Computing
Skills and progression Ladders Year 1 - 12 lessons per term approx.

Learning objectives, knowledge and skills

Advent

1.1 Computing systems and networks – IT around us

Identifying IT and how its responsible use improves our world in school and beyond.

1. **To recognise the uses and features of information technology**
   - I can describe some uses of computers
   - I can identify examples of computers
   - I can identify that a computer is a part of IT
2. **To identify the uses of information technology in the school**
   - I can identify examples of IT
   - I can identify that some IT can be used in more than one way
   - I can sort school IT by what it's used for
3. **To identify information technology beyond school**
   - I can find examples of information technology
   - I can sort IT by where it is found
   - I can talk about uses of information technology
4. **To explain how information technology helps us**
   - I can demonstrate how IT devices work together
   - I can recognise common types of technology
   - I can say why we use IT
5. **To explain how to use information technology safely**
   - I can list different uses of information technology
   - I can say how rules can help keep me safe
   - I can talk about different rules for using IT
6. **To recognise that choices are made when using information technology**
   - I can explain the need to use IT in different ways
   - I can identify the choices that I make when using IT
   - I can use IT for different types of activities
7.

1.2 Creating media – Digital photography

Capturing and changing digital photographs for different purposes.

1. **To use a digital device to take a photograph**
   - I can explain what I did to capture a digital photo
   - I can recognise what devices can be used to take photographs
   - I can talk about how to take a photograph
2. **To make choices when taking a photograph**
   - I can explain the process of taking a good photograph
   - I can explain why a photo looks better in portrait or landscape format
   - I can take photos in both landscape and portrait format
3. **To describe what makes a good photograph**
   - I can discuss how to take a good photograph
   - I can identify what is wrong with a photograph
   - I can improve a photograph by retaking it
4. **To decide how photographs can be improved**
   - I can experiment with different light sources
   - I can explain why a picture may be unclear
   - I can explore the effect that light has on a photo
5. **To use tools to change an image**
   - I can explain my choices
   - I can recognise that images can be changed
   - I can use a tool to achieve a desired effect
6. **To recognise that photos can be changed**
   - I can apply a range of photography skills to capture a photo
   - I can identify which photos are real and which have been changed
   - I can recognise which photos have been changed

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1.3 Programming A – Robot algorithms

Creating and debugging programs, and using logical reasoning to make predictions.

1. **To describe a series of instructions as a sequence**
   - I can choose a series of words that can be enacted as a sequence
   - I can follow instructions given by someone else
   - I can give clear instructions
2. **To explain what happens when we change the order of instructions**
   - I can show the difference in outcomes between two sequences that consist of the same commands
   - I can use an algorithm to program a sequence on a floor robot
   - I can use the same instructions to create different algorithms
3. **To use logical reasoning to predict the outcome of a program**
   - I can compare my prediction to the program outcome
   - I can follow a sequence
   - I can predict the outcome of a sequence
4. **To explain that programming projects can have code and artwork**
   - I can explain the choices I made for my mat design
   - I can identify different routes around my mat
   - I can test my mat to make sure that it is usable
5. **To design an algorithm**
   - I can create an algorithm to meet my goal
   - I can explain what my algorithm should achieve
   - I can use my algorithm to create a program
6. **To create and debug a program that I have written**
   - I can plan algorithms for different parts of a task
   - I can put together the different parts of my program
   - I can test and debug each part of the program

1.4 Data and information – Pictograms

Collecting data in tally charts and using attributes to organise and present data on a computer.

1. **To recognise that we can count and compare objects using tally charts**
   - I can compare totals in a tally chart
   - I can record data in a tally chart
   - I can represent a tally count as a total
2. **To recognise that objects can be represented as pictures**
   - I can enter data onto a computer
   - I can use a computer to view data in a different format
   - I can use pictograms to answer simple questions about objects
3. **To create a pictogram**
   - I can explain what the pictogram shows
   - I can organise data in a tally chart
   - I can use a tally chart to create a pictogram
4. **To select objects by attribute and make comparisons**
   - I can answer 'more than'/'less than' and 'most/least' questions about an attribute
   - I can create a pictogram to arrange objects by an attribute
   - I can tally objects using a common attribute
5. **To recognise that people can be described by attributes**
   - I can choose a suitable attribute to compare people
   - I can collect the data I need
   - I can create a pictogram and draw conclusions from it
6. **To explain that we can present information using a computer**
   - I can give simple examples of why information should not be shared
   - I can share what I have found out using a computer
   - I can use a computer program to present information in different ways

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1.5 Creating media - Digital music

Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.

1. **To say how music can make us feel**
   - I can describe music using adjectives
   - I can identify simple differences in pieces of music
   - I can say what I do and don't like about a piece of music
2. **To identify that there are patterns in music**
   - I can create a rhythm pattern
   - I can explain that music is created and played by humans
   - I can play an instrument following a rhythm pattern
3. **To experiment with sound using a computer**
   - I can connect images with sounds
   - I can relate an idea to a piece of music
   - I can use a computer to experiment with pitch
4. **To use a computer to create a musical pattern**
   - I can explain how my music can be played in different ways
   - I can identify that music is a sequence of notes
   - I can refine my musical pattern on a computer
5. **To create music for a purpose**
   - I can add a sequence of notes to my rhythm
   - I can create a rhythm which represents an animal I've chosen
   - I can create my animal's rhythm on a computer
6. **To review and refine our computer work**
   - I can explain how I changed my work
   - I can listen to music and describe how it makes me feel
   - I can review my work

1.6 Programming B - Programming quizzes

Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.

1. **To explain that a sequence of commands has a start**
   - I can identify that a program needs to be started
   - I can identify the start of a sequence
   - I can show how to run my program
2. **To explain that a sequence of commands has an outcome**
   - I can change the outcome of a sequence of commands
   - I can match two sequences with the same outcome
   - I can predict the outcome of a sequence of commands
3. **To create a program using a given design**
   - I can build the sequences of blocks I need
   - I can decide which blocks to use to meet the design
   - I can work out the actions of a sprite in an algorithm
4. **To change a given design**
   - I can choose backgrounds for the design
   - I can choose characters for the design
   - I can create a program based on the new design
5. **To create a program using my own design**
   - I can build sequences of blocks to match my design
   - I can choose the images for my own design
   - I can create an algorithm
6. **To decide how my project can be improved**
   - I can compare my project to my design
   - I can debug my program
   - I can improve my project by adding features

#BTK and Links with other subjects

Key Vocabulary