

# Ackworth Howard C of E School

Educating for 'life in all its fullness.'



**Computing Curriculum  
Essential Knowledge**

# Intent

The children at Ackworth Howard J&I School are digital natives – they are as adept at navigating a touch screen as they are at using a pencil and paper. Growing up in an increasingly digitized world, we understand the importance of giving our children exceptional learning opportunities in Computing.

Having recently invested heavily in tech across school, we are committed to developing an innovative curriculum which offers our children the chance to grow their understanding of digital technology, how to develop computational thinking, and how to stay safe online.

Our children are familiar with new tech, and use it across the curriculum to support their learning. Our facilities, integrated into all the classrooms, include interactive whiteboards and computers, laptops and iPads as well as other experimental tech.



## **Mind**

To encourage growth in mind, we offer opportunities to develop leadership skills through our Digital Leaders programme, whereby children are trained to take on leadership roles and to support others in computing across the school. Creativity is encouraged throughout the curriculum, such as during our Christmas Hackathon or during cross-curricular work such as retelling the story of Boudicca's rebellion through Scratch.



## **Body**

To encourage growth in body, we aim to equip our children with the knowledge and resilience to use digital technologies responsibly and safely, not only during Safer Internet Week, but throughout the year in response to current events and changing trends in our children's online activities.



## **Spirit**

To encourage growth in spirit, we encourage our children to embrace change, particularly in response to new technologies. We aim to nurture responsible digital citizens, for whom 'society' is global, not just local.

# What our children say about Computing...

**How much do you enjoy your computing lessons at Ackworth Howard School?**

★★★★★★★☆☆ (average rating 8.81/10)

**How confident do you feel in your computing lessons at Ackworth Howard School?**

★★★★★★☆☆☆ (average rating 7.58/10)

**How much do you enjoy your science computing at Ackworth Howard School?**

★★★★★★☆☆☆ (average rating 8.26/10)

*Source: February 2020 Pupil Voice Survey (147 responses)*

# Early Years Computing

| Area of Learning                           | Ackworth Howard's Knowledge Essentials  |
|--|---|
| Personal, Social and Emotional Development | <p><b><u>Three and Four-Year-Olds</u></b></p> <ul style="list-style-type: none"> <li>Increasingly follow rules, understanding why they are important</li> </ul> <p><b><u>Reception</u></b></p> <ul style="list-style-type: none"> <li>Show resilience and perseverance in the face of a challenge</li> </ul> <p><b><u>Early Learning Goals</u></b></p> <ul style="list-style-type: none"> <li>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> <li>Explain the reasons for rules, know right from wrong and try to behave accordingly</li> </ul> |
| Physical Development                       | <p><b><u>Three and Four-Year-Olds</u></b></p> <ul style="list-style-type: none"> <li>Matching their developing physical skills to tasks and activities in the setting</li> </ul> <p><b><u>Reception</u></b></p> <ul style="list-style-type: none"> <li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently</li> <li>Know and talk about the different factors that support their overall health and wellbeing</li> <li>Sensible amounts of screen time</li> </ul>  |
| Understanding the World                    | <p><b><u>Three and Four-Year-Olds</u></b></p> <ul style="list-style-type: none"> <li>Explore how things work</li> </ul>   |
| Expressive Arts and Design                 | <p><b><u>Reception</u></b></p> <ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings</li> </ul> <p><b><u>Early Learning Goals</u></b></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>  |

# Early Years Computing Vocabulary

## Essential Vocabulary

### E-SAFETY

Choices  
Internet  
Website

### PROGRAMMING

Equipment  
Buttons  
Movement

### MULTIMEDIA

Screen  
Mouse  
Images  
Keyboard  
Paint

### TECHNOLOGY IN OUR LIVES

Technology  
Share  
Create  
Internet

### DATA HANDLING

Collect  
Set of photos  
Count  
Organise

### Intended Learning Outcomes

- Respond to being given responsibility and independence with equipment.
  - Show initiative in using equipment.
- Test out their experiences of using equipment at home or in other settings.
  - Role play things that they have seen adults do.
  - Apply things they know into a different context.
- Begin to understand the processes involved in finding information from a computer, or how a piece of technology can help to complete a task.
- Evidence of using prior knowledge of different devices, gaining confidence and ability as they gain exposure to equipment.

### Key Vocabulary and Questions

- Language relating to equipment e.g. monitor, screen, tower, mouse, cursor etc.
  - Names of computer programmes and characters.
  - Developing directional language using remote control vehicles.
  - Language related to toys e.g. press, button, turn, sound, move etc.
- Use language related to specific objects which the children are familiar with.
  - Listening centre – on, off, play, stop, pause, eject etc. Shall we send a text message? Shall I see if there are any emails? Should we photocopy this picture? Explain how you play / use it / work it. How do you make it...? Which program do you like? I wonder if you could have done it a different way?

# Year 1

| National Curriculum  | Ackworth Howard's Knowledge Essentials   |
|--|--|
| <p data-bbox="147 319 563 354"><b>Pupils should be taught to:</b></p> <p data-bbox="147 408 428 442"><b>Computer Science</b></p> <ul data-bbox="147 454 924 753" style="list-style-type: none"><li data-bbox="147 454 924 619">• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li><li data-bbox="147 631 708 665">• create and debug simple programs</li><li data-bbox="147 676 924 753">• use logical reasoning to predict the behaviour of simple programs</li></ul> | <p data-bbox="1014 319 1294 354"><b><u>Programming Toys</u></b></p> <ul data-bbox="1014 365 2002 665" style="list-style-type: none"><li data-bbox="1014 365 1416 399">• say what an algorithm is</li><li data-bbox="1014 411 2002 445">• say why it is important to be precise when writing an algorithm</li><li data-bbox="1014 456 1615 491">• check their work for mistakes (debug)</li><li data-bbox="1014 502 1819 536">• program a robot (Bee-Bot) using the arrow buttons</li><li data-bbox="1014 548 1880 582">• start their programming sequence again if they need to</li><li data-bbox="1014 594 1798 628">• check their work for mistakes to debug a program</li><li data-bbox="1014 639 1472 674">• plan and check an algorithm</li></ul> <p data-bbox="1014 719 1416 753"><b><u>Programming with Scratch</u></b></p> <ul data-bbox="1014 765 2068 1108" style="list-style-type: none"><li data-bbox="1014 765 1661 799">• open the Scratch and start a new project</li><li data-bbox="1014 811 1610 845">• add new characters and backgrounds</li><li data-bbox="1014 856 1763 891">• use blocks for movement in different directions</li><li data-bbox="1014 902 1696 936">• create short sets of sequenced instructions</li><li data-bbox="1014 948 1788 982">• use different end blocks, including repeat forever</li><li data-bbox="1014 993 1753 1028">• change the size of characters to grow or shrink</li><li data-bbox="1014 1039 1819 1073">• hide and show characters with an instruction block</li><li data-bbox="1014 1085 2068 1119">• program two or more characters with instructions at the same time</li></ul> |

# Year 1

## National Curriculum

### Information technology

- use technology purposefully to create, organise, store, manipulate and retrieve digital content

## Ackworth Howard's Knowledge Essentials

### Word Processing Skills

- Type with two hands
- Use shift, space and enter correctly
- Use undo and redo
- Make text bold, italic or underline
- Save their work in their folder
- Edit text using backspace, delete and the arrow keys.
- Format the font
- Select single words.

### Painting

- Paint with different colours.
- Paint with different brushes.
- Create shapes.
- Save their paintings in their folder.
- Fill an area with a colour.
- Undo and redo.
- Add text.

### Using and Applying

- Turn on a computer and open an application
- type letters and symbols, including use of the shift key
- format text in different ways (bold, italic, underline)
- draw different shapes using paint software
- use a brush in a paint application and change the size and colour.
- click, double-click and drag objects
- save and open files
- make shapes [in Paint software] the size they desire
- position shapes correctly
- select and compare different brush types

# Year 1

## National Curriculum

### Digital literacy

- 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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- type their name and the date on a piece of work they have created
- choose the correct Safe Search filter when using a search engine
- make links between the online and offline world
- recall rules for Internet safety
- recognise which personal information they should keep safe from strangers
- help to construct an email.



# Year 1 Computing Vocabulary

## Essential Vocabulary

| <u>Programming Toys</u> | <u>Programming with Scratch</u> | <u>Word Processing Skills</u> | <u>Painting</u> | <u>Using and applying</u>  | <u>Online safety</u> |
|-------------------------|---------------------------------|-------------------------------|-----------------|--|----------------------|
| Code                    | Blocks                          | Keyboard                      | Paint           | <i>This unit, coming at the end of the academic year, incorporates all the vocabulary learnt in the previous topics.</i> | Online               |
| Left                    | Character                       | Backspace                     | Brush           |  | Key                  |
| Right                   | Background                      | Shift                         | Colour          |  | Safe                 |
| Forward                 | Sprite                          | Type                          | Tools           |  | Communicate          |
| Backward                | Sequence                        | Folder                        | Bucket          |  | Meet                 |
| Pause                   | Move                            | Enter                         | Text            |  | Email                |
| Clear                   | Repeat                          | Symbols                       | Shape           | Accept   |                      |
| Go                      | Repeat forever                  | Save                          | Screen          | Address  |                      |
| Program                 | Invisible                       | Return                        | Mouse           | Reliable   |                      |
| Bee-bot                 | Shrink                          | Space bar                     | Type            | Tell   |                      |
| Turn                    | Sound                           | Arrow keys                    | Computer        | Device   |                      |
| Sequence                | Wait                            | Delete                        | Draw            | Keyboard   |                      |
| Quarter                 | Show                            | Undo                          | Undo            | Search engine  |                      |
| half                    | Hide                            | Redo                          | Redo            | Image  |                      |
| Algorithm               | Record                          | Select                        | Save            | Text   |                      |
|                         | Start                           | Key                           | Open            | Save   |                      |
|                         | Programs                        | Bold                          |                 | Folder   |                      |
|                         | Project                         | Italics                       |                 | Name   |                      |
|                         | predict                         | Underline                     |                 | date   |                      |
|                         |                                 | format                        |                 | copyright  |                      |

# Year 2

## National Curriculum

Pupils should be taught to:

### Computer Science

- 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

## Ackworth Howard's Knowledge Essentials

### Preparing for Turtle Logo

- Walk forward a number of steps.
- Turn accurately 90° (a quarter turn).
- Walk squares and rectangles.
- Give and follow instructions.

### Programming Turtle Logo & Scratch

- Draw lines of different lengths using the fd command.
- Move blocks into the Scripts Area.
- Snap blocks together to combine commands.
- Turn the turtle using rt 90 and lt 90.
- Draw squares and rectangles.
- Create simple algorithms using a number of different blocks.
- Use the repeat and green flag blocks to control algorithms.

# Year 2

| National Curriculum  | Ackworth Howard's Knowledge Essentials   |
|--|--|
| <p><b>Information technology</b></p> <ul style="list-style-type: none"><li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</li></ul> | <p><b><u>Presentation Skills</u></b></p> <ul style="list-style-type: none"><li>• Insert slides, add and type in a text box</li><li>• Create folders.</li><li>• Print files.</li><li>• Add images.</li><li>• Format text and text boxes</li></ul> <p><b><u>Computer Art</u></b></p> <ul style="list-style-type: none"><li>• access an appropriate program for achieving a specific task; switch between program tools to produce different techniques;</li><li>• alter the formatting of a tool to adjust the colour or size.</li><li>• recreate a piece of art using a computer program;</li><li>• manipulate shapes and objects to recreate an art style.</li></ul> <p><b><u>Using and Applying</u></b></p> <ul style="list-style-type: none"><li>• find and open software for creating computer art;</li><li>• add text and images to a presentation;</li><li>• retrieve/open a file from a saved location;</li><li>• select a relevant backdrop and character within Scratch;</li><li>• add a second character and position on the backdrop within Scratch.</li><li>• control the mouse to produce different effects (dots/lines);</li><li>• use computer paint skills in a new context;</li><li>• add new slides to a presentation with a main idea on each slide;</li><li>• insert and reorder slides;</li><li>• make a character move within Scratch</li></ul> |

# Year 2

## National Curriculum

### Digital literacy

- 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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- know what 'digital footprint' means
- know that people can use the information they put online
- know that a digital footprint contains information about a person
- identify keywords that will give good search results
- use a website to search for information
- begin to identify possible dangers online
- identify websites suitable for their age
- know when to ask an adult for advice about accessing a website
- know what to do if a website makes them uncomfortable
- talk about what people might want to know about a website
- give their opinion about a website
- say what they like and dislike about a website
- begin to consider who a website could be aimed at
- identify unkind online behaviour
- know what to do if they think someone is being unkind to them online
- know how to safely search for information online
- choose appropriate websites for their age.

### Using the Internet

- search using the words "for kids"
- follow a weblink
- locate their own blog
- understand how to blog safely and responsibly
- identify search results that will give some useful information
- know where to find the address of a link
- log in and post a blog or comments.

# Year 2 Computing Vocabulary

## Essential Vocabulary

| <u>Preparing for Turtle Logo</u>   | <u>Programming Turtle Logo and Scratch</u>   | <u>Presentation skills</u>  | <u>Computer Art</u>  | <u>Online safety</u>  | <u>Using the internet</u>  |
|--|--|---|--|---|--|
| Move<br>Forward<br>Half turn<br>Quarter turn<br>Turn<br>Square<br>Rectangle<br>Instructions<br>Right / left 90<br>Forward 4<br>Commands<br>algorithm | Repeat<br>Right (rt)<br>Forward (fd)<br>Left (lt)<br>Sound<br>Turn<br>Instructions<br>Clear screen (cs)<br>Commands<br>move<br>Variable<br>algorithm | Log off<br>Search<br>Shut down<br>Folder<br>Image<br>Format<br>Colour<br>Black and white<br>Photo<br>Double sided<br>Copy<br>Windows<br>Switch<br>Monitor<br>Insert<br>Print<br>Date<br>System unit | Program<br>Tool<br>Fill<br>Straight lines<br>Primary colours<br>Weight<br>Manipulate<br>Rotate<br>Shade<br>Harmonious<br>Complementary<br>Duplicate<br>Copy and paste<br>Selective<br>Combination<br>review<br>Pointillism<br>Cubism<br>Impressionism<br>Pop art | Digital<br>Online<br>Search<br>Keyword<br>Website<br>Search engine<br>Cyberbullying<br>Information<br>Personal<br>Private<br>Profile<br>Account<br>Bullying<br>Report<br>Phone<br>Laptop<br>Tablet<br>App<br>comment<br>Digital footprint | Internet<br>World wide web<br>Search<br>Search engine<br>Results<br>Google<br>Bing<br>Yaho<br>Kidrex<br>Browser<br>Link<br>Web page<br>Back<br>Reload<br>Research<br>Photo<br>Camera<br>Tablet<br>Upload<br>blog |

# Year 3

## National Curriculum

Pupils should be taught to:

### Computer Science

- 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

## Ackworth Howard's Knowledge Essentials

### Programming Turtle Logo & Scratch

- Create and debug algorithms to draw regular polygons using the repeat command/ block (Turtle Logo and Scratch)
- Draw shapes with spaces between using penup and pendown (Turtle Logo)
- Change and alter the pen settings (Scratch)

# Year 3

## National Curriculum

### Information Technology

- 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

## Ackworth Howard's Knowledge Essentials

### Word Processing Skills

- Use undo and redo.
- Make text bold, italic or underline.
- Select text in different ways.
- Change case.
- Align text.
- Select single words.
- Cut, copy and paste text.
- Format the font.
- Insert images.
- Copy a screenshot into another application.
- Use a secure password.
- Use keyboard shortcuts.

### Presentation Skills

- Create a simple presentation
- Create shapes
- Create a hyperlink to another slide
- Use slide transitions
- Insert audio and video files (where possible)
- Record audio onto a slide
- Plan a branching story
- Create simple slide templates
- Copy and organise slides as required

### Drawing and Desktop Publishing

- Draw objects.
- Insert text boxes and images.
- Order and group objects.
- Move, resize and arrange text boxes and images effectively

# Year 3

## National Curriculum

### Digital literacy

- 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

## Ackworth Howard's Knowledge Essentials

### Internet Research and Communication

- To know and understand how word order affects the results returned.
- They will know how to bookmark or favourite a page and name different types of online communication.
- Children will know what to do if they feel uncomfortable when communicating online.
- They will be able to identify how they should behave online.
- Identify which word order gives the better results when searching online and be able to support this with examples.
- They will be able to share a webpage with others.
- Children will be able to research the different types of online communication used by their peers.



# Year 3

## National Curriculum

### Digital literacy

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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- recognise cyberbullying
- identify a safe person to tell if they encounter cyberbullying
- know that cyberbullying can happen via a range of devices
- identify adverts online
- identify a targeted advert
- explore how companies use websites to promote products
- create a strong password
- explain why a strong password is important
- explain what privacy settings are
- discuss email as a form of communication
- identify an email that they should not open
- write an email with an address and subject
- know how to safely send an email
- know how to safely receive an email
- identify online communities they are a part of
- identify different forms of online communication
- discuss the positive and negative aspects of online communities
- discuss the differences between communication in real life and online
- discuss what they have learnt about online safety
- communicate their ideas with a group clearly and listen to others' contributions
- use what they know about online safety to plan a party using online methods

# Year 3 Computing Vocabulary

## Essential Vocabulary

| <u>Programming Turtle Logo and Scratch</u>   | <u>Word processing skills</u>   | <u>Presentation skills</u>  | <u>Drawing and desktop publishing</u>   | <u>Internet Research and Communication</u>                           | <u>Online safety</u>   |
|--|---|---|---|--|--|
| Pen up<br>Pen down<br>Variable<br>Algorithm<br>Right (rt)<br>Forward (fd)<br>Left (lt)<br>Turn<br>Calculation<br>Instructions<br>Clear screen (cs)<br>Commands<br>move | Keyboard<br>Typing<br>Save<br>Folder<br>Shift<br>Caps lock<br>Space bar<br>Edit<br>Backspace<br>Delete<br>Arrow keys<br>Undo<br>Redo<br>Select<br>Window<br>Minimise<br>Password<br>Screenshot<br>Snipping tool<br>shortcut | Theme<br>Transition<br>Animation<br>Slide<br>Link<br>File format<br>Hyperlink<br>Button<br>Shape<br>Action settings<br>Audio<br>Video<br>Embed<br>Evaluate<br>Branching story<br>Image<br>Text<br>Text box<br>Title<br>Colour | Text<br>Text box<br>Format<br>Image<br>Photo<br>Photograph<br>Wrap text<br>Square<br>Aspect ratio<br>Objects<br>Layout<br>Background<br>Outline<br>Font<br>Size<br>colour | Webpage<br>Social media<br>Search<br>Link<br>Bing<br>Google<br>Yahoo | Online<br>Internet<br>Cyberbullying<br>Email<br>Password<br>Device<br>Digital<br>Safety<br>Technology<br>Social media<br>Website<br>Advertisement<br>Privacy settings<br>Secure<br>Digital citizen<br>Digital footprint<br>Community<br>Inbox<br>Forum<br>comments |

# Year 4

## National Curriculum

### Pupils should be taught to:

#### Computer Science

- 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

## Ackworth Howard's Knowledge Essentials

### Scratch: Questions and Quizes

- Write a program which accomplishes a specific goal.
- Create a program that includes a logical sequence.
- Debug a program they have written
- Use repetition and selection.
- Work with variables and adjust these depending on the effect they wish to create.
- Understand and use the duplicate function.
- Demonstrate that they understand how to combine a range of different effects to create their own quiz.

### Programming Turtle Logo

- Write procedures using simple algorithms.
- Change the colour of the pen.
- Write text using the label command.
- Draw shapes using setpos or setxy.
- Fill shapes in different colours.
- Draw arcs of different sizes as required

# Year 4

## National Curriculum

### Information Technology

- 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

## Ackworth Howard's Knowledge Essentials

### Word Processing

- select, edit and manipulate text in different ways
- insert an image into a document
- format an image
- use formatting tools to improve the layout
- use the spellcheck tool
- insert a simple table
- change the size of the page
- use some of the main keyboard shortcuts
- suggest ways to improve a layout
- apply specific effects to an image
- add a spelling to the spelling dictionary
- add or delete rows or columns in a table
- suggest ways to change a table
- type at an appropriate speed
- choose a relevant website to link a document to
- create a hyperlink.

### Animation

- Explain what is meant by animation
- Create a series of linked frames that can be played as a short animation.
- Control and adjust a time slider to locate a different point in a film clip.
- Insert images to create a simple stop-motion animation short film clip.
- Evaluate the good and bad points about some animation software.
- Describe one or more traditional methods of animation.
- Make slight changes to an image using onion skinning, understanding the term.
- Use a time slider to find a specific point in a film clip to insert or edit an object.
- Edit and refine images in a stop-motion animation short film clip.
- Compare different animation software by analysing good and bad points.

# Year 4

## National Curriculum

### Digital literacy

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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- define cyberbullying
- know how to respond to a hurtful message or comment online
- access a trusted search engine
- understand that different search terms give different results
- know what plagiarism is
- identify which information to keep private online
- explain what digital citizenship is
- tell someone else at least one way to stay safe online
- identify comments or messages that may be hurtful to others
- edit their own messages and comments to make sure they are kind
- understand that search results are ranked
- choose an appropriate number of words for a search term
- explain how to use other people's work respectfully
- explain why it may be dangerous to share private information
- explain how to be a good digital citizen
- tell someone else more than one way to stay safe online

# Year 4 Computing Vocabulary

## Essential Vocabulary

### Scratch: Questions and Quizzes

Algorithm  
 Costume  
 Quiz  
 Effects  
 Sprite  
 Scratch library sounds  
 Scratch library costumes  
 Scratch library backdrops  
 Sound  
 Backdrop  
 Variable  
 Blocks  
 question

### Programming Turtle Logo

Pen up  
 Pen down  
 Variable  
 Algorithm  
 Turn  
 Right (rt)  
 Forward (fd)  
 Left (lt)  
 Calculation  
 Instructions  
 Clear screen (cs)  
 Commands  
 move

### Word Processing

Hyperlink  
 Insert  
 Toolbar  
 Text  
 Format  
 Edit  
 Font type  
 Font colour  
 Font size  
 Align  
 Paste  
 Copy  
 Bullet  
 Text box  
 Wrap  
 Save  
 Spellcheck  
 Review  
 Highlight  
 cursor

### Animation

Frame rate  
 Play  
 Stop  
 Record  
 Onion skinning  
 Thaumatrope  
 Zoetrope  
 Flip book  
 Animation  
 Zoopraxiscope  
 Stereoscope  
 Loop  
 Still image  
 Analyse  
 Evaluate  
 Stop motion

### Online Safety

Online  
 Safety  
 Cyberbullying  
 Message  
 Search  
 Search engine  
 Search results  
 Plagiarism  
 Citation  
 Social media  
 Profile  
 Account  
 Private  
 Public  
 Digital citizen  
 Responsibility  
 Community  
 Personal information  
 Share  
 permission

# Year 5

## National Curriculum

### Pupils should be taught to:

#### Computer Science

- 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

## Ackworth Howard's Knowledge Essentials

### Scratch – Developing Games

- move and edit blocks as part of an algorithm.
- program an algorithm as a sequence of game instructions with actions and consequences.

### Controlling Devices

- Follow written instructions to draw a simple flowchart
- Insert symbols into a flowchart
- Add inputs into a flowchart.
- Identify conventional symbols, understanding the process of each stage.
- Create a program to control a simple sequence.
- Modify symbols in a flowchart for effect.
- Create flowcharts for multiple inputs and outputs.
- Use decisions and subroutines.
- Program inputs and outputs

# Year 5

## National Curriculum

### Information Technology

- 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

## Ackworth Howard's Knowledge Essentials

### Internet Research and Webpage Design

- Comment on the features and layout of a webpage.
- Create a new webpage with a chosen layout and format text in the webpage.
- Independently search for images that can be used in documents.
- Insert and format an image in a webpage.
- Independently create a hyperlink
- Learn how to share a webpage so it can be viewed by anyone.
- Use the advanced features of Google's web search

### 3D Modelling

- Draw 2D shapes or lines.
- Draw simple 3D models
- Manipulate 2D shapes into 3D shapes.
- Import 3D models from the 3D warehouse.
- Use a range of SketchUp tools including: shape, push, pull, orbit, pan, zoom, erase and fill.
- Draw and manipulate 3D models independently.
- Use inference points to draw lines and shapes.
- Use a wide range of SketchUp tools and concepts including: the dimensions toolbar and guides, tape measure, zoom extents and the 3D warehouse.

### Radio Station

- Record and play their own sounds in recording software
- Import an existing sound file into recording software to play
- Choose appropriate software for sound recording
- Plan and record a radio advert
- Listen to and improve on their own recordings by re-recording
- Locate and download existing sound files to be imported into recording software
- Combine two or more tracks to make a new, original recording
- Plan and record appropriate audio content for a podcast
- Evaluate what features makes good quality audio content



# Year 5

## National Curriculum

### Digital literacy

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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- identify a spam email
- explain what to do with spam email
- understand why they should cite a source
- explain the rules for creating a strong password
- create a strong password using a set of rules
- know that not everything they see online is true
- explain how to stay safe online
- identify unsafe online behaviour
- identify a dangerous spam email
- create multiple strong passwords for use across different platforms
- spot citations online
- alter a photograph.

# Year 5 Computing Vocabulary

## Essential Vocabulary

| <u>Scratch: Developing Games</u> | <u>Controlling devices</u> | <u>Internet Research and webpage design</u> | <u>3D modelling</u> | <u>Radio Station</u> | <u>Online Safety</u> |
|----------------------------------|----------------------------|---|---------------------|----------------------|----------------------|
| Repeat                           | Delay                      | Internet                                    | 2D shape            | Play                 | Spam                 |
| Score                            | Output                     | World wide web                              | 3D shape            | Stop                 | Email                |
| Variable                         | Start                      | Search                                      | Rectangle           | Record               | Link                 |
| Block                            | Stop                       | Search engine                               | Move                | Skip                 | Attachment           |
| Level                            | Flowchart                  | Google                                      | Push                | Digital content      | Junk                 |
| Costume                          | Decision                   | Browser                                     | Pull                | Mute                 | Inbox                |
| Sprite                           | Loop                       | Tab   | eraser              | Podcast              | Research             |
| Commentary                       | Symbol                     | Window                                      | Zoom                | Output               | Password             |
| Backdrop                         | Input                      | Layout                                      | Zoom extents        | Input                | Secure               |
| Code                             | Mimic                      | Text  | Group               | Sound                | Photo                |
| Debug                            | subroutine                 | Font  | Dimension           | Download             | Social media         |
| Events                           |                            | Colour                                      | Measurement         | Jingle               | Personal information |
| Scripts                          |                            | Image                                       | Component           | Audio                | Digital citizen      |
| algorithm                        |                            | Video                                       | Rotate              | Voiceover            | Filter               |
|                                  |                            | Animation                                   | Offset              | Edit                 | Source               |
|                                  |                            | Website                                     | Pan                 | Waveform             | Edit                 |
|                                  |                            | Hyperlink                                   | Orbit               | gain                 | Plagiarism           |
|                                  |                            | Share                                       | inference           |                      | Bibliography         |
|                                  |                            |   |                     |                      | Cite                 |
|                                  |                            |   |                     |                      | citation             |

# Year 6

## National Curriculum

Pupils should be taught to:

### Computer Science

- 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

## Ackworth Howard's Knowledge Essentials

### Scratch: Animated Stories

- Select appropriate characters to match a scene.
- Animate characters with movement and speech in a story scene.
- Use broadcast and receive blocks correctly in code.
- Use show and hide blocks correctly in code.
- Create a sequence of story scenes with added audio.
- Structure and sequence the animation of characters in each scene.
- Use the repeat command to create animation effect.
- Make a character visible or invisible at the correct times.

### Kodu Programming

- Open Kodu and navigate the programming environment using keyboard or mouse.
- Add objects to a world and program them using When and Do instructions.
- Plan and design the features of an original virtual environment.
- Program a character to move around a track.
- Create a path for a character to follow.
- Follow instructions given in the Kodu programming environment.
- Describe the actions of a sequence of Kodu commands.
- Use tools to change the size of the ground and raise or lower the landscape.
- Decompose code into smaller parts and explain it in their own words.
- Create a race track with an end goal for a game.
- Program a character to follow a path.

# Year 6

## National Curriculum

### Information Technology

- 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

## Ackworth Howard's Knowledge Essentials

### Spreadsheets

- Enter text and numbers into a spreadsheet.
- Identify and refer to cells by row and column.
- Begin to enter formulae with the SUM function
- Be able to enter formulae into cells.
- Edit data and discuss the effect on results.
- Use further functions including AVERAGE, MIN and MAX.
- Create graphs.
- Design their own spreadsheet for a specific purpose

### Film-Making

- plan and write a script using appropriate software
- search for relevant information using appropriate websites
- use a digital video camera (or similar device) to record
- plan suitable questions to ask an interviewee
- import video files into video editing software.
- plan additional elements for film-making such as locations and props
- evaluate whether information is reliable or not
- speak clearly into the camera when being recorded
- frame an appropriate filming shot when interviewing
- arrange video files to form a complete film

# Year 6

## National Curriculum

### Digital literacy

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

## Ackworth Howard's Knowledge Essentials

### Online Safety

- say what bullying and cyberbullying are
- say how people should deal with cyberbullying
- understand why I should ask an adult if I am unsure
- identify warning signs that a website might not be secure
- identify personal information
- explain what to do if I am asked or told something online which makes me uncomfortable
- explain some of the dangers of revealing personal information to an online friend
- choose an appropriate action online to stay safe
- identify a situation I should be careful in online
- understand how a stereotype can be harmful.
- look in the address bar of a website so check for security
- identify the lock symbol in an address bar
- explain why someone might have an online friendship
- explain what the SMART acronym means
- explain what a stereotype is
- compare gender stereotypes.

# Year 6 Computing Vocabulary

## Essential Vocabulary

### Scratch: Animated stories

Animate  
Visible  
Invisible  
Project  
Show  
Hide  
Receive  
Broadcast  
User  
Repeat  
Audio  
Debug  
Record  
Iteration

### Kodu programming

World  
Smooth  
Flatten  
Raise  
Kodu  
Start  
Finish  
Program  
Environment  
Acceleration  
Bump  
Obstacle  
Object  
Track  
Path  
Node  
Character  
Tool palette

### Spreadsheets

Spreadsheet  
Cell  
Row  
Column  
Formula  
Calculate  
Format  
Average  
Percent  
Edit  
Insert  
Ascending  
Descending  
Sort  
Graph  
Budget  
Total  
cumulative

### Film-making

Documentary  
Film  
Production  
Pre-production  
Post-production  
Improvise  
Interview  
Location  
Prop  
Copyright  
Source  
Shot  
Angle  
Close-up  
Frame  
Zoom  
Import  
Convert  
Upload  
screening

### Online safety

Cyberbullying  
Reporting  
Anonymous  
Victim  
Security  
Secure  
Private  
Personal  
Policy  
Https  
Domain  
Media  
Attachments  
Site  
Browser  
Gender  
Stereotype  
Message  
Instant messaging

# Aspirational Outcomes...

- All children to be discerning users of the internet and to have an understanding of when to use it.
- To be confident and creative users, open to new ideas of learning.
- To treat all equipment with respect.
- To use technology safely and respectfully: keeping personal information private, identify steps needed to remain safe and where to go for support.
- Children to start to use technology purposefully in a range of context ensuring that the end product is fit for purpose.
- To gather the knowledge and understanding to become an active participant in the digital world.