# Computing Curriculum Map

The Computing Curriculum at Howard Primary School is based upon the Rising Stars scheme of work 'Switched On Computing'.
Each year group completes 6 computing units over the course of the year. This equates to one each half term and ensures coverage of the national curriculum. Approximately half of these units are based upon the computer science elements of the curriculum with the remaining half based upon information and communication technology.  These lessons are taught discretely but where links can be made to topics being taught, they should be made.
By the end of KS2 we would like all children to:

- Are responsible, confident and creative users of technology, who apply computational thinking beyond the Computing curriculum.
- Become digitally literate and are active participants in a digital world.
- Know how to stay safe whilst using technology and on the internet, minimising risk to themselves and others.
- Understand and follow agreed E-Safety rules, and know who to contact if they have concerns, including the use of report buttons.
- Have repeated practical experience writing computer programs in order to solve problems, including logic & algorithms.
- Ask and answer questions through collection, analysing, evaluating and presenting data and information.
- Understand how digital networks work & the services they provide.
- Use search options effectively; understanding the need to evaluate the relevance of content.

Teachers follow the planning created for the Rising Stars scheme of work 'Switched On Computing' but it can been adapted it to the needs of the children and also to match specific maths and English units. Supplementary resources are also available to support with teacher's planning.

|  | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| Yr 1 | Story tellers<br>**Programming a talking book Communication/Collaboration**<br>To create a story – Purple mash | Treasure hunters<br>**Using programmable toys Programming**<br>Bee-Bots<br>Bee-Bot app | TV chiefs<br>**Filming the steps of a recipe computational thinking**<br>iMovie | Painters<br>**Illustrating an e-book Creativity**<br>**2 paint a picture – purple mash** | Collectors<br>**Finding images on the web**<br>PowerPoint -to explain things | Celebrating<br>**Creating a card digitally**<br>2 paint a picture, purple mash |

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|---|---|---|---|---|---|
| **Yr 2** | **Astronauts**<br>**Programming on screen programming – scratch** | **Game testers**<br>**Exploring how computer games work**<br>**Computational thinkers**<br>**scratch** | **Photographers**<br>**Taking better photos creativity** | **Researchers**<br>**Researching a topic**<br>**Popplet and PowerPoint** | **Detectives**<br>**Collecting clues Communication/ collaboration** | **Zoologist**<br>**Collecting data**<br>**Excel and Google Earth** |
| **Yr 3** | **Communicators**<br>**Communicating safely on the internet**<br>**PowerPoint** | **Programmers**<br>**Programming in animation**<br>**Programming in scratch** | **Bug Fixers**<br>**Finding and correcting bugs in programmes**<br>**Computational thinkers**<br>**Programming in scratch** | **Presenters**<br>**Video performance creativity**<br>**iMovie**<br>**Mover maker** | **Vloggers**<br>**Making and sharing a short screencast presentation**<br>**Google and PowerPoint** | **Opinion Pollsters**<br>**Collecting and analysing data**<br>**Productivity**<br>**Google forms** |
| **Yr 4** | **Co Authors**<br>**Produce a wiki**<br>**Collection and collaboration**<br>**Google sites** | **Software Developers**<br>**Develop a simple educational game**<br>**Programming**<br>**Scratch** | **Toy Designs**<br>**Prototype an interactive toy**<br>**Computational thinking**<br>**Scratch** | **Musicians**<br>**Producing digital music**<br>**Creativity** | **HTML Developers**<br>**Editing and writing HTML**<br>**Chrome and Brackets** | **Metrologies**<br>**Presenting the weather**<br>**Productivity**<br>**Excel** |
| **Yr 5** | **Web developers**<br>**Creating a web page about cyber safety**<br>**Computer network**<br>**Google Sites** | **Game developers**<br>**Developing an interactive game**<br>**Programming**<br>**Python** | **Cryptographers**<br>**Cracking codes**<br>**Computational thinking**<br>**Scratch** | **Artist**<br>**Focusing on geometry and art**<br>**Inkscape**<br>**Scratch** | **Bloggers**<br>**Sharing experiences and opinions**<br>**Collaboration and communication**<br>**Google sites** | **Architects**<br>**Creating a virtual space**<br>**Sketch up** |
| **Year 6** | Network Engineers<br>Exploring computer networks including the internet<br>**Scratch/command prompt** | Adventure Games<br>Making a text-based adventure game<br>Programming<br>**Python** | Computational Thinkers<br>Mastering algorithms for searching and sorting<br>**Scratch** | Advertisers<br>Creating a short television advert<br>**Publisher** | Travel Writers<br>Using media and mapping to document a trip<br>**Google Earth** | Publishers<br>Creating a yearbook creativity<br>Publisher<br>**Publisher** |

# Key Vocabulary

Computing is split into 5 different categories: E-Safety, Programming, Multimedia, Technology in Our Lives and Date Handling. Below is the vocabulary progression from Reception until they leave us in Year 6.

| E-Safety | | | | |
|---|---|---|---|---|
| **Reception** | **Year 1** | **Year 2** | **Year 3 and Year 4** | **Year 5 and Year 6** |
| Choices<br><br>Internet<br><br>Website | Rules<br><br>Online<br><br>Private information<br><br>Email | Appropriate/inappropriate sites<br><br>Cyber-bullying<br><br>Digital footprint<br><br>Keyword searching | E-safety rules<br><br>Secure passwords<br><br>Report abuse button<br><br>Gaming<br><br>Blogs | Responsible online communication<br><br>Informed choices<br><br>Virus threats<br><br>Blogs<br><br>Messaging |

## Programming

| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-----------|--------|--------|--------|--------|--------|--------|
| Equipment

Buttons

Movement | Instructions

Buttons

Robots

Patterns

Program | Forward

Backward

Right-angle turn

Algorithm

Sequence

Debug

Predict | Sequence instructions

Sequence debugging

Test + improve

Logo commands

Sequence programming | Type + edit logo commands

Sensors

Open-ended problems

Bugs in programs

Complex programming | Explore procedures

Refine procedures

Variable

Hardware + software control

Change inputs

Different outputs

Articulate solutions

Commands | Predicting outputs

Plan, program, test & review a program

Program writing

Control mimics + devices

Sensors

Measure input

Create variables

Link errors |

## Multimedia

| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-----------|--------|--------|--------|--------|--------|--------|
| Screen

Mouse

Images

Keyboard

Paint | Videos

Camera stills

Sounds

Image bank

Word bank | Paint effects

Templates

Animation

Documents

Index finger typing | Multimedia

Presentations

Alignment

Brush size

Repeats | Creating + modifying

Specific purpose

Photo modifying

Keyboard shortcuts

Bullet points | Online sharing

Multimedia effects

Multimedia modification

Transitions

Hyperlinks | Appropriate online tools

Audience

Atmosphere

Structure

Copyright |

|  | Space bar | Enter/return | Reflections | Spell check | Editing tools | Information collection |
|  |  | Caps lock | Green screening | Constructive feedback | Refining | HTML code |
|  |  | Backspace | Amend |  | Online sharing | Storing |
|  |  |  | Copy |  |  |  |
|  |  |  | Paste |  |  |  |

**Technology in Our Lives**

| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|
| Technology | Purpose | Information sources | School network | Different networks | Computing devices | Information movement |
| Share | Online tools | Communication | Devices | Information collection | Internet parts | Connecting devices |
| Create | Communicate | Purposes | Computer parts | Reliability | Collaboration | Different audiences |
| Internet |  | Website content | Collaborate | Owners | Responsibility | Research strategies |
|  |  |  | Appropriate online communication |  | Searching strategies | Search result rankings |
|  |  |  | Search tools |  | Webpages | Acknowledge resources |
|  |  |  | Appropriate websites |  |  |  |
|  |  |  | Owner |  |  |  |

**Data Handling**

| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Collect | Photographs | Capturing moments | Questioning | Database creation | Spreadsheets | Generate |
| Set of photos | Video | Magnified images | Database | Database searches | Complex searches (and/or: </>) | Process |
| Count | Sound | Questions | Construct | Inaccurate data | | Interpret |
| Organise | Data | Data collection | Contribute | | Problem solving | Store |
| | Pictogram | Graphs | Recording data | | Present answers | Present information |
| | Digitally | Charts | Data logger | | Analyse information | Plausibility |
| | | Save | Present data | | Question data | Appropriate data tool |
| | | Retrieve | | | Interpret | Interrogate |
| | | | | | | Investigations |