



Progression in Computing Lower Key Stage 2

Programming

Key Stage 2 National Curriculum Expectations

Pupils should be taught to:

- *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*

Year 3

Break an open-ended problem up into smaller parts.

Put programming commands into a sequence to achieve a specific outcome.

Keep testing their program and can recognise when they need to debug it.

Use repeat commands.

Describe the algorithm they will need for a simple task.

Detect a problem in an algorithm which could result in unsuccessful programming.

Year 4

Use logical thinking to solve an open-ended problem by breaking it up into smaller parts.

Use an efficient procedure to simplify a program.

Use a sensor to detect a change which can select an action within my program.

Know that they need to keep testing their program while they are putting it together.

Use a variety of tools to create a program.

Recognise an error in a program and debug it.

Recognise that an algorithm will help them to sequence more complex programs.

Recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.

Multi Media & Handling Data

Key Stage 2 National Curriculum Expectations

Pupils should be taught to:

- *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.*

Year 3

Create different effects with different technology tools.

Combine a mixture of text, graphics and sound to share their ideas and learning.

Use appropriate keyboard commands to amend text on their device, including making use of a spellchecker.

Evaluate their work and improve its effectiveness.

Use an appropriate tool to share their work online.

Talk about the different ways data can be organised.

Search a ready-made database to answer questions.

Collect data to help them answer a question.

Add to a database.

Make a branching database.

Use a data logger to monitor changes and talk about the information collected.

Year 4

Use photos, video and sound to create an atmosphere when presenting to different audiences.

They are confident to explore new media to extend what they can achieve.

Change the appearance of text to increase its effectiveness.

Create, modify and present documents for a particular purpose.

Use a keyboard confidently and make use of a spellchecker to write and review their work.

Use an appropriate tool to share their work and collaborate online.

Give constructive feedback to their friends to help them improve their work and refine their own work.

Organise data in different ways.

Collect data and identify where it could be inaccurate.

Technology in our Lives

Key Stage 2 National Curriculum Expectations

Pupils should be taught to:

- *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*

Year 3	Year 4
<p>Save and retrieve work on the Internet, the school network or their own device.</p> <p>Talk about the parts of a computer.</p> <p>Tell you ways to communicate with others online.</p> <p>Describe the World Wide Web as the part of the Internet that contains websites.</p> <p>Use search tools to find and use an appropriate website.</p> <p>Make decisions about whether I can use images that I find online in my own work.</p>	<p>Tell you whether a resource they are using is on the Internet, the school network or their own device.</p> <p>Identify key words to use when searching safely on the World Wide Web.</p> <p>Think about the reliability of information they read on the World Wide Web.</p> <p>Tell you how to check who owns photos, text and other information.</p> <p>Create a hyperlink to a resource on the World Wide Web.</p>

E-safety

Key Stage 2 National Curriculum Expectations

Pupils should be taught to:

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

Year 3	Year 4
<p>Talk about what makes a secure password and why they are important.</p> <p>Protect their personal information when they do different things online.</p> <p>Use the safety features of websites as well as reporting concerns to an adult.</p> <p>Recognise websites and games appropriate for their age.</p> <p>Make good choices about how long they spend online.</p>	<p>Choose a secure password when they are using a website.</p> <p>Talk about the ways they can protect themselves and their friends from harm online.</p> <p>Use the safety features of websites as well as reporting concerns to an adult.</p> <p>Know that anything they post online can be seen by others.</p>

Ask an adult before downloading files and games from the Internet.

Post positive comments online.

Choose websites and games that are appropriate for their age.

Help their friends make good choices about the time they spend online.

Talk about why they need to ask a trusted adult before downloading files and games from the Internet.

Comment positively and respectfully online.