Computing - Progression Map

Area of Learning (EYFS) & National Curriculum

Whilst computing/technology is no longer a discrete area of learning in the EYFS, the foundations of computing are formed in nursery and reception. Children have the opportunity to use and interact with technological toys, both real and pretend for instance as part of their role play. There are also more discrete computing learning opportunities linked with other areas of learning, for instance what the internet can be used for and the importance of using it safely.

At a Glance

Early Years

Using technological toys, operating basic digital equipment, understanding the internet, programming simple toys with instructions.

Year 1

Identifying technology and computers, creating digital content, understanding algorithms and simple programming, using technology purposefully.

Year 2

Recognising uses of IT, creating media (photography and music), debugging programs, using logical reasoning, understanding online safety.

Early Years Foundation Stage

Key Learning

Computing in Nursery

Knowledge

- Develop awareness that the internet can be used to find things out
- Complete a simple programme on an electronic device

Skills

- Show an interest in technological toys with knobs and pulleys, real objects such as cameras and touchscreen devices
- Acquire basic skills in turning on and operating basic digital equipment
- Operate mechanical toys
- Show skill in making toys work by pressing parts or lifting flaps
- Play with a range of materials to learn cause and effect

Computing in Reception

Knowledge

- Know that information can be retrieved from books and digital devices
- Understand programmable toys follow a series of instructions to move
- Use interactive technology to interact with apps and games e.g. iPads and whiteboards

Skills

- Use information books and other sources (with adult support and guidance) to find out facts and relay these facts to others
- Use simple tools to affect changes to materials
- Programme a toy with simple instructions to move in a desired way
- Develop their own ideas through experimentation with diverse materials
- Explore how different toys work and move

Key Vocabulary

Nursery

Key Vocabulary: On, off, battery, switch, button, phone, camera, iPad

Reception

Key Vocabulary: Backwards, forwards, instruction, internet, search, website, choose, electricity

Computing Systems and Networks - IT Around Us

Key Learning

Year 1

Knowledge

- Know what technology is
- Know the main parts of a computer
- Understand the importance of using technology responsibly

Skills

- Identify technology
- Identify a computer and its main parts
- Create rules for using technology responsibly
- Use a mouse in different ways
- Use a keyboard to type on a computer
- Use the keyboard to edit text

Year 2

Knowledge

- Know the uses and features of information technology
- Understand how information technology helps us
- Know how to use information technology safely
- Know that choices are made when using information technology

Skills

- Recognise the uses and features of information technology
- Explain how information technology helps us
- Explain how to use information technology safely
- Identify the uses of information technology in the school
- Identify information technology beyond school
- Recognise that choices are made when using information technology

Key Vocabulary

Year 1

Key Vocabulary: Technology, computer, mouse, trackpad, keyboard, screen, double-click, typing

Year 2

Key Vocabulary: Information technology (IT), computer, barcode, scanner/scan

Creating Media

Key Learning

Year 1 - Digital Painting and Writing

Knowledge

- Know what different freehand tools do
- Know that the look of text can be changed on a computer
- Understand the difference between painting on a computer and on paper
- Understand the difference between typing on a computer and writing on paper

Skills

- Describe what different freehand tools do
- Explain why I chose the tools I used
- Compare painting a picture on a computer and on paper
- Identify that the look of text can be changed on a computer
- Explain why I used the tools that I chose
- Compare typing on a computer to writing on paper
- Use the shape tool and the line tools
- Make careful choices when painting a digital picture
- Use a computer on my own to paint a picture
- Use a computer to write
- Add and remove text on a computer
- Make careful choices when changing text

Year 2 - Digital Photography and Music

Knowledge

- Know what makes a good photograph
- Know that photos can be changed
- Know that there are patterns in music
- Understand how music can make us feel

Skills

- Make choices when taking a photograph
- Describe what makes a good photograph
- Experiment with sound using a computer
- Use a computer to create a musical pattern
- Use a digital device to take a photograph
- Decide how photographs can be improved
- Use tools to change an image
- Recognise that photos can be changed
- Say how music can make us feel
- Identify that there are patterns in music
- Create music for a purpose
- Review and refine our computer work

Key Vocabulary

Year 1

Key Vocabulary: Select, paint program, tool, erase, fill, undo, shape tools, word processor, keyboard, keys, type, space, backspace, cursor, toolbar, bold, italic, underline, mouse, font, redo, format, compare, typing

Year 2

Key Vocabulary: Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, music, quiet, loud, feelings, notes, create, open, edit

Programming

Key Learning

Year 1

Knowledge

- Know what a command will do
- Know that a series of commands can be joined together
- Know that changing a value has an effect
- Know that each sprite has its own instructions
- Understand that there can be more than one solution to a problem

Skills

- Explain what a given command will do
- Plan a simple program
- Find more than one solution to a problem
- Show that a series of commands can be joined together
- Identify the effect of changing a value
- Explain that each sprite has its own instructions
- Act out a given word
- Combine forwards and backwards commands to make a sequence
- Combine four direction commands to make sequences
- Choose a command for a given purpose
- Design the parts of a project
- Use my algorithm to create a program

Year 2

Knowledge

- Know that a series of instructions is called a sequence
- Know what happens when we change the order of instructions
- Know that programming projects can have code and artwork
- Know that a sequence of commands has a start and an outcome

Skills

- Describe a series of instructions as a sequence
- Explain what happens when we change the order of instructions
- Use logical reasoning to predict the outcome of a program
- Explain that programming projects can have code and artwork
- Explain that a sequence of commands has a start
- Explain that a sequence of commands has an outcome
- Design an algorithm
- Create and debug a program that I have written
- Create a program using a given design
- Change a given design
- Create a program using my own design
- Decide how my project can be improved

Key Vocabulary

Year 1

Key Vocabulary: Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program, command, sprite, compare, programming, area, block, joining, start, run, background, delete, reset, predict, effect, value

Year 2

Key Vocabulary: Sequence, clear, unambiguous, order, prediction, artwork, design, route, mat, debugging, decomposition, program, outcome, predict, actions, project, modify, algorithm, build, match, compare, features, evaluate, code

Data and Information

Key Learning

Year 1

Knowledge

- Know that objects can be described in different ways
- Know that objects can be counted
- Know that objects with the same properties can be grouped

Skills

- Describe objects in different ways
- Compare groups of objects
- Answer questions about groups of objects
- Label objects
- Identify that objects can be counted
- Count objects with the same properties

Year 2

Knowledge

- Know that we can count and compare objects using tally charts
- Know that objects can be represented as pictures
- Know that people can be described by attributes
- Know that we can present information using a computer

Skills

- Recognise that we can count and compare objects using tally charts
- Recognise that objects can be represented as pictures
- Recognise that people can be described by attributes
- Explain that we can present information using a computer
- Create a pictogram
- Select objects by attribute and make comparisons

Key Vocabulary

Year 1

Key Vocabulary: Object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same

Year 2

Key Vocabulary: Common, popular, organise, data, tally chart, votes, total, pictogram, enter, compare, count, explain, attribute, same, different, conclusion, block diagram, sharing