Intent.

Computing mission statement

At Kingfisher Federation, we embrace the national vision for Computing and appreciate that, to achieve this, pupils must have access to a curriculum which is 'balanced and broadly based'. Our aim is to produce learners who are confident, perceptive and effective users of technology and who also have a good understanding of computers and how computer systems work, and how they are designed and programmed.

Implementation

Curriculum

Each term we plan full coverage of the curriculum using the National Curriculum. Units are structured across the term as roughly one lesson per week, however class teachers have flexibility to 'block' groups of lessons if appropriate.

Aims and Achievements:

At Kingfisher Federation we believe in supporting all children using technology with purpose as well as enjoyment. We aim to build on the minimum requirements set out in the National Curriculum as fully as possible. We aim to help all children to achieve the highest possible standards of achievements.
Our aim is to help all children to develop the underlying skills and capability which is essential to developing computer skills in problem solving, perseverance, learning from mistakes and applying their new skills elsewhere.

Additional Activities

Using technology, the school disseminates information to parents relating to e-safety where appropriate in the form of information posters using CEOP materials, the school website via School Facebook Page or the School Website.
Opportunities to develop and extend Computing capability are provided in other curriculum areas and technology is used to support most other subject areas.

Spirituality in Computing

Children are given a variety of exciting opportunities to express themselves through coding & programming, creating media and collecting data. They develop ideas and present these in a range of formats using information technology. Children are encouraged to be responsible and safe while using the internet, being mindful of themselves and others.

Computing Year A

Year 1/2

School	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Earsham	Year 1 Unit 1	Year 2 Unit 1	Year 1 Unit 3	Year 1 Unit 6	Year 2 Unit 3	Year 2 Unit 6
Ditchingham	Year 1 Unit 3	Year 2 Unit 3	Year 1 Unit 1	Year 2 Unit 1	Year 1 Unit 6	Year 2 Unit 6
Gillingham	Year 1 Unit 2	Year 1 Unit 5	Year 1 Unit 4	Year 2 Unit 4	Year 2 Unit 2	Year 2 Unit 5

Computing Year B

Year 1/2

School	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Earsham	Year 1 Unit 2	Year 1 Unit 5	Year 1 Unit 4	Year 2 Unit 4	Year 2 Unit 2	Year 2 Unit 5
Ditchingham	Year 1 Unit 2	Year 1 Unit 5	Year 1 Unit 4	Year 2 Unit 4	Year 2 Unit 2	Year 2 Unit 5
Gillingham	Year 1 Unit 1	Year 2 Unit 1	Year 1 Unit 3	Year 1 Unit 6	Year 2 Unit 3	Year 2 Unit 6

Computing Year A

Year 3/4

School	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Earsham	Year 3 Unit 1	Year 4 Unit 1	Year 3 Unit 3	Year 3 Unit 6	Year 4 Unit 3	Year 4 Unit 6
Ditchingham	Year 3 Unit 2	Year 4 Unit 2 	Year 3 Unit 4	Year 4 Unit 4 	Year 3 Unit 5	Year 4 Unit 5
Gillingham	Year 3 Unit 5	Year 4 Unit 5	Year 3 Unit 2	Year 4 Unit 2 	Year 3 Unit 4	Year 4 Unit 4 

Computing Year B

Year 3/4

School	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Earsham	Year 3 Unit 2	Year 4 Unit 2 	Year 3 Unit 4	Year 4 Unit 4 	Year 3 Unit 5	Year 4 Unit 5
Ditchingham	Year 3 Unit 1	Year 4 Unit 1	Year 3 Unit 3	Year 3 Unit 6	Year 4 Unit 3	Year 4 Unit 6
Gillingham	Year 3 Unit 1	Year 4 Unit 1	Year 3 Unit 3	Year 3 Unit 6	Year 4 Unit 3	Year 4 Unit 6

Computing Year A

Year 5/6

School	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Earsham	Year 5 Unit 1	Year 6 Unit 1	Year 5 Unit 3 	Year 5 Unit 6	Year 6 Unit 3	Year 6 Unit 6 
Ditchingham	Year 5 Unit 3 	Year 5 Unit 6	Year 6 Unit 3	Year 6 Unit 6 	Year 5 Unit 1	Year 6 Unit 1
Gillingham	Year 5 Unit 2	Year 6 Unit 2	Year 5 Unit 4	Year 6 Unit 4	Year 5 Unit 5	Year 6 Unit 5

Computing Year B

Year 5/6

School	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**

Earsham	Year 5 Unit 2	Year 6 Unit 2	Year 5 Unit 4	Year 6 Unit 4	Year 5 Unit 5	Year 6 Unit 5
Ditchingham	Year 5 Unit 2	Year 6 Unit 2	Year 5 Unit 4	Year 6 Unit 4	Year 5 Unit 5	Year 6 Unit 5
Gillingham	Year 5 Unit 1	Year 6 Unit 1	Year 5 Unit 3 	Year 5 Unit 6	Year 6 Unit 3	Year 6 Unit 6 



		What do the children need to know and be able to do?			
Unit	Kingfisher Ribbons	Skills and Suggested Activities	Vocabulary	Knowledge *and observations*	Assessment

Technology around us (KS1)	**Computing systems and networks**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To choose a piece of technology to do a job** **To recognise that some technology can be used in different ways** **To identify the main parts of a computer** **To use a mouse in different ways** **To use a keyboard to type** **To use the keyboard to edit text** **To show how to use technology safely**	**technology, computer, mouse, trackpad, keyboard, screen, double-click, typing**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To explain that technology is something that can help us** **To identify examples of technology** **To explain how examples of technology help us** **To recognise that a computer is an example of technology** **To recognise that choices are made when using technology** **To explain why rules are needed when using technology**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Digital Painting (KS1)	**Creating Media**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To create a picture using freehand tools** **To use shape and line tools when precision is needed** **To use a range of paint colours** **To use the fill tool to colour an enclosed area** **To use the undo button to correct a mistake** **To combine a range of tools to create a piece of artwork**	**paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To explain what different freehand tools do** **To recognise computers can be used to create art** **To recognise a tool can be adjusted to suit my need** **To decide when it's appropriate to use each tool** **To consider impact of choices made** **To compare painting using a computer with painting using brushes**	***EYFS*** Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Moving a Robot (KS1)	**Programming A**	**To enact a given word** **To predict the outcome of a command on a device** **To list which commands can be used on a given device** **To run a command on a floor robot** **To choose a command for a given purpose** **To choose a series of words that can be enacted as a program** **To choose a series of commands that can be run as a program** **To build a sequence of commands in steps** **To combine commands in a program** **To run a program on a device**	**Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.**	**To recall words that can be enacted** **To explain what a given command does** **To match a command to an outcome** **To understand that a program is a set of commands that a computer can run** **To recall that a series of instructions can be issued before they are enacted**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Grouping Data (KS1)	**Data and Information**	EYFS • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. To identify some attributes of an object To collect simple data To show that collected data can be counted To describe the properties of an object To choose an attribute to group objects by To group objects to answer questions To explain that objects can be grouped by similarities (attribute) To describe a group of objects (based on commonality)	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same	EYFS • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them To identify that objects can be counted To recognise that information can be presented To recognise that information can be presented in different ways	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Digital Writing (KS1)	**Creating Media**	EYFS • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. To use letter, number, and Space keys to enter text into a computer To use punctuation and special characters To select text To change the appearance of text on a computer To choose options to achieve a desired effect To position the text cursor in a chosen location To use the Backspace key to remove text To use Undo	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.	EYFS • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them To recognise that a keyboard is used to enter text into a computer To recognise that the Shift key changes the output of a key To recognise that text can be changed To recognise that text can be edited To recognise that the appearance of text can be changed To consider the impact of choices made	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Programming Animation (KS1)	**Programming B**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To choose a series of words that can be enacted as a program** **To choose a series of commands that can be run as a program** **To run a program on a device**	**ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To enact a given word** **To recall words that can be enacted** **To predict the outcome of a command on a device** **To list that commands can be used on a given device** **To recognise how to run a command (press a button)** **To choose a command for a given purpose** **To understand that a program is a set of commands a computer can run** **To recall that a series of instructions can be issued before they are enacted** **To build a sequence of commands in steps** **To combine commands in a program**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

IT Around Us (KS1)	**Computing Systems and Networks**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To describe some uses of computers** **To identify information technology in school** **To identify information technology beyond school** **To show how to use information technology safely**	**Information technology (IT), computer, barcode, scanner/scan**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To recognise different types of computers used in school** **To identify that a computer is a part of information technology** **To recognise the features of information technology** **To say how rules for using information technology can help us** **To talk about uses of information technology** **To explain how information technology benefits us** **To recognise that choices are made when using information technology**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Digital Photograph (KS1)	**Creating Media**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To capture a digital image** **To take photographs in both landscape and portrait format** **To view photographs on a digital device** **To decide which photographs to keep** **To hold the camera still to take a clear photograph** **To use zoom to change the composition of a photograph** **To consider lighting before taking a photograph** **To improve a photograph by retaking it**	**device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To recognise that some digital devices can capture images using a camera** **To talk about how to take a photograph** **To recognise that photographs can be saved and viewed later** **To make choices when composing my photograph** **To recognise features of 'good' photographs** **To identify how a photograph could be improved** **To explain the effect of light on a photograph** **To recognise that photographs can be change after they have been taken** **To recognise that some images are not accurate**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Robot Algorithm (KS1)	**Programming A**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To choose a series of words that can be enacted as a sequence** **To recall that a series of instructions can be issued before they are enacted** **To choose a series of instructions that can be run as a program** **To create a program** **To trace a sequence to make a prediction** **To run a program on a device** **To debug a program that I have written**	**instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To describe that a series of instructions is a sequence** **To explain what happens when we change the order of instructions** **To recognise that you can predict the outcome of a program**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Pictograms (KS1)	**Data and Information**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To show I can enter data onto a computer** **To use pictograms to answer single-attribute questions** **To use a computer to view data in different formats** **To recognise that people, animals and objects can be described by attributes** **To use a computer to answer comparison questions (graphs, tables)**	**more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To use a tally chart to collect data** **To compare objects that have been grouped by attribute** **To suggest appropriate headings for tally charts and pictograms** **To explain that we can present information using a computer** **To use a computer program to present information in different ways** **To give simple examples of why some information should not be shared**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Digital Music (KS1)	**Creating Media**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To experiment with musical patterns on a computer** **To experiment with different sounds on a computer** **To use a computer to create a musical pattern** **To use a computer to compose a rhythm and a melody on a given theme** **To use a computer to play the same music in different ways (e.g. tempo)** **To evaluate a musical composition created on a computer** **To improve a musical composition created on a computer**	**device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To identify that computers can be used to play sounds of different instruments** **To identify that the same pattern can be represented in different ways** **To compare playing music on instruments with making music on a computer**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Programming Quizzes (KS1)	**Programming B**	**EYFS** • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back. • When in the community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later. • Provide a range of materials that enable children to explore cause and effect. • Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits. • Provide a range of programmable toys for children to play with, as well as equipment involving ICT, such as computers, touchscreen devices and internet-connected toys. **To choose a series of words that can be enacted as a sequence** **To explain what happens when we change the order of instructions** **To choose a series of commands that can be run as a program** **To trace a sequence to make a prediction** **To test a prediction by running the sequence** **To create and debug a program that I have written** **To run a program on a device**	**sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.**	**EYFS** • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices • Uses ICT hardware to interact with age appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies • Can use the internet with adult supervision to find and retrieve information of interest to them **To describe a series of instructions as a 'sequence'** **To recall that a series of instructions can be issued before they are enacted** **To use logical reasoning to predict the outcome of a program**	**EYFS** • Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Connecting Computers (LKS2)	**Computing Systems and Networks**	**To identify input and output devices** **To explain that a computer system accepts an input and processes it to produce an output** **To explain how a computer network can be used to share information** **To explain the role of a switch, server, and wireless access point in a network.** **To identify network devices around me.**	**digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets**	**To describe what an input is.** **To explain that a process acts on the inputs.** **To explain that an output is produced by the process.** **To explain how computer systems can change the way that we work.** **To identify how changing the process can affect the output.** **To recognize that a digital device is made up of several parts.** **To recognize that computers can be connected to each other.**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Stop-Frame Animation (LKS2)	**Creating Media**	**To set up the work area with an awareness of what will be captures.** **To plan an animation using a storyboard** **To capture an image** **To use the onion skinning tool to review subject position.** **To move a subject between captures** **To review a captured sequence of frames as an animation** **To remove frames, improve an animation** **To add media to enhance an animation** **To review a completed project**	**text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.**	**To explain that an animation is made up of a sequence of images.** **To identify that a capturing device needs to be in a fixed position.** **To recognize that smaller movements create smoother animation.** **To explain the need for consistence in working.** **To explain the impact of adding other media to an animation.** **To explain that a project must be exported so it can be shared.**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Sequencing Sound (LKS2)	**Programming A**	**To identify that a program includes sequences of commands** **To build a sequence of commands** **To combine commands in a program** **To order commands in a program** **To create a sequence of commands to produce a given outcome**	**Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code.**	**To explain that programs start because of an input** **To explain what a sequence is** **To identify that a program includes sequences of commands** **To identify that the sequence of a program is a process** **To explain that the order of commands can affect a program's output** **To identify that different sequences can achieve the same output** **To identify that different sequences can achieve different outputs**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Branches Databases (LKS2)	**Data and Information**	**To create questions with yes/no answers** **To choose questions that will divide objects into evenly sized subgroups** **To repeatedly create subgroups of objects** **To identify an object using a branching database** **To retrieve information from different levels of the branching database**	**attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information decision tree.**	**To investigate questions with yes/no answers** **To identify attributes that you can ask yes/no questions about** **To select an attribute to separate objects into two similarly sized groups** **To explain that a branching database is an identification tool** **To explain that a well-structured branching database will enable you to identify objects using fewer questions** **To relate two levels of a branching database using AND** **To suggest real-world applications for branching databases**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Desktop Publishing (LKS2)	**Creating Media**	**To show that page orientation can be changed** **To add text to a placeholder** **To organise text and image placeholders in a page layout** **To add and remove images to and from placeholders** **To edit text in a placeholder** **To move resize and rotate images** **To choose fonts and apply effects to text** **To review a document**	**animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.**	**To recognise how text and images can be used together to convey information** **To define landscape and portrait as two different page orientations** **To consider how different layouts can suit different purposes** **To recognise that DTP pages can be structured with placeholders** **To recognise how different font styles and effects are used for particular purposes** **To consider the benefits of using a DTP application**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Events and actions in Programs (LKS2)	**Programming B**	**To build a sequence of commands** **To combine commands in a program** **To order commands in a program** **To create a sequence of commands to produce a given outcome**	**motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.**	**To explain that programs start because of an input** **To explain what a sequence is** **To identify that a program includes sequences of commands** **To identify that the sequence of a program is a process** **To explain that the order of commands can affect a program's output** **To identify that different sequences can achieve the same output** **To identify that different sequences can achieve different outputs**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

The Internet (LKS2)	**Computing Systems and Networks**		**computers - The internet Creating Media - Audio production Creating Media - Photo editing internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts**	**To describe how networks connect to other networks** **To outline how information can be shared via the World Wide Web** **To recognise that the World Wide Web is part of the internet** **To explain that the global interconnection of networks is the internet** **To recognise the need for security on the internet** **To describe how to access the World Wide Web** **To describe the types of content/media that can be added, created, and shared on the World Wide Web** **To explain how the content of the World Wide Web is created, owned, and shared by people** **To explain that the internet enables us to view the World Wide Web** **To explain that the World Wide Web comprises of websites and web pages**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Audio Production (LKS2)	**Creating Media**	**To record sound using a computer** **To play recorded audio** **To import audio into a project** **To delete a section of audio** **To change the volume of tracks in a project**	**audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.**	**To identify that sound can be recorded** **To identify that an input device is needed to record sound** **To identify that output devices are needed to play audio** **To recognise that recorded audio can be stored on a computer** **To recognise that audio can be edited** **To recognise that sound can be represented visually as a waveform** **To recognise that audio can be layered so that multiple sounds can be played at the same time** **To consider the results of editing choices made**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Repetition in Shapes (LKS2)	**Programming A**	**To list an everyday task as a set of instructions including repetition** **To use a count-controlled loop to produce a given outcome** **To use an indefinite loop to produce a given outcome** **To plan a program that includes appropriate loops to produce a given outcome** **To recognise tools that enable more than one process to be run at the same time (concurrency)** **To create two or more sequences that run at the same time**	**Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.**	**To relate what 'repeat' means** **To identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves** **To identify a loop within a program** **To explain that we can use a loop command in a program to repeat instructions** **To identify patterns in a sequence** **To explain that in programming there are indefinite loops and count-controlled loops** **To explain that you can program a loop to stop after a specific number of times** **To explain that an indefinite loop will run until the program is stopped** **To identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step'** **To justify when to use a loop and when not to** **To explain the importance of instruction order in a loop** **To recognise that not all tools enable more than one process to be run at once**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Data Logging (LKS2)	**Data and Information**	**To use a digital device to collect data automatically** **To choose how often to automatically collect data samples** **To use a set of logged data to find information** **To use a computer program to sort data by one attribute** **To export information in different formats**	**data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.**	**To suggest questions that can be answered using a table of data** **To identify data that can be logged over time** **To recognise that a sensor can be used as an input device for data collection** **To identify that sensors are input devices** **To explain that a data logger captures 'data points' from sensors over time**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Photo Editing (LKS2)	**Creating Media**	**To recognise that digital images can be manipulated** **To recognise that digital images can be changed for different purposes** **To choose the most appropriate tool for a particular purpose** **To consider the impact of changes made on the quality of the image**	**image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.**	**To use an application to change the whole of a digital image** **To use an application to change part of a digital image** **To use an application to add to the composition of a digital image** **To change the composition of a digital image by rotating and flipping** **To change the composition of a digital image by cropping** **To adjust colours of a digital image** **To apply filters to a digital image** **To apply effects to a digital image** **To select part of a digital Image** **To use clone, copy, and paste to change the composition of a digital image** **To use cloning to retouch a digital image** **To add text to a digital image**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Repetition in Games (LKS2)	**Programming B**	**To list an everyday task as a set of instructions including repetition** **To explain that we can use a loop command in a program to repeat instructions** **To identify patterns in a Sequence** **To identify a loop within a program** **To explain that in programming there are indefinite loops and count-controlled loops** **To explain that an indefinite loop will run until the program is stopped** **To explain that you can program a loop to stop after a specific number of times** **To identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step'** **To justify when to use a loop and when not to** **To explain the importance of instruction order in a loop** **To recognise that not all tools enable more than one process to be run at once**	**Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.**	**To relate what 'repeat' means** **To identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves** **To explain that we can use a loop command in a program to repeat instructions** **To identify a loop within a program** **To identify patterns in a Sequence** **To explain that in programming there are indefinite loops and count-controlled loops** **To explain that an indefinite loop will run until the program is stopped** **To explain that you can program a loop to stop after a specific number of times** **To identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step'** **To justify when to use a loop and when not to** **To explain the importance of instruction order in a loop** **To recognise that not all tools enable more than one process to be run at once**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Systems and Searching (UKS2)	**Computing Systems and Networks**	**To describe the input and output of a search engine** **To demonstrate that different search terms produce different results** **To evaluate the results of search terms**	**system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.**	**To recognise that a system is a set of interconnected parts which work together** **To explain that computers can be connected together to form IT systems** **To identify that data can be transferred between IT systems** **To recognise inputs, processes, and outputs in large IT systems** **To describe the role of a particular IT system in their lives** **To relate that search engines are examples of large IT systems** **To explain why search engines create indices, and that they are different for each search engine** **To explain the role of web crawlers in creating an index** **To explain how search results are selected** **To explain that ranking orders search results to make them more useful** **To explain how ranking is determined by rules, and that different search engines use different rules** **To explain why the order of results is important and to whom** **To explain how search engines make money by selling targeted advertising space** **To identify some of the limitations of search engines**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Video Production (UKS2)	**Creating Media**	**To use pan, tilt and zoom** **To use different camera angles** **To identify features of a video recording device or application** **To combine filming techniques for a given purpose** **To determine what scenes will convey your idea** **To identify features of a video recording device or application** **To choose to reshoot a scene or improve later through editing** **To decide what changes I will make when editing** **To use split, trim and crop to edit a video**	**vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection**	**To explain the features of video as a visual media format** **To recognise which devices can and can't record video** **To explain the purpose of a storyboard** **To recognise that filming techniques can be used to create different effects** **To recognise the need to regularly review and reflect on a video project** **To explain the limitations of editing video on a recording device** **To identify that videos can be edited on a recording device or on a computer** **To identify videos can be improved through and reshooting or editing** **To recognise projects need to be exported to be shared**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Selection in Physical Computing (UKS2)	**Programming A**	**To create a condition-controlled loop** **To use a condition in an 'if...then…' statement to start an action** **To use selection to switch the program flow in one of two ways** **To use a condition in an 'if...then...else…' statement to produce given outcomes**	**microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzzer**	**To explain that a condition can only be true or false** **To relate that a count-controlled loop contains a condition** **To compare a count-controlled loop with a condition-controlled loop** **To explain that a condition-controlled loop will stop when a condition is met** **To explain that when a condition is met, a loop will complete a cycle before it stops** **To explain that selection can be used to branch the flow of a program** **To explain that a loop can be used to repeatedly check whether a condition has been met** **To explain the importance of instruction order in 'if...then...else...' statements**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Flat-File Databases (UKS2)	**Data and Information**	**To choose different ways to view data** **To choose which attribute and value to search by to answer a given question (operands)** **To ask questions that need more than one attribute to answer** **To choose which attribute to sort data by to answer a given question** **To choose multiple criteria to search data to answer a given question (AND and OR)** **To select an appropriate graph to visually compare data** **To choose suitable ways to present information to other people**	**database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.**	**To explain that a computer program can be used to organise data** **To explain that tools can be used to select data to answer questions** **To outline how ordering data allows us to answer some questions** **To outline how operands can be used to filter data** **To outline how 'AND' and 'OR' can be used to refine data selection** **To explain that computer programs can be used to compare data visually** **To explain that we present information to communicate a message**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Introduction to Vector Graphics (UKS2)	**Creating Media**	**To add an object to a vector drawing** **To select one object or choices made multiple objects** **To delete objects** **To move objects between the layers of a drawing** **To duplicate objects using copy and paste** **To modify objects** **To reposition objects** **To group and ungroup selected objects** **To create a vector drawing for a given purpose**	**video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.**	**To identify that a vector drawing comprises separate objects** **To recognise that each object in a drawing is in its own layer** **To recognise that objects can be modified in groups** **To explain how alignment and size guides can help create a more consistent drawing** **To consider the impact of to select one object or choices made** **To combine options to achieve a desired effect**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Selection in Quizzes (UKS2)	**Programming B**	**To choose a condition to use in a program** **To create a condition-controlled loop** **To use a condition in an 'if... then…' statement to start an action** **To use selection to switch program flow** **To use 'if... then... else…' to switch program flow in one of two ways**	**Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator**	**To explain that a condition can only be true or false** **To relate that a count-controlled loop contains a condition** **To compare a count controlled loop with a condition-controlled loop** **To explain that a condition-controlled loop will stop when a condition is met** **To explain that when a condition is met a loop will complete a cycle before it stops** **To explain that selection can be used to branch the flow of a program** **To explain that a loop can be used to repeatedly check whether a condition has been met** **To explain the importance of instruction order in 'if... then... else...' statements**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
Communication and Collaboration (UKS2)	**Computing Systems and Networks**	**To outline methods of communicating and collaborating using the internet** **To choose methods of internet communication and collaboration for given purposes** **To evaluate different methods of online communication and collaboration** **To decide what you should and should not share online** **To explain that communicating and collaboration using the internet can be public or private**	**communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many.**	**To recognise that data is transferred across networks using agreed protocols (methods)** **To recognise that connections between computers allow access to shared stored files** **To explain that data is transferred in packets** **To recognise computers connected to the internet allow people in different places to work together** **To discuss the opportunities that technology offers for communication and collaboration** **To explain which types of media can be shared through the internet**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Webpage Creation (UKS2)	**Creating Media**	**To review an existing website (navigation bars, header)** **To create a new blank web page** **To add text to a web page** **To set the style of text on a web page** **To embed media in a web page** **To add web pages to a website** **To preview a web page (different screen sizes)** **To insert hyperlinks between pages** **To insert hyperlinks to another site**	**website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.**	**To recognise the relationship between HTML and visual display** **To recognise that web pages can contain different media types** **To recognise that web pages are written by people** **To recognise that a website is a set of hyperlinked web pages** **To recognise components of a web page layout** **To consider the ownership and use of images (copyright)** **To recognise the need for a navigation path** **To recognise the need to preview pages (different screens / devices)** **To recognise the implications of linking to content owned by others**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Variables in Games (UKS2)	**Programming A**	**To identify a variable in an existing program** **To experiment with the value of an existing variable** **To choose a name that identifies the role of a variable to make it easier for humans to understand it** **To decide where in a program to set a variable** **To update a variable with a user input** **To use an event in a program to update a variable** **To use a variable in a conditional statement to control the flow of a program** **To use the same variable in more than one location in a program**	**variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare**	**To define a 'variable' as something that is changeable** **To identify examples of information that is variable, for example, a football score during a match** **To explain that a variable can be used in a program, eg 'score'** **To define a program variable as a placeholder in memory for a single value** **To explain that a variable has a name and a value** **To recognise that the value of a variable can be used by a program** **To recognise that the value of a variable can be updated** **To identify that variables can hold numbers (integers) or letters (strings)** **To define the way that a variable is changed** **To recognise that a variable can be set as a constant (fixed value)** **To explain the importance of setting up a variable at the start of a program (initialisation)** **To explain that there is only one value for a variable at any one time** **To explain that if you change the value of a variable, you cannot access the previous value (cannot undo)** **To explain that if you read a variable, the value remains** **To explain that the name of a variable is meaningless to the computer** **To explain that the name of a variable needs to be unique**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Introduction to Spreadsheets (UKS2)	**Data and Information**	**To recognise cells can be linked** **To use functions to create new data** **To use existing cells within a formula** **To choose suitable ways to present spreadsheet data**	**data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.**	**To identify questions that can be answered using spreadsheet data** **To explain what an item of data is in a spreadsheet** **To outline that there are different software tools to work with data** **To explain how the data type determines how a spreadsheet can process the data** **To explain that formulas can be used to produce calculated data** **To calculate data using a formula for each operation** **To explain why data should be organised in a spreadsheet** **To recognise that a cell's value automatically updates when the value in a linked cell is changed** **To evaluate results in comparison to the question asked**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.
3D Modelling (UKS2)	**Creating Media**	**To position 3D shapes relative to one another** **To use digital tools to modify 3D objects** **To combine objects to create a 3D digital artefact** **To use digital tools to accurately size 3D objects** **To construct a 3D model which reflects a real world object**	**TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.**	**To explain that 3D models can be created on a computer** **To recognise that a 3D environment can be viewed from different perspectives** **To recognise that digital tools can be used to manipulate 3D objects** **To show how placeholders can create holes in 3D objects** **To recognise that artefacts can be broken down into a collection of 3D objects**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.

Sensing Movement (UKS2)	**Programming B**	**To identify a variable in an existing program** **To experiment with the value of an existing variable** **To choose a name that identifies the role of a variable to make it more usable (to humans)** **To decide where in a program to set a variable** **To update a variable with a user input** **To use an event in a program to update a variable** **To use a variable in a conditional statement to control the flow of a program** **To use the same variable in more than one location in a program**	**Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug.**	**To define 'variable' as something that is changeable** **To identify examples of information that is variable, e.g. a football score during a match** **To explain that a variable can be used in a program, e.g. 'score'** **To define a program variable as a placeholder in memory for a single value** **To explain that a variable has a name and a value** **To recognise that the value of a variable can be used by a program** **To recognise that the value of a variable can be updated** **To identify that variables can hold numbers (integers) or letters (strings)** **To define the way that a variable is changed** **To recognise that a variable can be set as a constant (fixed value)** **To explain the importance of setting up a variable at the start of a program (initialisation)** **To explain that there is only one value for a variable at any one time** **To explain that if you change the value of a variable, you cannot access the previous value (cannot undo)** **To explain that if you read a variable, the value remains** **To explain that the name of a variable is meaningless to the computer** **To explain that the name of a variable needs to be unique**	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant subject-specific vocabulary to describe and explain their thinking.