Computing Year B

EYFS

Technology
Children will explore and learn about a range of technology devices that can be used at home, school and work linked to topics and themes e.g phones, tablets, computers, tills and bar code readers.
Children will select technology for different purposes such as cameras to record their work, CD players to listen to music, tablets to play a game, beebots to explore control.

Computational Thinking
Autumn
Busy Bodies
Concepts & Approaches:
Algorithms, Decomposition, Debugging, Logic, Patterns, Abstraction

Children discover how bodies move and grow. They explore and learn about parts of the body, growth and movement.
Simple algorithms are created and adapted to form a routine of movements.

Spring
Build me a boat
Concepts & Approaches:
Algorithms, Decomposition, Creating, Tinkering, Logic, Patterns, Abstraction, Collaborating

Children investigate boats - uses of boats, floating and sinking predictions, creating a good boat through exploring designs and role play.

Summer
Summer Fun
Concepts & Approaches:
Tinkering, Persevering, Patterns, Logic, Decomposition, Debugging, Collaborating, Algorithms

Children explore their surroundings and get creative, take a journey and make a map, and discover seaside tangrams.

Year 1/2

Autumn
Computer Systems and networks
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
Creating Media: Digital Writing
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

Spring

Programming A: Beebots/Floorbots

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

Creating Media: Digital Painting

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

Summer

Data and Information: Pictograms

recognise common uses of information technology beyond school

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

Programming B: Scratch Jnr

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

Y3/4

Autumn

Computer Systems and Networks

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

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

Creating Media: (Yr 3) Stop-frame Animation

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

Spring

Programming A:(Yr 3) Sequencing sounds

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

Creating Media:(Yr 3) Desktop publishing

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

Summer
Programming A: (Yr4) Repetition in shapes
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

Data and Information:(Yr 3) Branching Databases
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

Y5/6

Autumn
Computer Systems and Networks: (Yr 5) Sharing Information
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

Creating Media: (Yr 5)Vector drawing
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

Spring
Programming A(Yr 5)
Microbit - Data handling unit https://microbit.org/lessons/data-handling-unit-summary/ (Microbits needed)
OR
Barefoot Computing: You're the Cyber Security Expert
https://www.barefootcomputing.org/resources/you-re-the-cyber-security-expert
(conditions in loops)

Data and Information:(Yr 5)Flat file Databases
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>Summer</u>
Programming B - (Yr 6) Sensing (variables): Microbit (can use emulator)
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

Creating Media:(Yr 6) 3D Modelling
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