Beam County Primary School: Long-term Component Map
Subject: Computing
EYFS (Nursery)

Domain/Unit	Computing through continuous provision	Computing Systems and Networks 1: Using an Ipad	Programming 1: All about instructions	Computing Systems and Networks 2: Exploring hardware	Programming 2: Programming a remote control vehicle	Data Handling: Introduction to data
Composite Goal(s)	Set up continuous provision in your classroom.	To learn how to use the ipad to explore features and apps	To learn to receive and give instructions on brushing their teeth	To learn how to operate a camera.	To learn about directions

To experiment with programming a remote control vehicle | To sort and categorise data.

To explore pictograms. |
| Components (25 weeks) | Use this period of time to set up an environment with resources, that are readily available, for children to explore and engage with independently throughout the day. | 1: To learn what an ipad is and the features it has
2: To learn how to switch on/off an ipad
3: To explore operating a simple app | 1: To follow instructions.
2: To sequence the steps
3: To give instructions to brush teeth. | 1: To explore what a camera is used for and it's features.
2: To learn how to operate a camera and/or iPad
3: To use it to take photographs | 1: To explore the meaning of directional arrow.
2: To follow a simple sequence of directions.
2: To experiment with programming a remote control car
3: To experiment with programming a remote control car and to follow a set of simple instructions to complete a route. | 1: To understand how to sort objects.
2: To explain how items have been sorted.
3: To compile a pictogram
4: To explore how to read data in a pictogram. |

Domain/Unit	Computing through continuous provision	Computing Systems and Networks 1: Using a computer	Programming 1: All about instructions	Computing Systems and Networks 2: Exploring hardware	Programming 2: Programming Bee-Bots	Data Handling: Introduction to data
Composite Goal(s)	Set up continuous provision in your classroom.	To learn about the main parts of a computer and how to use the keyboard and mouse. To learn how to log in and out.	To learn to receive and give instructions and understand the importance of precise instructions.	To tinker and explore different computer hardware. To learn how to operate a camera.	To learn about directions To experiment with programming a Bee-bot and tinkering with hardware.	To sort and categorise data. To explore branching databases and pictograms.
Components (25 weeks)	Use this period of time to set up an environment with resources, that are readily available, for children to explore and engage with independently throughout the day.	1: To learn what a keyboard is and how to locate relevant keys. 2: To learn how to log in and out of a computer. 3: To learn what a mouse is and develop control when using a mouse. 4: To develop basic mouse skills, including moving and clicking and using an online paint tool. 5: To further develop mouse skills, to include the ability to click and drag.	1: To follow instructions. 2: To give simple instructions. 3: To give instructions to dress up. 4: To debug instructions whilst washing hands. 5: To make predictions.	1: To learn how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary. 2: To recognise that a range of technology is used in places such as homes and schools. 3: To learn how to operate a camera and/or iPad and use it to take photographs (pt. 1). 4: To learn how to operate a camera and/or iPad and use it to take photographs (pt. 2). 5: To learn how to operate a camera and/or iPad and use it to take photographs (pt. 3).	1: To understand the meaning of directional arrow. To follow a simple sequence of instructions. 2: To experiment with programming a Bee-bot. 3: To experiment with programming a Bee-bot and to learn how to give simple commands. 4: To learn that an algorithm is a set of instructions to carry out a task, in a specific order. 5: To learn to debug instructions, with the help of an adult, when things go wrong.	1: To understand how to sort and categorise objects. 2: To explain how items have been sorted and categorised. 3: To understand how to sort and categorise objects. To explain how items have been sorted and categorised. 4: To explore and understand the concept of branch databases 5: To understand how to read and represent data in a pictogram.

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 1

Domain/Unit	Computing Systems and Networks 1: Improving mouse skills	Online Safety: Online responsibility	Skills showcase: Rocket to the moon	Creating Media: Digital Imagery	Programming 1: Algorithms unplugged	Programming 2: Bee-bots	Data Handling: Introduction to data
Composite Goal(s)	To know how to log in and navigate around a computer, developing mouse skills. To control a cursor to create a self-portrait.	To know how to stay safe and responsible online whilst managing feelings and emotions. To explore the idea of a 'digital footprint'.	To develop keyboard and mouse skills through designing and testing rockets. To create a digital list of materials needed.	To use creativity and imagination to plan a miniature adventure story. To use photo editing skills to add images to a photo collage showcase.	To relate algorithms, decomposition and debugging to familiar contexts by using instructions. To learn why instructions need to very specific.	To program a Bee-bot to reach a destination. To create and correct any mistakes made in their programming.	To know what data is and the different ways that it can be represented. To develop an understanding of how data can be used, gathered and recorded.
Components (32 weeks)	1: To log in to a computer and access a web. 2: To develop mouse skills. 3: To use mouse skills to draw and edit shapes. 4: To draw a scene from a story using digital tools. 5: Self-portrait.	1: To recognise what the internet is and how to use it safely. 2: To identify how people's feelings and emotions can be affected by online content. 3: To recognise how to treat others, both online and in person. 4: To recognise the importance of being careful when posting and sharing online. 5: To discuss ways to balance time spent online and offline.	1: To recognise that digital content can be represented in many forms. 2: To design a rocket using a graphics editing programme. 3: To sequence a set of instructions. 4: To build a rocket.	1: To understand and create a sequence of pictures. 2: To take clear photos and edit them.. 3: To search for and import images. 4: To create a photo collage.	1: To understand what an algorithm is. 2: To follow instructions precisely to carry out an action. 3: To understand that computers and devices around us use inputs and outputs. 4: To understand and be able to explain what decomposition is. 5: To know how to debug an algorithm.	1: To explore a new device. 2: To create a demonstration video. 3: To plan and follow a precise set of instructions. 4: To program a device. 5: To create a program that tells a story.	1: To show data in different ways. 2: To use technology to represent data. 3: To collect and record data. 4: To sort data into a branching database.

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 2

Domain/Unit	Computing Systems and Networks 1: What is a computer?	Online Safety: Sharing information online	Computing Systems and Networks 2: Word processing.	Creating Media: Stop motion	Programming 1: Algorithms and debugging	Programming 2: ScratchJr	Data Handling: International Space Station
Composite Goal(s)	To name some compute peripherals and their function. To explain the role of computers in the world around them and that buttons cause an effect.	To explain what is meant by online information. To recognise what information is safe to be shared online and understand that they have the right to deny their permission to information about them being shared online.	To use a range of keys correctly and make simple alterations to text using buttons on a word processor.	To create a flip book animation with stop motion animations.	To write clear and precise algorithms that solve problems and use loops, to make their code more efficient.	To explain what the blocks in ScratchJr do and to recognise a loop in coding and why it is useful. To use code to create an animation of an animal moving.	To describe and explain how astronauts' survival needs are met aboard the ISS. To create an algorithm that addresses all plants' needs.
Components (32 weeks)	1. To recognise the parts of a computer. 2. To recognise how technology is controlled. 3. To recognise technology. 4. To create a design for an invention. 5. To understand the role of computers.	1. To decide which information is safe to share online. 2. To practise keeping information safe and private online. 3. To recognise when to deny permission online. 4. To recognise that not everything online is true.	1: To begin to learn to touch type. 2: To understand how to use a word processor. 3: To understand how to add images to a text document. 4: To create a poetry book using sources from the internet.	1: To understand what animation is. 2: To create a stop motion animation. 3: To plan my stop motion animation. 4: To create a stop motion animation.	1: To decompose a game to predict the algorithms that are used. 2: To understand that computers can use algorithms to make predictions (machine learning). 3: To plan algorithms that will solve problems. 4: To understand what abstraction is. 5: To understand what debugging is.	1: To explore a new application. 2: To create an animation. 3: To use characters as buttons. 4: To follow an algorithm. 5: To plan and use code to create an algorithm.	1.To locate features on an interactive map. 2.To create a digital drawing. 3.To input data in a spreadsheet. 4: To create algorithms for healthy plant growth. 5: To retrieve data from a spreadsheet.

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 3

Domain/Unit	Computing Systems and Networks 1: **Networks**	Online Safety: **Fake news and social media platforms.**	Computing Systems and Networks 2: **Emailing**	Creating Media: **Video trailers: Option 2**	Programming 1: **Scratch**	Computing Systems and Networks 3: **Journey inside a computer**	Data Handling: **Comparison cards databases**
Composite Goal(s)	To learn how devices communicate and share information.	To differentiate between fact, opinion and belief online. To understand what social media platforms are used for and why they are age-restricted.	To learn how to send, edit and attach files to emails. To think about the contents of what is sent in an email.	To create a storyboard for a book trailer. To learn how to create and edit a trailer.	To apply ScratchJr knowledge to Scratch. To use a systematic approach to finding bugs whilst understanding decomposition and algorithms.	To recognise the different parts of a computer and compare different types of a computer.	To learn about records, fields and data to explore the concepts of sorting and filtering data.
Components (32 weeks)	1. To recognise what a network is. 2. To demonstrate how information moves around a network. 3. To demonstrate how a website works. 4. To explore the role of a router. 5. To identify the role of packet data.	1: To understand how the internet can be used to share beliefs, opinions and facts.. 2: To explain what should be done before sharing information online. 3: To identify the effects that the internet can have on people's feelings. 4: To understand the ways personal information can be shared on the internet. 5: To understand the rules for social media platforms.	1: To understand how we communicate with technology. 2: To understand what emails are and how to send one. 3: To know how to create an email with an attachment. 4: To understand the importance of being kind online. 5: To recognise when an email is not genuine.	1: To plan a book trailer. 2: To take photos or videos that tell a story. 3: To edit a video. 4: To add text and transitions to a video.	1: To explore a programming application. 2: To use repetition (a loop) in a program. 3: To program an animation. 4: To program a story..	1. To recognise basic inputs and outputs.. 2. To identify the components inside a laptop. 3. To understand the purpose of computer parts. 4. To understand the purpose of computer parts.	1. To understand the terminology around databases. 2. To compare paper and computerised databases. 3. To sort, filter and interpret data. 4. To represent data in different ways. 5. To sort data for a purpose.

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 4

Domain/Unit	Computing Systems and Networks 1: Collaborative Learning: Option 1	Online Safety: Navigating the internet	Programming 1: Further coding with Scratch	Creating Media: Website design: Option 1	Programming 2: Computational thinking	Skills showcase: HTML	Data Handling: Investigating weather
Composite Goal(s)	To work collaboratively in a responsible and considerate way whilst looking at a range of collaborative tools.	To learn how to navigate the internet in an informed, safe and respectful way.	To learn the basics of programming in Scratch. To create a simple script, use decomposition and understand variables.	To learn how web pages and websites are created. To develop collaborative working skills.	To develop the four areas of computational thinking through a range of unplugged activities.	To edit the HTML of a web page to change the layout of a website, text and images.	To learn about records, fields and data to explore the concepts of sorting and filtering data.
Components (32 weeks)	1: To understand that software can be used to work online collaboratively. 2: To understand how to contribute to someone else's work effectively. 3: To understand how to create effective presentations. 4: To understand how to create and share Google Forms. 5: To understand how to use a shared spreadsheet to explore data.	1: To describe how to search for information within a wide group of technologies. 2: To describe some of the methods used to encourage people to buy things online. 3: To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. 4: To explain that technology can be designed to act like or impersonate living things. 5: To explain how technology can be a distraction.	1: To recall the key features of Scratch. 2: To understand how a Scratch game works by using decomposition to identify key features. 3: To understand what a variable is and how to make one. 4: To understand how to make a variable in Scratch.	1: To explore the features of Google Sites. 2: To plan content for a collaborative webpage. 3: To create a webpage as part of a collaborative class website. 4: To plan and create a website.	1. To understand that computational thinking is made up of four key strands. 2. To understand what decomposition is and how to apply it to solve problems. 3. To understand what pattern recognition and abstraction mean. 4. To understand how to create an algorithm and what it can be used for.	1: To recognise the role of HTML in a web page. 2: To change HTML code for a specific purpose. 3: To recognise the basics of HTML. 4: To alter the HTML on a live web page. 5: To alter an image on a web page.	1. To log data taken from online sources in a spreadsheet. 2. To design a weather station. 3. To design an automated machine to respond to sensor data. *4.* To understand how weather forecasts are made. *5.* To use tablets or digital cameras to present a weather forecast.

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 5

Domain/Unit	Computing Systems and Networks: **Search engines**	Online Safety: **Online communication**	Programming 1: **Music: Option 2**	Creating Media: **Stop motion animation: Option 1**	Programming 2: **Micro:bit**	Data Handling: **Mars Rover 1**	Skills showcase: **Mars Rover 2**
Composite Goal(s)	To improve research skills and finding accurate information.	To learn about potential online dangers and safety.	To apply programming skills to create sounds and melodies.	To explore storyboard ideas, taking photographs and editing to create a video animation.	To predict what happens when certain blocks are connected. To create a program by breaking into smaller parts.	To identify some of the types of data that the Mars Rover collects and explaining how the Mars Rover transmits data.	To learn about pixels and binary. To understand the transfer of image data.
Components (32 weeks)	1: To understand what a search engine is and how to use it. 2: To be aware that not everything online is true. 3: To search effectively. 4: To create an informative poster. 5: To understand how search engines work.	1: To understand how apps can access personal information and how to alter the permissions. 2: To be aware of the positive and negative aspects of online communication. 3: To understand how online information can be used to form judgements. 4: To discover ways to overcome bullying. 5: To understand how technology can affect health and wellbeing.	1: To tinker with Scratch music elements. 2: To create a program that plays themed music. 3: To plan a soundtrack program. 4 : To program a soundtrack.	1: To understand what animation is. 2: To understand what stop motion animation is. 3: To plan a stop motion video. 4: To create a stop motion animation.	1. To tinker with a new piece of software. 2. To program an animation. 3. To recognise coding structures. 4. To create a program for a specific task. 5. **To create a program.**	1: To identify how and why data is collected from space. 2: To read and calculate numbers using binary code. 3: To identify the computer architecture of the Mars Rovers. 4: To use simple operations to calculate bit patterns. 5: To represent binary as text.	1: To recognise how bit patterns represent images as pixels. 2: To explain how the data for digital images can be compressed. 3: To identify and explain the fetch, decode and execute cycle. 4: To learn the basics of using Tinkercad through tutorials. .

Beam County Primary School: Long-term Component Map
Subject: Computing
Year 6

Domain/Unit	Online Safety: Fake news and social media platforms.	Computing Systems and Networks 1: Bletchley Park	Programming: Intro to Python	Data Handling 1: Big data 1	Computing systems and networks 2: Exploring AI	Data Handling 2: Big data 2
Composite Goal(s)	To learn how to navigate the internet in an informed, safe and respectful way.	To discover the history of Bletchley Park. To learn about code breaking and password hacking.	To learn about the fundamentals of the programming language of Python. To understand the use of loops.	To understand about the use of barcodes, QR codes, infrared and RFID technologies. To create and scan QR codes.	To explore what AI is and how it generates text, images and code. To learn about creating and refining prompts to improve AI responses and ethical implications.	To understand data usage through the use of mobile data vs WiFi, the internet of Things (IOT) and big data.
Components (32 weeks)	1:To describe online issues that give us negative feelings and know how to get help. 2: To explore the impact and consequences of sharing online. 3: To know how to create a positive online reputation. 4: To describe how to capture bullying content as evidence. 5: To manage personal passwords effectively.	1: To understand there are many different types of secret codes. 2: To understand the importance of having a secure password. 3: To research historical figures that contributed to technological advances in computing. 4:To research and present information about historical figures in computing.	1: To tinker with a new piece of software. 2: To understand nested loops. 3: To understand basic Python commands. 4: To use loops when programming. 5: To understand the use of random numbers.	1. To identify how barcodes and QR codes work. 2. To know how infrared waves transmit data. 3. To recognise how RFID is used. 4. To input and analyse real-world data.	1: To explore the basics of AI. 2: To recognise how AI processes and responds to text prompts. 3: To recognise how AI can be used to explore and generate images. 4: To use AI to generate HTML code. 5: To debate the ethical implications of AI	1: To explain how data can be safely transferred. 2: To investigate the data usage of different online activities. 3: To identify how data collection can improve city life. 4: To design a system for turning a school into a smart school.