




Curriculum Subject: Computing and E-safety

Subject Leader: Andrew Butler

Curriculum Overview and Statement of Intent, Implementation and Impact.

	<p align="center"><u>Vision</u></p> <p align="center">'We aspire to ensure that our inclusive, welcoming and loving church school gives children and adults the opportunity to reach their full potential, so that through God's love they can make a difference to the world around them.'</p>	<p align="center"><u>Values</u></p> <p align="center">Compassion Courage Community</p>
<p align="center"><u>Motto</u></p> <p align="center">Learning to make a difference through God's love. <i>Jesus said, 'Love one another as I have loved you' John 13:34</i></p>		
<p align="center"><u>Mission</u></p> <ul style="list-style-type: none"> • Ensure that children are safe and demonstrate compassion for others. • The school and its community work together to promote mental health and wellbeing and ensure that everyone feels respected. • Unify the school family enabling it to flourish through collective worship, inclusive extra curricular provision and a broad, balanced curriculum. • Encourage inclusively high expectations enabling children to personally and academically thrive. • Deliver an inspirational, creative curriculum to meet the needs of our aspirational children. • Ensure that children and adults acquire and apply knowledge that gives them the courage to fulfil their aspirations. <ul style="list-style-type: none"> • Create an environment that builds confidence for the school family to grow resilience. • Enable children to persevere on a journey of social, moral, cultural and spiritual growth. 		



Intent
At NJS, we believe in delivering an **inclusive**, high quality, **rich and varied** Computing education, to equip children with the digital skills, knowledge and understanding they need in order to **thrive** in a technologically rich society. Today's children are 'digital natives' – they have never known a time without computers and the Internet. Computing also ensures that children become digitally literate – to express themselves **creatively** and develop their ideas through, information and communication technology. This will build on previous knowledge gained at KS1 and **empower** children to contribute meaningfully to society as adults. Children will understand how computers work, how computing systems work and how they are designed and programmed.

Implementation
Children will learn and develop their skills through a **rich** variety of software, digital resources from Twinkl and digital hardware, that will enable them to create programs, systems, presentations, movies, podcasts and a range of digital content. Children will be taught **effective** computing skills for life, in creation and presentation of digital information in a variety of ways, alongside more specific skills in coding and programming. Each child has access to the Internet through a range of devices such as Kindles, laptops, desktops and iPads. They are taught how to use these appropriately and safely. Online Safety (E-Safety) is taught regularly at an age appropriate level and also on an 'ad hoc' basis throughout the Computing Curriculum. Children are taught key vocabulary linked to Computing and are expected to retain key skills and knowledge each term. Computing is also **inclusive** and cross-curricular, progressing children's learning in other areas of the curriculum.

Impact
Computing progress is measured through formative assessment and pupil voice at regular intervals throughout the year. Children's work is displayed and viewed online, where it is assessed for progress against learning objectives. Children are questioned about key skills and knowledge they have learned, the results of which are fed back to teachers so that planning can be adjusted accordingly. We expect children to become confident, competent, **respectful** and safe users of the Internet and be aware of the risks of sharing information. Children will develop a secure understanding of the Internet and its related risks and benefits through our online safety lessons. They will become confident users of digital technology and use this to **ignite their imagination** to accomplish a wide variety of goals. This will enable them to **make a difference** both at school and in wider society



Newport CE Junior School: Long Term Curriculum Overview for Computing

	Year 3	Year 4	Year 5	Year 6
Autumn	Word Processing	Word Processing	Web Page Design	Coding 1 (level 6)
	Drawing and Desktop Publishing	E-safety <small>(6 x ½ day sessions taught throughout year)</small>	E-safety <small>(6 x ½ day sessions taught throughout year)</small>	Coding 2 (level 6)
Spring	Coding 1 (level 3)	Coding 1 (level 4)	Coding 1 (level 5)	E-safety <small>(6 x ½ day sessions taught throughout year)</small>
	Coding 2 (level 3)	Coding 2 (level 4)	Coding 2 (level 5)	Film Making
Summer	E-safety <small>(6 x ½ day sessions taught throughout year)</small>	Animation	Sketch Up (or Paint 3D)	Spreadsheets
	Internet Research	Logo 4	Radio Station / Podcasting	Game/App-Making Project



Newport CE Junior School: Curriculum Progress Map for Computing (1st half terms)

	Year 3	Year 4	Year 5	Year 6
Autumn 1st half	Unit Title: Word Processing Skills	Unit Title: Word Processing Skills	Unit Title: Web Page Design	Unit Title: Coding 1 – More Complex Variables (Level 6)
	Vocabulary: undo, redo, word processor, bold, italic, underline, select, align, case, format, insert, bullet point, font, cut, copy, paste.	Vocabulary: hyperlink, format, spellcheck, layout, table.	Vocabulary: web page, hyperlink, bias, validity, Internet, World Wide Web (WWW), search, search engine, results, Google, browser, tab, window, layout, text, font, colour, image, video, animation.	Vocabulary: variable, condition, event, random, loop, if statement
	Key Knowledge: To learn functions of word processing and when to use them, specifically when to: <ul style="list-style-type: none"> align text edit text. change text in a variety of ways to suit a particular purpose. 	Key Knowledge: To understand when and how to format images. To know what a hyperlink is. To know how to use a table in a word document.	Key Knowledge: To know how to recognise where websites are from and make judgements about the validity of information from different sites. To know how to use logins and passwords securely. To understand the dangers and pitfalls of posting and using images on the web, when creating websites.	Key Knowledge: To understand how to check and change a program when it isn't working (debugging). To understand how to use 2-way selection (if..then..else) and repetition. To understand how to use variables and conditionals (selection) together.
	Key Skills: <ul style="list-style-type: none"> Use undo and redo. Make text bold, italic or underline. Select text in different ways. Change case. Align text. Cut, copy and paste text. 	Key Skills: <ul style="list-style-type: none"> select, edit and manipulate text in different ways; insert an image into a document; format an image; use formatting tools to improve the layout; use the spellcheck tool; insert a simple table; change the size of the page and create a hyperlink. 	Key Skills: <ul style="list-style-type: none"> To comment on the features and layout of a webpage. To create a new webpage with a chosen layout and format text in the webpage, and share it on Google Sites, so that it can be viewed by anyone. To independently search for images that can be used in documents. To insert and format an image in a webpage. To independently create a hyperlink. To use the advanced features of Google's web search. 	Key Skills: To use a variable to keep score. To use post-tested loop, e.g. 'until', and a sequence of selection statements in programs, including an 'if, then and else' statement. To increase the difficulty of a game as it progresses, by using conditional statements.
Spring 1st half	Unit Title: Coding 1 – Sequence and Animation (Level 3)	Unit Title: Coding 1 – Introduction to Variables (Level 4)	Unit Title: Coding 1 – Speed, Directions and Coordinates (Level 5)	Unit Title: E-Safety – see separate sheet
	Vocabulary: timer event, sequence, run, before, after, execute, algorithm, debug, conditional, if...then.	Vocabulary: variable, algorithm, loop, sequence, selection (if..then), conditional	Vocabulary: x-axis, y-axis, object, properties, conditional event, if..then statement (selection)	E-safety is taught as a separate unit of 6 areas each year, specific to year groups. Each class has 2 x half days of discrete teaching in this subject area (1 per ½ term), back up by ad hoc teaching of E-safety, linked to their Computing topic that term. Teachers take every opportunity to reinforce aspects of Online Safety, with a focus on Internet Safety Day during the Spring term.
	Key Knowledge: <ul style="list-style-type: none"> To understand what an algorithm is. To understand that programs execute by following precise instructions. To understand the term 'sequence' and how important correct sequencing of algorithms is. 	Key Knowledge: To understand what a variable is. To know how variable can be used to keep score. To know how to use loops and selection to construct algorithms.	Key Knowledge: To understand variables. To understand when to use conditionals (selection). To understand x-axis and y-axis movements.	
	Key Skills: To create a program using simple algorithms, which follow a defined sequence. To detect and correct errors, i.e. debugging in algorithms.	Key Skills: To create a variable that keeps track of the score. To create an algorithm using loops and selection. To debug a program systematically and explain what each bit of code does.	Key Skills: To design simple algorithms using loops and selection. To declare and assign variables. To use a conditional (selection) event in my code.	
Unit Title: E-safety – See separate sheet.	Unit Title: Animation	Unit Title: SketchUp / Paint 3D		
Summer 1st half	E-safety is taught as a separate unit of 6 areas each year, specific to year groups. Each class has 2 x half days of discrete teaching in this subject area (1 per ½ term), back up by ad hoc teaching of E-safety, linked to their Computing topic that term. Teachers take every opportunity to reinforce aspects of Online Safety, with a focus on Internet Safety Day during the Spring term.	Vocabulary: Frame, stop motion, upload, ghosting, onion skinning, loop, frame rate, sequence, still image, animation, animate, thaumatrope, flip book.	Vocabulary: 2D shape, 3D shape, push/pull, orbit, pan, zoom, dimension, component.	Vocabulary: Spreadsheet, cell, formula, function, SUM, select, column, row, cell reference, format, ascending, descending.
		Key Knowledge: To know the history of animation and what it is. To know the basic principles and techniques of simple animation, including stop-motion and flick book. To know the techniques and equipment needed to create and evaluate their own animation.	Key Knowledge: To know how to create simple and complex 3D models. To be able to add detail and manipulate 3D models using a variety of tools.	Key Knowledge: To understand what a spreadsheet is. To understand the advantages of spreadsheets over comparative manual methods and when it is appropriate to use one. To know how to use the SUM function in a spreadsheet.
		Key Skills: <ul style="list-style-type: none"> To create a series of linked frames that can be played as a short animation. Control and adjust a time slider to locate a different point in a film clip. To create and insert images in a simple stop-motion animation short film clip. 	Key Skills: <ul style="list-style-type: none"> Draw 2D shapes or lines and draw simple 3D models. Manipulate 2D shapes into 3D shapes. Import 3D models from the 3D warehouse. Use a range of SketchUp tools including: shape, push, pull, orbit, pan, zoom, erase and fill. 	Key Skills: <ul style="list-style-type: none"> To enter text and numbers into a spreadsheet, identifying and referring to cells by row and column. To begin to enter formulae with the SUM function. To select data and create graphs with appropriate formatting. To design their own spreadsheet for a specific purpose and present it appropriately.



Newport CE Junior School: Curriculum Progress Map for Computing (2nd Half terms)

	Year 3	Year 4	Year 5	Year 6
Autumn 2nd half	Unit Title: Drawing and Desktop Publishing	Unit Title: E-Safety – See separate sheet	Unit Title: E-Safety – See separate sheet	Unit Title: Coding 2 – Object Properties (level 6)
	Vocabulary: objects, ordering, grouping, layout	E-safety is taught as a separate unit of 6 areas each year, specific to year groups. Each class has 2 x half days of discrete teaching in this subject area (1 per ½ term), back up by ad hoc teaching of E-safety, linked to their Computing topic that term. Teachers take every opportunity to reinforce aspects of Online Safety, with a focus on Internet Safety Day during the Spring term.	E-safety is taught as a separate unit of 6 areas each year, specific to year groups. Each class has 2 x half days of discrete teaching in this subject area (1 per ½ term), back up by ad hoc teaching of E-safety, linked to their Computing topic that term. Teachers take every opportunity to reinforce aspects of Online Safety, with a focus on Internet Safety Day during the Spring term.	Vocabulary: random, numbers, property, parameter, objects, variable, location, events, values
	Key Knowledge: To understand graphic and presentation skills by introducing drawing as opposed to painting. To draw, order, group and manipulate objects to make a picture. To evaluate and create effective layouts, combining text and images.			Key Knowledge: To understand the term 'parameter'. To understand how to use code to detect parameter values of an object. To understand how to use the parameters of an object to affect other objects in a game.
Key Skills: • Draw objects. • Insert text boxes and images. • Order and group objects. • Move, resize and arrange text boxes and images effectively.	Key Skills: To write code that detects parameter values and passes them from one object to another. To use conditional events and variables in a game. To detect and correct errors in an algorithm.			
Spring 2nd half	Unit Title: Coding 2 – Conditionals (Level 3)	Unit Title: Coding 2 – Repetition and Loops (Level 4)	Unit Title: Coding 2 – Random Numbers and simulations (Level 5)	Unit Title: Film Making
	Vocabulary: conditional statement, selection (if...then), condition, collide, object, hit event	Vocabulary: Selection, algorithm, loop, repetition, sequence, conditional, nested loops, variable, object.	Vocabulary: variable, generate, random, simulate, x-axis, y-axis, if..then..else. (2-way selection)	Vocabulary: Publish, convert, edit, import, export, trim, file, upload, bias, plagiarism, Internet, web search, reliable
	Key Knowledge: • To understand that programs execute by following precise instructions. • To understand the term 'sequence' and how important correct sequencing of algorithms is. • To understand that objects can be programmed to react if certain conditions are met, and that this is called Selection (if...then).	Key Knowledge: To understand what a loop is. To know that loops can make algorithms and programs run more efficiently. To understand different types of loop and what they do.	Key Knowledge: To understand the term 'variable' in a coding context. To understand 2-way selection (if...then...else) To understand when to use 2-way selection in an algorithm.	Key Knowledge: To understand how to choose appropriate software for film making and editing. To know how to research effectively using an internet search engine. To understand what plagiarism is and how to reference sources effectively when using information found online.
Key Skills: • To create a program using simple algorithms, which follow a defined sequence. • To detect and correct errors, i.e. debugging in algorithms. • To write code that includes a conditional statement (selection), using a hit event, to program an object to stop.	Key Skills: To use a loop to do something repeatedly in a program. To design simple algorithms that use loops and selection simultaneously. To design algorithms that use repetition and two-way selection, i.e. if, then, and else.	Key Skills: To use a variable in an algorithm to generate random numbers in an algorithm. To use 2-way selection to control a sprite. To design and debug a program.	Key Skills: • To plan and write a script using appropriate software. • To understand what is relevant information, when searching, using appropriate websites, and evaluate whether information is reliable or not. • To use a digital video camera (or similar recording device) to record and import video files into video editing software.	
Summer 2nd half	Unit Title: Internet Research	Unit Title: Logo 4	Unit Title: Radio station / Podcasting	Unit Title: Game/App-Making Project
	Vocabulary: Internet, World Wide Web (WWW), search, search engine, results, Google, Bing, Yahoo, browser, key words, spam.	Vocabulary: Algorithm, debug, procedure, sequence, loop, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Vocabulary: record, edit, play, skip, soundwave, input, output, trim, jingle, backing track, voiceover, mute, gain.	Vocabulary: Scratch, algorithm, website, platform, analyse, web search, google, WWW, browser, search engine, sprite, code block, app.
	Key Knowledge: To understand how to effectively search using key words and how to safely communicate online. To understand the importance of word order when searching. To distinguish between a reliable and unreliable website or webpage.	Key Knowledge: To know how to create an algorithm to program a procedure and debug algorithms. To know basic Logo commands and how to repeat alongside a variable. To understand how to program their own procedures, use colour and set the position of the turtle, using coordinates.	Key Knowledge: To understand what podcasting is, and how to upload a podcast to the internet for sharing. To understand what makes an effective podcast that is relevant to the intended audience. To know how to use Audacity recording software to create a podcast.	Key Knowledge: To understand how to use and combine a variety of software, such as espresso Coding, Scratch or other software to design and create a game or app. To understand how to develop a game that people want to play, by collecting, analysing, evaluating and presenting data and information.
Key Skills: • To know and understand how word order affects the results returned. • To know how to bookmark or favourite a page for sharing, and name different types of online communication. • To know what to do if they feel uncomfortable when communicating online and identify how they should behave online.	Key Skills: • Write procedures using simple algorithms. • Know basic commands forward (fd), left (lt), right (rt), move, turn, clear screen (cs) • Change the colour of the pen. • Write text using the label command. • Draw shapes using setpos or setxy. • Fill shapes in different colours. • Draw arcs of different sizes as required.	Key Skills: • Record and play their own sounds in recording software (Audacity). • Import an existing sound file into recording software to play • Choose appropriate software for sound Recording • Combine two or more tracks to make a new, original recording.	Key Skills: To design a new game, using appropriate software to present information and advertise a product launch. To present research on game types to inform planning. To use Espresso Coding, Scratch, or Kodu to create a simple game. To plan a launch for the game with a website or advert.	



Newport CE Junior School: Long Term Curriculum Overview for E-Safety

	Year 3	Year 4	Year 5	Year 6
Autumn	Online Communication	Rings of responsibility	My Media Choices	Finding My Media Balance
	Keep it to yourself (passwords)	Password Power-up	Private and Personal Information	You won't Believe This!
Spring	Safe Emailing	Online identity	Our Online tracks	Beyond Gender Stereotypes
	Online Adverts	Respecting Online Communities	Keeping Games Fun and Friendly	Digital Friendships
Summer	What is Cyberbullying?	The Power of words	Super Digital Citizen	What is Cyberbullying?
	Party Planners project	Is Seeing Believing?	Copyright – a Creator's Rights and Responsibilities	What is Fake News?



Newport CE Junior School: Curriculum Progress Map for E-safety

	Year 3	Year 4	Year 5	Year 6
Autumn	Unit Title: E-safety - Online Communication / Keep it to yourself (passwords)	Unit Title: E-safety – Rings of responsibility / Password Power-up	Unit Title: E-safety – My Media Choices / Private and Personal Information.	Unit Title: E-safety – Finding My Media Balance / You won't Believe This!
	Vocabulary: device, email, social media, posts, comment, website, password, secure, privacy, settings, Online, community, communication, chat, forum.	Vocabulary: password, phrase, symbol, username, identity theft, privacy, responsibility, digital citizen.	Vocabulary: media, screen time, media choice, media balance, private, personal, posting.	Vocabulary: clickbait, FOMO (fear of missing out), media, screen time, media choice, media balance, posting.
	Key Knowledge: <ul style="list-style-type: none"> To understand the need for a strong password. To understand why I shouldn't share my password with anyone, and the need for privacy settings and what protections they offer. To understand how to communicate respectfully online. 	Key Knowledge: <p>To understand the term 'password'.</p> <p>To understand the consequences of not having a strong password.</p> <p>To understand how online behaviour affects others and ourselves.</p>	Key Knowledge: <p>To understand what makes a media choice healthy or not.</p> <p>To understand what 'Media Balance' is.</p> <p>To understand the difference between private and personal information.</p>	Key Knowledge: <p>To understand what "media balance" means, and how it applies to them.</p> <p>To understand why it is important to balance time between different forms of media and other activities.</p> <p>To understand what is meant by 'clickbait' and how it uses the curiosity gap to get your attention.</p>
	Key Skills: <ul style="list-style-type: none"> To be able to create a strong password. To know how to set privacy settings effectively. To know how to communicate respectfully online – if you wouldn't say it to their face, don't send it online. 	Key Skills: <p>To create a password that cannot be easily guessed (a 'strong' password).</p> <p>To be able to decide what to do if my password is compromised.</p> <p>To be able to talk about what 'being responsible online' means and give examples of responsible online behaviour.</p>	Key Skills: <p>To use media in a way that feels healthy and in balance with other activities.</p> <p>To know what information about me is private.</p> <p>To be able to explain the risks of posting private information.</p>	Key Skills: <p>To create a personalised plan for achieving a better media balance.</p> <p>To describe some of the tactics used by advertising media to get you to 'click' a link.</p> <p>To use strategies for avoiding 'clickbait'.</p>
Spring	Unit Title: E-safety – Safe Emailing / Online Adverts	Unit Title: E-safety – Online identity / Respecting Online Communities.	Unit Title: E-safety – Our Online tracks / Keeping Games Fun and Friendly.	Unit Title: E-safety – Beyond Gender Stereotypes / Digital Friendships.
	Vocabulary: Digital, device, email, social media, posts, comments, website, Internet, advert, product, target, digital footprint, secure, inbox, address line, subject line.	Vocabulary: Online, digital footprint, profiles, social media, account, register, private, public, privacy settings, digital citizen, respect, community, selfie, pledge, norms.	Vocabulary: digital footprint, inference, responsibility, digital media, grieving, trolling, social interaction.	Vocabulary: avatar, bias, gender, stereotype, gender stereotypes, private / personal information.
	Key Knowledge: <p>To know how to safely send and receive an email.</p> <p>To understand how to write emails respectfully and clearly.</p> <p>To understand how companies use websites to promote products.</p>	Key Knowledge: <p>To understand how others might perceive what I post.</p> <p>To understand the most important parts of an online profile.</p> <p>To understand what it means to be a 'good digital citizen'.</p>	Key Knowledge: <p>To understand what responsibilities they have for the digital footprints of themselves and others.</p> <p>To know that digital footprints can affect our online and offline personal reputations for a long time.</p> <p>To understand the risks of online and in-game social interaction.</p>	Key Knowledge: <p>To understand what gender stereotyping is.</p> <p>To understand how gender stereotyping impacts on who I am.</p> <p>To understand and describe the benefits and risks of online-only friendships.</p>
	Key Skills: <p>To safely send and receive an email.</p> <p>To identify an email that I should not open.</p> <p>To write an email with an address and subject.</p> <p>To identify a targeted advert.</p>	Key Skills: <p>To identify ways to post an online profile which best reflects who I am.</p> <p>To demonstrate 'good' online behaviour and how to act according to social 'norms' online.</p> <p>To be able to describe what 'digital footprint' means.</p>	Key Skills: <p>To define the term "digital footprint" and identify the online activities that contribute to it.</p> <p>To identify ways they are - and are not - in control of their digital footprint.</p> <p>To define "social interaction" and give an example and describe the positives and negatives of social interaction in online games.</p>	Key Skills: <p>To describe how gender stereotyping can lead to bias.</p> <p>To describe ways to stay safe online when developing online only friendships.</p> <p>To describe some of the risks of online friendships and how these may affect real-world friendships.</p>
Summer	Unit Title: E-safety – What is Cyberbullying? / Party Planners project	Unit Title: E-safety – The Power of words / Is Seeing Believing?	Unit Title: E-safety – Super Digital Citizen / Copyright – a Creator's Rights and Responsibilities.	Unit Title: E-safety – What is Cyberbullying? / What is Fake News?
	Vocabulary: Cyberbullying/bullying, digital, device, email, social media, posts, comments, website, Internet, secure, private, advert, settings.	Vocabulary: advertise, persuade, Photoshop, alter, fake, online comments.	Vocabulary: attribute, copyright, intellectual property, cyberbullying, upstander, digital citizen	Vocabulary: fake news, clickbait, propaganda, bias, scam, cyberbullying, victim, upstander.
	Key Knowledge: <p>To know what cyberbullying is and to recognise it when it happens.</p> <p>To know that cyberbullying can happen on a range of devices.</p> <p>To understand how to plan an event whilst keeping my online digital footprint private.</p>	Key Knowledge: <p>To understand the importance of thinking before we post online comments.</p> <p>To understand how other people perceive what we post.</p> <p>To understand why some photos and images may have been altered digitally.</p>	Key Knowledge: <p>To understand what cyberbullying is, and is not.</p> <p>To know how to be an 'upstanding' citizen.</p> <p>To understand rights and know my rights and responsibilities when it comes to the images I create and use.</p>	Key Knowledge: <p>To recognise similarities and differences between in-person bullying, cyberbullying, and being mean.</p> <p>To understand what fake news is and recognise it when it happens.</p> <p>To know why people create fake news and how it helps them.</p>
	Key Skills: <p>To identify cyberbullying and know what to do about it and who to tell.</p> <p>To ensure that evidence of cyberbullying is kept so that it may be used to resolve things.</p> <p>To plan an event using online tools safely and ensure my digital footprint is private.</p>	Key Skills: <p>To identify different reasons why someone may alter a photo or image digitally.</p> <p>To decide what kind of statements are ok to make online, and which ones are not.</p> <p>To identify ways to respond to mean words and identify cyberbullying.</p>	Key Skills: <p>To identify three key ways in which cyberbullying can be addressed.</p> <p>To identify ways in which you can be an 'upstander'.</p> <p>To define copyright, explain how it applies to creative work and apply its principles to real-life scenarios.</p>	Key Skills: <p>To identify strategies for dealing with cyberbullying and ways they can be an upstander for those being bullied.</p> <p>To be able to discuss five key strategies for identifying fake news stories</p> <p>To use my knowledge to identify fake news stories from real news stories.</p>