Preston Grange Primary School
Computing Curriculum

Nursery Overview

Autumn 1	Process simple positional vocabulary in the run of child initiated play. Match pairs to demonstrate a secure grasp of commonality
Autumn 2	Process and use positional vocabulary in large scale physical play.
Spring 1	Process and use positional language accurately in small world scenes and when building. Arrange 2D shapes, narrating choices with informal descriptions of properties. Explain how things work e.g windup toys pulleys.
Spring 2	Process and use positional language when out in the wider locality. Ascribe meaning to 3D shapes when building, according to their properties. Describe patterns on resources and the environment using everyday language or regularity and repetition to describe features.
Summer 1	Demonstrate a range of actions through with remote control toys Continue an ABAB linear pattern with everyday objects
Summer 2	Combine 2D and 3D shapes to make new shapes and narrate the effects created. Correct an error ABAB pattern. Participate accurately in ABAB repeated patterns of actions. Talk about things that have already happened and things that are going to happen.

Reception Overview

Autumn 1	Complete AB visual patterns. Narrate the pattern of the school day using now, next, after playtime, after lunch, before home time etc. Follow one step instructions.
Autumn 2	Sort by one criterion. Recognise the odd one out in a set. Create AB transient linear patterns. Narrate the pattern of the school day using morning, lunchtime, afternoon, evening, bedtime, daytime, night-time. Formulate and respond to I wonder, why? and how? questions. Follow two step instructions. Sort by one criterion. Recognise the odd one out in a set.
Spring 1	Narrate the pattern of the week using today, tomorrow, and yesterday. Begin to narrate the pattern of the week using the names of the days. Design with 2D shapes. Make 2D shapes out of other 2D shapes. Observe, notice and discuss and record weather patterns across days and weeks Imitate more complex rhythm patterns with tapping instruments. Articulate simple problem solving approaches.
Spring 2	Sort 2D shapes according to properties. Narrate the pattern of the week using the names of the days. Interpret google earth street view of the route between school and Lidl.
Summer 1	Name and describe attributes of 3D shapes in relation to their usefulness when model building. Narrate the pattern of a week using the names of days, weekend, today, tomorrow, yesterday Process and follow three step instructions.
Summer 2	Continue and create more complex linear patterns. Continue and create circular and symmetrical designs with 2D and 3D shapes Sort 3D shapes according to properties. Play games, giving instructions to each other.

KS1 Overview

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Year 1	Technology around us CS, AL	Digital painting ET, CM	Moving a robot AL,PG	Grouping data DI,AL	Digital writing ET, CM
Year 2	Information technology around us NW, CS	Digital photography ET, CM	Robot algorithms AL, PG	Pictograms DI, ET	Making music CM, DD

Key		AL Algorithms
CS Computing systems	ET Effective use of tools	SS Safety and Security
CM Creating media	NW Networks	IT Impact of technology
DI Data and information	PG Programming	DD Design and development

KS2 Overview

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Year 3	Connecting computers NW, CS	Stop-frame animation ET, CM	Sequencing sounds PG, DD	Branching databases DI, ET	Desktop publishing ET, CM
Year 4	The internet NW, SS	Repetition in shapes AL, PG	Data logging CS, DI	Photo editing ET, CM	Repetition in games PG, DD
Year 5	Sharing information NW, ET	Video editing CM, DD	Selection in physical computing PG, CS	Flat-file databases DI, ET	Vector drawing ET, CM
Year 6	Internet communication NW, ET	Webpage creation CM, DD	Variables in games PG, DD	Introduction to spreadsheets ET, DI	3D modelling ET, CM

Key		AL Algorithms
CS Computing systems	ET Effective use of tools	SS Safety and Security
CM Creating media	NW Networks	IT Impact of technology
DI Data and information	PG Programming	DD Design and development

Teach Computing

E-Safety Overview

1	**Media Balance Is Important**
	Pause for People
	Safety in My Online Neighborhood
2	**Pause & Think Online**
	How Technology Makes You Feel
	Internet Traffic Light
	We the Digital Citizens
3	**Device-Free Moments**
	That's Private!
	Digital Trails
	Who Is in Your Online Community?
	Putting a STOP to Online Meanness
	Let's Give Credit!

4	**Your Rings of Responsibility**
	Password Power-Up
	This Is Me
	Our Digital Citizenship Pledge
	The Power of Words
	Is Seeing Believing?
5	**My Media Choices**
	Private and Personal Information
	Our Online Tracks
	Keeping Games Fun and Friendly
	Be a Super Digital Citizen
	A Creator's Rights and Responsibilities
6	**Finding My Media Balance**
	You Won't Believe This!
	Beyond Gender Stereotypes
	Digital Friendships
	Is It Cyberbullying?
	Reading News Online

Media Balance & Well-Being

Privacy & Security

Digital Footprint & Identity

Relationships & Communication

Cyberbullying, Digital Drama, & Hate Speech

News & Media Literacy

Year 1

Unit: Technology in Our Classroom

NC Objective

- Recognise common uses of information technology beyond school
- 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.

Vocabulary:	Objectives:	Resources:
- technology	- To identify technology - To identify a computer and its main parts - To use a mouse in different ways - To use a keyboard to type on a computer - To use the keyboard to edit text - To create rules for using technology responsibly	https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-technology-around-us Glue, post it notes (lesson 1) Desktop/Laptop(lesson 2) Desktop/laptop (lesson 3) Desktop/laptop (lesson 4) Desktop/laptop (lesson 5)

13 I have the right to find out and share information

17 I have the right to get information in lots of ways, so long as it's safe

Unit: Creating Media – Digital Painting

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

Vocabulary:	Objectives:	Resources:
- Device - Usernames - Passwords - tool(s)	- To describe what different freehand tools do - To use the shape tool and the line tools - To make careful choices when painting a digital picture - To explain why I chose the tools I used - To use a computer on my own to paint a picture - To compare painting a picture on a computer and on paper	https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-painting Computers or tablets, Painting app

Unit: Creating Media – Digital writing

NC Objectives:

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Use technology safely and respectfully, keeping personal information private
- I can give reasons why I should only share information with people I choose to and can trust.

Vocabulary:
- Word processing
- Key
- Keyboard
- Enter
- Space key
- Toolbar
- Double-click
- Drag
- Text
- Font
- Undo
- Letters
- Microsoft Word
- Google Docs

Objectives:

- To use a computer to write
- To add and remove text on a computer
- To identify that the look of text can be changed on a computer
- To make careful choices when changing text
- To explain why I used the tools that I chose
- To compare writing on a computer with writing on paper

Resources:
https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-writing
Computers with access to word processor

E-Safety

Media Balance

Unit: Grouping data

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

Vocabulary:	Objectives	Resources:
- Data - Information - Group - Count - Label - Property (of an object) - similar/different	- To label objects - To identify that objects can be counted - To describe objects in different ways - To count objects with the same properties - To compare groups of objects - To answer questions about groups of objects	- https://teachcomputing.org/curriculum/key-stage-1/data-and-information-grouping-data - Assortment of physical objects for each table/group that fit into a group, Dry-erase whiteboard Box of physical 2D shapes of varying colour, size, and shape Talk buttons or dictation tool

E-Safety

Pause for People

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Unit: Moving a Robot

NC Objectives:

- 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

Vocabulary:
- Memory
- Device
- Command
- Instruction
- Program
- Sequence
- Robot
- Predict
- Destination
- Algorithm
- Debug

Objectives:
- To explain what a given command will do
- To act out a given word
- To combine forwards and backwards commands to make a sequence
- To combine four direction commands to make sequences
- To plan a simple program
- To find more than one solution to a problem

Resources:
https://teachcomputing.org/curriculum/key-stage-1/programming-a-moving-a-robot

Floor robots

E-Safety

Safety in my online community

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Year 2

Unit: Computing systems and networks - Information and technology around us

NC Objectives:

- 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.

Vocabulary:
- Technology
- desktop / laptop computer
- Mouse
- Trackpad
- Double click
- Keyboard
- Typing

Objectives:

- To recognise the uses and features of information technology
- To identify information technology in the home
- To identify information technology beyond school
- To explain how information technology benefits us
- To show how to use information technology safely
- To recognise that choices are made when using information technology

Resources:

- Desktop/ laptop computer
- Paintz.app
- flipchart/large paper
- Print out of school rules

E-Safety
Pause & Think Online

Unit: Digital photography

NC Objectives:

- 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

Vocabulary:
- Device
- Camera
- Capture
- Image
- Digital
- Landscape
- Portrait
- Framing
- Subject
- Light sources
- Flash
- Focus
- Background
- Editing
- Filter

Objectives:

- To use a digital device to take a photograph
- To make choices when taking a photograph
- To describe what makes a good photograph
- To decide how photographs can be improved
- To use tools to change an image
- To recognise that photos can be changed

Resources:
- IPad
- Torches
- Lamps
- pixlr.com/x/ or the Pixlr app

E-Safety

How Technology Makes You Feel

Unit: Creating media - Making music

NC Objectives:

- 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

Vocabulary:	Objectives:	Resources:
- Pattern - Rhythm - Pulse - Pitch - Tempo - Notes - Digital Instrument - Create 	- To say how music can make us feel - To identify that there are patterns in music - To experiment with sound using a computer - To use a computer to create a musical pattern - To create music for a purpose - To review and refine our computer work	Music Coloured counters Range of untuned percussion instruments~ PCs or tablets to run Chrome Music Lab online E-Safety **Internet Traffic Light**

Unit: Pictograms

NC Objectives:

- 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

Vocabulary:	Objectives:	Resources:
- More than - Less than - Most - Least - Organise - Data - Object - Tally chart - Votes - Total - Pictogram - Enter - Compare - Group - Conclusion 13 I have the right to find out and share information 17 I have the right to get information in lots of ways, so long as it's safe	- To recognise that we can count and compare objects using tally charts - To recognise that objects can be represented as pictures - To create a pictogram - To select objects by attribute and make comparisons - To recognise that people can be described by attributes - To explain that we can present information using a computer	• 'Just 2 Easy: Pictogram' (https://www.j2e.com/jit5#pictogram)

Unit: Robot Algorithms

NC Objectives:
● 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.

Vocabulary:

● Instruction
● Sequence
● Clear
● Unambiguous
● Algorithm
● Program
● Order
● Command
● Prediction
● Artwork
● Design
● Route
● Mat

Objectives:

● To describe a series of instructions as a sequence
● To explain what happens when we change the order of instructions
● To use logical reasoning to predict the outcome of a program (series of commands)
● To explain that programming projects can have code and artwork
● To design an algorithm
● To create and debug a program that I have written

Resources:
● Possible routes teacher resource
● Mat print outs
● Coloured pencils
● Whiteboards and pens

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We the Digital Citizens

Year 3

Unit: Connecting Computers

NC Objectives:

- 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.

Vocabulary:

- Digital device
- Input
- Output
- Process
- Program
- Connection
- Network
- Network switch
- Server
- Wireless Access Point (WAP)

Objectives:

- To explain how digital devices function.
- To identify input and output devices.
- To recognise how digital devices can change the way we work.
- To explain how a computer network can be used to share information.
- To explore how digital devices can be connected.
- To recognise the physical components of a network.

Resources:

- Example of digital device (floor robot, laptop, digital camera)
- Computer with basic graphics program (Paint)

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Digital Trails

Unit: Stop -frame Animation

NC Objectives:
- 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.

Vocabulary:
- Animation
- Flipbook
- Stop-frame animation
- Frame
- Sequence
- Image
- Setting
- Character
- Events
- Stop-frame animation
- Onion skinning
- Consistency
- Evaluation
- Delete
- Frame
- Media
- Import
- Transition

Objectives:

- To explain that animation is a sequence of drawings or photographs.
- To relate animated movement with a sequence of images.
- To plan an animation.
- To identify the need to work consistently and carefully.
- To review and improve an animation.
- To evaluate the impact of adding other media to an animation.

Resources:
- Sticky notes (small paper stapled into a book)
- Pens/Pencils
- iPads
- Paper/Whiteboards
- Whiteboard pens and rubbers
- iMotion app
- Sticky Tape

E-Safety
That's Private!

17 I have the right to get information in lots of ways, so long as it's safe

13 I have the right to find out and share information

Unit: Sequencing in Sounds

NC Objectives:
- 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.

Vocabulary:
- Scratch
- Programming
- Blocks
- Commands
- Code
- Sprite
- Costume
- Stage
- Backdrop
- Programming blocks
- Motion
- Turn
- Point in direction
- Go to
- Glide
- Sequence
- Event

- Task
- Design
- Code
- Run
- Order
- Note
- Chord
- Design
- Algorithm
- Bug
- Debug

Objectives:
- To explore a new programming environment.
- To identify that commands have an outcome.
- To explain that a program has a start.
- To recognise that a sequence of commands can have an order.
- To change the appearance of my project.
- To create a project from a task description.

Resources:
- Scratch
- Computers

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Device-Free Moments

Unit: Branching Databases

NC Objectives:

- 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.

Vocabulary:

- Attribute
- Value
- Questions
- Table
- Objects
- Branching database
- Database
- Equal
- Even
- Separate
- Structure
- Compare
- Organise
- Order
- Value

- Selecting Pictogram
- Information
- Decision Tree
- j2data

Objectives:

- To create questions with yes/no answers.
- To identify the object attributes needed to collect relevant data.
- To create a branching database.
- To explain why it is helpful for a database to be well structured.
- To identify objects using a branching database.
- To compare the information shown in a pictogram with a branching database.

Resources:

- 8/9 physical objects
- Large paper
- Sticky notes/strips of paper
- J2data resource
- 'Chatbot' Scratch project

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Putting a STOP to Online Meanness

Unit: Desktop Publishing

NC Objectives:

- 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.

Vocabulary:

- Text
- Images
- Advantages
- Disadvantages
- Communicate
- Font
- Fontstyle
- Template
- Landscape
- Portrait
- Orientation
- Placeholder
- Layout

- Content
- Desktop publishing
- Copy
- Paste
- Purpose
- Benefits

Objectives:

- To recognise how text and images convey information.
- To recognise that text and layout can be edited.
- To choose appropriate page settings.
- To add content to a desktop publishing publication.
- To consider how different layouts can suit different purposes.
- To consider the benefits of desktop publishing.

Resources:
- Whiteboards, pens and rubbers
- A3 paper
- Glue

E-Safety

Let's Give Credit!

13 I have the right to find out and share information

17 I have the right to get information in lots of ways, so long as it's safe

Year 4

Unit: Computing systems and networks – The Internet

NC Objectives:
- 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.

Vocabulary:
- Internet
- Network
- Devices
- World Wide Web
- Content
- Router
- Server
- Network security
- Network Switch
- Wireless Access Point (WAP)
- Browser
- Links
- Files
- Download
- Ownership
- Permission

Objectives:
- To describe how networks physically connect to other networks
- To recognise how networked devices make up the internet
- To outline how websites can be shared via the World Wide Web
- To describe how content can be added and accessed on the World Wide Web
- To recognise how the content of the WWW is created by people
- To evaluate the consequences of unreliable content

Resources:
- Submarine Cable Map (L1)

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Your Rings of Responsibility

Unit: Creating media - Photo Editing

NC Objectives:
- 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.

Vocabulary		Objectives:	Resources:
● Image, effects,	● font style,		Paper copies of magazines/flyers/cards/packaging with images on them
● colours,	● shapes,	● To explain that digital images can be changed	paint.net (www.getpaint.net)
● hue/saturation	● border,		BeFunky app (www.befunky.com)
● sepia,	● layer,	● To change the composition of an image	LunaPic (www341.lunapic.com/editor)
● version,	● edit,		A digital image of each learner in a folder that they can access.
● illustrator,	● arrange,	● To describe how images can be changed for different uses	Two versions of a children's book with different illustrations
● vignette	● select,		A folder containing 5/6 images for learners to edit
● retouch,	● digital,		
● clone,	● crop,		
● recolour,	● undo,	● To make good choices when selecting different tools	**E-Safety**
● magic wand,	● save,		
● adjust,	● search,		**This Is Me**
● sharpen,	● save,		
● Brighten	● copyright,	● To recognise that not all images are real	
● fake/real,	● composition,		
● composite	● pixels,		
● alter,	● rotate,		
● background,	● flip,		
● Foreground	● adjustments,		
● publication,	● elements,		
	● original,		

Unit: Data information - Data Logging

NC Objectives:
- ...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

Vocabulary:
- Data,
- table (layout)
- Input device,
- sensor,
- data logger
- Data logger,
- logging,
- data point,
- interval
- Analyse,
- data set,
- import,
- export
- Data,
- data logger,
- logged,
- collection
- Analyse,
- Review,
- Conclusion

Objectives:
- To explain that data gathered over time can be used to answer questions
- To use a digital device to collect data automatically
- To explain that a data logger collects 'data points' from sensors over time
- To use data collected over a long duration to find information
- To identify the data needed to answer questions
- To use collected data to answer questions

Resources:
Data tables:
'Which data?' activity sheet
(ncce.io/dat4-1-a1-ww)
'Which data?' solutions
(ncce.io/dat4-1-a1-sw)
Data gathered over time: 'Data that is collected regularly' activity sheet
(ncce.io/dat4-1-a4-wd)

E-Safety
Our Digital Citizenship Pledge

Unit: Programming A - Repetition in Shape

NC Objectives:
- 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

Vocabulary:
- Program
- Commands
- Code snippet
- Algorithm
- Debug
- Decompose
- Procedure
- Count-controlled loop
- Procedure
- Debug
- Program

Objectives:
- To identify that accuracy in programming is important
- To create a program in a text-based language
- To explain what 'repeat' means
- To modify a count-controlled loop to produce a given outcome
- To decompose a task into small steps
- To create a program that uses count-controlled loops to produce a given outcome

Resources:
- LOGO
turtleacademy.com/playground
fmslogo.sourceforge.net

E-Safety

The Power of Words

Unit: Programming B - Repetition in Games

NC Objectives:
- 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

Vocabulary:
- loop,
- repeat,
- value
- Block,
- forever,
- infinite loop,
- count-controlled loop,
- costume
- Repetition,
- forever,
- animate,
- costume,
- event block,
- duplicate

- design,
- algorithm,
- duplicate,
- debug,
- refine,
- evaluate

Objectives:
- To develop the use of count-controlled loops in a different programming environment
- To explain that in programming there are infinite loops and count-controlled loops
- To develop a design that includes two or more loops which run at the same time
- To modify an infinite loop in a given program
- To design a project that includes repetition
- To create a project that includes repetition

Resources:
A2 Resource: Creating a triangle
Scratch website
A1 Code: Dancing dinosaurs
L4 Code – Catch the shark
A0 Code: Bat catching game

E-Safety

Is Seeing Believing?

13 I have the right to find out and share information

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Year 5

Unit: Computing systems and networks – Sharing information

NC Objectives:
- 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.

Vocabulary:
- computer systems
- collaboration
- input
- output
- Transferring
- IP address
- protocols
- media
- packet

Objectives:
- To explain that computers can be connected together to form systems.
- To recognise the role of computer systems in our lives.
- To recognise how information is transferred over the internet.
- To explain how sharing information online lets people in different places work together.
- To evaluate different ways of working together online.

Resources:
- G Suite logins for Pupils
- Desktop PCs
- Scratch

E-Safety

My Media Choices

Unit: Creating media – Vector drawing

NC Objectives:
- 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.

Vocabulary:
- vector,
- drawing tools, shapes,
- object,
- toolbar,
- object,
- move,
- resize,
- colour,
- rotate,
- duplicate/
- copy,
- zoom,

- grid,
- handles,
- consistency,
- modify,
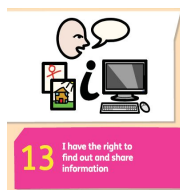- Layer select,
- rotate,
- alignment

Objectives:
- To identify that drawing tools can be used to produce different outcomes
- To create a vector drawing by combining shapes
- To use tools to achieve a desired effect
- To recognise that vector drawings consist of layers.
- To group objects to make them easier to work with
- To evaluate my vector drawing

Resources:
- Google Drawings
- PC/Laptops

E-Safety

A Creator's Rights and Responsibilities

31 I have a right to relax and play

17 I have the right to get information in lots of ways, so long as it's safe

13 I have the right to find out and share information

Unit: Video Editing

NC Objectives:
- 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.
- Recognise inappropriate content, contact, and conduct and know how to report concerns
- Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour
- Identify a range of ways to report concerns about content and contact

Vocabulary:
- video,
- audio,
- recording,
- storyboard,
- script,
- soundtrack,
- dialogue
- zoom,
- pan,
- tilt,
- angle

Objectives:
- To recognise video as moving pictures, which can include audio.
- To identify digital devices that can record video.
- To capture video using a digital device.
- To recognise the features of an effective video.
- To identify that video can be improved through re-shooting and editing.
- To consider the impact of the choices made when making and sharing a video.

Resources:
- iPads
- iMovie/Window's Movie Maker

E-Safety

Private and Personal Information

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<u>Unit:</u> Flat-file databases

<u>NC Objectives:</u>
- 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

<u>Vocabulary:</u>
- Database,
- data,
- information,
- record,
- field,
- sort,
- order,
- group
- graph,
- chart,
- axis,
- compare,
- filter
- presentation

<u>Objectives:</u>
- To use a form to record information.
- To compare paper and computer-based databases.
- To outline how grouping and then sorting data allows us to answer questions.
- To explain that tools can be used to select specific data.
- To explain that computer programs can be used to compare data visually.
- To apply my knowledge of a database to ask and answer real-world questions.

<u>Resources:</u>
- J2Data website
- PCs

<u>E-Safety</u>

Our Online Tracks

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Unit: Programming A – Selection in physical computing

NC Objectives:
- 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

Vocabulary:
- Microcontroller,
- Crumble controller,
- components,
- LED,
- Sparkle,
- crocodile clips,
- battery box,
- program,
- repetition,
- infinite loop
- repetition,
- count-controlled loop
- condition,
- true,
- false,
- input

Objectives:
- To control a simple circuit connected to a computer.
- To write a program that includes count-controlled loops.
- To explain that a loop can stop when a condition is met, eg number of times.
- To conclude that a loop can be used to repeatedly check whether a condition has been met.
- To design a physical project that includes selection.
- To create a controllable system that includes selection.

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Resources:
- Crumble Starter Kits x10/15
- Crumble Software on PCs

E-Safety

Keeping Games Fun and Friendly

Year 6

Unit: Communication

NC Objectives:
●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.

Vocabulary:

- search
- search engine (Google, Bing, Yahoo!, Swisscows, DuckDuckGo,
- refine
- omnibox
- index
- crawler
- bot
- ranking
- optimisation
- links

- Internet
- public
- private
- one-way/two-way,
- one-to-one/
- one-to-many,
- SMS
- Email
- blog

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Objectives:

- To identify how to use a search engine.
- To describe how search engines select results.
- To explain how search results are ranked.
- To recognise why the order of results is important, and to whom.
- To recognise how we communicate using technology.
- To evaluate different methods of online communication.

Resources:
Ipads/computers with internet connection.
Google Docs
Google Classroom logins
A3 Paper
Mini Whiteboards
Sticky notes

E-Safety

Finding My Media Balance

Unit: Creating media - 3D Modelling

NC Objectives:
- 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
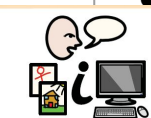
Vocabulary:

- 2D
- 3D
- 3D object
- 3D space
- view
- resize
- colour
- lift
- rotate
- position
- select
- duplicate
- dimensions
- placeholder

- hole
- group
- ungroup
- resize
- design
- modify
- evaluate
- improve
- content creator
- selection
- ranking

Objectives:
- To use a computer to create and manipulate three-dimensional (3D) digital objects
- To compare working digitally with 2D and 3D graphics
- To construct a digital 3D model of a physical object
- To identify that physical objects can be broken down into a collection of 3D shapes
- To design a digital model by combining 3D objects
- To develop and improve a digital 3D model

Resources:

- A selection of 3D shapes
- A computer mouse for each device
- Physical photo frames (optional)

E-Safety

You Won't Believe This!

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Unit: Web page creation

NC Objectives:

● 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.

Vocabulary:

- website
- web page
- browser
- Hypertext Markup Language (HTML)
- Logo
- Layout
- header
- media
- purpose
- home page
- preview
- evaluate

- device
- Google Sites
- Copyright
- fair use
- home page
- preview
- evaluate
- device
- breadcrumb trail
- navigation
- hyperlink
- subpage
- evaluate
- Implication
- external link
- embed

Objectives:

- To review an existing website and consider its structure.
- To plan the features of a web page.
- To consider the ownership and use of images (copyright).
- To recognise the need to preview pages.
- To outline the need for a navigation path.
- To recognise the implications of linking to content owned by other people.

Resources:

- Devices with internet connection.
- Whiteboards, pens & rubbers.
- Google Sites (GC logins)

E-Safety
Beyond Gender Stereotypes

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Unit: Data and Information - Spreadsheets	

NC Objectives:

- 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

Vocabulary:

- spreadsheet
- data
- data heading
- data set
- cells
- columns
- rows
- object
- spreadsheet application
- format
- common attribute
- formula,
- calculation
- Input
- output

- cell reference
- calculate
- operation
- formula
- cell
- range
- duplicate
- sigma
- propose
- question
- organised
- graph, chart
- evaluate
- results
- comparison
- questions
- software
- tools

Objectives:

- To identify questions which can be answered using data
- To explain that objects can be described using data
- To explain that formulas can be used to produce calculated data
- To apply formulas to data, including duplicating
- To create a spreadsheet to plan an event
- To choose suitable ways to present data

Resources:

- Access to Google Sheets
- whiteboards
- pens
- rubbers
- Learners will need access to their own saved spreadsheet from Lesson 5

E-Safety

Digital Friendships

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Unit: Programming A - Variables in games

NC Objectives:
- 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

Vocabulary:
- variable
- change
- name
- value
- set
- change
- design
- event
- algorithm
- code
- program
- project
- code
- test

- debug
- improve
- evaluate
- task
- artwork
- share

Objectives:
- To define a 'variable' as something that is changeable
- To explain why a variable is used in a program
- To choose how to improve a game by using variables
- To design a project that builds on a given example
- To use my design to create a project
- To evaluate my project

Resources:
- Devices that are capable of running Scratch 3
- Designs from Lesson 4
- Individual dry wipe boards

E-Safety
Is It Cyberbullying?