Computing in Year 2

Topics: Information Technology around us, Digital Photography, Robot Algorithms, Pictograms, Digital Music, Programming Quizzes

Information Technology Around Us

National Curriculum Statements:

- 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.

Knowledge:

- Understand what technology is and how it is used safely.
- Identify and explain the purposes of IT both in school and beyond.
- Explain the benefits of technology.
- Explain some of the choices they make when using technology.

Implementing Skills:

- Recognise the uses and features of IT in and beyond school.
- Explore the benefits of IT in different environments such as home, school, shops, offices.
- List different rules for using IT safely and describe how these rules keep them safe.
- Describe a 'digital 5 a day' and having a balanced digital diet.

Assessment:

- Do children understand the use of barcodes on products?
- Can children demonstrate how IT devices work together?
- Can children recognise the benefits of using IT and how to use it safely?

Digital Photography

National Curriculum Statements:

- 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.

Knowledge:

- Explain some aspects of taking a good photograph.
- Know that a photo can be portrait or landscape.

Implementing Skills:

- Take a photograph using a simple camera or device that has been set up in camera mode.
- Identify some of the reasons why a photograph may be good or bad.
- Experiment when taking photos with different light sources.
- Identify a photo that has been enhanced using tools when asked questions.
- use different tools to change how a photograph looks.

Assessment:

- Can children take a photo then use different tools to change how the photo looks?
- Can children spot if a photo has been altered?

Robot Algorithms

National Curriculum Statements:

- 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.

Knowledge:

- Understand a series of instructions.
- Understand different algorithms by changing the sequence of commands.
- Predict what a sequence of commands will do.

Implementing Skills:

- Follow sequences of instructions including moving forwards and backwards and turning left and right.
- Plan a series of instructions for someone else to follow.
- Plan a mat layout with several possible routes.
- Plan and execute a program to reach a goal and debug as needed.

Assessment:

- Can the children plan and execute a program onto a floor robot to reach a given point?
- Can children spot mistakes in their commands?

Pictograms

National Curriculum Statements:

- 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.

Knowledge:

- Importance of organising data effectively for counting and comparing.
- Recognise objects can be represented as pictures.
- Understand how objects can be grouped by attributes.
- Understand when to share data.

Implementing Skills:

- Create and compare tally charts and answer questions using ‘more than’ and ‘less than’.
- Create pictograms on paper and then on computer using tally charts and use these to answer questions.
- Tally objects and people using a common attribute and present data in form of a pictogram.
- Discuss when it is ok to share data and when to say know.

Assessment:

- Can children compare data from tally charts?
- Can children create pictograms?
- Can children describe when it is ok to share data and when it is not?

Digital Music

National Curriculum Statements:

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Knowledge:

- Reflect on a piece of music.
- Follow a rhythm pattern.
- Understand that a computer can generate different sounds.
- Understand that a computer can be used to make a sequence of notes.
- Understand how pattern and rhythm can be used to depict an animal.

Implementing Skills:

- Create and follow a rhythm pattern using two different instruments.
- Use the computer to generate different sounds represented by images.
- Create a sequence of notes on the computer and start to refine them.
- Create a sequence of notes that use rhythm and tempo to link with a chosen animal, refining their work.

Assessment:

- Can the children plan and create a piece of music?

Programming Quizzes

National Curriculum Statements:

- 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.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Knowledge:

- Know that a sequence can be started using a variety of event blocks.
- Know that a sequence has an outcome, and identify different programs that have the same outcome.
- Know the backgrounds can be changed through the programming blocks.
- Understand the role of the numbers on ScratchJr blocks.

Implementing Skills:

- Write and run a simple program with a start block, and an end block which changes the background.
- Adapt a given design to create a program with multiple sprites and backgrounds which uses the blocks given in the example.
- Create and program a quiz with at least two backgrounds which switch based on an action.
- Identify errors in their program, and debug them.

Assessment:

- Can the children plan a project including changing backgrounds?
- Can the children test a program created and evaluate how successful it has been?
- Can they identify how closely a plan matches the outcome?