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| **Computing** | **Computing Systems and Networks – information Technology arounds us**  **Skills**  Identify examples of computers and describe some uses of computers.  Identify that a computer is part of Information Technology.  Explain the purpose of IT in the home. Open a file. Move an resize images.  Find examples, talk about, compare types of IT.  Demonstrate how IT is used in a shop. Recognise that IT cam be connected. Explain how IT helps people.  List different uses of IT. Recognise how to use IT responsibly. Say how those rules or guides can help.  Identify the choices that are made when using IT. Explain simple guidance for using IT in different environments and settings. Enjoy a variety of activities.  **Knowledge**  Know devices that can be described as IT; computers (laptops, PCs, tablets), devices with computers inside (eBook readers, smart TVs, smart speakers) or things made to work with computers (scanners, barcode scanners, barcode labels, printers). Technology continues to develop rapidly and some devices may fit in multiple categories.  Know where technology can be found in shops and how it can be used. Know which devices can work together (barcode, barcode scanner and till).  Know school rules regarding safe use of technology.  **Vocabulary**  Information Technology (IT), computer, barcode, scanner/scan | **Digital Photography**  **Skills**  Recognise what devices can be used to take photographs. Talk about how to take a photograph. Explain what I did to capture a digital photo.  Explain the process of taking a good photograph. Take photos in both landscape and portrait format and explain which looks best.  Identify what is wrong with a photograph. Discuss how to take a good photograph. Improve a photograph by retaking it.  Explore the effect that light has on a photo. Experiment with different light sources. Explain why a picture may be unclear.  Recognise that images can be changed. Use a tool to achieve the desired effect. Explain my choices.  Apply a range of photography skills to capture a photo. Recognise which photos have been changed. Identify which photos are real and have been changed.  **Knowledge**  Capture photographs using different digital devices.  Take a photo in both portrait and landscape and the suitability of both formats. Delete a stored photo from the device being used.  Know the three key concepts of photography composition; positioning, framing and detail.  Know how to use the auto focus feature on the camera device. know how the enable the camera flash. Know how to find a stock photo in Pixlr and use the adjust tool to change its colour.  **Vocabulary**  Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, lighting. | **Making music**  **Skills**  Identify simple differences in pieces of music. Listen with concentration to a range of music. Describe how music makes me feel.  Create a rhythm pattern and play an instrument following a rhythm pattern. Explain that music is created and played by humans.  Connect images with sounds. Use a computer to experiment with pitch and duration. Relate an idea to a piece of music.  Identify that music is a sequence of notes. Use a computer to create a musical patter using three notes and refine my musical pattern on a computer.  Describe an animal using sounds. Explain my choices and save my work.  Reopen my work and explain how I made my work better. Listen to music and explain how it made me feel.  **Knowledge**  Know the words rhythm and pulse.  Know how to save music work in Chrome Music Labs.  Know how to open weblinks saved from a previous lesson and save it again.  **Vocabulary**  Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, pattern, instrument, create, beat, open, edit | **Pictograms**  **Skills**  Record data in a tally chart. Represent a tally count as a total and compare totals in a tally chart.  Enter data onto a computer. Use a computer to view data in a different format. Use pictograms to answer simple questions about objects.  Organise data in a tally chart and use it to create a pictogram and explain what the pictogram shows.  Tally objects using a common attribute. Create a pictogram to arrange objects by an attribute. Answer more than/less than, most/least questions about an attribute.  Chose a suitable attribute to compare people. Collect the data needed and create a pictogram and draw conclusions from it.  Use a computer program to present information in different ways. Share what I have found out using a computer. Give simple examples of why information should not be shared.  **Knowledge**  Know how tally charts are made and the benefits of organising data this way.  Know ways in which objects can be grouped in attributes.  Know the word attribute and a knowledge of creating tally charts and pictograms.  Know how date from tally charts can be presented as block diagrams  **Vocabulary**  More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, compare, objects, count, explain, more/most common, least/less common, attribute, group, same, different, most popular, least popular, conclusion, block diagram, common, sharing. | **Programming A – Robot Algorithms**  **Skills**  Follow instructions given by someone else. Chose a serious of words that can be enacted as a sequence. Give clear and unambiguous instructions.  Create different algorithms for a range of sequences (using the same commands). Use an algorithm to program a sequence on a floor robot. Show the differences in two outcomes between two sequences that consist of the same commands.  Follow and predict the outcome of a sequence. Compare my prediction to the program outcome.  Explain the choices I made for my mat design. Identify different route around my mat. Test my mat to make sure it is usable.  Explain what my algorithm should achieve. Create an algorithm to meet my goal. Use my algorithm to create my program.  Plan algorithms for different parts of a task. Test and debug each part of the program. Put together the different parts of the program.  **Knowledge**  Know that specific and clear words and phrases need to be used when giving instructions to others. Computers can only follow the instructions that they are given and instructions given to computers as a program must be clear and unambiguous. Know the term algorithm. An algorithm is a precise set of ordered instructions that can be turned into code.  Know how to use floor robots including how to switch them on and off, add commands, run programs and clear their memory.  Know that following an algorithm or program is called code tracing.  Know the functionality of a design to ensure that a number of routes around the mat can be used (squares to visit/square to avoid).  Know that ‘debugging’ is finding and fixing errors in algorithms and programs. These errors can include: sequence errors, logical errors, and keying errors.  Be familiar with decomposition.  Identifying and fully understanding the task is a key step in program design.  **Vocabulary**  Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging. | **Programming Quizzes**  **Skills**  Identify the start of a sequence. Identify that a program needs to be started. Show how to run my program.  Predict the outcome of a sequence of commands. Match two sequences with the same outcome. Change the outcome of a sequence of commands.  Work out the actions of a Sprite in an algorithm. Decide which blocks to use in a design. Build the sequences of blocks that I need.  Chose background and characters for the design and create a program based on the new design.  Chose the images for my own design. Create an algorithm. Build sequences of blocks to match my design.  Compare my project to my design. Improve my project by adding features. Debug  **Knowledge**  Know the term sequence and understand how sequences can be started.  Explore two levels of abstraction (code and running the code).  Move between the ‘design’ and ‘code’ levels of the project.  Know how to use the Green flag block to start their programs. Know how to use the Start on tap block: Know that a Start on tap block, the user must tap on the sprite to run the program.  Know that ‘design’ is the task of designing artwork and algorithms. An algorithm is part of the design – a precise set of ordered instructions which can be turned into code.  **Vocabulary**  Sequence, command, program, run, start, outcome, predict, blocks, sprite, algorithm, blocks, design, actions, project, modify, change, build, match, compare, debug, features, evaluate. |