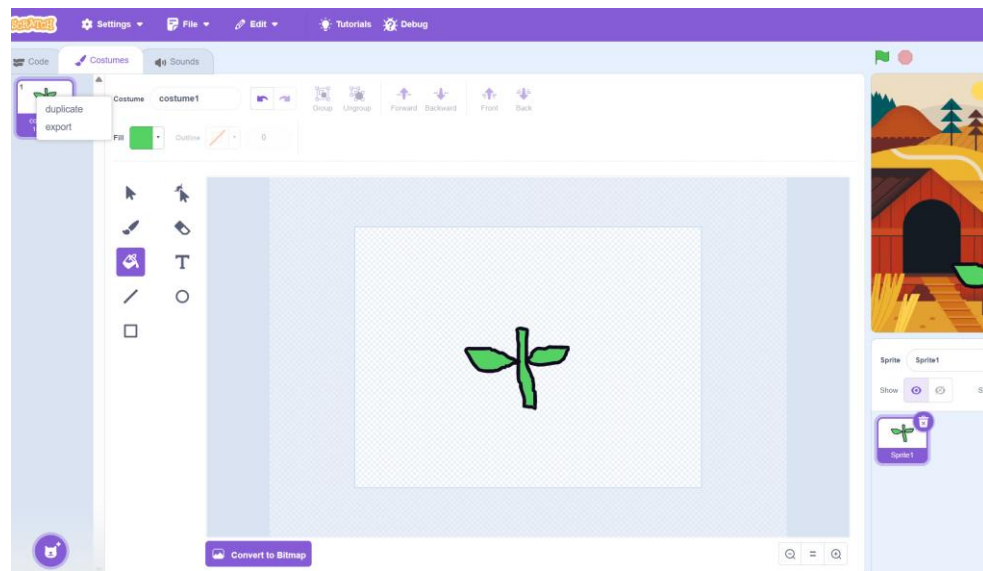
| <b>Lesson 11 – Programming a costume to change</b> |                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                        | <p><b>Goal 4 – Introduction to software logic (Scratch)</b></p> <p><a href="#">Video tutorial available here</a></p> <p><a href="#">Finished examples of Scratch projects are available here</a></p>                                                                                                                                                                                                     |
| <b>Learning objective</b>                          | We are learning to use variables in a program to change the appearance of a sprite                                                                                                                                                                                                                                                                                                                       |
| <b>UN Sustainable Development Goal</b>             | <div>  <p><b>SDG 2: Zero Hunger</b><br/>(Target 2.4: Ensure sustainable food production)<br/>Increase the productivity of greenhouses that are used to grow food</p> </div>                                                                                                                                             |
| <b>Success Criteria</b>                            | <ul style="list-style-type: none"> <li>• I can add a sprite and a background</li> <li>• I can add different costumes, by duplicating and changing costumes</li> <li>• I can create a variable called ‘water’ which changes over time and when something happens</li> <li>• I can program costumes to change</li> <li>• I can program costumes to change by themselves, using a ‘wait’ command</li> </ul> |
| <b>Introduction</b>                                | <p><b>Time: 15 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children what needs to happen to crops on a farm (they need to be watered and looked after)</li> <li>2. How could we use Scratch to teach people about this? (we could create a simulation, which is what we will do today!)</li> </ol>                                                                                 |

## Main lesson

**Time: 35 minutes**

### Step 1: Opening Scratch and setting up a project (5 mins)

1. Direct children to open a new project and add a background. If they have saved a picture of a farm, they could use this, otherwise select a farm background.
2. Show children how to add a plant sprite and to duplicate it so it has several different costumes (each costume being a different level of the plant's health)

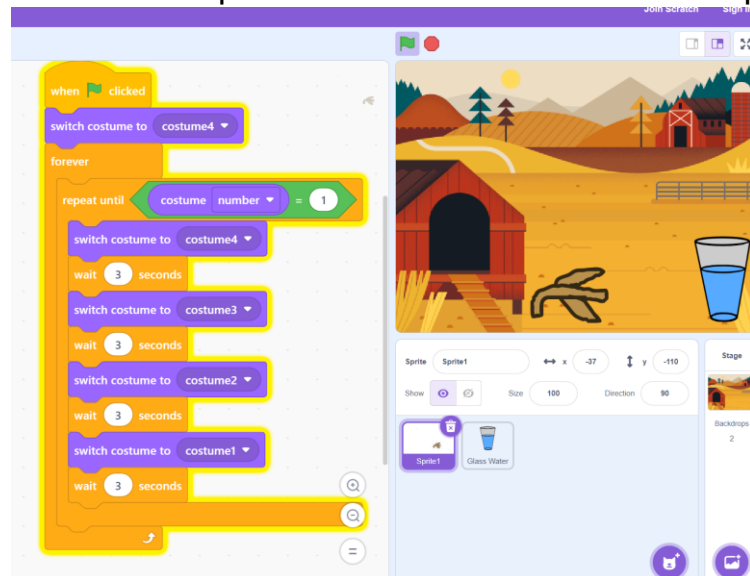


3. Ask the children to add four costumes, showing their plant getting healthier. Show them how they can place

their sprite on the screen and change its appearance by changing costume.

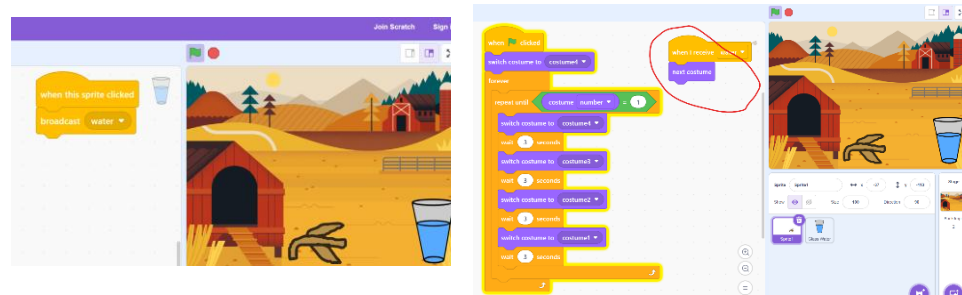
## Step 2: Programming the costume to gradually change (15 mins)

- Show the children how to use the purple blocks to make the costume change and then wait.
- Program the costume to start with the first (healthiest) costume
- Place a repeat until loop inside a forever loop



## Step 3: Using a broadcast command (5 mins)

- Add a water sprite. Program this so that when it is clicked, it broadcasts 'water'.
- Program the plant sprite to change to the next costume when it receives 'water'.

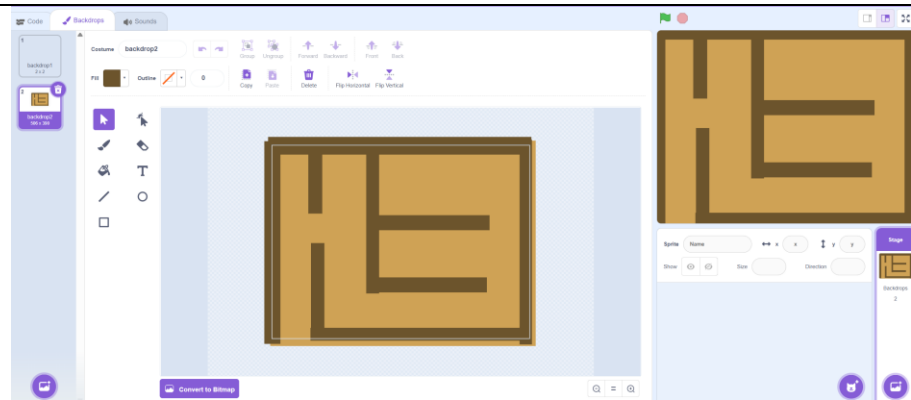


- Duplicate the plant sprite to have several plants.

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| <b>Plenary</b> | <b>Time: 10 minutes</b><br><br><ol style="list-style-type: none"><li>1. How realistic is our simulation? Does it help people to remember to care for plants?</li><li>2. How could we improve it further? (different wait amount for different plants, random amounts, sounds).</li><li>3. Ask students to save their work and log off their computers.</li></ol> |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

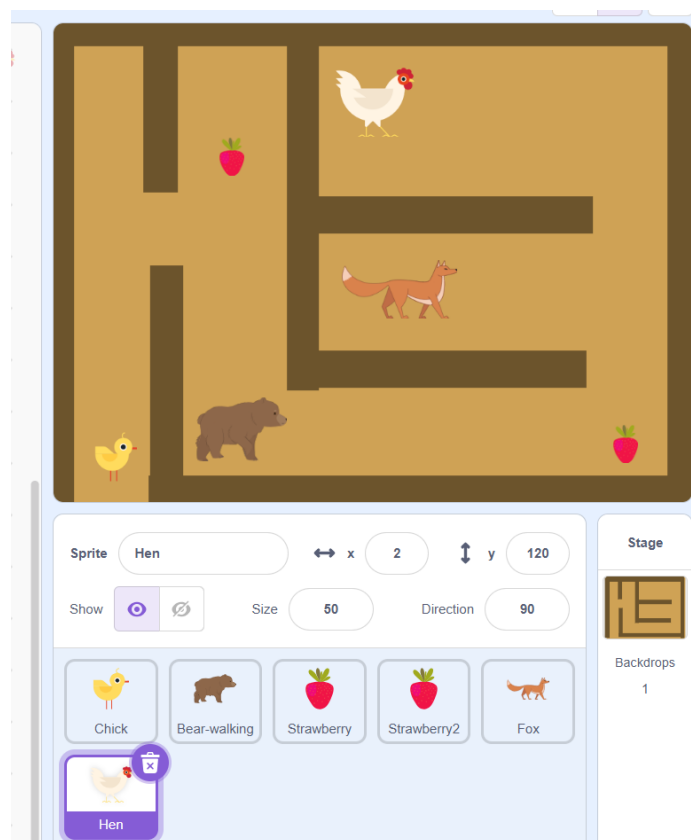
| <b>Lesson 12 – Programming a maze game</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                | <b>Goal 4 – Introduction to software logic (Scratch)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Finished examples of Scratch projects are available here</a>                                                                                                                                                                                                                                                        |
| <b>Learning objective</b>                  | We are learning to program sprites to move using x and y                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>UN Sustainable Development Goal</b>     |  <b>SDG 15: Life on Land</b><br><b>(Target 15.5: “Protect and prevent the extinction of threatened species”)</b><br>Manage human-wildlife interactions without harming wild animals                                                                                                                                                                                 |
| <b>Success Criteria</b>                    | <ul style="list-style-type: none"> <li>• I can start a new project in Scratch and add a plain background and a sprite</li> <li>• I can draw a maze using the background painter</li> <li>• I can program a sprite to move left and right (using change x) and up and down (using y)</li> <li>• I can make a sprite bounce off walls using negative movement</li> <li>• I can add objects to collect</li> <li>• I can add sprites to avoid</li> </ul> |
| <b>Introduction</b>                        | <b>Time: 15 minutes</b><br><br>1. Ask the children if animals on farms have to be careful of anything? (Yes, predators)<br>2. Explain that we are going to create a game about a lost hen, trying to return to its mother. Show a picture of the finished project and talk about how it works. What could be changed?                                                                                                                                |
| <b>Main lesson</b>                         | <b>Time: 35 minutes</b><br><br><b>Step 1: Opening Scratch and drawing a maze (5 mins)</b>                                                                                                                                                                                                                                                                                                                                                            |





1. Show children how to use the box tools to draw a maze background.

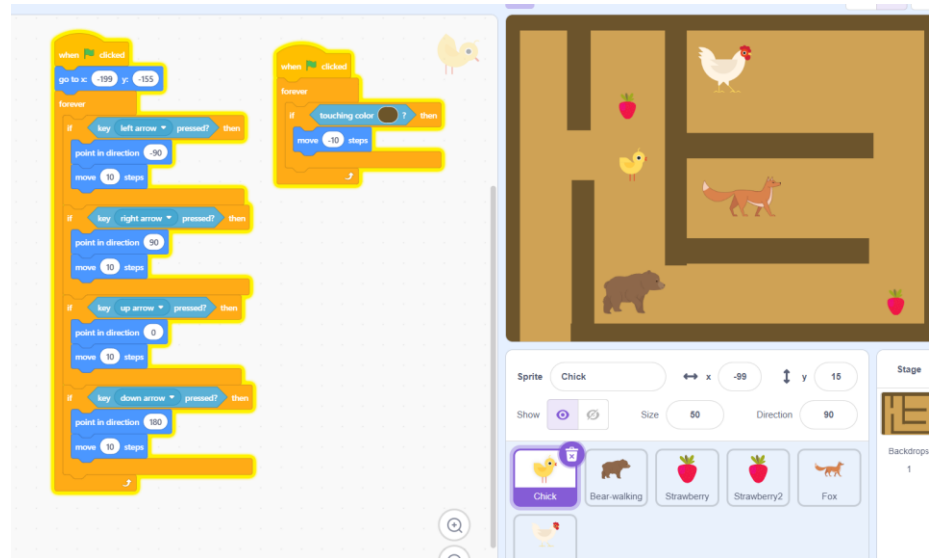
## Step 2: Adding sprites to the maze (5 mins)



- Show the children how to add a chick (player character), sprites to avoid (bear and fox), an end goal (hen) and collectable sprites (strawberries)

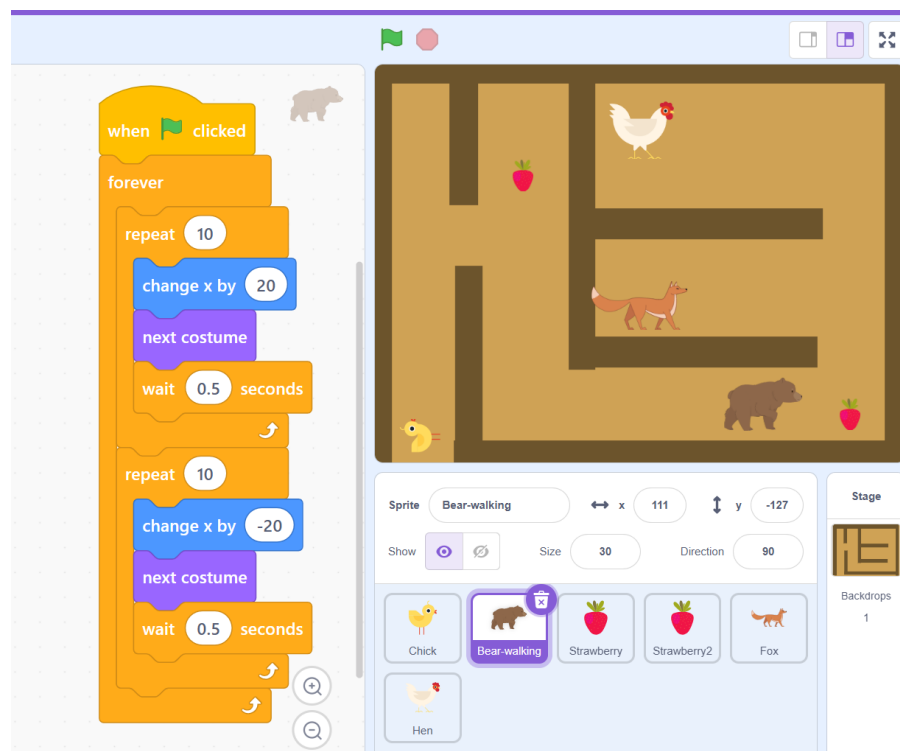
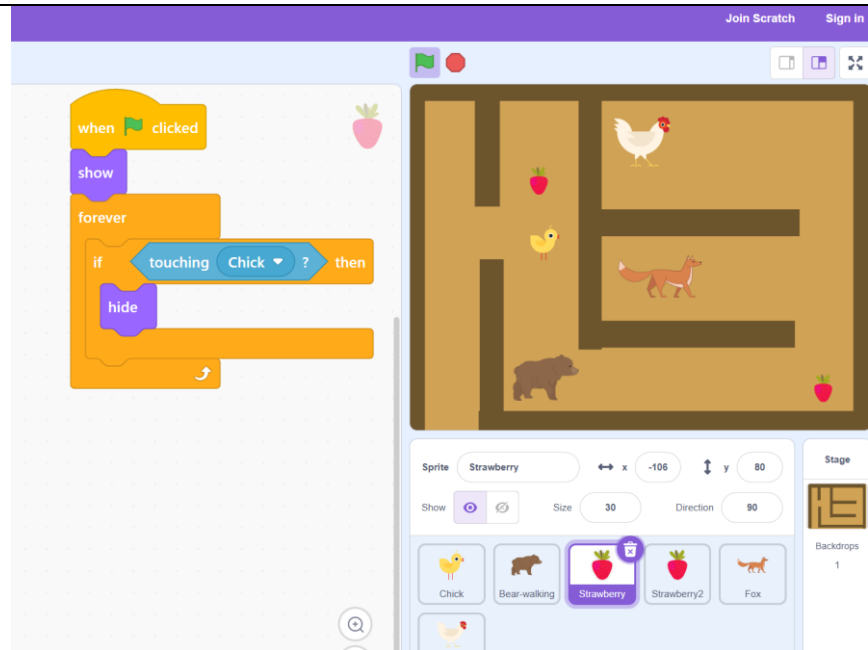
### Step 3: Programming the chick to move (10 mins)

1. Show the class how to program the chick to move by changing its direction.
2. Show children how to make the chick 'bump into' wall by using negative movement.
3. Ensure that children set the size of the chick to that it can navigate the maze.



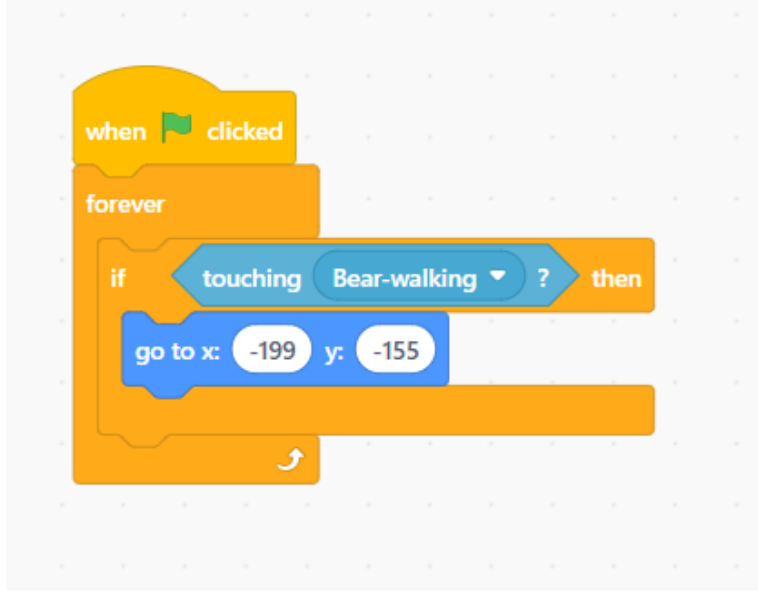
### Step 3: Programming the strawberries (5 mins)

1. Show the children how to program the strawberries to show and then hide if they are touching the chick.



### Step 3: Programming the bear and fox (10 mins)

1. Show the children how to program the bear and fox to move left and right.

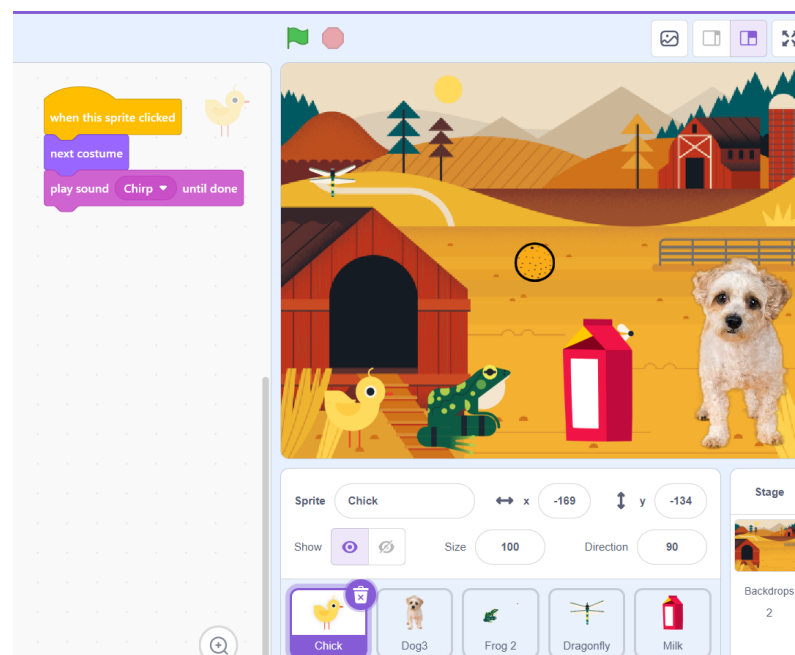
|                       |                                                                                                                                                                                                                                                                                                                                                  |
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|                       | <p>2. Children should program the chick to go back to the start if it touches the bear.</p>                                                                                                                                                                    |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Give the children time to play each other's games and provide feedback</li> <li>2. Whole class discussion – what was fun about the games? What could make them more exciting?</li> <li>3. Children save their Scratch projects and shut down their computers</li> </ol> |

| <b>Lesson 13 – Programming sounds to play</b> |                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                   | <b>Goal 4 – Introduction to software logic (Scratch)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Finished examples of Scratch projects are available here</a>                                                                                                                                                                                                               |
| <b>Learning objective</b>                     | We are learning to add sounds to a Scratch project                                                                                                                                                                                                                                                                                                                                                          |
| <b>UN Sustainable Development Goal</b>        | <div>  <p><b>SDG 4: Quality Education</b><br/> <b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br/>           Learning to use add sounds into a computer program</p> </div>                                                                                                 |
| <b>Success Criteria</b>                       | <ul style="list-style-type: none"> <li>• I can start a new Scratch project</li> <li>• I can add a background and several sprites</li> <li>• I can click on a sprite and program ‘when clicked’</li> <li>• I can open the sound library and choose a sound</li> <li>• I can explain the difference between play sound and play until done</li> </ul>                                                         |
| <b>Introduction</b>                           | <b>Time: 10 minutes</b><br><br><ol style="list-style-type: none"> <li>1. Ask the children what kinds of sounds they hear on a farm? Record some ideas on the whiteboard</li> <li>2. Explain that sometimes, it can be hard to identify the sounds that are heard on a farm.</li> <li>3. We are going to create a program to help people identify some of the sounds that can be heard on a farm.</li> </ol> |
| <b>Main lesson</b>                            | <b>Time: 35 minutes</b><br><br><b>Step 1: Starting a new Scratch project (5 mins)</b>                                                                                                                                                                                                                                                                                                                       |

- Show the children how to start a new Scratch project, add a farm background and add several sprites which make sounds on a far

### Step 2: Programming sprites to make a sound (15 mins)

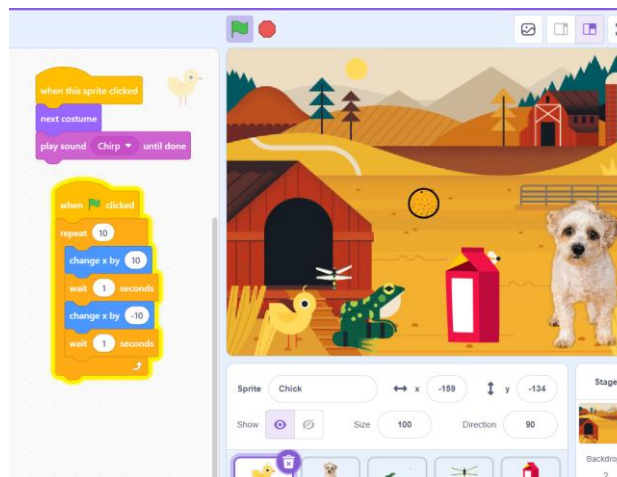
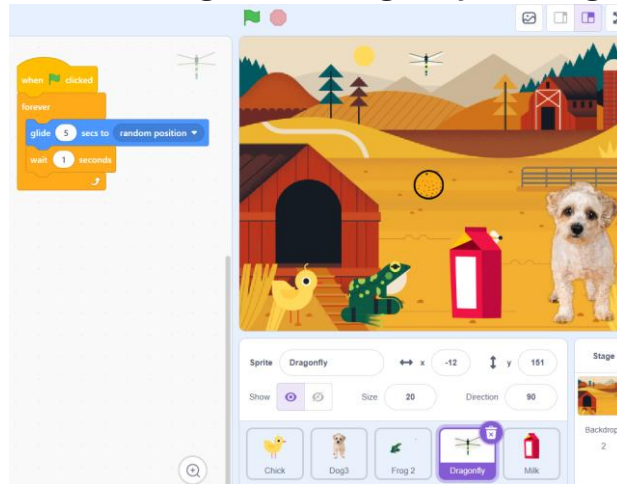
- Show children how to add a 'when this sprite is clicked' event block to a sprite
- Show children how to access the sounds library and browse different sounds. Children may need help adjusting the sound on their computers for this lesson, or help attaching headphones
- Emphasise and demonstrate the difference between 'play sound' and 'play sound until done' (the first plays the sound and then immediately starts the next block in the sequence)



### Step 3: Adding movement animations (10 mins)

1. Show the class the movement blocks and ask which ones we could use to add some movement in our farm. Remind them that x is move left and right, y, is move up and down.

2. Show some examples, such as a chick moving left and right or a dragonfly moving randomly.



#### Step 4: Adding background noise (10 mins)

- Show the children how to add a sound loop, by adding a play sound until done block and selecting one of the sounds from the loops category.

#### Plenary

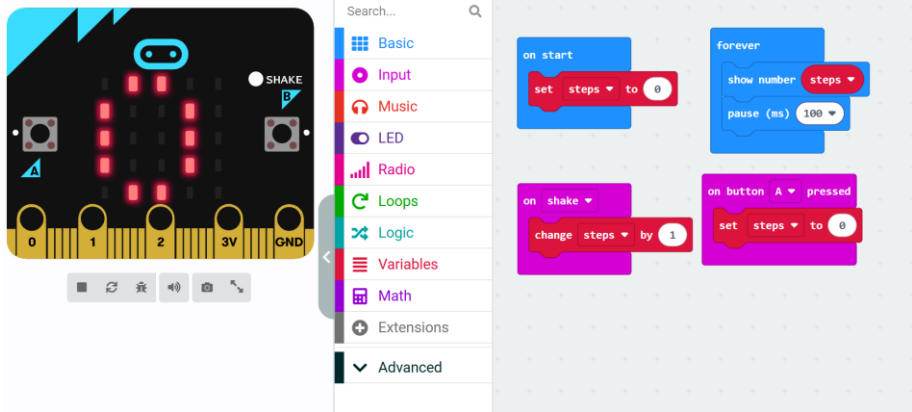
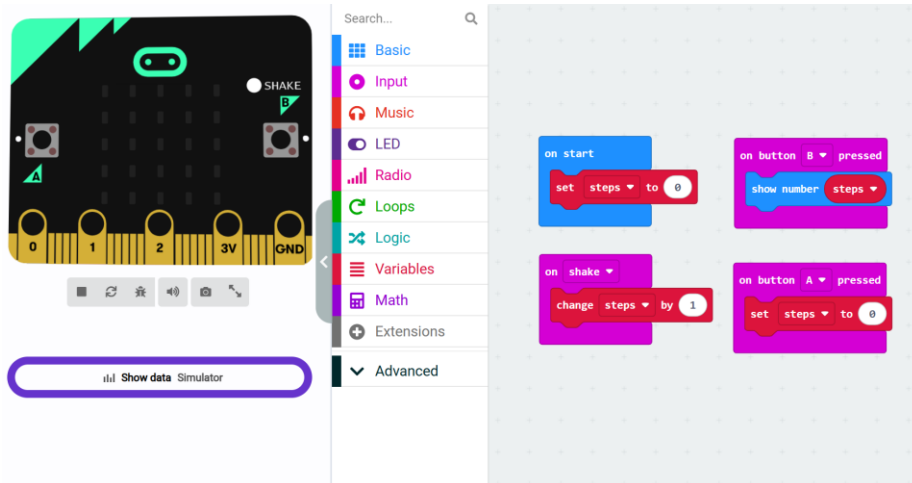
#### Time: 10 minutes

1. Celebrate children's success. Does it now sound like a farm in our classroom?
2. What could we add or change to make our farms sound even more realistic?
3. Children save their Scratch projects and log off their computers.

| <b>Lesson 14 – Programming a Microbit step counter</b> |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                            | <b>Goal 4 – Introduction to software logic (Microbit)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Wide range of Microbit tutorials available here</a>                                                                                                                                                                                                                                     |
| <b>Learning objective</b>                              | We are learning to program a step counter to monitor animal movement and health                                                                                                                                                                                                                                                                                                                                           |
| <b>UN Sustainable Development Goal</b>                 |  <b>SDG 15: Life on Land</b><br><b>(Target 15.5: “Protect and prevent the extinction of threatened species”)</b><br>Building devices to monitor the health of animals                                                                                                                                                                   |
| <b>Success Criteria</b>                                | <ul style="list-style-type: none"> <li>• I can open the MakeCode programming website</li> <li>• I can start a new project</li> <li>• I can create a variable</li> <li>• I can program the variable to change</li> <li>• I can display the variable</li> <li>• I can reset the variable</li> </ul>                                                                                                                         |
| <b>Introduction</b>                                    | <b>Time: 15 minutes</b><br><br><ol style="list-style-type: none"> <li>1. Ask the children why movement is important to keep healthy. Why is it important to keep animals healthy by letting them move around?</li> <li>2. How can we keep track of movement? (we can count steps taken)</li> <li>3. Explain that in this lesson, we will build devices that can track out movement and the movement of animals</li> </ol> |

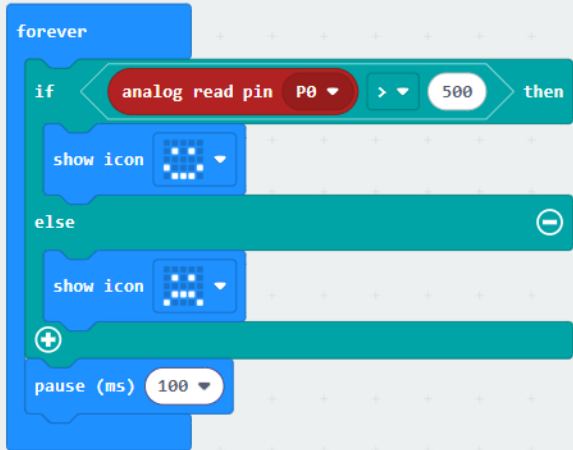


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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Open the Makecode website and start a new project (5 mins)</b></p> <p>1. Show the children how to access the Makecode website and start a new project.<br/><a href="https://makecode.microbit.org/">https://makecode.microbit.org/</a></p> <p><b>Step 2: Creating and controlling a variable (10 mins)</b></p> <ul style="list-style-type: none"><li>• Ask the children how we could create a number that changes in a program (We create a variable).</li><li>• Model creating a variable and setting it to 0 at the start of the program.</li><li>• Program the variable to change when the Microbit shakes.</li><li>• Program the variable to reset when the A button is pressed.</li></ul> <p><b>Step 3: Displaying the step count (5 mins)</b></p> <ul style="list-style-type: none"><li>• Discuss how the step count should be shown. Should it be shown all the time, or only when a button is pressed?</li><li>• Both solution are shown below. The 2<sup>nd</sup> one is arguably better because it takes time for the number to display on the first one.</li><li>• Ensure that children know how to download their programs to their Microbit. (click the button in the bottom right of the screen).</li></ul> |
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| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. How successful have we been with our step counters? How much could they help us be healthy?</li> <li>2. What would we change in our programs if we worked on them more?</li> <li>3. Ask children to save their programs and log off their computers.</li> </ol> |

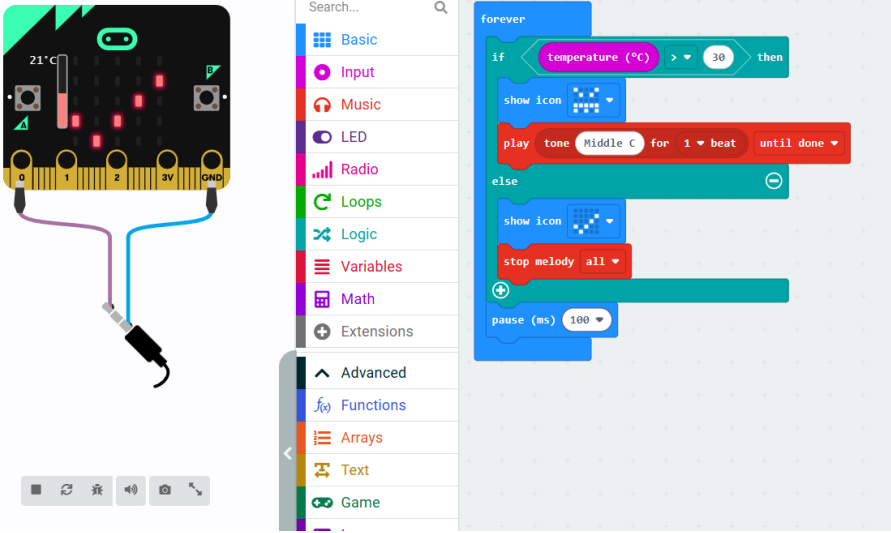
| <b>Lesson 15 Programming a Microbit moisture probe</b> |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                            | <b>Goal 4 – Introduction to software logic (Microbit)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Wide range of Microbit tutorials available here</a>                                                                                                                                                                                                                                      |
| <b>Learning objective</b>                              | We are learning to add pins to a Microbit to make a soil moisture probe                                                                                                                                                                                                                                                                                                                                                    |
| <b>UN Sustainable Development Goal</b>                 | <div>  <div> <b>SDG 6: Clean Water and Sanitation</b><br/> <b>(Target 6.4: Substantially increase water-use efficiency across all sectors)</b><br/>           Conserve water by building systems that only use water when it is needed.         </div> </div>                                                                             |
| <b>Success Criteria</b>                                | <ul style="list-style-type: none"> <li>• I can open the MakeCode programming website</li> <li>• I can start a new project</li> <li>• I can connect crocodile clips to the Microbit with nails attached</li> <li>• I can use an if/else programming structure</li> <li>• I can add a pause command to stop the Microbit from recording continuously</li> </ul>                                                              |
| <b>Introduction</b>                                    | <b>Time: 15 minutes</b><br><br><ol style="list-style-type: none"> <li>1. Ask the children how we can keep plants healthy when we have a lot of them (we can use sensors to monitor plant health)</li> <li>2. How the children a Microbit and ask them where they think we will see the plant health, as its moisture level</li> <li>3. Ask the children where the information will go into the Microbit (input)</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Connecting nails to the Microbit (15 mins)</b></p> <ul style="list-style-type: none"><li>• Show the children how to clip a crocodile clip to the 3V pin on the Microbit.</li><li>• Show the children how to clip another crocodile clip to pin 1 on the Microbit.</li><li>• Show them how to attached nails to the wires and push them into soil, about 5cm apart.</li></ul> <p><b>Step 2: Programming the Microbit (15 mins)</b></p> <ul style="list-style-type: none"><li>• Show the children how to open the MakeCode website and start a new project:<br/><a href="https://makecode.microbit.org/">https://makecode.microbit.org/</a></li><li>• Show the children how to add an 'if/else' block</li><li>• Show them how to use a comparison block, so that the code reads, 'if analogue read pin 1 &gt;500. (This 500 is a good starting point, it may need to be changed based on the soil)</li><li>• Inside the if section (wet soil) show them how to add a happy face icon.</li><li>• In the else section, add a sad face icon (dry soil)</li><li>• Add a pause command to stop the Microbit from refreshing all the time.</li></ul> <p><b>Step 3: Testing the system (5 mins)</b></p> <ul style="list-style-type: none"><li>• Explain that an important part of programming is adjusting systems until they work well. Ask children to adjust their system using a wet paper cloth to try out different moistures until the system works.</li></ul> |
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|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|                       |  <p>The image shows a Scratch script on a light gray grid background. It starts with a blue 'forever' loop block. Inside the loop is a green 'if' block with a red 'analog read pin' block set to 'P0' and a comparison '&gt;' followed by the number '500'. The 'then' branch of the 'if' block contains a blue 'show icon' block with a plant icon. The 'else' branch contains a blue 'show icon' block with a leaf icon. Below the 'if' block is a blue 'pause (ms)' block set to '100'.</p> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children how successful they think they have been? Do their devices work? How do they know? How could they be improved?</li> <li>2. If possible, set the devices up in the room to monitor the status of plants growing</li> <li>3. Ask children to save their programs and shut down their computers,</li> </ol>                                                                                                                                                                                |

| <b>Lesson 16 - Programming a Microbit temperature alarm</b> |                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                                 | <b>Goal 4 – Introduction to software logic (Microbit)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Wide range of Microbit tutorials available here</a>                                                                                                                                                                                                         |
| <b>Learning objective</b>                                   | We are learning to make a temperature alarm using a Microbit                                                                                                                                                                                                                                                                                                                                  |
| <b>UN Sustainable Development Goal</b>                      |  <b>SDG 13: Climate Action</b><br><b>(Target 13.3: “Improve education, awareness-raising and institutional capacity on climate change mitigation”)</b><br>Creating digital systems to respond to changing temperatures                                                                                       |
| <b>Success Criteria</b>                                     | <ul style="list-style-type: none"> <li>• I can start a new project in Makecode</li> <li>• I can connect crocodile clips to a Microbit to control a buzzer.</li> <li>• I can spot the temperature sensor on a Microbit</li> <li>• I can use a condition in my code to control an output, with an if else structure</li> </ul>                                                                  |
| <b>Introduction</b>                                         | <b>Time: 15 minutes</b><br><br><ol style="list-style-type: none"> <li>1. Discuss how grain that is stored needs to be kept at the right temperature. When grain is stored, mould and bacteria will grow, generating heat.</li> <li>2. If grain is too hot, it will spoil or can even catch fire.</li> <li>3. We can monitor temperature and create an alarm if grain gets too hot.</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Connecting nails to the Microbit (15 mins)</b></p> <ul style="list-style-type: none"><li>• Show the children how to clip a crocodile clip to pin 0 of the Microbit and connect this to the positive leg of the buzzer.</li><li>• Show the children how to clip a crocodile clip to pin GND of the Microbit and connect this to the negative leg of the buzzer.</li></ul> <p><b>Step 2: Programming the Microbit (15 mins)</b></p> <ul style="list-style-type: none"><li>• Show the children how to open the MakeCode website and start a new project:<br/><a href="https://makecode.microbit.org/">https://makecode.microbit.org/</a></li><li>• Show the children how to add an 'if/else' block</li><li>• Show them how to use a comparison block, so that the code reads, 'if temperature &gt;30 degrees</li><li>• Inside the if section of the code (too hot) add:<br/>show icon, angry face, play tone high C for one beat</li><li>• Inside the else section of the code, add:<br/>Show icon check, clear screen, stop all tones</li><li>• Add a pause at the end of these instructions</li></ul> <p><b>Step 3: Testing the system (5 mins)</b></p> <ul style="list-style-type: none"><li>• Explain that an important part of programming is adjusting systems until they work well. Ask children to adjust their system using with different temperatures until it works.</li></ul> |
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|                       |                                                                                                                                                                                                                                                                                                                 |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children how successful they think they have been? Do their devices work? How do they know? How could they be improved?</li> <li>2. If possible, set the devices up in the room to monitor the status of plants growing</li> <li>3. Ask children to save their programs and shut down their computers</li> </ol> |



| <b>Lesson 17- Programming a Microbit light sensor</b> |                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                           | <b>Goal 4 – Introduction to software logic (Microbit)</b><br><br><a href="#">Video tutorial available here</a><br><br><a href="#">Wide range of Microbit tutorials available here</a>                                                                                                                                      |
| <b>Learning objective</b>                             | We are learning to use a Microbit to monitor light levels for plants                                                                                                                                                                                                                                                       |
| <b>UN Sustainable Development Goal</b>                | <div>  <div> <b>SDG 2: Zero Hunger</b><br/> <b>(Target 2.4: Ensure sustainable food production systems)</b><br/>           Building automated systems to monitor and protect plants         </div> </div>                                 |
| <b>Success Criteria</b>                               | <ul style="list-style-type: none"> <li>• I can explain where light enters a Microbit</li> <li>• I can use a forever block</li> <li>• I can put a conditional block into a forever block</li> <li>• I can display text</li> <li>• I can add a pause so that the Microbit does not constantly check</li> </ul>               |
| <b>Introduction</b>                                   | <b>Time: 15 minutes</b><br><br><ol style="list-style-type: none"> <li>1. Ask the children what some of the things that plants need to grow are. Elicit that light is one of the requirements.</li> <li>2. Explain that in this activity, we will make a sensor that tracks if plants have enough light to grow.</li> </ol> |

## Main lesson

**Time: 35 minutes**

### Step 1: Opening a new Makecode project (5 mins)

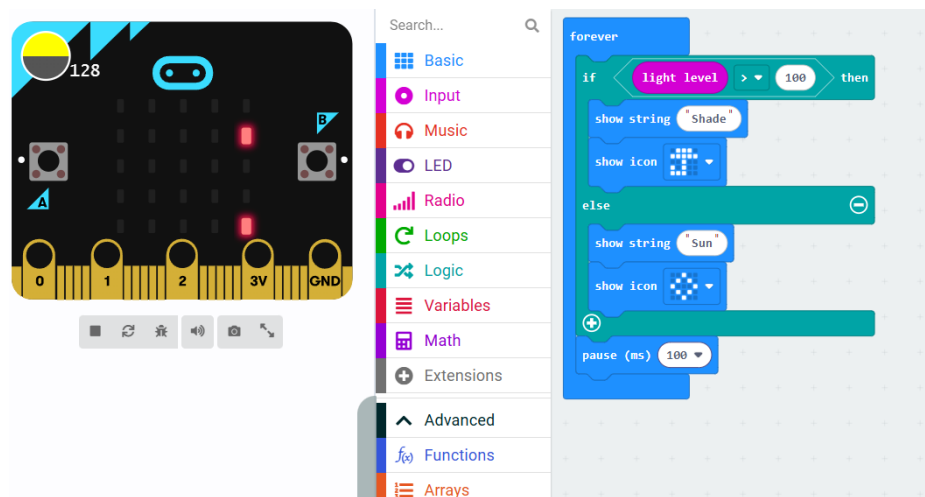
- Show the children how to open the MakeCode website and start a new project:  
<https://makecode.microbit.org/>

### Step 2: Programming an 'if/else' structure (10 mins)

- Show the children how to add an 'if/else' block to their programs.
- Show the children how to add a comparative clock and use this to say, 'if light level < 100'

### Step 3: Programming strings (text) to appear Wikipedia (15 mins)

- Show the children how to add a string (text) to their program, so that the program reads:  
**"If light level < 100, show strong "shade" and an umbrella icon."**  
else  
"show string "sun" followed by a sun icon"



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|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Plenary</b> | <b>Time: 10 minutes</b> <ol style="list-style-type: none"><li>1. Ask the children how successful they think they have been? Do their devices work? How do they know? How could they be improved?</li><li>2. If possible, set the devices up in the room to monitor the status of plants growing</li><li>3. Ask children to save their programs and shut down their computers,</li></ol> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |

GOAL 5 – UNDERSTANDING COMPUTER SYSTEMS AND NETWORKS

# Goal 5



## UNDERSTANDING COMPUTER SYSTEMS AND NETWORKS

| <b>Lesson 18 – Creating a physical network</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                    | <b>Goal 5 – Understanding computer systems and networks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Learning objective</b>                      | We are learning to identify how our individual laptops connect to a local school network server to share and open leaning files.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>UN Sustainable Development Goal</b>         | <div>  <p><b>SDG 9: Innovation and Infrastructure</b><br/><b>(Target 9c: Access to ICT)</b><br/>Learning to connect devices to a network</p> </div>                                                                                                                                                                                                                                                                                                                |
| <b>Success Criteria</b>                        | <ul style="list-style-type: none"> <li>• I can trace the physical path form my laptop to the network router/server</li> <li>• I can explain the difference between local storage (my laptop) and shared network storage (the school server)</li> <li>• I can load a shared book file from the E-Pustakalaya network server</li> </ul>                                                                                                                                                                                                               |
| <b>Introduction</b>                            | <p><b>Time: 15 minutes</b></p> <ol style="list-style-type: none"> <li>1. Hold up a physical book. Ask the children, “If I keep this book inside my private drawer, can any of you read it? No, only I can”</li> <li>2. Now place the book on a central table. Ask the same question.</li> <li>3. Explain how networks work. Computers do the same thing, instead of saving a book on out laptops, we connect computers together to a central area called the server. Today we are going to explore how data travels across this network.</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Creating a physical representation of a network (15 minutes)</b></p> <p><b>Setup:</b></p> <ul style="list-style-type: none"><li>• Designate one students' desk at the front as the 'central server'. Place a box labelled 'E-Pustakalaya books' there. Designate another student's as the 'router', standing in the middle of the room holding pieces of yarn.</li></ul> <p><b>Activity</b></p> <ol style="list-style-type: none"><li>1. A student at the desk "The client laptop" hold up a message saying "Requesting bear story book"</li><li>2. They pass this message to the router in the middle</li><li>3. The router walks the message over to the server.</li><li>4. The server finds the paper "Bear Story book" in the box and the router delivers it back to the requesting student.</li></ol> <p>Teacher role – explain to the class that this happens every time a link is clicked on a computer!</p> <p><b>Step 2: Viewing the network on their laptops (10 mins)</b></p> <ol style="list-style-type: none"><li>1. Instruct the children to open their laptops and check whether they are connected to the school network. Emphasise that this means the laptop is talking to the classroom router and then server.</li><li>2. Ask students to access resources on Wikipedia or E-Pustakalaya</li></ol> <p><b>Step 3: Touring the school network (5 mins)</b></p> <ol style="list-style-type: none"><li>1. Take the children on a tour of the school to see network infrastructure, including classroom router, cables and (if available) server.</li></ol> |
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| <b>Plenary</b> | <b>Time: 10 minutes</b><br><br><ol style="list-style-type: none"><li>1. Ask the children, if we turned off the classroom router, would the laptops still turn on? (Yes, because the laptops are battery powered!) But they would not connect to the internet.</li><li>2. Run system shutdown, close E-Pustakalaya, shut down computes safely</li></ol> |
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## Teaching objectives covered in this unit

| Teaching objectives covered in this unit (highlighted)                                          |                          |
|-------------------------------------------------------------------------------------------------|--------------------------|
| ICT Skills                                                                                      | Taught in lesson(s):     |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | <input type="checkbox"/> |
| 2. Use a mouse to left and right click and draw boxes to select items                           | <input type="checkbox"/> |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | <input type="checkbox"/> |
| 4. Type full sentences, using 'shift' to capitalise.                                            | <input type="checkbox"/> |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | <input type="checkbox"/> |
| 6. Open the internet, access bookmarks and type in a URL.                                       | <input type="checkbox"/> |
| 7. Create a word document with a title, appropriate layout and style.                           | <input type="checkbox"/> |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | <input type="checkbox"/> |
| Digital literacy and E-safety                                                                   | Taught in lesson(s):     |
| 1. Describe ICT rules in the school and at home                                                 | <input type="checkbox"/> |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | <input type="checkbox"/> |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | <input type="checkbox"/> |
| 4. Give examples of personal information and say who we would not share this with.              | <input type="checkbox"/> |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | <input type="checkbox"/> |
| 6. Name different ways of reporting problems or contact online.                                 | <input type="checkbox"/> |
| 7. Perform an internet search and select reliable results.                                      | <input type="checkbox"/> |
| 8. Gather information from websites provided by the teacher.                                    | <input type="checkbox"/> |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | <input type="checkbox"/> |
| Programming and computational thinking                                                          | Taught in lesson(s):     |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | <input type="checkbox"/> |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | <input type="checkbox"/> |
| 3. Program precise movement, using distance, degrees and x and y .                              | <input type="checkbox"/> |
| 4. Program looks to change over time creating smooth animations.                                | <input type="checkbox"/> |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | <input type="checkbox"/> |
| 6. Recognise and use conditional language in an 'if/else' structure                             | <input type="checkbox"/> |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | <input type="checkbox"/> |
| 8. Use computational thinking to approach problems logically, including debugging.              | <input type="checkbox"/> |

GOAL 6 – DIGITAL LITERACY, E-SAFETY AND AI

# Goal 6



DIGITAL LITERACY,  
E-SAFETY AND AI

| <b>Lesson 19 - E-safety – Safe and healthy device usage</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <b>Goal</b>                                                 | <b>Goal 6 – Digital literacy, E-safety and AI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Learning objective</b>                                   | We are learning to recognise common technological devices, establish rules and take breaks from screens                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>UN Sustainable Development Goal</b>                      |  <p><b>SDG 2: Good Health and Well-being</b><br/> <b>(Target 3.4 Promote mental health and well-being)</b><br/>           Promote mental health and well-being as essential aspects of a healthy life</p>                                                                                                                                                                                                                    |
| <b>Success Criteria</b>                                     | <ul style="list-style-type: none"> <li>• I can identify three technology devices in my classroom</li> <li>• I can follow our ICT Acceptable Use rules when using technology</li> <li>• I can take a break from the screen at appropriate times</li> <li>• I can create a poster to explain the ICT rules to other people</li> </ul>                                                                                                                                                                           |
| <b>Introduction</b>                                         | <ol style="list-style-type: none"> <li>1. The teacher leads a three-minute game of “I Spy” around the room to identify technology in the room (tablet, screen, computer, mouse etc.)</li> <li>2. Discuss ways in which computers are helpful, but why it is important to take a break (eyes, bodies)</li> <li>3. Remind the children why we have rules for using technology (our ICT Acceptable use agreement). Ask them which rules they think are the most important. Record these on the board.</li> </ol> |
| <b>Main lesson</b>                                          | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Task example (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show the children an example of a poster made about one or several of the ICT acceptable use rules. Point out clear images and text.</li> </ul> <p><b>Step 2: Opening software (5 minutes)</b></p>                                                                                                                                                                                     |

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|                       | <ul style="list-style-type: none"> <li>• Guide children to open Word, or other appropriate software, and add a table with several of the ICT Acceptable Use rules. Explain that their task is to type the rules and then use a website like Pixabay to add images to the rules to display them for other people.</li> <li>• Children open their Word documents and open the Pixabay.com website.</li> </ul> <p><b>Step 3: Creating posters (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Children use Word and create a table, with space to type several of the ICT Acceptable Use rules.</li> <li>• Children use Pixabay.com to find images to support their rules. Children may need guidance in searching appropriately and not being too specific, instead using key words like ‘computer’.</li> </ul> <p><b>Step 4: Screen break (1 minute)</b></p> <ul style="list-style-type: none"> <li>• At various points in the lesson (use a ten-minute timer), a bell will ring and children will take a stretching and movement break from their screens.</li> </ul> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children to display their posters on their screens for other class members to look at.</li> <li>2. Celebrate the children’s success. Ask them which rules they think are important as a result of this lesson.</li> <li>3. Ask the students why we took breaks from our screens and why this is a good idea.</li> <li>4. Ask the children to save their documents in Libre Office and close the computers down safely.</li> <li>5.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| <b>Lesson 20 – E-safety – Personal information</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                        | <b>Goal 6 – Digital literacy, E-safety and AI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Learning objective</b>                          | We are learning what personal information means and why we should keep this information private online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>UN Sustainable Development Goal</b>             | <div>  <p><b>SDG 16: Peace, Justice and Strong Institutions</b><br/> <b>(Target 16.10: “Ensure public access to information and protect fundamental freedoms”)</b><br/>           Teach children to transmit information via the internet safely</p> </div>                                                                                                                                                                                                                                                                                                                                      |
| <b>Success Criteria</b>                            | <ul style="list-style-type: none"> <li>• I can explain what “personal information” means</li> <li>• I can give examples of personal information</li> <li>• I can explain what I should do if I am asked for personal information online</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Introduction</b>                                | <ol style="list-style-type: none"> <li>1. Gather the students in a circle in the classroom. Place a bag in the middle of the room containing personal and non-personal objects (personal: photo, bank letter, wallet, certificate, email, mobile phone). (Non-personal: shopping list, magazine, teddy bear, piece of clothing)</li> <li>2. Discuss how we could separate the objects into two groups.</li> <li>3. Talk about how we would deal with the two sets differently. Which would we keep safer? Who would we show the private group to? What would we do if someone asked to see them? Can children think of anything else that would belong in either pile?</li> </ol> |

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| <p><b>Main lesson</b></p> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Software launch (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask students to open the Word/Libre Office and create a new document. Show the children how to add a title and a table.</li> </ul> <p><b>Step 2: Adding to a table (20 minutes)</b></p> <ul style="list-style-type: none"> <li>• Guide children to create two columns in their table and label each column ‘personal’ and ‘non-personal’.</li> <li>• Ask children to type the things that we talked about into the personal or non-personal columns.</li> </ul> <p><b>Step 3: Online scenario discussion (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Discuss occasions when we might be asked for our information online. Cover two main categories: <ul style="list-style-type: none"> <li>- Websites asking us form information</li> <li>- Individuals asking for information, i.e. in playing games</li> </ul> </li> </ul> <p>Ensure that children know that they should not give out personal information and should ask an adult for help if some asks for this information online.</p> <p>If available, go through some example scenarios with children and ask what they would do.</p> |
| <p><b>Plenary</b></p>     | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Provide some true or false questions for children to answer as a class about personal information.</li> <li>2. Reiterate why it is important to keep personal information safe online</li> <li>3. Ask children to save their work and shut down their computers.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| <b>Lesson 21 – Digital citizenship</b> |                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 6 – Digital literacy, safety and AI</b>                                                                                                                                                                                                                                                                                                                                                |
| <b>Learning objective</b>              | We are learning how the way that we behave online, including digital text, can affect how people feel                                                                                                                                                                                                                                                                                          |
| <b>UN Sustainable Development Goal</b> | <div>  <p><b>SDG 16: Peace, Justice and Strong Institutions</b><br/> <b>(Target 16.10: “Ensure public access to information and protect fundamental freedoms”)</b><br/>           Learning to follow rules to keep myself and others safe</p> </div>                                                          |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can explain why text on a screen can upset people</li> <li>• I can categorise messages and emojis into ‘kind’ and ‘unkind’ groups</li> <li>• I can explain a ‘golden rule’ for sending messages online</li> <li>• I can explain what to do if someone upsets me online</li> </ul>                                                                   |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Write a list of two columns on the board. Title the columns, ‘Things that make us feel happy’ and ‘things that make us feel sad’</li> <li>2. Discuss that we all want to feel happy and that we can make each other happy or unhappy.</li> <li>3. Ask children about some things that make us feel happy or unhappy when using technology</li> </ol> |
| <b>Main lesson</b>                     | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Phrase discussion (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show mock chat bubbles on the screen one at a time. Include phrases and emojis, such as:               <ul style="list-style-type: none"> <li>- Great job!</li> <li>- You are bad at this</li> <li>- Want to play?</li> </ul> </li> </ul>                         |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                | <ul style="list-style-type: none"> <li>- Go away!<br/>For the unkind phrases, ask for a student volunteer to help rewrite the phrases.</li> </ul> <p><b>Step 2: Golden rule (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Discuss the ‘golden rule’ with children: ‘If you wouldn’t say it on the playground, don’t say it online’</li> <li>• Discuss what you should do if someone is unkind to you online. Should you be mean back, or stop the activity and go and tell someone?</li> </ul> <p><b>Step 3: Scenario discussion (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Use presentation slides to show various imaginary situations to children. Ask them to discuss in pairs what they think the person should do in each situation, before feeding back to the class.</li> <li>• Include scenarios such as: <ul style="list-style-type: none"> <li>- <b>Some friends are playing a game. You ask to join, but they don’t let you</b></li> <li>- <b>Someone sends a photo of someone without their permission</b></li> <li>- <b>Someone sends you a silly emoji</b></li> </ul> </li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>- Ask the children if they agree or disagree with the following statements: <ol style="list-style-type: none"> <li>1) Being unkind online isn’t as bad as being mean in real life</li> <li>2) It’s okay to be mean online because no one will find out</li> <li>3) Messages that people send online are there forever</li> <li>4) Online messages can’t hurt people</li> <li>5) It’s okay to send mean emojis if it’s just for fun</li> </ol> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



|  |                                                                                                                                                                          |
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|  | <ul style="list-style-type: none"><li>- Ask the children to explain what they have learned about being good online citizens. Ask for ways that we can do this.</li></ul> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| <b>Lesson 22 – Reporting problems</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 6 – Digital literacy, safety and AI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Learning objective</b>              | We are learning what to do if we see something scary, inappropriate or something that makes us feel uncomfortable online                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 2: Good Health and Well-being</b><br><b>(Target 3.4 Promote mental health and well-being)</b><br>Protecting our mental health by asking for help when we need it                                                                                                                                                                                                                                                                 |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can identify the ‘scared or confused’ feeling caused by strange online content</li> <li>• I can demonstrate the ‘Stop, Close, Tell’ strategy during a roleplay</li> <li>• I can name two trusted adults I can report online problems to</li> </ul>                                                                                                                                                                                                                             |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Lead a class discussion: “What does a car driver do if they see something unexpected in the road?” (They brake!)</li> <li>2. Explain that if a strange, scary picture appears on the screen, or a button that they do not know about, children must use their own digital, emergency brake.</li> </ol>                                                                                                                                                                          |
| <b>Main lesson</b>                     | <b>Time: 35 minutes</b><br><br><b>Step 1: The three-step routine (10 minutes)</b> <ul style="list-style-type: none"> <li>• Explain the three-step routine that children should follow in situations such as these:               <ul style="list-style-type: none"> <li>- <b>Stop:</b> Remove hands from the keyboard</li> <li>- <b>Close:</b> Turn the device face-down, close the window or close the laptop lid</li> <li>- <b>Tell:</b> Walk directly to a trusted adult and tell them about it</li> </ul> </li> </ul> |

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|                | <p>Children could come up with hand movements to help them remember these steps.</p> <p><b>Step 2: Roleplay practice (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Display some situational examples on a presentation. For each, ask the children to roleplay in groups/pairs what they would do in each situation.</li> <li>• Include scenarios such as: <ul style="list-style-type: none"> <li>- You are playing a game, and someone says a rude word</li> <li>- You are searching for a picture and a scary picture appears</li> <li>- You are looking at a website and a button saying 'error' appears</li> </ul> </li> </ul> <p><b>Step 3: Trusted adult identification (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask students to name or draw two trusted adults (e.g. parent, teacher, school head) that they can talk to when doing step three.</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children what they have learned in this lesson about what happens if they feel uncomfortable online</li> <li>2. Remind them to act on the feeling of unease when they notice it and that online content is not their fault.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| <b>Lesson 23 – Identifying adverts</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Goal</b>                            | <b>Goal 6 – Digital literacy, safety and AI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Learning objective</b>              | We are learning to use trusted websites online and to recognise advertisements and sponsored links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>UN Sustainable Development Goal</b> |  <p><b>SDG 16: Peace, Justice and Strong Institutions</b><br/> <b>(Target 16.10: Ensure public access to information and protect fundamental freedoms)</b><br/>           Selecting safe, legal and reliable sources of information</p>                                                                                                                                                                                                                                                                               |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can identify the web browser search bar</li> <li>• I can spot ‘Ad’ or ‘Sponsored’ labels on a search page</li> <li>• I can use a saved browser bookmark to navigate to reliable learning sites</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Write a list of companies on the board, some associated with technology</li> <li>2. Ask the students what is the same about all of these companies (they all want to make money)</li> <li>3. Ask children how companies make money) they advertise, persuade you to spend your money)</li> </ol>                                                                                                                                                                                                                                                             |
| <b>Main lesson</b>                     | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Detective challenge (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Hand out magnifying glasses to children (these can be real, or paper versions).</li> <li>• Perform a web search and look at the results as a class.</li> <li>• As a class, look for paid links, such as those that say ‘Ad’ or ‘Sponsored’. Children should hold up their magnifying glasses and call out ‘found it!’ when they see a paid link.</li> <li>• On the whiteboard, record a list of signs that a website is trying to persuade us to spend money</li> </ul> |

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|                | <ul style="list-style-type: none"> <li>• Repeat this web search several times, on different search engines and video platforms</li> </ul> <p><b>Step 2: Setting up bookmarks (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Explain to children that one way to avoid accidentally clicking on paid links is to use a bookmark bar.</li> <li>• Show children where their bookmark bar is and guide them to navigate to a page and add it to their bookmarks.</li> <li>• Write a list of several useful pages on the board and ask children to set up bookmarks.</li> <li>• Show children how bookmarks can be grouped into folders.</li> </ul> <p><b>Step 3: Practice using bookmarks (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Ask children to practise closing the internet browser completely and opening bookmarked websites.</li> <li>• See how quickly they can do this. They could race the teacher who is opening via a search!</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children how they can avoid clicking on paid or sponsored links.</li> <li>2. Talk about what happens if we accidentally click on a sponsored link? (Close or ask an adult to help)</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| <b>Lesson 24 – Recognising AI</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 6 – Digital literacy, safety and AI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Learning objective</b>              | We are learning to recognise AI tools and follow safety rules when interacting with smart technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>UN Sustainable Development Goal</b> |  <p><b>SDG 2: Good Health and Well-being</b><br/> <b>(Target 3.4 Promote mental health and well being)</b><br/>         Keeping ourselves safe in a world where AI tools are common</p>                                                                                                                                                                                                                                                                                                                                                       |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can explain that AI tools are machines created by humans</li> <li>• I can explain why I must never share my personal information with an AI tool or voice assistant</li> <li>• I can explain rules and age limits for using AI tools</li> <li>• I can explain what to do when a smart tool gives a strange answer (Stop, Close, Tell)</li> </ul>                                                                                                                                                                                                                                    |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Hold up a teddy bear and a smartphone or a voice assisted icon.</li> <li>2. Ask the children, If I tell a secret to my teddy bear or my friend, is it safe? Can they give me a hug?</li> <li>3. What about if we tell secrets to a voice assistant? (Those things will not be kept secret.)</li> <li>4. Emphasise that a voice assistant or search engine is a machine and not a friend.</li> <li>5. Emphasise that as children, we should not use these tools unless an adult is present and that we should follow the <b>Stop, Close, Tell</b> rule if we feel worried.</li> </ol> |
| <b>Main lesson</b>                     | <p><b>Time: 25 minutes</b></p> <p><b>Step 1: Clear rules (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Use this time to emphasise rules for AI tools with children. These should focus on young children not using AI tools and knowing the Stop, Close, Tell rule</li> </ul>                                                                                                                                                                                                                                                                                                                                  |

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|                | <p>if they feel uncomfortable. Also emphasise that we never share personal information with AI tools, including photos of ourselves or other people.</p> <p><b>Step 2: Exploring scenarios (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Guide children through discussion of scenarios relating to E-safety, including, but not focusing entirely on AI tools. Ask children to discuss in pairs what they should do in each situation, focusing on the <b>Stop, Close, Tell</b> rule.</li> <li>• Scenarios could include: <ul style="list-style-type: none"> <li>- <b>You perform a search and the top result is an AI assistant</b></li> <li>- <b>You use a website and an AI assistant asks, 'How can I help you?'</b></li> <li>- <b>You open an app and an assistant says hello (and your name)</b></li> <li>- <b>A voice assistant gives you a strange or a scary answer</b></li> <li>- <b>A website asks for your name and age</b></li> </ul> </li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children to give top tips about staying safe in a world with AI tools.</li> <li>2. Ask the children if they can remember the hand gestures for Stop, Close, Tell.</li> <li>3. Remind them that Tell is the most important rule, as we all can make mistakes.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |



GOAL 7 – AGRICULTURAL FINANCIAL LITERACY

# Goal 7



## AGRICULTURAL FINANCIAL LITERACY

| Lesson 25                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                            | <b>Goal 7 – Agricultural financial literacy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Learning objective</b>              | We are learning to identify crop prices, count currency values up to 50 Rupees and calculate the total cost of buying or selling local farm products                                                                                                                                                                                                                                                                                                                                                                   |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 4: Quality Education</b><br><b>(Target 4.6: ...A substantial proportion of adults...achieve literacy and numeracy)</b><br>Learning to use computers to develop numeracy skills                                                                                                                                                                                                                                                |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can load the market or counting modules in E-Paath</li> <li>• I can match a local vegetable (e.g. potato, tomato) to its currency values (Rupees) on the screen</li> <li>• I can solve a simple addition problem to find the total cost of two farm items</li> </ul>                                                                                                                                                                                                        |
| <b>Introduction</b>                    | <b>Time: 15 minutes</b> <ol style="list-style-type: none"> <li>1. Set up a physical classroom market on the teacher's desk at the front of the classroom with a few physical vegetables and some price tags, i.e. 10 Rupees, 20 Rupees</li> <li>2. Call up a volunteer and role play a situation, i.e. "If I buy one onion and one potato, how much do I need to pay you?"</li> <li>3. Connect this to the learning in this lesson. Explain that we are going to practise our addition skills using E-Paath</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Accessing E-Paath (5 mins)</b></p> <ul style="list-style-type: none"> <li>• Instruct the children how to open E-Paath by clicking on the links on their desktops, or using Bookmarks in Chrome.</li> <li>• Guide students to navigate to the Grade 1 or 2 Science modules, “Let’s go to the Market”</li> </ul> <p><b>Step 2: Practising addition skills (15 mins)</b></p> <ul style="list-style-type: none"> <li>• Children work through the interactive E-Paath modules where they choose items to buy from the different shops and place them in a virtual trolley and pay the shopkeeper</li> </ul> <p><b>Step 3: Applying skills (15 mins)</b></p> <ul style="list-style-type: none"> <li>• Provide the children with worksheets with printed word problems. Alternatively, display problems on the screen for children to solve.</li> <li>• Children wrote their calculations and answers in a Libe Office Writer document.</li> </ul> |
| <b>Plenary</b>     | <p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• Ask the children a problem involving change, i.e. “If a customer hands you a 50 Rupee note for a box of tomatoes that costs 30 Rupees, how much change do you have to give?”</li> <li>• Remind children why it is important to count money carefully.</li> <li>• Run exit procedures. Close E-Paath and save documents before shutting the computers down.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |

GOAL 8 – AGRICULTURAL SCIENCE

# Goal 8



## AGRICULTURAL SCIENCE



| <b>Lesson 26</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>Goal</b>                            | <b>Goal 8 – Agricultural science (via E-Pustakalaya or Wikipedia)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Learning objective</b>              | We are learning to search digital libraries to find information about a specific crop disease and ways to treat it                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 2: Zero Hunger</b><br><b>(Target 2.3: Double agricultural productivity...through resources, inputs, knowledge, financial services)</b><br>Improve growth of crops by providing suitable plant care                                                                                                                                                                                                                                |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can use the browser search bars to locate specific agricultural terms</li> <li>• I can navigate to the agriculture section of E-Pustakalaya or use Wikipedia to find a disease</li> <li>• I can extract and write down two, practical, local solutions to protect a crop.</li> </ul>                                                                                                                                                                                            |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Present a realistic problem, i.e. “Imagine you look at your family’s tomato field and you notice dark rings on the flower leaves. How do you fix this?”</li> <li>2. Explain that instead of guessing or buying expensive chemicals, most farmers today use digital tools to diagnose the condition quickly.</li> <li>3. Introduce the problem: we are being agricultural detectives and finding out exactly what is attacking our crops and how to cure it naturally.</li> </ol> |
| <b>Main lesson</b>                     | <b>Time: 35 minutes</b><br><br><b>Step 1: Accessing E-Pustakalaya or Wikipedia (5 mins)</b> <ul style="list-style-type: none"> <li>• Show the children how to access these websites either through the browser or via the shortcuts on their desktops</li> </ul>                                                                                                                                                                                                                                                           |

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|                | <p><b>Step 2: Carrying our searches (10 mins)</b></p> <ul style="list-style-type: none"> <li>• Guide the students to the search bar. Show them how to search using keywords, such as “tomato diseases” rather than being too specific, such as “why are the tomatoes in my field dying”</li> <li>• Show students how to read the results, click on them and use the back button.</li> </ul> <p><b>Step 3: Recording information (15 mins)</b></p> <ul style="list-style-type: none"> <li>• When children locate the “Early blight” article, ask them to open Libre Office Writer document.</li> <li>• Ask them to type a diagnostic report with two headings: Disease name and Organic remedies.</li> <li>• Students fill in the sections underneath the headings with short sentences, i.e. “Pulling off the infected leaves and spacing plants out so that the sun dries them for next year”</li> </ul> <p><b>Step 4: Peer checking (5 mins)</b></p> <ul style="list-style-type: none"> <li>• Ask the students to read their neighbour’s remedies and decide if they are clear enough to follow.</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Bring the class together. Ask how technology can prevent crops from failing.</li> <li>2. Save documents and close down computers safely.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |



GOAL 9 – MODERN MARKETING AND BUSINESS

# Goal 9



## MODERN MARKETING AND BUSINESS

| <b>Lesson 27 – Using Paint to create an image</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                                       | <b>Goal 9 – Modern marketing and community agribusiness</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Learning objective</b>                         | We are learning to create a clear, colourful visual product sign using digital shapes and text to attract buyers to a local market stall                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>UN Sustainable Development Goal</b>            |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Combining digital tools to present ideas                                                                                                                                                                                                                                                                                                                                 |
| <b>Success Criteria</b>                           | <ul style="list-style-type: none"> <li>• I can create a blank document in Libre Office Writer</li> <li>• I can open a drawing application such as Paint</li> <li>• I can use different colours to highlight a product name and price</li> <li>• I can explain how a clean, bright design helps a business sell its crops</li> </ul>                                                                                                                                                                                                                                                             |
| <b>Introduction</b>                               | <b>Time: 15 minutes</b> <ol style="list-style-type: none"> <li>1. Hold up two pieces of paper. On one, show a messy, unclear design, saying “Corn, 20 Rupees”. On the other, show a colourful design, with a picture of corn and a bold tag saying “Corn, 20 Rupees”</li> <li>2. Ask the children if they were walking through a busy market with their families, which one would catch their eye first?</li> <li>3. Introduce the marketing concept, if we grow amazing vegetables, we need to show them off! We need to make bold, bright and clear signs to show off our produce.</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Opening Paint and Libe office Writer (5 mins)</b></p> <ol style="list-style-type: none"> <li>2. Show the children how to open Paint by double clicking on the desktop shortcut.</li> <li>3. Show the children how to open Libre Office Writer by double clicking on the desktop shortcut.<br/>Emphasise that both programs are now open.</li> </ol> <p><b>Step 2: Accessing E-Pustakalaya or Wikipedia (15 mins)</b></p> <ol style="list-style-type: none"> <li>1. Model using Paint to draw a picture of a locally grown vegetable.</li> <li>2. Children use Paint to draw their vegetables, using a variety of tools including the fill tools, undo tool and eraser tool.</li> </ol> <p><b>Step 3: Combining media (15 mins)</b></p> <ol style="list-style-type: none"> <li>1. Show the class how top right click and copy and paste this graphic into the Libre Office Writer document.</li> <li>2. Children copy and paste their drawings from Paint to the Libe Office document.</li> <li>3. Children add descriptive text, resize it, make sections bold and change the colour.</li> <li>4. Ensure children include necessary information on their work, including the price of their produce</li> </ol> |
| <b>Plenary</b>     | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Gather the attention of the class. Ask, what makes a successful advertisement for grown produce?</li> <li>2. Give children time to look at each other's work and comment on which ones they particularly like</li> <li>3. Instruct children to save their painted drawings and their documents before closing computes down safely.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| <b>Lesson 28 – Creating a slideshow</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                             | <b>Goal 9 – Modern marketing and business</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Learning objective</b>               | We are learning to create a new presentation about our local area (using PowerPoint, or Libre Office Impress)                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>UN Sustainable Development Goal</b>  |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Developing oracy and presentation skills                                                                                                                                                                                                                                                            |
| <b>Success Criteria</b>                 | <ul style="list-style-type: none"> <li>• I can explain that a presentation is sharing ideas or interesting things with an audience</li> <li>• I can open presentation software</li> <li>• I can create a new slideshow presentation</li> <li>• I can add titles to my slides</li> <li>• I can insert images onto slides using copy and paste</li> </ul>                                                                                                                                                                    |
| <b>Introduction</b>                     | <ol style="list-style-type: none"> <li>1. Ask children if they have ever seen someone give a presentation before (they may mention lessons at school!)</li> <li>2. If possible, show them an example of a presentation, using slideshow software. Ask them what makes a successful presentation (not too much text, clear titles, consistent colours and design)</li> <li>3. If possible, show some good and bad examples of a slideshow presentation, focusing on amount of text, clear titles and arrangement</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Project introduction (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Explain to the children that we are going to create a presentation to advertise our local area.</li> <li>• Write down some of the things we could include on the board (food, places, crops)</li> </ul> <p><b>Step 2: Opening PowerPoint or Libre Office Inspire (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show the students how to open PowerPoint or Libre Office Inspire. How then how to create the layout of a presentation by creating a title page and 5 or 6 slide titles.</li> <li>• Show children how to add a text box and type in information about some of the things for each slide.</li> </ul> <p><b>Step 3: Adding text to presentations (15 minutes)</b></p> <ul style="list-style-type: none"> <li>• Supervise children while they add text to the slides of their presentation.</li> <li>• Explain that next lesson, we will add images to our presentation.</li> </ul> |
| <b>Plenary</b>     | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children to look at each other's presentations so far.</li> <li>2. Have we included the necessary information about where we are from?</li> <li>3. Ensure that children name and save their work so that they can continue with their presentations in the next lesson.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| <b>Lesson 29 – Adding images to a presentation</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Goal</b>                                        | <b>Goal 9 – Modern marketing and business</b>                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Learning objective</b>                          | We are learning to add images to a presentation from a trusted source on the internet                                                                                                                                                                                                                                                                                                                                                  |
| <b>UN Sustainable Development Goal</b>             | <div>  <p><b>SDG 2: Zero Hunger</b><br/>(Target 2.3: Double agricultural productivity...through resources, inputs, knowledge, financial services)</p> <ul style="list-style-type: none"> <li>• Creating digital systems to evaluate the financial viability of a harvest</li> </ul> </div>                                                            |
| <b>Success Criteria</b>                            | <ul style="list-style-type: none"> <li>• I can navigate to either Pixabay or Wikipedia</li> <li>• I can search for an image using an appropriate search term</li> <li>• I can select non-sponsored images and copy them</li> <li>• I can paste an image into a slideshow</li> <li>• I can resize an image and add borders</li> </ul>                                                                                                   |
| <b>Introduction</b>                                | <ol style="list-style-type: none"> <li>1. Show children an example of a presentation and ask them what is different to this one and the presentations we started last week (this one has images in)</li> <li>2. Ask what kind of images we need (clear, good quality, suitable)</li> <li>3. Ask children where we could get images for our presentation from? (trusted websites where we have permission to use the images)</li> </ol> |
| <b>Main lesson</b>                                 | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Navigating to Pixabay.com, searching (10 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show the children how to navigate to Pixabay.com, or Wikipedia.</li> <li>• Discuss how we can search for an item for our presentation about our local area. Discuss the</li> </ul>                                                                                                     |

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|                | <p>merits of selecting key words, rather than searching in whole sentences</p> <ul style="list-style-type: none"> <li>• Model copying and pasting an image from Pixabay or Wikipedia and placing it into the presentation started last week.</li> </ul> <p><b>Step 2: Adding images (20 minutes)</b></p> <ul style="list-style-type: none"> <li>• Supervise children while they use either Pixabay or Wikipedia to search for images and add them to the presentations they started last lesson.</li> <li>• Encourage children to resize their images and add borders.</li> </ul> <p><b>Step 3: Adding captions (5 minutes)</b></p> <ul style="list-style-type: none"> <li>• Show an example of a picture with a caption.</li> <li>• Show children how they can add a textbox to add a caption to their pictures.</li> </ul> |
| <b>Plenary</b> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children if anyone would like to give their presentation to the rest of the class.</li> <li>2. Applaud presenters for sharing their work.</li> <li>3. Ensure that children save their work and log off their computers.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| <b>Lesson 30 – Using the Snipping Tool</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>Goal</b>                                | <b>Goal 9 – Modern marketing and business</b>                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Learning objective</b>                  | We are learning to use the Snipping Tool to add images to a presentation from other programs                                                                                                                                                                                                                                                                                                                                     |
| <b>UN Sustainable Development Goal</b>     |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Combining digital tools to present ideas                                                                                                                                                                  |
| <b>Success Criteria</b>                    | <ul style="list-style-type: none"> <li>• I can open my work from other Computing lessons this year</li> <li>• I can open the Snipping Tool by using the search bar at the bottom of the screen</li> <li>• I can draw a snip around a section of work, retrying if needed</li> <li>• I can paste this into a slideshow</li> </ul>                                                                                                 |
| <b>Introduction</b>                        | <ol style="list-style-type: none"> <li>1. Ask the children what they are proud of this year in Computing. Remind them of some of the topics they have studied.</li> <li>2. Ask children how we could tell other people about what we have achieved in Computing (we could use a Slideshow presentation)</li> </ol>                                                                                                               |
| <b>Main lesson</b>                         | <b>Time: 35 minutes</b><br><br><b>Step 1: Using the Snipping Tool (5 minutes)</b> <ul style="list-style-type: none"> <li>• Show students how to open a piece of work from another lesson.</li> <li>• Show them how to open the Snipping Tool by using the search bar at the bottom of the screen.</li> <li>• Model drawing a box around a piece of work using the Snipping Tool. Model pasting this into a Slideshow.</li> </ul> |



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|                       | <p><b>Step 2: Creating a new presentation about Computing work (30 minutes)</b></p> <ul style="list-style-type: none"> <li>• Guide children through setting up a new presentation using either PowerPoint or Libre Office Inspire.</li> <li>• Show children an example presentation made about accomplishments this year in Computing. Share a success criteria, including <ul style="list-style-type: none"> <li>- A title page</li> <li>- Clear headings</li> <li>- Images of work (using the Snipping Tool)</li> <li>- Captions under images</li> <li>- Other images taken from Pixabay or Wikipedia</li> <li>- 5 or 6 slides that are clearly presented</li> </ul> </li> </ul> |
| <p><b>Plenary</b></p> | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"> <li>1. Ask the children to look at each other's presentations so far and give two stars and a wish as constructive feedback</li> <li>2. Ask children to decide on one thing that they want to add for next week.</li> <li>3. Ensure that children save their work and log off their computers.</li> </ol>                                                                                                                                                                                                                                                                                                        |

| <b>Lesson 31 – Adding animations</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Goal</b>                            | <b>Goal 9 – Modern marketing and business</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Learning objective</b>              | We are learning to select and add animations to a presentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>UN Sustainable Development Goal</b> |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Combining digital tools to present ideas                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Success Criteria</b>                | <ul style="list-style-type: none"> <li>• I can open my presentation from last week</li> <li>• I can find the animation panel</li> <li>• I can view the different animations and select an appropriate one</li> <li>• I can add slide transition effects</li> <li>• I can delete animations if they do not add to the overall quality of the presentation</li> </ul>                                                                                                                                                                                                                                                                                          |
| <b>Introduction</b>                    | <ol style="list-style-type: none"> <li>1. Ask the children what the overall goal of our presentation is (to show people what we did this year in an engaging way)</li> <li>2. (If possible) show an example of a presentation that contains animations. What is different about this presentation? How do the animations and slide transitions add to the overall engagement of the presentation?</li> <li>3. (If possible) Show the children an example of a presentation with too many slide transitions or animations. Why is this presentation not as effective? How could we improve it? (use less effects, or use the same type of effects)</li> </ol> |

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| <b>Main lesson</b> | <p><b>Time: 35 minutes</b></p> <p><b>Step 1: Adding animations and transitions (10 minutes)</b></p> <ul style="list-style-type: none"><li>• Show students how to add animations and transitions in either PowerPoint or Libre Office Inspire.</li><li>• Model viewing different animations and transitions and selecting the best ones.</li><li>• Model deleting or changing animations when the slideshow is played.</li></ul> <p><b>Step 2: Adding animations and transitions (25 minutes)</b></p> <ul style="list-style-type: none"><li>• Guide children through opening their presentations for last week and adding animations to their images, text and titles.</li><li>• Guide children to select transitions between their slides.</li><li>• Encourage children to keep on testing their presentations and changing things until they are most effective</li></ul> |
| <b>Plenary</b>     | <p><b>Time: 10 minutes</b></p> <ol style="list-style-type: none"><li>1. Congratulate children on their work this lesson and ask them whether they think the animations and transitions improved their presentations.</li><li>2. Ensure that all children save their work and log off their computers.</li></ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| <b>Lesson 32 – Giving presentations</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                             | <b>Goal 9 – Modern marketing and business</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Learning objective</b>               | We are presenting our work and achievements from Computing this year                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>UN Sustainable Development Goal</b>  |  <b>SDG 4: Quality Education</b><br><b>(Target 4.4: ...Substantially increase the number of youth who have relevant skills...)</b><br>Developing oracy and presentation skills                                                                                                                                                                                                                            |
| <b>Success Criteria</b>                 | <ul style="list-style-type: none"> <li>• I can open my presentation</li> <li>• I can rehearse giving my presentation</li> <li>• I can give a slideshow presentation without reading from the screen</li> <li>• I can change slides and click through animations using a mouse</li> </ul>                                                                                                                                                                                                   |
| <b>Introduction</b>                     | <ol style="list-style-type: none"> <li>1. Congratulate children on completing a successful year in Computing.</li> <li>2. Explain that this lesson is a chance for them to show their class (and wider school community) some of the things they are proud of.</li> <li>3. If possible, set up this lesson as a celebration, with decorations and snacks.</li> <li>4. Remind children of some of the things that make a successful presentation (refer to the success criteria)</li> </ol> |

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| <b>Main lesson</b> | <b>Time: 35 minutes</b><br><br><b>Step 1: Rehearsal (10 minutes)</b> <ul style="list-style-type: none"><li>• Remind the children of the success criteria for a good presentation</li><li>• Gove children time to practise their presentations in pairs, giving each other constructive feedback.</li></ul><br><b>Step 2: Presentations (5 minutes)</b> <ul style="list-style-type: none"><li>• Children give their presentations to the class, explaining the things they have achieved and learned in Computing.</li></ul> |
| <b>Plenary</b>     | <b>Time: 10 minutes</b> <ul style="list-style-type: none"><li>- Celebrate the children's accomplishments in Computing this year</li><li>- Remind them to be safe in how they use technology during the holidays!</li></ul>                                                                                                                                                                                                                                                                                                  |

## Teaching objectives covered in this unit

| <b>Teaching objectives covered in this unit (highlighted)</b>                                   |                             |
|-------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ICT Skills</b>                                                                               | <b>Taught in lesson(s):</b> |
| 1. Turn a computer on and off safely. Log in and open apps and own work.                        | 1                           |
| 2. Use a mouse to left and right click and draw boxes to select items                           | 1, 2                        |
| 3. Use design tools to change shape and colour. Erase mistakes, use 'undo'                      | 2                           |
| 4. Type full sentences, using 'shift' to capitalise.                                            | 2, 3                        |
| 5. Copy and paste with the mouse and keyboard shortcuts.                                        | 5                           |
| 6. Open the internet, access bookmarks and type in a URL.                                       | 5                           |
| 7. Create a word document with a title, appropriate layout and style.                           | 6, 27                       |
| 8. Create a PowerPoint presentation, adding pictures and a clear layout.                        | 28, 29, 31                  |
| <b>Digital literacy and E-safety</b>                                                            | <b>Taught in lesson(s):</b> |
| 1. Describe ICT rules in the school and at home                                                 | 1, 2, 19                    |
| 2. Gives examples of being kind and unkind online, talk about why this matters.                 | 21                          |
| 3. Describe how technology can be used as part of a balanced lifestyle.                         | 19                          |
| 4. Give examples of personal information and say who we would not share this with.              | 20                          |
| 5. Explain what to do if inappropriate content is viewed online, or if your feel uncomfortable. | 20, 21                      |
| 6. Name different ways of reporting problems or contact online.                                 | 20, 22                      |
| 7. Perform an internet search and select reliable results.                                      | 23                          |
| 8. Gather information from websites provided by the teacher.                                    | 4, 5, 7, 26                 |
| 8. Gives real-world examples of AI and explain AI as a machine algorithm.                       | 24                          |
| <b>Programming and computational thinking</b>                                                   | <b>Taught in lesson(s):</b> |
| 1. Describe events that start programs (clicking on the green flag, sensors, touch).            | 9, 12, 13, 14               |
| 2. Place commands in the correct sequence, explain the effects of changing a sequence.          | 9, 12                       |
| 3. Program precise movement, using distance, degrees and x and y .                              | 9, 12                       |
| 4. Program looks to change over time creating smooth animations.                                | 9, 11                       |
| 5. Notice commands and sequences that repeat, optimise code using loops.                        | 9, 16, 17                   |
| 6. Recognise and use conditional language in an 'if/else' structure                             | 9, 10, 15, 16               |
| 7. Recognise and use variables in a program, i.e. 'score'. Set and change variables.            | 10                          |
| 8. Use computational thinking to approach problems logically, including debugging.              | 9, 16, 17                   |

## REFERENCES AND ACKNOWLEDGEMENTS

*This scheme of work references third-party interactive educational software, applications, platforms and media resources:*

### **Productivity, Graphics design and desktop software**

- **LibreOffice** (The Document Foundation) – Free and open-source office suite used under the Mozilla Public Licence v2.0 (MPLv2).
- **Microsoft Word, PowerPoint, Excel** (Microsoft Corporation) – Referenced for word processing, presentation creation and spreadsheet creation instruction

### **Coding, AI and Physical Computing**

- **Code.org (AI for Oceans)** – Used under Code.org’s free educational terms
- **Microsoft MakeCode** (Microsoft Corporation) – Used under Microsoft’s free educational terms  
Microsoft makecode screenshots used with permission from Microsoft Corporation. Interface images © Microsoft. Microsoft and makecode are trademarks of the Microsoft group of companies.
- **Micro:bit Python Editor** (Microbit Educational Foundation) – Used for educational coding under the Micro:bit Educational Foundation terms
- BBC Microbit Python Editor screenshots used courtesy of the Micro:bit Educational Foundation (microbit.org). Micropython is licenced under the MIT licence. ‘Python’ is a registered trademark of the Python Software foundation.
- **Mu** (Code with Mu) – Free, open-source Python IDE used under the GNU General Public Licence v3 (GPLv3).
- **Scratch** (MIT Media lab) – Used under MIT’s free educational terms and Creative Commons Attribution-ShareAlike 2.0 licence

Scratch is a project of the Scratch Foundation. It is available for free at <http://scratch.mit.edu>. Interface screenshots used under Creative Commons Attribution-ShareAlike terms.

## **Interactive Geography, Learning platforms, Research and Practise tools**

- **E-Paath and E-Pustakalaya** (OLE Nepal) – Licenced under CC BY-NC-SA 3.0
- **Google Earth** (Google LLC) – mapping and spatial exploration tool used under Google Earth’s standard permissions for educational reference
- **LearnEnglish Kids** (British Council) – Used for educational classroom reference
- **Typing.com** (Teaching.com) – used for educational touch-typing instruction and practice

## **Information and Media Resources**

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- **United Nations Sustainable Development Goals** – (United Nations) - <https://www.un.org/sustainabledevelopment> - Used according to the guidelines on the United Nations website, for non-commercial, educational purposes. The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States.
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