Auckley School
Computing Progression of Skills Document

Computer Science

Progression of Skills	
Unit	**Introducing Programming**
Year 1	1. Place instructions into the correct order (sequence) to make something work. 2. Use direction arrows to move an on-screen object (character/sprite) to achieve an objective. 3. Predict a route and sequence direction commands (algorithm) to achieve an objective. Correct the errors if necessary (debug). 4. Predict a route and sequence distance commands to program an on-screen object to achieve an objective. 5. Predict and sequence movement and pen commands to program the drawing of different 2D shapes. 6. Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective.
Year 2	**Develop Programming** 1. Create and debug simple programs by selecting code blocks, placing them in the correct sequence and executing a program. 2. Use logical reasoning to predict the behaviour of simple programs. 3. Simplify a program by using a loop **Programming with Scratch Jr** 1. Program movements. 2. Program outputs for audio or text.

	3. Find errors in a program. 4. Program inputs. 5. Program selection/conditions (if one sprite hits another)
Year 3	**Programming in Scratch** 1. Design, write and debug programs that accomplish specific goals. (Including outputs) 2. Use repetition in programs. 3. Work with various forms of inputs; keyboard, mouse and touch screen. 4. Write programs to simulate physical systems
Year 4	**Programming in Scratch** 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks.
Year 5	**Programming in Scratch** 1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer. 2. Program distance sensing and movement. 3. Program Inputs, outputs, loops, conditions, sensing and variables. 4. Program list variables that chooses randomly.

Year 6	**Programming in Scratch** 1. Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators). 2. Program inputs, selection, sensing, random variables, operators for direction and data variables for scoring. 3. Use inputs, selection, loops, sensing, costume changes and broadcasts. 4. Work with multiple sprites to send broadcast messages between them **Machine Learning & AI** 1. Understand how computers use information to learn by solving new problems and following new instructions. 2. Understand and use examples of machine learning. 3. Understand how artificial intelligence is used to perform tasks often only performed by humans. 4. Discuss and show awareness of potential dangers of AI

Information Technology

	Progression of Skills					
Unit	**Mouse & Keyboard Skills**	**Digital Artwork**	**Design**	**Text & Images**	**Comic Creation**	**Music Creation**
Year 1	• Move the mouse or trackpad and left click to select an object. • Drag and drop with mouse or trackpad to move objects around the screen. • Find letters or numbers on a keyboard. • Begin touch typing with home row keys.	• Change the colour of individual pixels to accurately re-create basic artwork. • Make changes where required. • Change the colour of individual pixels to accurately re-create detailed artwork. **Digital Artwork**	• Change the colour and pattern of elements. • Position and rotate objects on a design. • Position objects in relation to each other. • Resize, rotate, flip and arrange objects behind/in fro nt of each other. **Ebook Creation**	• Change the background colour of a page. • Add, resize and position images (pictures) on a page. • Type and position text on a page, if possible, using capital letters and punctuation. • Label pictures with text. • Use word-banks for writing sentences about pictures.	• Add, resize and organise colour or picture backgrounds. • Add, resize, organise characters/object to different panels. • Add narration using text and direct speech using speech bubbles. **Introduction to Animation**	• Create a rhythm using a pattern of beats. • Create digital sounds using patterns and shapes. • Create a simple melody using patterns and adjust tempo.

	Document Editing & Creation			Introduce Data Handling		
Year 2	• Copy and Paste text and images. • Find and replace words. • Format text for a purpose. • Add bullet points to make lists. • Experiment with keyboard shortcuts.	• Use lines and fill tools to make interesting patterns. • Add a variety of shapes (outlines and fill) and label them with text. Re-create graphics using pixels with different colours.	• Add a book cover with title, author, colour and image. • Add multiple pages based on a theme. • Add text on different pages. • Add images on different pages to match the theme/text. • Add voice recordings to match the text and theme.	• Understand what data is and collect it as a tally. • Use software to label a pictogram and add data to each column. • Edit a table with correct titles and numbers. • Use software to create a bar chart/pie chart/line chart suitable for the data. • Interpret a pictogram/bar chart/line chart.	• Add a background and objects to a frame (including text) • Copy/clone a frame and move objects to create an animation, including flipping objects. • Create an animation with multiple objects moving simultaneously. • Create screen-recording animation (*optional, requires iPad*). • Create stop-motion animation with photos (*optional, requires iPad*). • Create animated drawings of characters by cropping photos and adjusting points of movement.	

	Document Editing & Creation	Digital Artwork Infographics	Storyboards	Branching Database	Comic Creation	Music Creation
Year 3	• Copy and Paste text and images. • Find and replace words. • Format text for a purpose. • Add bullet points to make lists. • Experiment with keyboard shortcuts.	• Use various lines and fill tools plus copy/paste and rotation to create pattern effects. • Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. • Use stamps, copy/paste, layers and multiple frames to create animated GIF computer game graphics. • Understand what an infographic is and why we use them. • Search for and add suitable graphic elements. • Add and format suitable titles and text. • Label an image with arrows and text.	• Add and edit backgrounds. Add and edit characters, including changing posture, expression and clothing. • Add narration and speech bubbles, including formatting text. • Duplicate objects to match scenes. • Search for objects to use	• Understand what an infographic is and why we use them. • Search for and add suitable graphic elements. • Add and format suitable titles and text. • Label an image with arrows and text.	• Add, resize and organise colour or picture backgrounds. • Add, resize, organise characters/objects to different panels. • Add narration using text and direct speech using speech bubbles. • Save comic with name and title. • Add audio recordings (optional).	• Create ascending and descending scales. • Add chords evenly across the scales. • Add arpeggios and melodies. • Add a steady and even rhythm. • Use sampled sounds to create an effective mix. • Build beats, melody (tones) and effects.

	Video Editing	3D Design	Ebook Creation	Data Handling	Animation	
Year 4	• Add scene images. • Add scripted voiceover audio, adjust the volume and crop clips (including splitting a clip). • Add more clips and use transition effects. • Add titles. • Use elements such as shapes. • Add music background music and adjust the volume. • Export a project.	• Understand 3D spatial awareness. • Add 3D shapes, resize, adjust height, duplicate and use the different perspective. • Re-create different types of buildings using 3D shapes. • Create roads/paths by adjusting the height of 3D shapes. • Add windows and door shapes. • Add, move, change colour and duplicate a brick. • Rotate bricks. • Use sloping bricks and special bricks for a purpose. • Change the transparency of bricks.	• Choose a suitable page shape and add a title and subtitle. • Change the background colour/texture of a page. • Add, resize and change the colour of a shape then copy and paste it. • Search for and add suitable images then resize and position them. • Create another page with a background,	• Change appearance of cells in a spreadsheet (fill colour and border) then add and align text. • Find and add data to a spreadsheet, resize cells and use the software to create a suitable chart with a title.	• Create a stop-motion video by duplicating slides that include backgrounds and shapes. • Create animation using transition and animation effects (morph, motion paths, pulse etc), including taking and editing a screenshot. • Animate individual elements of objects. • Create animated GIF files by animating pixels	

			image, shapes and text. • Add an audio recording of the page text, including hiding it behind an object. • Use hyperlinks for navigation between the pages.			

		App Design	Ebook Creation	Data Handling		Music Creation
Year 5		• Adjust slide size to mimic a phone/tablet size. • Add text and images to a slide. • Add icons and text to use as navigation. • Duplicate slides to create multiple pages of the app. • Create hyperlinks to create navigation.	• Add page colour and style. • Add, position and format text on different pages. • Add and position images. • Add audio, including hiding it behind an object. • Add hyperlinks to text and images. • Search for shapes. • Lock and arrange shapes (extension task).	• Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. • Use formulae to find totals, averages and maximum/minimum numbers. • Find data and create a spreadsheet to suit it. • Search a database for specific information.		• Layer tracks using sounds and effects. • Create effective instrument tracks. • Edit tracks and effectively adjust volume and add effects.

	Image Editing	Web Design	Computers: Past, Present & Future			
Year 6	• Adjust the colours, brightness and contrast to improve a photo. • Create a before and after slide in presentation software. • Take and crop a screenshot • Add drawing and text layers. • Import new images as layers and resize them to fit. • Add colour elements to a black and white image using layers	• Create a static homepage. • Choose a suitable theme for your website. • Change the site identity to a suitable title, tagline and website icon. • Upload a suitable header and/or background image. • Adjust the website sidebar and add suitable widgets. • Add text and images to a page and edit them. • Add multiple pages and edit the navigation, including sub-menus. • Provide constructive feedback for your classmates' websites.	• Show awareness of how computers and digital technology helps us today. • Understand how technology has changed over time and represen t it as an interactive timeline. • Understand the impact (positive/neg ative) technological changes have on society. • Predict how technology			

	and eraser tools.		will change in the future.			

E-Safety

Progression of Skills	
Unit	**E-Safety**
Year 1	1.Understand what the internet is and how people use it. 2. Understand what personal information is and why we keep personal information private. 3. Why do websites want personal information. 4. Identify when and where to go for help when concerned.

Year 2	**Recognise Uses of IT** 1. Understand what makes a computer a computer. 2. Understand computers store and follow instructions. 3. Spot digital technology in school. 4. Understand how different technology helps us **E-Safety** 1. What are the dangers of sharing photos online? 2. People online are not always who they say they are. 3. Trusting information online. 4. Using the Internet responsibly. 5. Being respectful **Internet Research** 1. Understand how a web-page displays information in different ways; text, images, videos and interactive elements. 2. Use a web-page to answer questions
Year 3	**E-Safety** 1. Understand what to do if something upsets you online. 2. Understand why and how people can be nasty online. 3. Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online and how to check 7. Understand the importance of being kind in the real world and also online. 8. Understand the importance of using avatars and how to make them.

Year 4	**Internet Research** 1. Use search technologies to find specific pieces of information. 2. Understand features of an Internet Browser. 3. Reference the correct source of information. 4. Be discerning in evaluating digital content. 5. Check the internet for fake news by cross-referencing facts. **E-Safety** 1. Understand what to do if something upsets you online. 2. Understand why and how people can be nasty online. 3. Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online and how to check 7. Understand the importance of being kind in the real world and also online. 8. Understand the importance of using avatars and how to make them

Year 5	**Computer Networks and the Internet** 1. Understand Computer Networks, Internet and Cloud Computing and how they help us. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging) **E-Safety** 1. Keep personal information private. 2. Respect and protect again online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How and where and who can we report concerns we have to. 7. Understand the pitfalls of in-app purchases
Year 6	**E-Safety** 1. Keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How, where and who can we report concerns we have to. 7. Use suitable usernames and passwords for online accounts. 8. Understand the pitfalls of in-app purchases