Computing Lesson Objective Map

Differentiation by task activity - See weekly planning for additional demand for GDS pupils and for SEND pupils refer to SEND passport targets.
AFL minimum expectations during each lesson - modelling by teacher; peer and self-assessment; targeted questioning
Long term memory development strategies - Last lesson/this lesson/next lesson

Each topic to be taught in bullet point order using these lesson objectives.

Year Group	Autumn	Spring	Summer
Pre-School	**Exploring technology in Pre-School** • Use buttons, flaps and simple mechanisms and begin to operate them. • Use phones, ipads, cameras (pretend) in the home corner • Switch on or off some equipment using the IWB/iPad • Operate mechanical toys / school play set e.g. friction cars, wind up toys • Exploring electronic toys • Use photocopiers to photocopy work • Explore equipment such as torches, radios, karoke machines • Learns nursery rhymes via an interactive nursery rhyme book • Online safety - talk about ICT apparatus, what it does, what they can do with it and how to use it safely.		
Nursery	**Exploring technology in Nursery** • Operate simple equipment, turns them on and off and uses a remote control • Uses technological toys with knobs and pulleys • Uses real objects to explore and play such as cameras and mobile phones • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. • Use photocopiers to photocopy work • Explores differernt computer programes on the IWB (Purple Mash, 2Simple) • Operates Bee-Bots/remote controlled cars and programes them • Uses specifically designed Early Years cameras • Reminded about Online safety and how they only use programmes that adults allow them to use both in Nursery and at home • Online teaching programes suh as Phonics Play, Cbeebies and story time.		
Reception	• Can explain technology as something that helps us • Can locate examples of technology in the classroom • Can explain how these technology examples help us • Can name the main parts of a computer • Can switch on and log into a computer		

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Can use a mouse to click and drag
Can use a mouse to open a program
Can click and drag to make objects on a screen
Can use a mouse to create a picture
Can tell you that writing on a computer is called typing
Can type their name on a computer
Can save work to a file
Can open my work from a file
Can use the arrow keys to move the cursor
Can delete letters
Can identify rules to keep us safe and healthy when we are using technology in and beyond the home
Can give examples of rules to keep safe online.
Can discuss how we benefit from online safety rules. Can talk about where to go if something happens when online.
Can talk about what to do if click on something inappropriate.

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Autumn 1 Online Safety- (Teachers)

1.1 We are rule writers

NC :-Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Understand that rules help us stay safe, both in the real world and online.
Able to suggest strategies for staying safe in different online scenarios including where to go for help when concerned about content or contact on the internet or other online technologies.
Able to help to develop a set of online safety rules that are easily understood and appropriate for Year 1.

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Spring 1 - Online Safety (Teachers)

NC :- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

1.3 We are responsible internet and device users

Know the very basic principles of what the internet is
Understand how people use the internet
Understand that using computer devices too often can be bad for us and we should take time out form technology to do other things
Discuss what to do if they see or hear something online that upsets them.

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Summer 1 - Online Safety (Teachers)

NC:-Use technology safely and respectfully.

1.5 We are good digital citizens

Understand what is meant by ‘digital citizen’
Understand how to be responsible, respectful and safe online
Understand that being a good digital citizen means having a kind heart, a warning tummy and a thinking brain: all things that keep us safe online
Recall what to do if something happens online that makes them feel uncomfortable – building on We are information protectors lesson.

NC:-Use technology safely and respectfully.
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Autumn 1- Online Safety (Teachers)

NC:- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

1.2 We are kind and thoughtful

- Understand that unkind behaviour online can affect other people, even though we can't see them.
- Understand that the rules created in 'Rule Writers' can be applied to any concerns they may have about their online activities.

Autumn 1- (ICT) IT Around Us

NC:- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.Recognise common uses of information technology beyond school. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

NC :- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Spring 1- Online Safety (Teachers)

1.4 We are information protectors

- Understand what is meant by 'personal information'.
- Recognise that anyone online who we don't know in real life is a stranger
- Understand how we can protect our personal information, including reporting concerns to trusted adults.

Spring 1 (ICT) Digital Writing

NC:-Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use technology safely and respectfully, keeping personal information private.

Wk 1- To use a computer to write

- Can open a word processor
- Can recognise keys on a keyboard
- Can identify and find keys on a keyboard

Wk 2- To add and remove text on a computer

- Can enter text into a computer
- Can use letter, number, and space keys
- Can use backspace to remove text

1.6 We are responsible gamers

- Understand the importance of playing games in shared spaces where grown-ups are available for support
- Understand the importance of taking breaks away from technology.

Summer 1 (ICT) Grouping Data

NC:- Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use technology safely and respectfully.

Wk 1 - To label objects

- Can describe objects using labels
- Can match objects to groups
- Can identify the label for a group of objects

Wk 2 - To identify that objects can be counted

- Can count objects
- Can group objects
- Can count a group of objects

Wk 3- To describe objects in different ways

- Can describe an object
- Can describe a property of an object
- Can find objects with similar properties

Wk 4- To count objects with the same properties

- Can group similar objects

Wk 1 - To recognise the uses and features of information technology

- Can identify examples of computers
- Can describe some uses of computers
- Can identify that a computer is part of IT

Wk 2- To identify information technology in the home

- Can explain the purpose of IT in the home
- Can open a file
- Can move and resize images

Wk 3- To identify information technology beyond school

- Can find examples of IT
- Can talk about uses of IT
- Can compare types of IT

Wk 4- To explain how information technology benefits us

- Can demonstrate how IT is used in a shop
- Can recognize that IT can be connected
- Can explain how IT can helps people

Wk 5- To show how to use information technology safely

- Can list different uses of IT
- Can recognize how to use IT responsibly
- Can say how those safety rules/guides can help me.

Wk 6- To recognise that choices are made when using information technology

Wk 3- To identify that the look of text can be changed on a computer

- Can type capital letters
- Can explain what the keys that I have learnt about already do
- Can identify the toolbar and use bold, italic, and underline

Wk 4- To make careful choices when changing text

- Can select a word by double-clicking
- Can select all of the text by clicking and dragging
- Can change the font

Wk 5- To explain why I used the tools that I chose

- Can say what tool I used to change the text
- Can decide if my changes have improved my writing
- Can use 'undo' to remove changes

Wk 6 - To compare writing on a computer with writing on paper

- Can write a message on a computer and on paper
- Can compare using a computer with using a pencil and paper
- Can say which method I like best

Spring 2 (ICT) Programming A – Moving a robot

NC:- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs.Use logical reasoning to predict the behaviour of simple programs.Recognise common uses of information technology beyond school.

- Can group objects in more than one way
- Can count how many objects share a property

Wk 5 - To compare groups of objects

- Can choose how to group objects
- Can describe groups of objects
- Can record how many objects are in a group

Wk6 - To answer questions about groups of objects

- Can decide how to group objects to answer a question
- Can compare groups of objects
- Can record and share what I have found

Summer 2 (ICT) Programming B- Intoduction to animation (Scratch Junior)

NC:- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs.

Wk1- To choose a command for a given purpose

- Can find the commands to move a sprite
- Can use commands to move a sprite

	• Can identify the choices that I make when using information technology • Can explain simple guidance for using information technology in different environments and settings • Can enjoy a variety of activities **Autumn 2 (ICT) Digital Painting** **NC:- Use technology purposefully to create, organise, store, manipulate, and retrieve digital content.** **Wk 1- To describe what different freehand tools do** • Can make marks on a screen and explain which tools I used • Can draw lines on a screen and explain which tools I used • Can use the paint tools to draw a picture **Wk 2- To use the shape tool and the line tools** • Can make marks with the square and line tools • Can use the shape and line tools effectively • Can use the shape and line tools to recreate the work of an artist **Wk 3- To make careful choices when painting a digital picture** • Can choose appropriate shapes • Can make appropriate colour choices • Can create a picture in the style of an artist **Wk 4- To explain why I chose the tools I used** • I know that different paint tools do different jobs	**Wk 1 - To explain what a given command will do.** • Can predict the outcome of a command on a device • Can match a command to an outcome • Can run a command on a device and follow an instruction **Wk 2- To act out a given word** • Can recall words that can be acted out • Can give directions • Can compare forwards and backwards movements **Wk 3- To combine forwards and backwards commands to make a sequence** • Can start a sequence from the same place • Can predict the outcome of a sequence involving forwards and backwards commands • Can compare left and right turns **Wk 4- To combine four direction commands to make sequences** • Can compare left and right turns • Can experiment with turn and move commands to move a robot • Can predict the outcome of a sequence involving up to four commands **Wk 5- To plan a simple program** • Can explain what my program should do • Can choose the order of commands in a sequence • Can debug my program	• Can compare different programming tools **Wk 2- To show that a series of commands can be joined together** • Can use more than one block by joining them together • Can use a **Start** block in a program • Can run my program **Wk 3- To identify the effect of changing a value** • Can find blocks that have numbers • Can change the value • Can say what happens when I change a value **Wk 4- To explain that each sprite has its own instructions** • Can show that a project can include more than one sprite • Can delete a sprite • Can add blocks to each of my sprites **Wk 5- To design the parts of a project** • Can choose appropriate artwork for my project • Can decide how each sprite will move • Can create an algorithm for each sprite **Wk 6- To use my algorithm to create a program** • Can use sprites that match my design • Can add programming blocks based on my algorithm • Can test the programs I have created

	• Can choose appropriate paint tools and colours to recreate the work of an artist • Can say which tools were helpful and why **Wk 5- To use a computer on my own to paint a picture** • Can make dots of colour on the page • Can change the colour and brush sizes • Can use dots of colour to create a picture in the style of an artist on my own **Wk 6 - To compare painting a picture on a computer and on paper** • Can explain that pictures can be made in lots of different ways • Can spot the differences between painting on a computer and on paper • Can say whether I prefer painting using a computer or using paper.	**Wk 6- To find more than one solution to a problem** • Can identify several possible solutions • Can plan two programs • Can use two different programs to get to the same place **Spring 2 (ICT) Lego Wedo Workshop- Plants** **NC:- :- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs.Use logical reasoning to predict the behaviour of simple programs.** • I can create sounds, movement and images by coding.	
2	**Autumn 1 - Online Safety (Teachers)** **NC:-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **2.1 We are year 2 rule writers** • Consider online safety scenarios encountered in Year 1 (both at school and at home) and appreciate how these new experiences can be used to update their online safety rules. • Consider what strategies they might use if their usual trusted adult is not available • Review and edit their online safety guidelines	**Spring 1 Online Safety- (Teachers)** **NC:- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.** **2.3 We are safe searchers** • Understand the very basic principles of how search engines work • Understand the key steps for searching the web safely • Understand how to report concerns • when searching the web. **NC:- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or**	**Summer 1 -Online Safety (Teachers)** **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and** **2.5 We are online behaviour experts** • Understand that the way technology is used is as important as good online behaviour • Understand that the way we use technology impacts the people around us • Further develop responses to incidents of poor behaviour online.

	• Develop their online safety rules so they are easily understood and appropriate for Year 2 pupils **NC:- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **2.2 We are not online bullies** • Begin to understand the concept of online bullying and the role of the bystander • Develop an understanding of the consequences of online bullying • Recall their online safety rules for reporting concerns and inappropriate behaviour. **Autumn 1- (ICT) Digital Photography** **NC:- Use technology purposefully to create, organise, store, manipulate, and retrieve digital content.Recognise common uses of information technology beyond school.Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies** **Wk- 1- To use a digital device to take a photograph**	**2.4 We are code masters** • Understand that passwords are an important part of keeping information safe • Understand differences between strong and weak passwords • Understand that sharing a password makes it weak. **Spring 1 (ICT) Programming A- Robot algorithms** **NC:- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.Create and debug simple programs.Use logical reasoning to predict the behaviour of simple programs.Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **Wk -1 To describe a series of instructions as a sequence** • Can follow instructions given by someone else • Can choose a series of words that can be enacted as a sequence • Can give clear and unambiguous instructions **Wk 2- To explain what happens when we change the order of instructions**	**Recognise common uses of information technology beyond school. • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **2.6 We are game raters** • Recognise the PEGI age rating system for digital games • Understand that the system is useful for helping people decide which games are appropriate • Understand what to do if someone nearby is playing a game which is inappropriate for them. **Summer 1 (ICT) Pictograms** **NC:-Use technology purposefully to create, organise, store, manipulate and retrieve digital content.Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies** **Wk 1- To recognise that we can count and compare objects using tally charts**

	• Can recognise what devices can be used to take photographs • Can talk about how to take a photograph • Can explain what I did to capture a digital photo **Wk 2- To make choices when taking a photograph** • Can explain the process of taking a good photograph • Can take photos in both landscape and portrait format • Can explain why a photo looks better in portrait or landscape format **Wk 3- To describe what makes a good photograph** • Can identify what is wrong with a photograph • Can discuss how to take a good photograph • Can inporve a photograph by retaking it **Wk 4- To decide how photographs can be improved** • Can explore the effect that light has on a photo • Can experiment with different light sources • Can explain why a picture may be unclear **Wk 5- To use tools to change an image** • Can recognise that images can be changed • Can use a tool to achieve a desired effect • Can explain my choices **Wk 6- To recognise that photos can be changed**	• Can create different algorithms for a range of sequences (using the same commands) • Can use an algorithm to program a sequence on a floor robot • Can show the difference in outcomes between two sequences that consist of the same commands **Wk 3- To use logical reasoning to predict the outcome of a program (series of commands)** • Can follow a sequence • Can predict the outcome of a sequence • Can compare my prediction to the program outcome **Wk 4- To explain that programming projects can have code and artwork** • Can explain the choices I made for my mat design • Can identify different routes around my mat • Can test my mat to make sure that it is usable **Wk 5- To design an algorithm** • Can explain what my algorithm should achieve • Can create an algorithm to meet my goal • Can use my algorithm to create a program • **Wk 6- To create and debug a program that I have written** • Can plan algorithms for different parts of a task	• Can record data in a tally chart • Can represent a tally count as a total • Can compare totals in a tally chart **Wk 2- To recognise that objects can be represented as pictures** • Can enter data onto a computer • Can use a computer to view data in a different format • Can use pictograms to answer simple questions about objects **Wk 3 - To create a pictogram** • Can organise data in a tally chart • Can use a tally chart to create a pictogram • Can explain what the pictogram shows **Wk 4- To select objects by attribute and make comparisons** • Can tally objects using a common attribute • Can create a pictogram to arrange objects by an attribute • Can answer 'more than'/'less than' and 'most/least' questions about an attribute **Wk 5 - To recognise that people can be described by attributes** • Can choose a suitable attribute to compare people • Can collect the data I need • Can create a pictogram and draw conclusions from it

	• Can apply a range of photography skills to capture a photo • Can recognise which photos have been changed • Can identify which photos are real and which have been changed **Autumn 2- (ICT) Making Music** **NC:-Use technology purposefully to create, organise, store, manipulate and retrieve digital content.** **Wk 1- To say how music can make us feel** • Can identify simple differences in pieces of music • Can listen with concentration to a range of music (links to the Music curriculum) • Can describe how music makes me feel, e.g. happy or sad **Wk 2- To identify that there are patterns in music** • Can create a rhythm pattern • Can play an instrument following a rhythm pattern • Can explain that music is created and played by humans **Wk 3- To describe how music can be used in different ways** • Can connect images with sounds • Can use a computer to experiment with pitch and duration • Can relate an idea to a piece of music	• Can test and debug each part of the program • Can put together the different parts of my program **Spring 2- Consolidate knowledge of above objectives using varied software such as:-** **Wk 1- Code.org** **Wk 2- Code.org** **Wk 3- Code.org** **Wk 4- 2Code** **Wk 5- 2Code**	**Wk 6 To explain that we can present information using a computer** • Can use a computer program to present information in different ways • Can share what I have found out using a computer • Can give simple examples of why information should not be shared **Summer 2 (ICT) Programming B- An introduction to quizzes** **NC:-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.Create and debug simple programs.Use logical reasoning to predict the behaviour of simple programs** **Wk1 - To explain that a sequence of commands has a start** • Can identify the start of a sequence • Can identify that a program needs to be started • Can show how to run my program **Wk 2 - To explain that a sequence of commands has an outcome** • Can predict the outcome of a sequence of commands

	Wk 4- To show how music is made from a series of notes • Can identify that music is a sequence of notes • Can use a computer to create a musical pattern using three notes • Can refine my musical pattern on a computer **Wk5- To create music for a purpose** • Can describe an animal using sounds • Can explain my choices • Can save my work **Wk 6- To review and refine our computer work** • Can reopen my work • Can explain how I made my work better • Can listen to music and describe how it makes me feel		• Can match two sequences with the same outcome • Can change the outcome of a sequence of commands **Wk 3- To create a program using a given design** • Can work out the actions of a sprite in an algorithm • Can decide which blocks to use to meet the design • Can build the sequences of blocks I need **Wk4 - To change a given design** • Can choose backgrounds for the design • Can choose characters for the design • Can create a program based on the new design **W5- To create a program using my own design** • I can choose the images for my own design • I can create an algorithm • I can build sequences of blocks to match my design **Wk6 -To decide how my project can be improved** • Can compare my project to my design • Can improve my project by adding features • Can debug

			Workshop- Materials **Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.Create and debug simple programs.Use logical reasoning to predict the behaviour of simple programs.** • I can identify materials that are conductors of electricity through code to make sound.
3	**Autumn 1 – Online Safety (Teachers)** **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **3.1 We are Year 3 rule writers** • Able to consider online safety scenarios encountered in Year 2 (both at school and at home) and appreciate how these new experiences can be used to refine their online safety rules • Consider what new strategies they can apply to online safety scenarios, such as calling Childline • Review and edit their online safety guidelines. • Develop their online safety rules so they are easily understood and appropriate for Year 3 pupils.	**Spring 1- Online Safety (Teachers)** **NC:- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.** **3.3 We are internet detectives** • use clues to make choices about which web pages they consider most useful and trustworthy • understand that not all links are safe or trustworthy • understand different ways to report concerns and inappropriate behaviour **NC:- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.**	**Summer 1- Online Safety (Teachers)** **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **3.5 We are netiquette experts** • Understand that good online behaviour is important for making the internet an enjoyable place for everyone • Understand that email is a widely used form of digital communication that lasts forever and can be shared **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.**

NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

3.2 We are digital friends

• Begin to understand that information shared online cannot always be controlled

• Develop a deeper understanding of the consequences of online bullying

• Understand the role of a bystander in online bullying.

NC:-Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Autumn 1 (ICT) Connecting Computers

Wk 1- To explain how digital devices function

- Can explain that digital devices accept inputs

3.4 We are aware of our digital footprint

- Understand that every time we use the internet we leave a digital trail that can be found, copied, shared and broadcast
- Understand that the things we upload onto the internet last forever

NC:- Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs.Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Spring 1- (ICT) Sequencing in music

Wk 1- To explore a new programming environment

- Can identify objects in a Scratch project (sprites, backdrops)

3.6 We are avatar creators

- Understand that internet identities are actively constructed by the user
- Recognise that internet identities can be misleading or not representative of the creator
- Recall that personal information should not be shared by anyone online who we don't know in real life.

NC:-Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
Use technology safely,

Summer 1 (ICT) Branching Databases

Wk1- To create questions with yes/no answers

- I can investigate questions with yes/no answers
- I can make up a yes/no question about a collection of objects
- I can create two groups of objects separated by one attribute

	• Can explain that digital devices produce outputs • Can follow a process **Wk 2 -To identify input and output devices** • Can classify input and output devices • Can model a simple process • Can design a digital device **Wk 3- To recognise how digital devices can change the way we work** • Can explain how I use digital devices for different activities • Can recognise similarities between using digital devices and non-digital tools • Can suggest differences between using digital devices and non-digital tools **Wk 4- To explain how a computer network can be used to share information** • I can recognise different connections • I can explain how messages are passed through multiple connections • I can discuss why we need a network switch **Wk 5 - To explore how digital devices can be connected** • I can recognise that a computer network is made up of a number of devices • I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network **Wk 6- To recognise the physical components of a network**	• I know that objects in Scratch have attributes (linked to) • I know that commands in Scratch are represented as blocks • **Wk 2- To identify that commands have an outcome** • I know that each sprite is controlled by the commands I choose • I know a word which describes an on-screen action for my design • Can start a program in different ways **Wk 3- To explain that a program has a start** • Can start a program in different ways • Can create a sequence of connected commands • Can explain that the objects in my project will respond exactly to the code **Wk 4- To recognise that a sequence of commands can have an order** • Can explain what a sequence is • Can combine sound commands • Can order notes into a sequence **Wk 5- To change the appearance of my project** • can build a sequence of commands • I can decide the actions for each sprite in a program • I can make design choices for my artwork	**Wk 2- To identify the object attributes needed to collect relevant data** • Can select objects to arrange in a branching database • Can group objects using my own yes/no questions • Can prove my branching database works **Wk 3- To create a branching database** • Can create yes/no questions using given attributes • Can explain that questions need to be ordered carefully to split objects into similarly sized groups • Can compare two branching database structures **Wk 4- To explain why it is helpful for a database to be well structured** • Can select a theme and choose a variety of objects • Can create questions and apply them to a tree structure • Can use my branching database to answer questions **Wk 5- To identify objects using a branching database** • I can select a theme and choose a variety of objects • I can create questions and apply them to a tree structure • I can use my branching database to answer questions **Wk 6 - To compare the information shown in a pictogram with a branching database** • Can explain what a pictogram tells me

- I can identify how devices in a network are connected with one another
- I can identify networked devices around me
- I can identify the benefits of computer networks

Autumn 2- (ICT) Creating an animation

NC:- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; Identify a range of ways to report concerns about content and contact.

Wk1- To explain that animation is a sequence of drawings or photographs

- Can draw a sequence of pictures
- Can create an effective flip book—style animation
- Can explain how an animation/flip book works

Wk2- To relate animated movement with a sequence of images

Wk 6- To create a project from a task description

- Can identify and name the objects I will need for a project
- Can relate a task description to a design
- Can implement my algorithm as code

NC:- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

Spring 2- (ICT) Desktop Publishing

Wk 1- To recognise how text and images convey information

- Can explain the difference between text and images
- Can recognise that text and images can communicate messages clearly
- Can identify the advantages and disadvantages of using text and images

Wk 2- To recognise that text and layout can be edited

- Can change font style, size, and colours for a given purpose
- Can edit text
- Can explain that text can be changed to communicate more clearly
- Can explain what a branching database tells me
- Can compare two ways of presenting information

Programming B- (ICT) Events and actions

NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Wk 1- To explain how a sprite moves in an existing project

- I can explain the relationship between an event and an action
- I can choose which keys to use for actions and explain my choices
- I can identify a way to improve a program

	• Can predict what an animation will look like • Can explain why little changes are needed for each frame • Can create an effective stop-frame animation **Wk 3- To plan an animation** • Can break down a story into settings, characters and events • Can describe an animation that is achievable on screen • Can create a storyboard **Wk 4- To identify the need to work consistently and carefully** • Can use onion skinning to help me make small changes between frames • Can review a sequence of frames to check my work • Can evaluate the quality of my animation **Wk 5- To review and improve an animation** • Can explain ways to make my animation better • Can evaluate another learner's animation • Can improve my animation based on feedback **Wk 6- To evaluate the impact of adding other media to an animation** • Can add other media to my animation • Can explain why I added other media to my animation • Can evaluate my final film	**Wk 3- To choose appropriate page settings** • Can define the term 'page orientation' • Can recognise placeholders and say why they are important • Can create a template for a particular purpose **Wk 4- To add content to a desktop publishing publication** • Can choose the best locations for my content • Can paste text and images to create a magazine cover • Can make changes to content after I've added it. **Wk 5- To consider how different layouts can suit different purposes** • Can identify different layouts • Can match a layout to a purpose • Can choose a suitable layout for a given purpose **Wk 6 To consider the benefits of desktop publishing** • Can identify the uses of desktop publishing in the real world • Can say why desktop publishing might be helpful • Can compare work made on desktop publishing to work created by hand	**Wk 2- To create a program to move a sprite in four directions** • I can choose a character for my project • I can choose a suitable size for a character in a maze • I can program movement **Wk 3- To adapt a program to a new context** • I can use a programming extension • I can consider the real world when making design choices • I can choose blocks to set up my program **Wk 4- To develop my program by adding features** • I can identify additional features (from a given set of blocks) • I can choose suitable keys to turn on additional features • I can build more sequences of commands to make my design work **Wk 5- To identify and fix bugs in a program** • I can test a program against a given design • I can match a piece of code to an outcome • I can modify a program using a design **Wk 6- To design and create a maze-based challenge** • I can make design choices and justify them

			• I can implement my design • I can evaluate my project **NC:-Design, write and debug programs that accomplish specific goals, including controlling physical systems; solve problems by decomposing them into smaller parts.** Year 3 workshop Light- Makey Makey Kit
4	**Autumn 1- Online Safety (Teachers)** **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **4.1 We are Year 4 rule writers** • Consider online safety scenarios encountered in Year 3 (both at school and at home) and appreciate how these new experiences can be used to update their online safety rules • Consider what new strategies they can apply to online safety scenarios, beyond talking to a trusted adult • Review and edit their online safety guidelines • Develop their online safety rules so they are easily understood and appropriate for Year 4 pupils.	**Spring 1- Online Safety (Teachers)** **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies** **4.3 We are aware that our online content lasts forever** • Understand that because of the internet, information can be spread more quickly and reach more people now than at any time in the past • Understand that although information posted on the internet might not always be true or accurate, it lasts forever.	**Summer 1- Online Safety (Teachers)** **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **4.5 We are respectful of digital rights and responsibilities** • Understand that both digital rights and responsibilities are important to ensure the internet is a great place for everyone • Understand that there are consequences for knowingly ignoring rights • Further develop a positive and responsible attitude towards technology and internet use.

NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

4.2 We are standing up to peer pressure

- Understand that peer pressure can be a positive and negative influence
- Understand that access to the internet is not the same for everyone
- Recall ways to report concerns and inappropriate behaviour.

NC:-Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

4.4 We are online risk managers

- Understand the risks involved in clicking on and opening links on suspicious websites and in emails
- Understand that hacking can be illegal and has consequences for the hacker
- Develop awareness of viruses and what to do if they think their account has been compromised.

NC:-Use search technologies effectively
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Spring 1- Photo Editing (ICT)

Wk1- To explain that digital images can be changed

- Can identify changes that we can make to an image

NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

4.6 We are careful when talking to virtual friends

- Understand that virtual friends are still strangers that they do not know
- Apply their knowledge of online safety to decide what information they, as virtual friends, can safely share online
- Recap rules for reporting suspicious or uncomfortable online situations

NC:-Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs.
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

	Autumn 1- (ICT) The Internet **Wk1- To describe how networks physically connect to other networks** • Can describe the internet as a network of networks • Can demonstrate how information is shared across the internet • Can discuss why a network needs protecting. **Wk2 - To recognise how networked devices make up the internet** • Can describe the different networked devices and how they connect • Can explain how the internet allows us to view the World Wide Web • Can recognise that the World Wide Web is the part of the internet that contains websites and web pages. **Wk 3- To outline how websites can be shared via the World Wide Web** • Can explain the types of media that can be shared on the World Wide Web (WWW) • Can describe where websites are stored when uploaded to the WWW • Can describe how to access websites on the WWW **Wk 4- To describe how content can be added and accessed on the World Wide Web** • Can create media which can be found on websites • Can recognise that I can add content to the WWW • Can explain that new content can be created online	• Can explore how images can be changed in real life • Can explain the effect that editing can have on an image **Wk2- To change the composition of an image** • Can explain what has changed in an edited image • Can change the composition of an image by selecting parts of it • Can consider why someone might want to change the composition of an image **Wk 3- To describe how images can be changed for different uses** • Can talk about changes made to images • Can choose effects to make my image fit a scenario • Can explain why my choices fit a scenario **Wk 4- To make good choices when selecting different tools** • Can identify how an image has been retouched • Can give examples of positive and negative effects that retouching can have on an image • Can choose appropriate tools to retouch an image **Wk 5- To recognise that not all images are real** • Can sort images into 'fake' or 'real' and explain my choices • Can combine parts of images to create new images • Can talk about fake images around me	**Summer 1- (ICT) Programming B - Repetition in games** **Wk 1- To develop the use of count-controlled loops in a different programming environment** • Can list an everyday task as a set of instructions including repetition • Can predict the outcome of a snippet of code • Can modify a snippet of code to create a given outcome. **Wk 2- To explain that in programming there are infinite loops and count-controlled loops** • Can modify loops to produce a given outcome • Can choose when to use a count-controlled and an infinite loop • Can recognise that some programming languages enable more than one process to be run at once. **Wk 3- To develop a design that includes two or more loops which run at the same time** • Can choose which action will be repeated for each object • Can explain what the outcome of the repeated action should be • Can evaluate the effectiveness of the repeated sequences used in my program.

Wk 5- To recognise how the content of the WWW is created by people

- Can explain that websites and their content are created by people
- Can suggest who owns the content on websites
- Can explain that there are rules to protect content

Wk 6- To evaluate the consequences of unreliable content

- Can explain that not everything on the World Wide Web is true.
- Can explain why some information I find online may not be honest, accurate, or legal.
- Can explain why I need to think carefully before I share or reshare content

NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Wk 6- To evaluate how changes can improve an image

- Can consider the effect of adding other elements to my work
- Can compare the original image with my completed publication
- Can evaluate the impact of my publication on others through feedback

NC:- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Spring 2- Audio editing (Podcast)

Wk 1- To identify that sound can be digitally recorded

- Can identify digital devices that can record sound and play it back
- Can identify the inputs and outputs required to play audio or record sound
- Can recognise the range of sounds that can be recorded

Wk 4- To modify an infinite loop in a given program

- Can identify which parts of a loop can be changed
- Can explain the effect of my changes
- Can re-use existing code snippets on new sprites

Wk5- To design a project that includes repetition

- Can evaluate the use of repetition in a project
- Can select key parts of a given project to use in my own design
- Can develop my own design explaining what my project will do

Wk 6- To create a project that includes repetition

- Can refine the algorithm in my design
- Can build a program that follows my design
- Can evaluate the steps I followed when building my project

NC:-...work with various forms of input.Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

	Autumn 2 (ICT) **Programming- Repetition in shapes** **Wk-1- To identify that accuracy in programming is important** • Can program a computer by typing commands • Can explain the effect of changing a value of a command • Can create a code snippet for a given purpose. **Wk 2- To create a program in a text-based language** I • Can use a template to draw what I want my program to do • Can write an algorithm to produce a given outcome • Can test my algorithm in a text-based language **Wk 3- To explain what 'repeat' means** • Can identify repetition in everyday tasks • Can identify patterns in a sequence • Can use a count-controlled loop to produce a given outcome **Wk 4- To modify a count-controlled loop to produce a given outcome** • Can identify the effect of changing the number of times a task is repeated • Can predict the outcome of a program containing a count-controlled loop • Can choose which values to change in a loop **Wk 5- To decompose a task into small steps**	**Wk 2- To use a digital device to record sound:** • Can use a device to record audio and play back sound • Can suggest how to improve my recording • Can discuss what other people include when recording sound for a podcast **Wk 3- To explain that a digital recording is stored as a file** • Can plan and write the content for a podcast • Can discuss why it is useful to be able to save digital recordings • Can save a digital recording as a file **Wk 4- To explain that audio can be changed through editing** • Can open a digital recording from a file • Can discuss ways in which audio recordings can be altered • Can edit sections of of an audio recording **Wk 5- To show that different types of audio can be combined and played together** • Can discuss sounds that other people combine • Can choose suitable sounds to include in a podcast • Can use editing tools to arrange sections of audio **Wk 6- To evaluate editing choices made** • Can explain that digital recordings need to be exported to share them • Can discuss the features of a digital recording I like • Can suggest improvements to a digital recording	**Summer 2- (ICT) Data Logging** **Wk 1- To explain that data gathered over time can be used to answer questions** • Can choose a data set to answer a given question • Can suggest questions that can be answered using a given data set • Can identify data that can be gathered over time **Wk 2- To use a digital device to collect data automatically** • Can explain that sensors are input devices • Can use data from a sensor to answer a given question • Can identify that data from sensors can be recorded **Wk 3- To explain that a data logger collects 'data points' from sensors over time** • Can identify a suitable place to collect data • Can identify the intervals used to collect data • Can talk about the data that I have captured **Wk 4- To use data collected over a long duration to find information** • Can import a data set • Can use a computer to view data in different ways • Can use a computer program to sort data

	• Can identify 'chunks' of actions in the real world • Can use a procedure in a program • Can explain that a computer can repeatedly call a procedure **Wk 6- To create a program that uses count-controlled loops to produce a given outcome** • Can design a program that includes count-controlled loops • Can make use of my design to write a program • Can develop my program by debugging it	**NC:-design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts** **Year 4 workshop- Circuits- Makey Makey** • Create code to test which materials are conductors/insulators of electricity using a circuit board.	**Wk 5- To identify the data needed to answer questions** • Can propose a question that can be answered using logged data • Can plan how to collect data using a data logger • Can use a data logger to collect data **Wk 6- To use collected data to answer questions** • Can interpret data that has been collected using a data logger • Can draw conclusions from the data that I have collected • Can explain the benefits of using a data logger
5	**Autumn 1- Online Safety (Teachers)** **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **5.1 We are year 5 rule writers** • Consider online safety scenarios encountered in Year 4 (both at school and at home) and appreciate how these new experiences can be used to update their online safety rules • Consider what new strategies they can apply to online safety scenarios, such as clicking the CEOP button • Review and edit their online safety guidelines • Develop their online safety rules so they are easily understood and appropriate for Year 5 pupils.	**Spring 1- Online Safety (Teachers)** **NC:-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **5.3 We are content evaluators** • Understand that some people get paid to endorse products online • Develop a discerning attitude to online content so that they can confidently reach their own conclusions • Appreciate the value of trusted adults in helping them reach an informed conclusion. **NC:- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.**	**Summer 1- Online Safety (Teachers)** **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **5.4 We are respectful of copyright** • Understand that copyright laws exist to protect original content creators • Understand that content they choose to use or upload on the internet may be subject to copyright laws • Further develop their understanding of rights and responsibilities as digital citizens.

NC:-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

5.2 We are responsible for our online actions

- Recognise that online behaviour can have reallife negative effects on other people
- Understand that we must take responsibility for our own actions online, regardless of what other people are doing
- Critically assess all information surrounding an online safety scenario to decide whether it constitutes online bullying
- Use their knowledge of online safety to reach a consensus on the appropriate response to an online incident.

NC:-Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

5.4 We are protecting our online reputation

- Understand that posting inappropriate information online can cause regret later
- Understand how to manage their online reputation
- Understand that, although information posted on the internet might not always be true or accurate, it can last forever
- Understand that it is possible to search the internet for information about particular individuals.

NC:- Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

Spring 1 (ICT) Vector drawings (Islamic Shapes)

Wk 1- To identify that drawing tools can be used to produce different outcomes

- Can recognise that vector drawings are made using shapes
- Can identify the main drawing tools
- Can discuss how a vector drawing is different from paper-based drawings

Wk 2- To create a vector drawing by combining shapes

- Can identify the shapes used to make a vector drawing

NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

5.5 We are game changers

- Understand different business models for online games
- Understand that accounts for devices are linked to real-life bank accounts
- Understand that some features in online games and apps cost real money
- Understand that research, parental controls and device settings are tools we can use to help us game confidently.

NC:-Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

	Autumn 1- (ICT) Programming- Selection in physical computing (Crumble kits) **Wk 1- To control a simple circuit connected to a computer.** • Can build a simple circuit to connect a microcontroller to a computer • Can program a microcontroller to light an LED • Can explain why I used an infinite loop **Wk2- To write a program that includes count-controlled loops** • Can connect more than one output device to a microcontroller • Can design sequences for given output devices • Can decide which output devices I control with a count-controlled loop • **Wk 3- To explain that a loop can stop when a condition is met, eg number of times** • I can explain that a condition is something that can be either true or false (eg whether a value is more than 10, or whether a button has been pressed) • I can experiment with a 'do until' loop • I can program a microcontroller to respond to an input **Wk 4- To conclude that a loop can be used to repeatedly check whether a condition has been met** • Can explain that a condition being met can start an action	• Can explain that each element added to a vector drawing is an object • Can move, resize, and rotate objects I have duplicated **Wk 3- To use tools to achieve a desired effect** • Can use the zoom tool to help me add detail to my drawings • Can explain how alignment grids and resize handles can be used to improve consistency • Can modify objects to create different effects **Wk 4- To recognise that vector drawings consist of layers** • Can identify that each added object creates a new layer in the drawing • Can identify which objects are in the front layer or in the back layer of a drawing • Can change the order of layers in a vector drawing **Wk 5- To group objects to make them easier to work with** • Can copy part of a drawing by duplicating several objects • Can group to create a single object • Can reuse a group of objects to further develop my vector drawing **Wk 6- To evaluate my vector drawing** • Can create alternatives to vector drawings • Can suggest improvements to a vector drawing • Can apply what I have learned about vector drawings	**Summer 1 (ICT)** **Flat file databases** **Wk 1- To use a form to record information** • I can create multiple questions about the same field • I can explain how information can be recorded • Can order, sort, and group my data cards **Wk 2- To compare paper and computer-based databases** • Can navigate a flat-file database to compare different views of information • Can explain what a 'field' and a 'record' is in a database • Can choose which field to sort data by to answer a given question **Wk3- To outline how grouping and then sorting data allows us to answer questions** • Can explain how information can be grouped • Can group information to answer questions • Can combine grouping and sorting to answer more specific questions **Wk 4- To explain that tools can be used to select specific data** • Can choose which field and value are required to answer a given question • Can outline how 'AND' and 'OR' can be used to refine data selection

- Can identify a condition and an action in my project
- Can use selection (an 'if… then…' statement) to direct the flow of a program

Wk 5- To design a physical project that includes selection

- Can identify a condition to start an action (real world)
- Can describe what my project will do (the task)
- Can create a detailed drawing of my project

Wk 6- To create a controllable system that includes selection

- Can write an algorithm to control lights and a motor
- Can use selection to produce an intended outcome
- Can test and debug my project

NC:-Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information.Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

- Can choose multiple criteria to answer a given question

Wk 5- To explain that computer programs can be used to compare data visually

- Can select an appropriate chart to visually compare data
- Can refine a chart by selecting a particular filter
- Can explain the benefits of using a computer to create graphs

Wk 6- To apply my knowledge of a database to ask and answer real-world questions

- Can ask questions that will need more than one field to answer
- Can refine a search in a real-world context
- Can present my findings to a group

NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

	Autumn 2- (ICT) Video Editing **Wk 1- To explain what makes a video effective** • I can explain that video is a visual media format • I can identify features of videos • I can compare features in different videos **Wk 2- To use a digital device to record video** • I can identify and find features on a digital video recording device • I can experiment with different camera angles • I can make use of a microphone **Wk 3- To capture video using a range of techniques** • I can suggest filming techniques for a given purpose • I can capture video using a range of filming techniques • I can review how effective video is **Wk 4- To create a storyboard** • I can outline the scenes of my video • I can decide which filming techniques I will use • I can create and save video content **Wk 5- To identify that video can be improved through reshooting and editing** • Can store, retrieve, and export my recording to a computer • Can explain how to improve a video by reshooting and editing	**Spring 2** **Computer systems and networks- sharing information (ICT)** **Wk 1- To explain that computers can be connected together to form systems** • Can explain that systems are built using a number of parts • Can describe that a computer system features inputs, processes, and outputs • Can explain that computer systems communicate with other devices **Wk 2- To recognise the role of computer systems in our lives** • Can identify tasks that are managed by computer systems • Can identify the human elements of a computer system • Can explain the benefits of a given computer system **Wk 3- To recognise how information is transferred over the internet** • Can recognise that data is transferred using agreed methods • Can explain that networked digital devices have unique addresses • Can explain that data is transferred over networks in packets **Wk 4- To explain how sharing information online lets people in different places work together** • Can recognise that connected digital devices can allow us to access shared files stored online • Can send information over the internet in different ways	**Summer 2 (ICT)** **Selections in quizzes** **Wk1- To explain how selection is used in computer programs** • Can recall how conditions are used in selection • Can identify conditions in a program • Can modify a condition in a program **Wk 2- To relate that a conditional statement connects a condition to an outcome** • Can use selection in an infinite loop to check a condition • Can identify the condition and outcomes in an 'if… then… else…' statement • Can create a program with different outcomes using selection **Wk 3- To explain how selection directs the flow of a program** • Can explain that program flow can branch according to a condition • Can design the flow of a program which contains 'if… then… else…' • Can show that a condition can direct program flow in one of two ways **Wk 4- To design a program which uses selection** • Can outline a given task • Can use a design format to outline my project

	• Can select the correct tools to make edits to my video **Wk6- To consider the impact of the choices made when making and sharing a video** • Can make edits to my video and improve the final outcome • Can recognise that my choices when making a video will impact on the quality of the final outcome • Can evaluate my video and share my opinions	• Can explain that the internet allows different media to be shared **Wk 5- To contribute to a shared project online** • Can suggest strategies to ensure successful group work • Can make thoughtful suggestions on my group's work • Can compare working online with working offline **Wk 6- To evaluate different ways of working together online** • Can identify different ways of working together online • Can recognise that working together on the internet can be public or private • Can explain how the internet enables effective collaboration	• Can identify the outcome of user input in an algorithm **Wk 5- To create a program which uses selection** • Can implement my algorithm to create the first section of my program • Can test my program • Can share my program with others **Wk 6- To evaluate my program** • Can identify ways the program could be improved • Can identify the setup code I need in my program • Can extend my program further **NC:-Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts** **Year 5 workshop- Forces** Build and code a robot to push and pull objects.
6	**Autumn 1- Online Safety (Teachers)** **NC:-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.**	**Spring 1- Online Safety (Teachers)** **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.**	**Summer 1- Online Safety (Teachers)** **NC:- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.**

	6.1 We are online safety ambassadors • Consider online safety scenarios encountered in Year 5 (both at school and at home) and appreciate how these new experiences can be used to update their online safety rules • Consider what new strategies they can apply to online safety scenarios, such as using reporting buttons within websites and apps • Review and edit their online safety guidelines • Develop their online safety rules so they are easily understood and appropriate for Year 6 pupils **NC:-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **6.2 We will not share inappropriate images** • Understand the negative consequences of sharing nude selfies • Develop confidence in saying no when they are posed with a request for inappropriate and or indecent images of themselves • Understand that once an image is online, it stays online forever • Understand what is meant by nude selfies and learn that, sending, sharing and storing inappropriate images of under 18s is a crime.	**6.3 We are safe social workers** • Understand that most online sites and apps require an account holder to be a minimum of 13 years old • Understand that they should check and adhere to the age restrictions of a site or app • Understand why age restrictions apply to online communication tool • Develop resilience to online behaviour and influences in an unfamiliar setting • Learn how to use appropriate social networking sites safely **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies** **6.4 We are respectful of others** • Understand that they need to respect other people's preferences when uploading images or video to the internet • Understand that everyone has the right to privacy and can refuse permission for images or videos of themselves being uploaded to the internet • Develop their understanding that content posted on the internet can last forever.	**6.5 We are online safety problem solvers** • Develop confidence in their ability to act appropriately when confronted with unfamiliar situations involving technology and the internet • Revisit the key concepts of digital citizenship. **NC:-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.** **6.6 We are safe gaming experts** • Understand the risks involved with online gaming, including exposure to inappropriate content, grooming, bullying, trolling and the use of bribery tactics • Understand that research and parental controls and device settings are tools we can use to help us game safely and confidently • Apply their knowledge of safe gaming practices to plan and deliver an assembly to other children and/or parents • Consolidate everything they have learnt about age-appropriate online gaming in preparation for their transition to KS3.

	NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. **Autumn 1 (ICT)** **Progamming – variables in games** **Wk1- To define a 'variable' as something that is changeable** • Can identify examples of information that is variable • Can explain that the way that a variable changes can be defined • Can identify that variables can hold numbers or letters	**NC:-Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact** **Spring 1 (ICT) Communication- World Wide Web** **Wk1- To identify how to use a search engine**	**NC:-Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.** **Summer 1 (ICT)** **3D Modelling** **Wk 1- To use a computer to create and manipulate three-dimensional (3D) digital objects** • Can discuss the similarities and differences between 2D and 3D shapes • Can explain why we might represent 3D objects on a computer • Can select, move, and delete a digital 3D shape **Wk 2- To compare working digitally with 2D and 3D graphics** • Can identify how graphical objects can be modified • Can resize a 3D object • Can change the colour of a 3D object

	Wk2- To explain why a variable is used in a program • Can identify a program variable as a placeholder in memory for a single value • Can explain that a variable has a name and a value • Can recognise that the value of a variable can be changed **Wk3- To choose how to improve a game by using variables** • Can decide where in a program to change a variable • Can make use of an event in a program to set a variable • Can recognise that the value of a variable can be used by a program **Wk4- To design a project that builds on a given example** • Can choose the artwork for my project • Can explain my design choices • Can create algorithms for my project **Wk 5- To use my design to create a project** • Can create the artwork for my project • Can choose a name that identifies the role of a variable • Can test the code that I have written **Wk 6- To evaluate my project** • Can identify ways that my game could be improved • Can extend my game further using more variables • Can share my game with others	• Can complete a web search to find specific information • Can refine my search • Can compare results from different search engines **Wk 2- To describe how search engines select results** • Can explain why we need tools to find things online • Can recognise the role of web crawlers in creating an index • Can relate a search term to the search engine's index **Wk 3- To explain how search results are ranked** • Can explain that search results are ordered • Can explain that a search engine follows rules to rank relevant pages • Can suggest some of the criteria that a search engine checks to decide on the order of results **Wk 4- To recognise why the order of results is important, and to whom** • Can describe some of the ways that search results can be influenced • Can recognise some of the limitations of search engines • Can explain how search engines make money **Wk 5- To recognise how we communicate using technology** • Can explain the different ways in which people communicate • Can identify that there are a variety of ways of communicating over the internet	**Wk 3- To construct a digital 3D model of a physical object** • Can rotate a 3D object • Can position 3D objects in relation to each other • Can select and duplicate multiple 3D objects **Wk 4- To identify that physical objects can be broken down into a collection of 3D shapes** • Can identify the 3D shapes needed to create a model of a real-world object • Can create digital 3D objects of an appropriate size • Can group a digital 3D shape and a placeholder to create a hole in an object **Wk 5- To design a digital model by combining 3D objects** • Can plan my 3D model • Can choose which 3D objects I need to construct my model • Can modify multiple 3D objects **Wk 6- To develop and improve a digital 3D model** • Can decide how my model can be improved • Can modify my model to improve it • Can evaluate my model against a given criterion

NC:- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour.

Autumn 2- (ICT) Web page creation (London)

Wk 1- To review an existing website and consider its structure

- Can explore a website
- Can discuss the different types of media used on websites
- Know that websites are written in HTML

Wk 2- To plan the features of a web page

- Can recognise the common features of a web page
- Can suggest media to include on my page
- Can draw a web page layout that suits my purpose

Wk 3- To consider the ownership and use of images (copyright)

- Can choose methods of communication to suit particular purposes

Wk 6- To evaluate different methods of online communication

- Can compare different methods of communicating on the internet
- Can decide when I should and should not share
- Can explain that communication on the internet may not be private

NC:-Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

NC:-Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and

Summer 2- Spreasheets- Living in the wider world (budgeting)

Wk 1- To identify questions which can be answered using data

- Can explain the relevance of data headings
- Can answer questions from an existing data set
- Can ask simple relevant questions which can be answered using data

Wk 2- To explain that objects can be described using data

- I can explain what an item of data is
- I can apply an appropriate number format to a cell
- I can build a data set in a spreadsheet application

Wk 3- To explain that formulas can be used to produce calculated data

- Can explain the relevance of a cell's data type
- Can construct a formula in a spreadsheet

	• Can say why I should use copyright-free images • Can find copyright-free images • Can describe what is meant by the term 'fair u I can add content to my own web page. **Wk4- To recognise the need to preview pages** • Can preview what my web page looks like • Can evaluate what my web page looks like on different devices and suggest/make edits.se' • Can explain what a navigation path is **Wk 5- To outline the need for a navigation path** • I can explain what a navigation path is • I can describe why navigation paths are useful • I can make multiple web pages and link them using hyperlinks **Wk 6- To recognise the implications of linking to content owned by other people** • I can explain the implication of linking to content owned by others • I can create hyperlinks to link to other people's work • I can evaluate the user experience of a website	**Spring 2- (ICT) Sensing (Microbits)** **Wk 1- To create a program to run on a controllable device** • Can apply my knowledge of programming to a new environment • Can test my program on an emulator • Can transfer my program to a controllable device **Wk 2- To explain that selection can control the flow of a program** • Can identify examples of conditions in the real world • Can use a variable in an if, then, else statement to select the flow of a program • Can determine the flow of a program using selection **Wk 3- To update a variable with a user input** • Can use a condition to change a variable • Can experiment with different physical inputs • Can explain that if you read a variable, the value remains **Wk 4- To use an conditional statement to compare a variable to a value** • Can explain the importance of the order of conditions in else, if statements • Can use an operand (e.g. <>=) in an if, then statement • Can modify a program to achieve a different outcome	• Can identify that changing inputs changes outputs **Wk 4- To apply formulas to data, including duplicating** • Can recognise that data can be calculated using different operations • Can create a formula which includes a range of cells • Can apply a formula to multiple cells by duplicating it **Wk 5- To create a spreadsheet to plan an event** • Can use a spreadsheet to answer questions • Can explain why data should be organised • Can apply a formula to calculate the data I need to answer questions **Wk 6- To choose suitable ways to present data** • Can produce a graph • Can use a graph to show the answer to questions • Can suggest when to use a table or graph **Year 6 Workshop Light- (Crumble kits)** **NC:- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts**

		Wk 5- To design a project that uses inputs and outputs on a controllable device • Can decide what variables to include in a project • Can design the algorithm for my project • Can design the program flow for my project **Wk 6- To develop a program to use inputs and outputs on a controllable device** • Can create a program based on my design • Can test my program against my design • Can use a range of approaches to find and fix bugs	