Ladysmith Federation

Ladysmith Federation Progression of Computing Skills

Year 1 Computing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 1	Unplugged: Acceptable Use Policy and Online Safety Using computers responsibly Generate rules for acceptable use of IT based on experiences. Understand how to be safe online	**Digital Painting** Recap on mouse skills How can we paint using computers? Using shape and lines Use a mouse in different ways. Describe what different freehand tools do and use the shape and line tools.	**Programming A – Moving a robot** Unplugged: Directions Forwards and backwards Four directions Explain what a given command will do and combine forwards and backwards and four direction commands to make sequences.	**Digital Writing** Exploring the keyboard Adding and removing text Use a computer to write and add and remove text on a computer.	**Programming B – Programming Animations** Exploring ScratchJr – Comparing tools Joining blocks Choose a command for a given purpose and show that a series of commands can be joined together.	**Programming B – Programming Animations** Project design Design the parts of a project
Lesson 2	**Technology around us** Unplugged: Technology in our classroom Using technology in the wider world To identify technology in school and the wider world	**Digital Painting** Making careful choices Painting all by myself Comparing computer art and painting Use a computer and make careful choices when painting a picture. Compare painting a picture on a computer and on paper.	**Programming A – Moving a robot** Beebots: Buttons Getting there Routes Plan a simple program and find more than one solution to a problem	**Digital Writing** Exploring the toolbar Making changes to text Discuss: pencil or keyboard? Identify that the look of text can be changed on a computer and make careful choices when changing a text. Compare typing on a computer to writing on paper.	**Programming B – Programming Animations** Make a change Adding Sprites Identify the effect of changing a value and explain that each sprite has its own instructions.	**Programming B – Programming Animations** Follow my design Use my algorithm to create a program.

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Year 2 Computing						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Lesson 1	Acceptable Use Policy Online Safety Generate rules for acceptable use of IT based on experiences. Understand how to be safe online	**Information Technology Around Us** IT in the world The benefits of IT Identify IT beyond school and explain how IT helps us	**Creating Media – Digital Photography** Taking photographs Landscape or portrait What makes a good photograph? Use a digital device and make choices when taking a photograph. Describe what makes a good photograph	**Creating Media – Digital Music** How music makes us feel Rhythms and patterns How music can be used Say how music can make us feel. Identify that there are patterns in music and experiment with sound using a computer.	**Programming A – Robot Algorithms** Giving instructions Same but different Making predictions Describe a series of instructions as a sequence. Explain what happens when we change the order of instructions. Use logical reasoning to predict the outcome of a program.	**Programming B – Programming Quizzes** ScratchJr recap Outcomes Using a design Changing a design Explain that a sequence of commands has a start and outcome. To create and change a given design.
Lesson 2	**Information Technology Around Us** What is IT? IT in school Recognise the uses and features of IT. Identify the uses of IT in school	**Information Technology Around Us** Using IT safely Using IT in different ways Explain how to use IT safely and recognise that choices are made when using IT,	**Creating Media – Digital Photography** Lighting Effects Is it real? Decide how photographs can be improved, use tools to change an image and recognise that photographs can be changed	**Creating Media – Digital Music** Notes and tempo Creating digital music Reviewing and editing music Use a computer to create a musical pattern. Create music for a purpose and review and refine computer work.	**Programming A – Robot Algorithms** Mats and routes Algorithm design Break it down Explain that programming projects can have code and artwork. Design an algorithm and create and debug a self-written program	**Programming B – Programming Quizzes** Designing and creating a program Evaluation Create a self-designed program and decide how the project can be improved

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Year 3						
	Autumn 1 **Computing systems and networks – Connecting Computers**	**Autumn 2** **Creating media – Stop-frame animation**	**Spring 1** **Programming A – Sequencing sounds**	**Spring 2** **Data and information – Branching databases**	**Summer 1** **Creating media – Desktop publishing**	**Summer 2** **Programming B – Events and actions in programs**
Lesson 1	How does a digital device work? Explain how digital devices function	Can a picture move? Explain that animation is a sequence of drawings or photographs	Introduction to Scratch Explore a new programming environment	Yes or no questions Create questions with yes/no answers	Words and pictures Recognise how text and images convey information	Moving a sprite Explain how a sprite moves in an existing project
Lesson 2	What parts make up a digital device? Identify input and output devices	Frame by frame Relate animated movement with a sequence of images	Programming Sprites Identify that commands have an outcome	Making groups Identify the attributes needed to collect data about an object	Can you edit it? Recognise that text and layout can be edited	Maze movement Create a program to move a sprite in four directions
Lesson 3	How do digital devices help us? Recognise how digital devices can change the way we work	What's the story? Plan an animation	Sequences Explain that a program has a start	Creating a branching database Create a branching database	Great template! Choose appropriate page settings	Drawing lines Adapt a program to a new context
Lesson 4	How am I connected? Explain how a computer network can be used to share information	Picture perfect Identify the need to work consistently and carefully	Ordering commands Recognise that a sequence of commands can have an order	Structuring a branching database Explain why it is helpful for a database to be well structured	Can you add content? Add content to a desktop publishing publication	Adding features Develop a program by adding features
Lesson 5	How are computers connected? Explore how digital devices can be connected	Evaluate and make it great! Review and improve an animation	Looking good Change the appearance of a project	Using a branching database Plan the structure of a branching database	Lay it out Consider how different layouts can suit different purposes	Debugging movement Identify and fix bugs in a program
Lesson 6	What does our school network look like? Recognise the physical components of a network	Lights, camera, action! Evaluate the impact of adding other media to an animation	Making an instrument Create a project from a task description	Two ways of presenting information Independently create an identification tool	Why desktop publishing? Consider the benefits of desktop publishing	Making a project Design and create a maze-based challenge

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Year 4						
	Autumn 1 **Computing systems and networks – The Internet**	**Autumn 2** **Creating media – Audio production**	**Spring 1** **Programming A – Repetition in shapes**	**Spring 2** **Data and information – Data logging**	**Summer 1** **Creating media – Photo editing**	**Summer 2** **Programming B – Repetition in games**
Lesson 1	Connecting networks Describe how networks physically connect to other networks	Digital recording Identify that sound can be recorded	Programming a screen turtle Identify that accuracy in programming is important	Answering questions Explain that data gathered over time can be used to answer questions	Changing digital images Explain that the composition of digital images can be exchanged	Using loops to create shapes Develop the use of count-controlled loops in a different programming environment
Lesson 2	What is the internet made of? Recognise how networked devices make up the internet	Recording sounds Explain that audio recordings can be edited	Programming letters Create a program in a text-based language	Data collection Use a digital device to collect data automatically	Changing the composition of images Explain that colours can be changed in digital images	Different loops Explain that in programming there are infinite loops and count-controlled loops
Lesson 3	Sharing information Outline how websites can be shared via the World Wide Web	Creating a podcast Recognise the different parts of creating a podcast project	Patterns and repeats Explain what 'repeat' means	Logging Explain that a data logger collects 'data points' from sensors over time	Changing images for different uses Explain how cloning can be used in photo editing	Animate your name Develop a design that includes two or more loops which run at the same time
Lesson 4	What is a website? Describe how content can be added and accessed on the World Wide Web	Editing digital recordings Apply audio editing skills independently	Using loops to create shapes Modify a count-controlled loop to produce a given outcome	Analysing data Recognise how a computer can help us analyse data	Retouching images Explain that images can be combined	Modifying a game Modify an infinite loop in a given program
Lesson 5	Who owns the web? Recognise how the content of the World Wide Web is created by people	Combining audio Combine audio to enhance podcast project	Breaking things down Decompose a task into small steps	Data for answers Identify the data needed to answer questions	Fake images Combine images for a purpose	Designing a game Design a project that includes repetition
Lesson 6	Can I believe what I read? Evaluate the consequences of unreliable content	Evaluating podcasts Evaluate the effective use of audio	Creating a program Create a program that uses count-controlled loops to produce a given outcome	Answering my question Use data from sensors to answer questions	Making and evaluating a publication Evaluate how changes can improve an image	Creating our games Create a project that includes repetition

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Year 5						
	Autumn 1 **Computing systems and networks – Systems and searching**	**Autumn 2** **Creating media – Video production**	**Spring 1** **Programming A – Selection in physical computing**	**Spring 2** **Data and information – Flat-file databases**	**Summer 1** **Creating media – Introduction to vector graphics**	**Summer 2** **Programming B – Selection in quizzes**
Lesson 1	Systems Explain that computers can be connected together to form systems	What is video? Explain what makes video effective	Connecting Crumbles Control a simple circuit connected to a computer	Creating a paper-based database Use a form to record information	The drawing tools Identify that drawing tools can be used to produce different outcomes	Exploring conditions Explain how selection is used in computer programs
Lesson 2	Computer systems and us Recognise the role of computer systems in our lives	Filming techniques Identify digital devices that can record video	Combining output components Write a program that includes count-controlled loops	Computer databases Compare paper and compute-based databases	Creating images Create a vector drawing by combining shapes	Selecting outcomes Relate that a conditional statement connects a condition to an outcome
Lesson 3	Searching the web Experiment with search engines	Using a storyboard Capture video using a range of techniques	Controlling conditions Explain that a loop can stop when a condition is met	Using a database Outline how you can answer questions by grouping and then sorting data	Making effective drawings Use tools to achieve a desired effect	Asking questions Explain how selection directs the flow of a program
Lesson 4	Selecting search results Describe how search engines select results	Planning a video Create a storyboard	Starting with selection Explain that a loop can be used to repeatedly check whether a condition has been met	Using search tools Explain that tools can be used to select specific data	Layers and objects Recognise that vector drawings consist of layers	Planning a quiz Design a program which uses selection
Lesson 5	How search results are ranked Explain how search results are ranked	Importing and editing video Identify that video can be improved through reshooting and editing	Drawing designs Design a physical project that includes selection	Comparing data visually Explain that computer programs can be used to compare data visually	Manipulating objects Group objects to make them easier to work with	Testing a quiz Create a program which uses selection
Lesson 6	How are searches influenced Recognise why the order of results is important, and to whom	Video evaluation Consider the impact of the choices made when making and sharing a video	Writing and testing algorithms Create a program that controls a physical computing project	Databases in real life Use a real-world database to answer questions	Create a vector drawing Apply knowledge about vector drawings	Evaluating a quiz Evaluate my program

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Year 6						
	Autumn 1 **Computing systems and networks – Communication and collaboration**	**Autumn 2** **Creating media – Web page creation**	**Spring 1** **Programming A – Variables in games**	**Spring 2** **Data and information – Spreadsheets**	**Summer 1** **Creating media – 3D Modelling**	**Summer 2** **Programming B – Sensing movement**
Lesson 1	Internet addresses Explain the importance of internet addresses	What makes a good website? Review an existing website and consider its structure	Introducing variables Define a 'variable' as something that is changeable	What is a spreadsheet? Create a data set in a spreadsheet	Introduction to 3D modelling Recognise that you can work in three dimensions on a computer	The micro:bit Create a program to run on a controllable device
Lesson 2	Data packets Recognise how data is transferred across the internet	How would you layout your web page? Plan the features of a web page	Variables in programming Explain why a variable is used in a program	Modifying spreadsheets Build a data set in a spreadsheet	Modifying 3D objects Identify that digital 3D objects can be modified	Go with the flow Explain that selection can control the flow of a program
Lesson 3	Working together Explain how sharing information online can help people to work together	Copyright or CopyWRONG? Consider the ownership and use of images (copyright)	Improving a game Choose how to improve a game by using variables	What's the formula? Explain that formulas can be used to produce calculated data	Make your own name badge Recognise that objects can be combined in a 3D model	Sensing inputs Update a variable with a user input
Lesson 4	Shared working Evaluate different ways of working together online	How does it look? Recognise the need to preview pages	Designing a game Design a project that builds on a given example	Calculate and duplicate To apply formulas to data	Making a desk tidy Create a 3D model for a given purpose	Finding your way Use a conditional statement to compare variable to a value
Lesson 5	How we communicate Recognise how we communicate using technology	Follow the breadcrumbs Outline the need for a navigation path	Design to code Use my design to create a project	Event planning To create a spreadsheet to plan an event	Planning a 3D model Plan my own 3D model	Designing a step counter Design a project that uses inputs and outputs on a controllable device
Lesson 6	Communicating responsibly Evaluate different methods of online communication	Think before you link! Recognise the implications of linking to content owned by other people	Improving and sharing Evaluate my project	Presenting data To choose suitable ways to present data	Make your own 3D model Create my own digital 3D model	Making a step counter Develop a program to use inputs and outputs on a controllable device