Coteford Junior School Progression in Computing

Essential characteristics of computer scientists

• Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.

• The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

• An understanding of the connected nature of devices.

• The ability to communicate ideas well by using applications and devices throughout the curriculum.

• The ability to collect, organise and manipulate data effectively.

Range of Coverage	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	Computer systems and networks – Connecting computers	Computer systems and networks – The Internet	Computer systems and networks – Sharing information	Computer systems and networks – Communication
	Creating media – animation	Creating media – Audio editing	Creating media – Vector drawings	Creating media – 3D modelling
	Creating media – desktop publishing	Creating media – Photo editing	Creating media – Video editing	Creating media – Web page creation
	Data and Information – Branching databases	Data and Information – Data logging	Data and Information – Flat-line databases	Data and Information - Spreadsheets
	Programming A – sequence in music	Programming A – Repetition in shapes	Programming A – Selection in physical computing	Programming A – Variables in games

	Programming B – events and actions	Programming B – Repetition in games	Programming B – Selection in quizzes	Programming B – Sensing

Intent

Computing at CotefordJunior School intends to develop 'thinkers of the future' through a modern, ambitious and relevant education in computing. We want to equip pupils to use computational thinking and creativity that will enable them to become active participants in the digital world. It is important to us that the children understand how to use the ever-changing technology to express themselves, as tools for learning and as a means to drive their generation forward into the future. Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online. Our aim is to provide a computing curriculum that is designed to balance acquiring a broad and deep knowledge alongside opportunities to apply skills in various digital contexts. Beyond teaching computing discreetly, we will give pupils the opportunity to apply and develop what they have learnt across wider learning in the curriculum.

A key part of implementing our computing curriculum was to ensure that safety of our pupils is paramount. We take online safety very seriously and we aim to give children the necessary skills to keep themselves safe online. Children have a right to enjoy childhood online, to access safe online spaces and to benefit from all the opportunities that a connected world can bring them, appropriate to their age and stage.

Children build online resilience through the use of our PSHE lessons; assemblies and theme days. This framework aims to support and broaden the provision of online safety education, so that it is empowering, builds resilience and effects positive culture change. The objectives promote the development of safe and appropriate long-term behaviours, and support educators in shaping the culture within their setting and beyond.

Implementation

Our scheme of work for Computing is adapted from the 'Teach Computing' Curriculum and covers all aspects of the National Curriculum. This scheme was chosen as it has been created by subject experts and based on the latest pedagogical research. It provides an innovative progression framework where computing content (concepts, knowledge, skills and objectives) has been organised into interconnected networks called learning graphs. The curriculum aims to equip young people with the knowledge, skills and understanding they need to thrive in the digital world of today and the future. The curriculum can be broken down into 3 strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction.

The national curriculum for computing aims to ensure all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (Computer science)
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (Computer science)
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (Information technology)
- are responsible, competent, confident and creative users of information and communication technology. (Digital literacy)

Impact

Our children enjoy and value Computing and know why they are doing things, not just how. Children will understand and appreciate the value of Computing in the context of their personal wellbeing and the technological, creative and cultural industries and their many career opportunities.
Progress in Computing is demonstrated through regularly reviewing and scrutinising children's work, in accordance with our assessment policy to ensure that progression of skills is taking place.
Namely through:

- Looking at pupils' work, especially over time as they gain skills and knowledge
- Observing how they perform in lessons
- Talking to them about what they know.

The Computing curriculum will contribute to children's personal development in creativity, independence, judgement and self-reflection. This would be seen in them being able to talk confidently about their work, and sharing their work with others. Progress will be shown through outcomes and through the important record of the process leading to them.

SKILLS	Pre-KS2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	**Information technology around us** **Identifying IT and how its responsible**	**Connecting computers** **Identifying that digital devices have inputs,**	**The internet** **Recognising the internet as a network of networks including**	**Sharing Information** **Identifying and exploring how information**	**Communication** **Recognising how the WWW can be used to communicate and**

	use improves our world in school and beyond. ●Identify examples of computers ●Describe some uses of computers ●Identify that a computer is a part of IT ●Identify examples of IT ●Sort school IT by what it's used for ●Identify that some IT can be used in more than one way ●Find examples of information technology ●Sort IT by where it is found ●Talk about uses of information technology ●Recognise common types of technology ●Demonstrate how IT devices work together ●Say why we use IT	**processes, and outputs,and how devices can be connected to make networks.** * Explain that digital devices accept inputs *explain that digital devices produce outputs *Follow a process * Classify input and output devices *Describe a simple process *Design a digital device * Explain how I use digital devices for different activities *Recognise similarities between using digital devices and using non-digital tools *Suggest differences between using digital devices and using non-digital tools * Recognise different connections *Explain how messages are passed	**the WWW, and why we should evaluate online content.** ● Describe the internet as a network of networks ● demonstrate how information is shared across the internet ● discuss why a network needs protecting ● Describe networked devices and how they connect ● explain that the internet is used to provide many services ● recognise that the World Wide Web contains websites and web pages ● Explain the types of media that can be shared on the WWW ● describe where websites are stored when uploaded to the WWW ● describe how to access websites on the WWW	**is shared between digital systems.** ●Explain that systems are built using a number of parts ●Describe the input, process, and output of a digital system ●Explain that computer systems communicate with other devices ●Identify tasks that are managed by computer systems ●Identify the human elements of a computer system ●Explain the benefits of a given computer system ●Make use of a web search to find specific information ●Refine my web search ●Compare results from different search engines ●Explain why we need tools to find things online	**be searched to find information.** ●Recognise that data is transferred using agreed methods ●Explain that internet devices have addresses ●Describe how computers use addresses to access websites ●Identify and explain the main parts of a data packet ●Explain that data is transferred over networks in packets ●Explain that all data transferred over the internet is in packets ●Recognise how to access shared files stored online ●Send information over the internet in different ways ●Explain that the internet allows different media to be shared

	●List different uses of information technology ●Talk about different rules for using IT ●Say how rules can help keep me safe ●Identify the choices that I make when using IT ●Use IT for different types of activities ●Explain the need to use IT in different ways	through multiple connections *Discuss why we need a network switch * Recognise that a computer network is made up of a number of devices *Demonstrate how information can be passed between devices *Explain the role of a switch, server, and wireless access point in a network * Identify how devices in a network are connected together *Identify networked devices around me *Identify the benefits of computer networks	● Explain what media can be found on websites ● recognise that I can add content to the WWW ● explain that internet services can be used to create content online ● Explain that websites and their content are created by people ● suggest who owns the content on websites ● explain that there are rules to protect content ● Explain that not everything on the World Wide Web is true ● explain why some information I find online may not be honest, accurate, or legal ● explain why I need to think carefully before I share or reshare content	●Recognise the role of web crawlers in creating an index ●Relate a search term to the search engine's index ●Order a list by rank ●Explain that a search engine follows rules to rank results ●Give examples of criteria used by search engines to rank results ●Describe some of the ways that search results can be influenced ●Recognise some of the limitations of search engines ●Explain how search engines make money	●Identify different ways of working together online ●Recognise that working together on the internet can be public or private ●Explain how the internet enables effective collaboration ●Explain the different ways in which people communicate ●Identify that there are a variety of ways to communicate over the internet ●Choose methods of communication to suit particular purposes ●Compare different methods of communicating on the internet ●Decide when I should and should not share information online ●Explain that communication on the internet may not be private

Creating media	**Digital Photography** **Capturing and changing digital photographs for different purposes** ●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 ●Explain why a photo looks better in portrait or landscape format ●Identify what is wrong with a photograph ●Discuss how to take a good photograph	**Animation** **Capturing and editing digital still images to produce a stop-frame animation that tells a story.** * Draw a sequence of pictures *Create an effective flip book—style animation *Explain how an animation/flip book works * Predict what an animation will look like *Explain why little changes are needed for each frame *Create an effective stop-frame animation * Break down a story into settings, characters and events *Describe an animation that is achievable on screen *Create a storyboard * Use onion skinning to help me make small	**Audio Editing** **Capturing and editing audio to produce a podcast, ensuring that copyright is considered.** ● Identify the input and output devices used to record and play sound ● use a computer to record audio ● explain that the person who records the sound can say who is allowed to use it ● Re-record my voice to improve my recording ● inspect the soundwave view to know where to trim my recording ● discuss what sounds can be added to a podcast ● Explain how sounds can be combined to make a podcast more engaging	**Vector Drawing** **Creating images in a drawing program by using layers and groups of objects.** ●Recognise that vector drawings are made using shapes ●Experiment with the shape and line tools ●Discuss how vector drawings are different from paper-based drawings ●Identify the shapes used to make a vector drawing ●Explain that each element added to a vector drawing is an object ●Move, resize, and rotate objects I have duplicated ●Use the zoom tool to help me add detail to my drawings ●Explain how alignment grids and resize handles can be used to improve consistency	**3D Modelling** **Planning, developing, and evaluating 3D computer models of physical objects.** ●Add 3D shapes to a project ●View 3D shapes from different perspectives ●Move 3D shapes relative to one another ●Resize an object in three dimensions ●Lift/lower 3D objects ●Recolour a 3D object ●Rotate objects in three dimensions ●Duplicate 3D objects ●Group 3D objects ●Accurately size 3D objects ●Show that placeholders can create holes in 3D objects ●Combine a number of 3D objects ●Analyse a 3D model

	●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 a 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 which have been changed	changes between frames *Review a sequence of frames to check my work *Evaluate the quality of my animation * Explain ways to make my animation better *Evaluate another learner's animation *Improve my animation based on feedback * Add other media to my animation *Explain why I added other media to my animation *Evaluate my final film	● save my project so the different parts remain editable ● plan appropriate content for a podcast ● Record content following my plan ● review the quality of my recordings ● improve my voice recordings ● Open my project to continue working on it ● arrange multiple sounds to create the effect I want ● explain the difference between saving a project and exporting an audio file ● Listen to an audio recording to identify its strengths ● suggest improvements to an audio recording ● choose appropriate edits to improve my podcast	●Modify objects to create a new image ●Identify that each added object creates a new layer in the drawing ●Change the order of layers in a vector drawing ●Use layering to create an image ●Copy part of a drawing by duplicating several objects ●Recognise when I need to group and ungroup objects ●Reuse a group of objects to further develop my vector drawing ●Create a vector drawing for a specific purpose ●Reflect on the skills I have used and why I have used them ●Compare vector drawings to freehand paint drawings	●Choose objects to use in a 3D model ●Combine objects in a design ●Construct a 3D model based on a design ●Explain how my 3D model could be improved ●Modify my 3D model to improve it
Creating media	**Making Music** **Using a computer**	**Desktop Publishing** **Creating documents**	**Photo Editting** **Manipulating digital**	**Video Editing** **Planning, capturing,**	**Web Page Creation** **Designing and**

	as a tool to explore rhythms and melodies, before creating a musical composition ●Identify simple differences in pieces of music ●Describe music using adjectives ●Say what I do and don't like about a piece of music ●Create a rhythm pattern ●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 ●Relate an idea to a piece of music To use a computer to create a musical pattern	**by modifying text, images, and page layouts for a specified purpose.** * Explain the difference between text and images *Recognise that text and images can communicate messages clearly *Identify the advantages and disadvantages of using text and images * Change font style, size, and colours for a given purpose *Edit text *Explain that text can be changed to communicate more clearly * Explain what 'page orientation' means *Recognise placeholders and say why they are important	**images, and reflecting on the impact of changes and whether the required purpose is fulfilled.** ● Improve an image by rotating it ● explain why I might crop an image ● use photo editing software to crop an image ● Explain that different colour effects make you think and feel different things ● experiment with different colour effects ● explain why I chose certain colour effects ● Add to the composition of an image by cloning ● identify how a photo edit can be improved ● remove parts of an image using cloning ● Experiment with tools to select and copy part of an image	**and editing video to produce a short film.** ●Explain that video is a visual media format ●Identify features of videos ●Compare features in different videos ●Identify and find features on a digital video recording device ●Experiment with different camera angles ●Make use of a microphone ●Suggest filming techniques for a given purpose ●Capture video using a range of filming techniques ●Review how effective my video is ●Outline the scenes of my video ●Decide which filming techniques I will use ●Create and save video content	**creating webpages, giving consideration to copyright, aesthetics, and navigation.** ●Explore a website ●Discuss the different types of media used on websites ●Know that websites are written in HTML ●Recognise the common features of a web page ●Suggest media to include on my page ●Draw a web page layout that suits my purpose ●Say why I should use copyright-free images ●Find copyright-free images ●Describe what is meant by the term 'fair use' ●Add content to my own web page ●Preview what my web page looks like

	●Identify that music is a sequence of notes ●Explain how my music can be played in different ways ●Refine my musical pattern on a computer ●Create a rhythm which represents an animal I've chosen ●Create my animal's rhythm on a computer ●Add a sequence of notes to my rhythm ●Review my work ●Explain how I changed my work ●Listen to music and describe how it makes me feel	*Create a template for a particular purpose * Choose the best locations for my content *Paste text and images to create a magazine cover *Make changes to content after I've added it * Identify different layouts *Match a layout to a purpose *Choose a suitable layout for a given purpose * Identify the uses of desktop publishing in the real world *Say why desktop publishing might be helpful *Compare work made on desktop publishing to work created by hand	● use a range of tools to copy between images ● explain why photos might be edited ● Describe the image I want to create ● choose suitable images for my project ● create a project that is a combination of other images ● Review images against a given criteria ● use feedback to guide making changes ● combine text and my image to complete the project	●Store, retrieve, and export my recording to a computer ●Explain how to improve a video by reshooting and editing ●Select the correct tools to make edits to my video ●Make edits to my video and improve the final outcome ●Recognise that my choices when making a video will impact the quality of the final outcome ●Evaluate my video and share my opinions	●Evaluate what my web page looks like on different devices and suggest/make edits. ●Explain what a navigation path is ●Describe why navigation paths are useful ●Make multiple web pages and link them using hyperlinks ●Explain the implication of linking to content owned by others ●Create hyperlinks to link to other people's work ●Evaluate the user experience of a website
Data and Information	**Pictograms**	**Branching Databases** **Building and**	**Data Logging** **Recognising how**	**Flat-line Databases** **Using a database**	Spreadsheets Answering

	Collecting data in tally charts and using attributes to organise and present data on a computer. ●Record data in a tally chart ●Represent a tally count as a total ●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 ●Use a tally chart to create a pictogram ●Explain what the pictogram shows ●Tally objects using a common attribute ●Create a pictogram to	**using branching databases to group objects using yes/no questions.** * Investigate questions with yes/no answers *Make up a yes/no question about a collection of objects *Create two groups of objects separated by one attribute * Select an attribute to separate objects into groups *Create a group of objects within an existing group *Arrange objects into a tree structure * Select objects to arrange in a branching database *Group objects using my own yes/no questions *Test my branching database to see if it works * Create yes/no questions using given attributes	**and why data is collected over time, before using data loggers to carry out an investigation.** ● Choose a data set to answer a given question ● suggest questions that can be answered using a given data set ● identify data that can be gathered over time ● Explain what data can be collected using sensors ● use data from a sensor to answer a given question ● identify that data from sensors can be recorded ● Recognise that a data logger collects data at given points ● identify the intervals used to collect data ● talk about the data that I have captured	**to order data and create charts to answer questions.** ●Create a database using cards ●Explain how information can be recorded ●Order, sort, and group my data cards ●Explain what a field and a record is in a database ●Navigate a flat-file database to compare different views of information ●Choose which field to sort data by to answer a given question ●Explain that data can be grouped using chosen values ●Group information using a database ● I can combine grouping and sorting to answer specific questions	questions by using spreadsheets to organise and calculate data. ●Collect data ●Suggest how to structure my data ●Enter data into a spreadsheet ●Explain what an item of data is ●Choose an appropriate format for a cell ●Apply an appropriate format to a cell ●Explain which data types can be used in calculations ●Construct a formula in a spreadsheet ●Identify that changing inputs changes outputs ●Calculate data using different operations ●Create a formula which includes a range of cells ●Apply a formula to multiple cells by duplicating it

	arrange objects by an attribute ●Answer 'more than'/'less than' and 'most/least' questions about an attribute ●Choose a suitable attribute to compare people ●Collect the data I need ●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	*Compare two branching database structures *Explain that questions need to be ordered carefully to split objects into similarly sized groups * Independently create questions to use in a branching database *Create questions that will enable objects to be uniquely identified *Create a physical version of a branching database * Create a branching database that reflects my plan *Work with a partner to test my identification tool *Suggest real-world uses for branching databases	● View data at different levels of detail ● sort data to find information ● explain that there are different ways to view data ● Propose a question that can be answered using logged data ● plan how to collect data using a data logger ● use a data logger to collect data ● Interpret data that has been collected using a data logger ● draw conclusions from the data that I have collected ● explain the benefits of using a data logger	●Choose which field and value are required to answer a given question ●Outline how 'AND' and 'OR' can be used to refine data selection ●Choose multiple criteria to answer a given question ●Select an appropriate chart to visually compare data ●Refine a chart by selecting a particular filter ●Explain the benefits of using a computer to create charts ●Ask questions that will need more than one field to answer ●Refine a search in a real-world context ●Present my findings to a group	●Use a spreadsheet to answer questions ●Explain why data should be organised ●Apply a formula to calculate the data I need to answer questions ●Produce a chart ●Use a chart to show the answer to a question ●Suggest when to use a table or chart
Programming A	**Robot Algorithms** **Creating and debugging programs,**	**Sequence in Music** **Creating sequences in a block-based programming language to**	**Repetition in shapes** **Using a text-based programming language to explore count-controlled**	**Selection in Physical Computing** **Exploring conditions and selection using a programmable**	**Variables in Games** **Exploring variables when designing and coding a game.**

	and using logical reasoning to make predictions. ●Follow instructions given by someone else ●Choose a series of words that can be acted out as a sequence ●Give clear instructions ●Use the same instructions to create different algorithms ●Use an algorithm to program a sequence on a floor robot ●Show the difference in outcomes between two sequences that consist of the same instructions ●Follow a sequence ●Predict the outcome of a sequence	**make music.** * Identify the objects in a Scratch project (sprites, backdrops) *Explain that objects in Scratch have attributes (linked to) *Recognise that commands in Scratch are represented as blocks * Identify that each sprite is controlled by the commands I choose *Choose a word which describes an on-screen action for my plan *Create a program following a design * Start a program in different ways *Create a sequence of connected commands *Explain that the objects in my project will respond exactly to the code	**loops when drawing shapes.** ● Program a computer by typing commands ● explain the effect of changing a value of a command ● create a code snippet for a given purpose ● Use a template to draw what I want my program to do ● write an algorithm to produce a given outcome ● test my algorithm in a text-based language ● Identify repetition in everyday tasks ● identify patterns in a sequence ● use a count-controlled loop to produce a given outcome ● Identify the effect of changing the number of times a task is repeated	**microcontroller.** ●Create a simple circuit and connect it to a microcontroller ●Program a microcontroller to make an LED switch on ●Explain what an infinite loop does ●Connect more than one output component to a microcontroller ●Use a count-controlled loop to control outputs ●Design sequences that use count-controlled loops ●Explain that a condition is either true or false ●Design a conditional loop ●Program a microcontroller to respond to an input ●Explain that a condition being met can start an action ●Identify a condition and an action in my project ●Use selection (an 'if…then…' statement)	●Identify examples of information that is variable ●Explain that the way a variable changes can be defined ●Identify that variables can hold numbers or letters ●Identify a program variable as a placeholder in memory for a single value ●Explain that a variable has a name and a value ●Recognise that the value of a variable can be changed ●Decide where in a program to change a variable ●Make use of an event in a program to set a variable ●Recognise that the value of a variable can be used by a program ●Choose the artwork for my project ●Create algorithms for my project

	●Compare my prediction to the program outcome ●Explain the choices that I made for my mat design ●Identify different routes around my mat ●Test my mat to make sure that it is usable ●Explain what my algorithm should achieve ●Create an algorithm to meet my goal ●Use my algorithm to create a program ●Test and debug each part of the program ●Plan algorithms for different parts of a task ●Put together the different parts of my program	* Explain what a sequence is *Combine sound commands *Order notes into a sequence * Build a sequence of commands *Decide the actions for each sprite in a program *Make design choices for my artwork * Identify and name the objects I will need for a project *Relate a task description to a design *Implement my algorithm as code	● predict the outcome of a program containing a count-controlled loop ● choose which values to change in a loop ● Identify 'chunks' of actions in the real world ● use a procedure in a program ● explain that a computer can repeatedly call a procedure ● Design a program that includes count-controlled loops ● make use of my design to write a program ● develop my program by debugging it	to direct the flow of a program ●Identify a real-world example of a condition starting an action ●Describe what my project will do ●Create a detailed drawing of my project ●Write an algorithm that describes what my model will do ●Use selection to produce an intended outcome ●Test and debug my project	●Explain my design choices ●Create the artwork for my project ●Choose a name that identifies the role of a variable ●Test the code that I have written ●Identify ways that my game could be improved ●Use variables to extend my game ●Share my game with others
Programming B	**Programming Quizzes**	**Events and Actions** **Writing algorithms**	**Repetition in Games** **Using a block-based**	**Selection in Quizzes** **Exploring selection**	**Sensing** **Designing and coding**

	Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. ●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 to meet the design	**and programs that use a range of events to trigger sequences of actions.** * Explain the relationship between an event and an action *Choose which keys to use for actions and explain my choice *Identify a way to improve a program * Choose a character for my project *Choose a suitable size for a character in a maze *Program movement * Use a programming extension *Consider the real world when making design choices *Choose blocks to set up my program * Identify additional features (from a given set of blocks) *Choose suitable keys to turn on additional features	**programming language to explore count-controlled and infinite loops when creating a game.** ● List an everyday task as a set of instructions including repetition ● predict the outcome of a snippet of code ● modify a snippet of code to create a given outcome ● Modify loops to produce a given outcome ● choose when to use a count-controlled and an infinite loop ● recognise that some programming languages enable more than one process to be run at once ● Choose which action will be repeated for each object ● explain what the outcome of the	**in programming to design and code an interactive quiz.** ●Recall how conditions are used in selection ●Identify conditions in a program ●Modify a condition in a program ●Use selection in an infinite loop to check a condition ●Identify the condition and outcomes in an 'if… then… else…' statement ●Create a program that uses selection to produce different outcomes ●Explain that program flow can branch according to a condition ●Design the flow of a program that contains 'if… then… else…' ●Show that a condition can direct program flow in one of two ways ●Outline a given task	**a project that captures inputs from a physical device.** ●Apply my knowledge of programming to a new environment ●Test my program on an emulator ●Transfer my program to a controllable device ●Identify examples of conditions in the real world ●Use a variable in an if, then, else statement to select the flow of a program ●Determine the flow of a program using selection ●Use a condition to change a variable ●Experiment with different physical inputs ●Explain that checking a variable doesn't change its value ●Use an operand (e.g. <>=) in an if, then statement

	●Build the sequences of blocks I need ●Choose backgrounds for the design ●Choose characters for the design ●Create a program based on the new design ●Choose 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 my program	*Build more sequences of commands to make my design work * Test a program against a given design *Match a piece of code to an outcome *Modify a program using a design * Make design choices and justify them *Implement my design *Evaluate my project	repeated action should be ● evaluate the effectiveness of the repeated sequences used in my program ● Identify which parts of a loop can be changed ● explain the effect of my changes ● re-use existing code snippets on new sprites ● Evaluate the use of repetition in a project ● select key parts of a given project to use in my own design ● develop my own design explaining what my project will do ● Refine the algorithm in my design ● build a program that follows my design ● evaluate the steps I followed when building my project	●Use a design format to outline my project ●Identify the outcome of user input in an algorithm ●Implement my algorithm to create the first section of my program ●Test my program ●Share my program with others ●Identify ways the program could be improved ●Identify the setup code I need in my program ●Extend my program further	●Explain the importance of the order of conditions in else, if statements ●Modify a program to achieve a different outcome ●Decide what variables to include in a project ●Design the algorithm for my project ●Design the program flow for my project ●Create a program based on my design ●Test my program against my design ●Use a range of approaches to find and fix bugs