Computing Progression Map

	EYFS – Cross curricular links	Year 1	Year 2	Year 3 (Great Clacton Junior School)
National Curriculum *Pupils should be taught…*	**Communication and language** <u>Listening, attention and understanding</u> • Make comments about what they have heard and asks questions to clarify their understanding. <u>Speaking</u> • offer explanations for why things might happen, making use of recently introduced vocabulary. **Personal, social and emotional** <u>Self-regulation</u> • Give focused attention to what the teachers say, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several actions. <u>Managing-self</u> • Explain the reasons for rules, know right from wrong and try to behave accordingly. **Physical development** <u>Fine motor</u> • use a range of tools. **Mathematics** <u>Numerical patterns</u> • understand position through words alone. • describe a familiar route.	• 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 • 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.		• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration • use search technologies

	• Discuss routines and locations, using words like 'in front of' and 'behind'. **Understanding the world** <u>People, culture and community</u> • Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. • Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps. **Expressive arts and design** <u>Creating with materials</u> • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.		effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

EYFS - Knowledge			
Knowledge *By the end of the year, children should know…*	**Autumn 1 –** All about me **Autumn 2 -** Through my eyes	**Spring 1 -** People who help us **Spring 2 -** Down at the bottom of the garden	**Summer 1** - We're on the move **Summer 2 -** Under the sea
	Communication and language <u>Listening, attention and understanding</u> • Understand that we can use the internet and computers to search and learn about different cultures, religions and festivals e.g., Diwali, and Hanukkah. <u>Speaking</u> • Understand and explain how to use simple programs on a computer. **Personal, social and emotional** <u>Self-regulation</u> • Understand how to follow simple instructions given to them. <u>Managing-self</u> • Understand how to stay safe when using different forms of technology at home and at school. **Physical development** <u>Fine motor</u> • Understand how to use their hands and fingers to operate a computer or iPad. **Mathematics** <u>Numerical patterns</u> • understand position through words alone.	**Communication and language** <u>Listening, attention and understanding</u> • Understand that we can use the internet and computers to search and learn about different occupations and where different foods come from in the world e.g., police, firefighters, paramedics, doctors, fruits and vegetables. <u>Speaking</u> • Understand and explain how to use simple programs on a computer. **Personal, social and emotional** <u>Self-regulation</u> • Understand how to follow simple instructions given to them. <u>Managing-self</u> • Understand how to stay safe when using different forms of technology at home and at school. <u>Fine motor</u> • Understand how to use their hands and fingers to operate a computer or iPad. **Understanding the world** <u>People, culture and community</u> • Understand and identify the different countries	**Communication and language** <u>Listening, attention and understanding</u> • Understand that we can use the internet and computers to search and learn about different vehicles and different holiday locations e.g., cars, buses, planes, seaside. <u>Speaking</u> • Understand and explain how to use simple programs on a computer. **Personal, social and emotional** <u>Self-regulation</u> • Understand how to follow simple instructions given to them. <u>Managing-self</u> • Understand how to stay safe when using different forms of technology at home and at school. <u>Fine motor</u> • Understand how to use their hands and fingers to operate a computer or iPad. **Understanding the world** <u>People, culture and community</u> • Identify past events that have happened such as the historic importance of Amelia

	• describe a familiar route. • Discuss routines and locations, using words like 'in front of' and 'behind'. **Understanding the world** <u>People, culture and community</u> • Understand how to use and follow a map. • Understand the different types of maps. • Understand the differences between two localities of the forest and beach using photographs. • Understand God's creation story by watching and discussing different clips. **Expressive arts and design** <u>Creating with materials</u> • Learn a variety of phonic, number and Christmas songs using a computer.	that different foods come from using clips and photographs. • Identify past events that have happened in their life. **Expressive arts and design** <u>Creating with materials</u> • Explore a variety of Chinese songs and dances and Easter songs using a computer.	Earhart. **Expressive arts and design** <u>Creating with materials</u> • Learn a variety of vehicle and under the sea songs using a computer.
Vocabulary	Programs, instructions, safe, position, in front, behind	Computer, operate, songs, learn, search	Technology, internet, clips

Year 1 - Knowledge			
Knowledge *By the end of the year, children should know…*	**Autumn 1 –** Computing systems and networks – Technology around us **Autumn 2 –** Creating media – Digital painting	**Spring 1 –** Programming A – Moving a robot **Spring 2 –** Data and information – Grouping data	**Summer 1 –** Creating media – Digital writing **Summer 2 –** Programming B – Programming animations
	Autumn 1 • Explain that technology is something that can help us. • Identify examples of technology. • Explain how examples of technology help us. • Recognise that a computer is an example of technology. • Recognise that choices are made when using technology. • Explain why rules are needed when using technology. **Autumn 2** • Explain what different freehand tools do. • Recognise computers can be used to create art. • Recognise a tool can be adjusted to suit my needs. • Decide when it's appropriate to use each tool.	**Spring 1** • Recall words that can be enacted. • Explain what a given command does. • Match a command to an outcome. • Understand that a program is a set of commands that a computer can run. • Recall that a series of instructions can be issued before they are enacted. **Spring 2** • Identify that objects can be counted. • Recognise that information can be presented. • Recognise that information can be presented in different ways.	**Summer 1** • Recognise that a keyboard is used to enter text into a computer. • Recognise that the shift key changes the output of a key. • Recognise that text can be changed. • Recognise that the appearance of text can be changed. • Recognise that text can be edited. • Consider the impact of choices made. **Summer 2** • Enact a given word. • Recall words that can be enacted. • Predict the outcome of a command on a device. • List that commands can be used on a given device. • Explain what a given command does. • Match a command to an outcome. • Recognise how to run a command. • Choose a command for a given purpose. • Understand that a program is a set of commands a computer can run. • Recall that a series of instructions can be issued before

	• Consider the impact of choices made. • Compare painting using a computer with painting using brushes.		they are enacted. • Build a sequence of commands in steps. • Combine commands in a program.
Vocabulary	**Autumn 1 -** technology, computer, mouse, trackpad, keyboard, screen, double-click, typing. **Autumn 2 -** paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers.	**Spring 1 –** Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program. **Spring 2 -** object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same.	**Summer 1 –** word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing. **Summer 2 –** Scratch Jr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.

Year 2 - Knowledge			
Knowledge *By the end of the year, children should know…*	**Autumn 1 –** Computing systems and networks – IT around us **Autumn 2 –** Creating media – digital photography	**Spring 1 –** Programming A – Robot algorithms **Spring 2 –** Data and information – pictograms	**Summer 1 –** Creating media – digital music **Summer 2 –** Programming B – Programming quizzes
	Autumn 1 • Recognise different types of computers used in school. • Identify that a computer is a part of information technology. • Recognise the features of information technology. • Talk about uses of information technology. • Say how rules for using information technology can help us. • Explain how information technology benefits us. • Recognise that choices are made when using information technology. **Autumn 2** • Recognise that some digital devices can capture images using a camera. • Talk about how to take a photograph. • Recognise that photographs can be saved and views later. • Make choices when composing photographs. • Recognise features of a good photograph.	**Spring 1** • Describe that a series of instructions is a sequence. • Explain what happens when we change the order of instructions. • Reall that a series of instructions can be issued before they are enacted. • Recognise that you can predict the outcome of a program. **Spring 2** • Use a tally chart to collect data. • Compare objects that have been grouped by attribute. • Suggest appropriate headings for tally charts and pictograms. • Construct a given comparison question. • Use a computer program t0 present information in different ways. • Explain that we can present information using a computer.	**Summer 1** • Identify that computers can be used to play sounds of different instruments. • Identify that the same pattern can be represented in different ways. • Compare playing music on instruments with making music on a computer. **Summer 2** • Describe a series of instructions as a ‘sequence’. • Recall that a series of instructions can be issued before they are enacted. • Use logical reasoning to predict the outcome of a program.

	• Identify how a photograph could be improved. • Explain the effect of light on a photograph. • Recognise that photographs can be changed after they have been taken. • Recognise that some images are not accurate.	• Give simple examples of why some information should not be shared.	
Vocabulary	**Autumn 1 -** Information technology (IT), computer, barcode, scanner/scan. **Autumn 2 -** device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting.	**Spring 1 –** instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition. **Spring 2 -** more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing.	**Summer 1 –** music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit. **Summer 2 –** sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.

Skills *By the end of the year, children should be able to…*			
	EYFS	**Year 1**	**Year 2**
	• Use with an adult the internet to search different topics. • Explain how to use simple programs on a computer. • Follow simple instructions. • Explain how to stay safe when using the internet/computer. • Watch clips on a device. • Know how to follow a map.	**Autumn 1** • Choose a piece of technology to do a job. • Recognise that same technology can be used in different ways. • Identify the mains parts of a computer. • Use a mouse in different ways. • Use a keyboard to type. • Use a keyboard to edit text. • Show how to use technology safely. **Autumn 2** • Create a picture using freehand tools. • Use shape and line tools when precision is needed. • Use a range of paint colours. • Use the fill tool to colour an enclosed area. • Use the undo button to correct a mistake. • Combine a range of tools to create a piece of artwork. **Spring 1** • Enact a given word. • Predict the outcome of a command on a device. • List which commands can be used on a given device. • Run a command on a floor robot. • Choose a command for a given purpose. • Choose a series of words that can be enacted as a program.	**Autumn 1** • Describe some uses of computers. • Identify information technology in school. • Identify information technology beyond school. • Show how to use information technology safely. **Autumn 2** • Capture a digital image. • Take photographs in both landscape and portrait. • View photographs on a digital device. • Decide which photographs to keep. • Hold the camera still to take a clear photograph. • Use zoom to change the composition of a photograph. • Consider lighting before taking a photograph. • Use simple editing tools to change the appearance of a photograph. • Improve a photograph by retaking it.

		• Choose a series of commands that can be run as a program. • Build a sequence of commands in steps. • Combine commands in a program. • Run a program on a device. **Spring 2** • Identify some attributes of an object. • Collect simple data. • Show that collected data can be counted. • Describe the properties of an object. • Choose an attribute to group objects by. • Group objects to answer questions. • Explain that objects can be grouped by similarities. • Describe a group of objects. **Summer 1** • Use letter, number and space keys to enter text into a computer. • Use punctuation and special characters. • Select text. • Choose options to achieve a desired effect. • Change the appearance of text on a computer. • Use the backspace key to remove text. • Position the text cursor in a chosen location. • Use undo. **Summer 2** • Choose a series of words that can be enacted as a program. • Choose a series of commands that can be run as a program.	**Spring 1** • Choose a series of words that can be enacted as a sequence. • Choose a series of instructions that can be run as a program. • Create a program. • Trace a sequence to make a prediction. • Run a program on a device. • Debug a program that I have written. **Spring 2** • Show I can enter data onto a computer. • Use a computer to view data in different formats. • Use pictograms to answer single-attribute questions. • Recognise that people, animals and objects can be described by attributes. • Use a computer to answer comparison questions. **Summer 1** • Experiment with musical patterns on a computer. • Experiment with different sounds on a computer. • Use a computer to create a musical

		• Run a program on a device.	pattern. • Use a computer to compose a rhythm and a melody on a given theme. • Use a computer to play the same music in different ways. • Evaluate a musical composition created on a computer. • Improve a musical composition created on a computer. **Summer 2** • Choose a series of words that can be enacted as a sequence. • Explain what happens when we change the order of instructions. • Choose a series of commands that can be run as a program. • Trace a sequence to make a prediction. • Test a prediction by running the sequence. • Create and debug a program I have written. • Run a program on a device.