Curriculum Improvement Cycle
Draft Technical Framework
Fourth Level

November 2026

Version 1.0

These are draft materials. The content, format and style are subject to change. They are being shared as part of the co-design process and in advance of engagement and feedback time during the 2026/27 session. There is no expectation on educators, schools or settings to do anything now with these drafts. It would not be appropriate to change current planning or tracking and monitoring systems in establishments at this stage.

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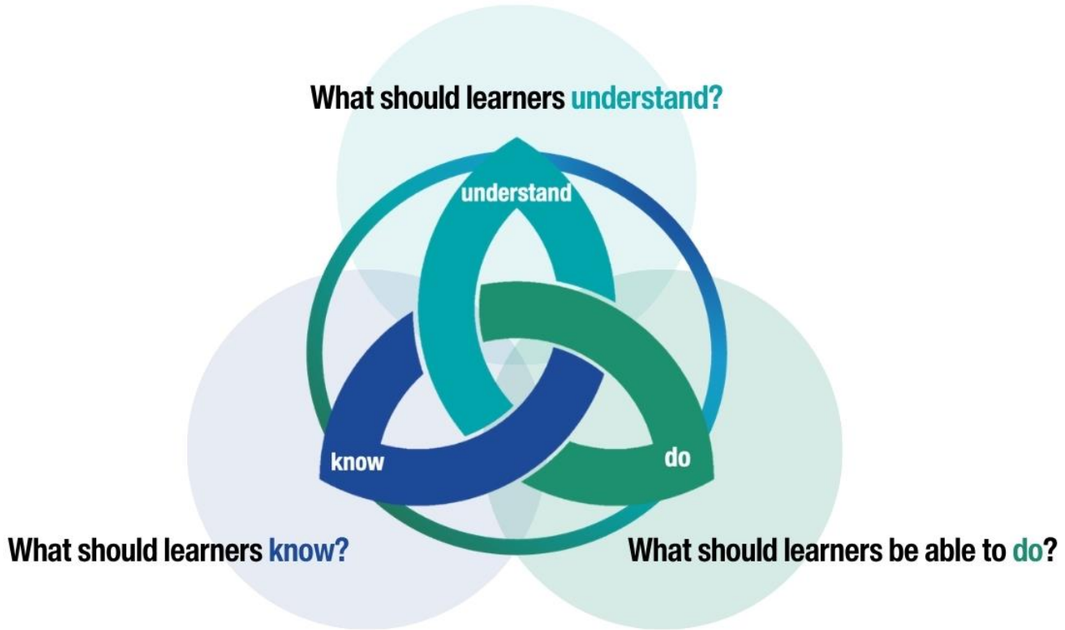
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The Know-Do-Understand (KDU) framework



How the KDU knots are written

Understand:
Statements that decribe the relationship between concepts.

Know:
Facts, definitions or **case studies** that learners need to know to develop the understanding above.

Do:
Skills, **processes** and **procedures** learners need to know to develop the understanding above.

Notes:
Information that helps practitioners in their planning for this KDU knot.

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Introduction to the Fourth Level Know-Do-Understand Framework

At Fourth Level, children and young people continue to extend and deepen their knowledge, skills and understanding across the curriculum. They engage with increasingly challenging concepts, contexts and ideas, exploring relationships and connections to develop a more informed understanding of themselves and the world around them.

Across the technical frameworks, there is a greater emphasis on independence, critical thinking and the purposeful application of learning. Children and young people are supported to explore and evaluate information, evidence and different perspectives. They make informed judgements, justify their thinking and reflect on and refine their approaches. Children and young people draw on their developing knowledge, skills and understanding to respond to challenges, solve problems and make choices and decisions across a range of contexts. Learning continues to encourage curiosity, creativity, collaboration and critical thinking, supporting the development of the four capacities of Curriculum for Excellence.

The draft Fourth Level frameworks set out what children and young people should know, do and understand by the end of the level, with some identifying a sequence for learning within the level, supporting progression from previous learning and continuity across curriculum levels and transitions into the Senior Phase. Practitioners can plan meaningful learning experiences that reflect their learners, contexts and communities, ensuring that the intended knowledge, skills and understanding are developed by the end of Fourth Level.

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Summary of Fourth Level

Curricular Area	Strand	Sub-Strand	Sub-sub Strand	Fourth Level Understanding
Expressive Arts	**Creative Process**			Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.
	Perform, Present and Produce			Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.
	Self-expression			Self-expression communicates a creative voice through purposeful choices.
	Reflect and Respond			Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.
	Cultural Awareness and Understanding			Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.
Health and Wellbeing (Food and Health, Physical Education, Physical Activity and Sport, Personal and Social Education)	**Communities in Action**			Changes within interconnected communities can have consequences for people, resources and opportunities.
	Relationships			Interacting needs, expectations and differences in power can influence relationships.
	Habits for Health			Changes in circumstances and influences can affect how people maintain, adapt or change established habits.
	Mental, Emotional, Social and Physical Health (MESP)			Interactions between mental, emotional, social and physical factors can change across contexts and influence responses and decisions in different ways.
	Safety			Complex and uncertain circumstances can alter how multiple factors combine to influence safety.
	Growing Body			Interactions between body systems can influence how the body functions and adapts across life stages.
Languages	**Understanding Language**			People understand texts through the interaction of vocabulary, context and the organisation of information and ideas. The way language functions in texts depends on audience and purpose.
	Using Language			People use and sequence language to describe events, organise ideas, express perspectives and justify opinions. People structure and adapt language to suit purpose, audience and context. People select, adapt and combine tools and strategies to support language use.
	Language for Interaction			People interact to exchange ideas, opinions and information to negotiate meaning in familiar and unfamiliar contexts. People adapt language in response to audience, purpose and context during interaction. People maintain shared meaning through clarification and expressing ideas in different ways.
	Identity and Belonging			Identity and belonging reflect diverse lived experiences and may be expressed differently across and within communities and contexts.
	Perspectives and Worldviews			Values and experiences shape perspectives and worldviews.
	Cultures and Traditions			Cultures and traditions reflect the diversity of experiences within and across communities where a language is used.
	Pattern and Structure			Language patterns and structures can be selected and adapted to suit purpose, audience and context.
	Pronunciation and Writing Systems			People use knowledge about pronunciation and writing systems to support the development of accuracy and control of language across familiar and unfamiliar contexts.
	Language Learning Strategies			The process of selecting, adapting and combining tools and strategies supports increasingly independent language use. People use knowledge of patterns and groups of words to work out the meaning of unfamiliar language.
Literacy and English	**Communicating and Interacting**			Adapting style and content in interactions deepens understanding, advocacy and self-expression.
	Story and Identity			Stories, real and imagined, can construct representations of identities, voices, experiences and perspectives in ways that may foreground or marginalise people, communities and cultures.
				Selecting and creating texts for personal purpose and enjoyment empowers and enriches understanding of ourselves, others and the wider world.
	How Texts Work			People choose how to engage audiences by using text features and genre conventions to convey ideas and themes and to represent different voices and perspectives.
	Information Literacy			The cyclical nature of research involves applying strategies to find and revise information from a widening range of sources.
				Critically evaluating the authority, accuracy and relevance of information determines its credibility.
				The creation of evidence-based texts is enabled by synthesising information from a variety of sources.

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	Tools for Reading Comprehension			Background knowledge, disciplinary knowledge and vocabulary support interpretation, inference and comprehension of written texts.
				Skilled readers evaluate and adapt as they engage with written text, automatically selecting appropriate repair strategies when meaning breaks down.
				The rules and conventions of grammar and punctuation, both when observed and when manipulated can affect meaning and create impact in written texts.
				Reading with accuracy and automaticity bridges word recognition and reading comprehension of written texts from across disciplinary areas, contributing the reader's overall understanding.
	Tools for Writing			Writers use the processes of generating ideas, planning, drafting, editing and revising to express their creativity, increasing their impact upon their intended audience.
				Writers both observe and manipulate the rules of grammar and punctuation, creating impact in written texts and engaging a variety of audiences in different ways.
				Knowledge of letter patterns and word roots support spelling and written communication across disciplines.
Literacy and Gàidhlig	**Feartan na Gàidhlig/Features of the Gaelic Language**			A broad and adaptable vocabulary enables precise communication and expression across diverse contexts. Dialectal variation adds to the richness of the language, with unique features connected to specific regions. Grammatical structures support accuracy, clarity and meaning of communication. Idiomatic language allows for rich and authentic communication and expression.
	Conaltradh agus Leasachadh Cànain/Communication and Language Development			Interpreting social cues enhances spoken communication and interaction. Listening to and understanding spoken Gaelic requires attention to language, context and listening strategies. Critical listening involves analysing how language and delivery influence meaning and reliability. The effectiveness of spoken Gaelic is founded upon accurate pronunciation, grammar and vocabulary. Effective spoken communication requires deliberate adaptation of language, structure and delivery to audience and purpose. Engaging with a range of Gaelic texts challenges and shapes thinking through exposure to diverse ideas and perspectives. Knowledge of language patterns supports accurate reading of unfamiliar and specialist texts. Critical reading of texts is deepened through scrutinising language, structure, viewpoint and context. Written Gaelic uses conventions and stylistic choices to achieve purpose and impact. Reviewing and editing improve how effectively ideas and information are communicated in writing.
	Compàirteachas agus Buintealas/Participation and Connecting with Others			Gaelic identities are diverse and are shaped by cultural, linguistic and social influences across local and global contexts. Using Gaelic across a wide range of contexts develops confidence and supports meaningful connections.
	Dualchas Cultarach agus Coimhearsnachd/Gaelic Cultural Heritage and Community			Cultural heritage reflects and strengthens the relationships between communities, language and place.
	Luachadh agus Tagrachd/Appreciation and Advocacy			Language rights protect access, representation and equity, supporting the development of Gaelic across society. The future vitality and visibility of Gaelic depend on active advocacy by individuals and communities.
Numeracy and Mathematics	**Quantity, Numbers and the Algebraic Properties of Number**	Number Systems and Structures		Scientific notation uses powers of ten to represent numbers, enabling very large and very small numbers to be written and compared efficiently.
		Number Relationships and Operations		Equivalence and multiplicative relationships underpin operations with fractions and mixed numbers, supporting the combination, scaling and comparison of quantities.
		Proportional Reasoning		Ratios can be used to describe, partition and scale quantities while maintaining proportional relationships between parts and wholes.
		Patterns and Sequences		Sequences that follow additive and multiplicative patterns can model real-life situations to make predictions and solve problems.
		Expressions, Equations		The use of brackets enables expressions to be written in equivalent forms according to the distributive law.

		and Relationships		Algebra represents relationships between quantities, allowing patterns to be generalised, situations to be modelled and unknown values to be determined.
		Finance		Financial systems support individuals, communities and governments and involve risks, responsibilities and opportunities.
	Shape, Space and Measurement	Position and Movement		Relationships between angles formed by intersecting and parallel lines determine how angle measures are calculated from known values. Transformations describe mathematically how shapes can be manipulated to change their position or orientation. Linear models represent situations where the rate of change is constant, allowing the relationship between two variables to be described, interpreted and used to make predictions.
		Properties of Shapes and Solids		Relationships between the sides and angles of right-angled triangles determine how unknown measurements are calculated. Relationships between angles formed by lines meeting or intersecting circles determine how angle measures are calculated from known values.
		Proportional Reasoning		Proportional relationships, including the dimensions of similar shapes, determine how quantities that scale together are compared, analysed and generalised.
		Measures		Relationships within and between shapes and solids can be used to derive and justify measures of area, surface area and volume.
				The Earth's rotation determines how time zones standardise time of day across regions of the world.
	Information, Data and Uncertainty	Data Management		The design and wording of survey questions can introduce bias, affecting the reliability and validity of the evidence collected. Grouping data into intervals organises large data sets but reduces detail.
		Data Analysis and Interpretation		The ways in which data is collected and presented can emphasise or obscure particular conclusions. The distribution of data sets can be described and compared using measures that capture central tendency, spread and position.
		Probability		Probabilities derived from data are used in real-life contexts to assess risk and inform decision-making.
Religious Education Roman Catholic	**Seeking God's Presence in Our Lives**			Human nature is open to God.
	Knowing we are made in God's Image			Every human person is created in the image of God and called to grow in holiness and fulfilment through a lifelong relationship with Him.
	Believing in One God revealed to us			How key people and events in the New Testament reveal God's loving and saving nature, deepen our insight into the Trinity, and impact our personal faith response.
	Encountering the life, death and resurrection of Jesus Christ			In Jesus, God enters and transforms human nature and exists at the centre of all creation. The centrality and significance of the death and resurrection of Jesus helps us to understand Jesus as Son of God and Son of Man. Studying the world 2,000 years ago helps us truly understand who Jesus was, why His message was so unexpected, and how His life still transforms ours today.
	Nurturing faith through Church and the Sacraments			Through the Holy Spirit and the Sacraments, the Church forms disciples who reveal Christ to the world.
	Exploring the Word of God			Sacred Scripture and Sacred Tradition together communicate God's revelation and are authentically interpreted by the Church. Knowledge of Scripture, particularly the New Testament, informs and sustains the life of Christians today.
	Responding through Prayer, devotion and Liturgy			Prayer, the Sacraments, and encountering Christ's Real Presence in the Eucharist form our conscience, deepen our relationship with God, and inspire us to live out our faith.
	Journeying to Holiness through Christian Living			The teachings of Christ challenge us to transform the world. Encountering wisdom and compassion influence our relationships with God and our conscience.

				Church teaching and reconciliation inform my moral decisions to foster communion with God.
	World Religions			Core religious worldviews can offer answers to ultimate questions and contribute to shared values in a diverse society.
Religious, Moral and Philosophical Studies	**Religion & Worldviews**			Diversity of belief across and within religion and worldviews can link to the sources they draw upon and the ways in which sources are interpreted. Diversity of belief across and within religion and worldviews can have implications for adherents and society. The practices and traditions of religion and worldviews can present opportunities and challenges for individuals, communities and society.
	Morality, Ethics and Values			As society changes and new moral challenges arise, views within and across religion, worldviews and philosophical perspectives on what is right and wrong may change and adapt.
	Questions, Arguments and Sources			Using sources in different ways, religion, worldviews and philosophical perspectives develop arguments to support and challenge beliefs and ideas about religious and philosophical questions. These arguments can differ *across* and *within* religion, worldviews and philosophical perspectives.
Sciences	**Scientific Investigation**			Scientific investigations are designed to test ideas by changing and measuring variables appropriately and controlling other relevant variables to improve the validity of findings.
	Interpreting and Analysing			Scientific knowledge becomes more reliable through evaluation of evidence, recognition of limitations and critical review by others, so conclusions can be justified and refined.
	Evaluation in Science			Evaluating and refining scientific practice helps ensure findings are valid, reliable and trustworthy, supporting continuous improvement in future investigations.
	Scientific Communication and Review			Scientific thinking, knowledge and skills enable critical review so evidence, explanations and conclusions can be scrutinised and refined.
	The Connected World	**Nature and Earth's resources**	**Nature**	Environmental and climate conditions shape different biomes, supporting life on Earth.
			Food and interdependence	When resources are limited, living things must compete to get what they need, enabling them to survive.
			Materials and their properties	Metals have different chemical properties and react in different ways, making them suited to different uses and applications in society.
		Energy in society	**Energy sources and security**	Meeting future energy needs requires balancing energy sources, storage and demand, so societies can make informed decisions about reliable, sustainable and secure energy supplies.
			Energy and climate change	Scientific evidence helps to inform decisions about how to reduce greenhouse gas emissions and respond to the impacts of climate change on communities around the world.
		Space		Scientific discoveries and technologies deepen understanding of the changing Universe and enable continued exploration of space, leading to new knowledge and possibilities.
		Health and disease		Vaccination prepares the immune system to recognise and respond rapidly to specific pathogens, reducing the spread and impact of infectious diseases.
	The Living World	**Survival of living things**	**Concept of life**	Living things depend on cellular processes for growth, maintenance and survival, making these processes essential for life.
			Genetic variation	Genetic information is organised in DNA, genes and chromosomes, providing instructions that influence an organism's characteristics and how it functions.
		Systems for survival	**Digestive, respiratory and circulatory systems**	Digestion and respiration rely on the circulatory system to transport substances to and from cells, enabling energy release.
			Reproductive systems in humans and other animals	Human fertility is affected by biological, environmental and lifestyle factors, which can affect the ability to reproduce.
	The Chemical World	**Physical changes**	**Mixtures**	Mixtures of liquids can be separated by distillation based on differences in their boiling points, allowing useful substances to be collected for specific purposes.
		Chemical changes	**Chemical reactions**	Chemical reactions involve energy transfers, and understanding these energy changes helps explain how reactions occur and how the energy released or absorbed can be used for specific purposes.
			Acids and bases	Acids and bases react in a neutralisation reaction to form new substances, and the products of these reactions have many useful applications in industry and everyday life.

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		Elements and compounds	**Elements and the periodic table**	Atoms are made of subatomic particles which helps explain how atoms interact.
			Compounds	Scientists use chemical formulae to communicate information about substances, helping to describe, identify and understand how the wide variety of substances in the Universe are made.
	The Physical world	**Electricity**	**Electrical circuits**	The behaviour of electrical circuits depends on the relationship between potential difference, current and resistance, allowing circuits to be designed and controlled for different purposes.
		Forces	**Motion**	Acceleration is the rate of change of speed and can be represented on a speed- time graph to analyse and interpret other aspects of motion.
			Forces and interactions	Motion due to interacting forces is governed by physical laws, which allow us to model and predict motion.
		Waves	**Sound**	The speed and distance that sound travels depend on the medium it travels through, helping us predict its behaviour and use sound safely in different situations.
			Light	Light changes direction in predictable ways as it passes between different materials, helping us explain how lenses and light technologies work.
			Wave properties	Waves properties such as wavelength, frequency and amplitude can be measured, and these properties allow for different practical applications.
			Electromagnetic radiation	Electromagnetic waves have different wavelengths and frequencies, and this explains their uses and effects.
	Taking Scientific Action			Critically applying scientific knowledge, skills and evidence supports responsible action, informed decision-making and evaluation of impact, helping to contribute to positive change.
	Science Around Me			Breaking down barriers in science enables diverse participation and responsible innovation that considers future, ethical, social, political, environmental and economic impacts on global society.
	Informed and Responsible Decision-making			Scientific evidence can be critically evaluated, helping people and society to make informed and responsible decisions to address scientific and societal issues.
Social Studies (Geography, History, Modern Studies)	**Causation**			Causes and consequences may not always be deliberate.
	Conflict			Conflict is influenced by social, economic, environmental and political factors, and the consequences may not always be deliberate.
	Cooperation			Cooperation is affected by social, economic, environmental and political factors.
	Enquiry			Enquiry requires selecting and using information to reach and justify conclusions.
	Environments			Decisions about environments involve competing priorities and can have different consequences for people and places.
	Equality			Progress towards equality is shaped by the decisions, attitudes and actions of people, organisations and governments.
	Evidence			Evidence may be more or less useful, reliable or trustworthy for different purposes.
	Perspective			Perspectives can influence how people, places, events and issues are understood, explained and responded to.
	Power			Power is uneven.
	Society			Societies change and adapt over time.
	Systems			Systems interact in different ways.
Technologies	**Identify, Define, Explore and Articulate**			Successful innovation is achieved through a structured and evidence-based design process that balances user needs, testing evidence and real-world constraints
	Make It Happen			Successful solutions require technical skill, precision and informed decisions about how tools, resources and technologies behave and interact.
	Systems			Interactions between technological, social and digital systems can create complex outcomes that are difficult to predict or control.
	People and Planet			Responsible technological decisions require balancing ethical, social, environmental and economic considerations.
	A Data Rich World			The quality, quantity, structure and balance of data determine how reliably analyses can be performed and how accurately technologies, including AI systems, generate outputs.

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Expressive Arts Know-Do-Understand Strands

<table>
<tr><td>Strand</td><td colspan="4">Creative Process
The Creative Process, within the Expressive Arts, is the development of knowledge, understanding and skills across Art and Design, Dance, Drama, Film and Screen and Music and Music Technology. It involves exploring ideas, experimenting with materials and techniques and refining work through thoughtful adjustment. It focuses on the ways that creative ideas grow and develop before they are shared.</td></tr>
<tr><td></td><td>Art and Design</td><td>Dance</td><td colspan="2">Drama</td></tr>
<tr><td rowspan="3">Fourth Level</td><td>Understand: Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.</td><td>Understand: Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.</td><td colspan="2">Understand: Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.</td></tr>
<tr><td>Know:
Creative ideas are developed through an evolving process involving exploration, refinement, resolution and critical reflection.

Artists and designers select, manipulate, refine and justify visual and design elements, materials, techniques and processes to communicate thoughts and ideas.

Researching artists, designers, styles and contexts informs and supports justified creative decisions.

Critical evaluation of work and feedback supports the development process to improve art and design work.</td><td>Do:
Analyse and interpret a stimulus or brief.

Research and investigate visual sources to inform creative decisions.

Make connections between creative influences and personal practice.

Develop and refine creative ideas, intentions or viewpoints to create an original outcome.

Select and justify visual elements, design concepts, materials and techniques for a purpose/audience.

Evaluate and refine creative work using appropriate vocabulary.</td><td>Know:
Dance ideas are conceptualised, structured and developed through a choreographic process of experimenting and building elements to create a final performance.

Dance uses movement, motif development, structure, dynamics, space and choreographic devices to shape and communicate meaning, theme and intention.

Creative decisions are informed and justified by purpose, audience and performance context.

Dance compositions use contrast, variation, structure and development to deepen meaning and impact.</td><td>Do:
Select, apply and refine appropriate elements and movements in keeping with the dance tone and theme.

Select and justify music and media in relation to timing, mood and intended impact.

Create and develop a motif that is performed repeatedly with variation, control, clarity and intention.

Select and justify movement, structure and choreographic choices.</td><td>Know:
Dramas are created through planned choices in structure, design, dramatic conventions, genre, style and form.

Drama skills and production elements can be combined and refined to control pace, build tension, shape character and relationships and communicate meaning and mood.

Characters can be developed and sustained through controlled use of drama skills.

Rehearsal techniques support experimentation and refinement.</td><td>Do:
Independently generate, test and develop ideas from different stimuli.

Experiment with, select and combine dramatic conventions, genre, style, structure and production elements to shape a performance concept

Apply and sustain drama skills across roles.

Adapt and justify developing ideas in response to reflection and feedback.

Use appropriate drama vocabulary to describe and reflect on work.</td></tr>
<tr><td>Includes, but not limited to
• artists, designers, styles and movements from different times, places and cultures
• visual elements such as line, colour, shape, form, pattern, texture and tone
• roles and careers within art and design such as artist, designer, architect, illustrator, animator, craftsperson and digital creative practitioner

Notes</td><td>Includes, but not limited to
• stimuli such as auditory, visual and textual sources
• choreographic features such as movement, structure, dynamics and choreographic devices
• collaborative approaches such as sharing ideas, negotiating roles, making decisions and taking responsibility

Notes</td><td colspan="3">Includes, but not limited to
• dramatic concepts such as mood, atmosphere, time period and audience response
• drama techniques such as voice (accent, dialect, projection and register), movement (use of space, proxemics, mannerisms, contrast and timing) and rehearsal techniques (improvisation and role reversal)
• dramatic forms and conventions such as forum theatre, monologue, aside, split stage, soliloquy and stylised movement
• dramatic styles and genres such as naturalistic and non-naturalistic theatre, Commedia dell’Arte, farce, satire and docudrama
• production skills such as costume, lighting, sound, props, hair and make-up and set design

Notes</td></tr>
</table>

	Exploring and comparing the work of artists, designers, styles and movements supports critical thinking, analysis and creative decision-making. The creative process involves research, exploration, development, refinement and realisation of ideas. Similarities and differences between artistic and design approaches can be identified and discussed using appropriate vocabulary. Visual elements can be used individually and in combination to communicate ideas, meaning and intended effects. Awareness of roles and career pathways supports understanding of how creative knowledge and skills can be applied in different contexts.	Dance can be inspired by a range of stimuli that support the generation, development and communication of ideas. Movement material can be selected, adapted and refined to communicate intention and artistic expression. Structure, dynamics and choreographic devices can be combined purposefully to develop and organise dance sequences. Collaboration supports the sharing, development and refinement of ideas, roles and responsibilities throughout the creative process.	Drama can be shaped through the purposeful use of concepts, techniques, forms, conventions and production elements. Voice, movement and rehearsal techniques support the development and refinement of characters, ideas and performances. Forms, conventions, styles and genres can be used to structure narratives, communicate viewpoints and explore different theatrical traditions and approaches. Production elements can enhance meaning, establish context and influence audience experience and response. Creative and performance choices influence how drama is interpreted by audiences.

	Film and Screen		**Music and Music Technology**	
Fourth Level	**Understand:** Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.		**Understand:** Creative work is influenced by artistic and cultural contexts and refined through critical reflection to form a coherent creative vision.	
	Know: Scripts are central to structuring narrative and guiding production decisions. Creative processes are involved in developing, shaping and refining film ideas throughout the pre-production, production and post-production. Plot, theme and structure of Film and Screen products inform and influence audience response. Planning is influenced and shaped by constraints of budget, compliance and risk assessment. Engagement in set etiquette is essential for effective collaboration and professional practice. The specific purpose of film and screen departments, roles and responsibilities.	**Do:** Develop, structure and refine scripts of more than one scene, for a variety of film and screen products. Plan, create and present film and screen products in response to briefs that are suitable for an identified audience. Edit and refine film and screen products in response to briefs, that are suitable for an identified audience. Collaborate effectively and demonstrate professional set etiquette in the making of own and others' Film and Screen products. Undertake and reflect on a range of production roles across departments.	**Know:** Musical styles, genres, composers and contexts can influence creative and performance decisions. Musical ideas can be developed and refined through a creative process Creative context and purpose influence how music is created, developed and presented. Recording, editing and production techniques can be used to shape, refine and communicate musical intentions.	**Do:** Analyse and interpret the work of others to develop and refine creative choices. Investigate and interpret musical influences to inform creative and performance decisions. Create, develop and refine musical ideas using instruments, voices and/or technology. Evaluate and justify creative choices and processes using appropriate musical vocabulary. Refine creative musical work in response to reflection, rehearsal and feedback, considering purpose and context. Select and use appropriate digital tools and production techniques to record, edit and refine musical work, justifying creative decisions.
	Includes, but not limited to • production considerations such as budget, time, resources, copyright, permissions and filming locations • filmmaking roles such as script writer, director, assistant director, cinematographer, animator, production designer, editor and sound recordist		**Includes, but not limited to** • musical styles and traditions such as rock, Scottish music and jazz • structural devices such as verse and chorus, bridge, middle eight, A and B parts and chord progressions • creative contexts and processes such as live performance, recording, digital media, composition, improvisation and rehearsal • digital tools and resources such as composition software, chord progression tools and improvisation tools	

	• professional practices such as set etiquette, on-set calls, communication procedures and risk assessment **Notes** Film and screen production requires planning and organisation to manage time, resources, budgets and production requirements. Legal, ethical and safety responsibilities include copyright, permissions, location considerations and risk assessment. Crew members contribute through a range of specialised roles and responsibilities throughout the production process. Professional practices, including set etiquette and recognised communication procedures, support safe, respectful and effective collaboration.	**Notes** Listening to, analysing and comparing music from a range of genres, cultures and contexts can inform creative and musical decision-making. Understanding how musical features, elements and structures are used across traditions supports composition, improvisation and performance. Musical elements can be selected, combined and manipulated to communicate ideas, purpose and artistic intention. Music can be developed individually or collaboratively through experimentation, rehearsal, discussion, reflection and feedback. Appropriate music vocabulary supports the discussion, analysis and evaluation of musical processes and outcomes. Digital technologies can support the exploration, development, recording and refinement of musical ideas. Musical understanding is developed through creating, performing, listening to and reflecting on music. Musical elements at this level: melody, harmony, rhythm, tempo, dynamics, timbre, texture, style and structure.

Strand	**Perform, Present and Produce** Perform, Present and Produce is the process of preparing and sharing creative work with others. It involves organising, refining and presenting work so that ideas, stories or intentions are clear. This includes live performance, recorded formats and physical or digital display.					
	Art and Design		**Dance**		**Drama**	
	Understand: Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.		**Understand:** Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.		**Understand:** Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.	
Fourth Level	**Know:** Audience, context and purpose influence decisions about presentation, format, scale, display and communication. Advanced media, techniques and presentation strategies can be used intentionally to achieve coherent art and design portfolios. How artists and designers solve problems.	**Do:** Plan, develop, refine and present art and design works. Make and justify creative decisions about materials and technical choices such as format, scale, sequencing, context and presentation using art and design vocabulary.	**Know:** Performance qualities communicate artistic intention and influence audience interpretation. Style, genre, context and purpose influence performance decisions. Performance elements, including music, costume, props, lighting and technology, contribute to audience experience. Alignment, posture, strength, stamina, flexibility and coordination contribute to effective performance.	**Do:** Perform dances in a range of styles, communicating a clear artistic intention to an audience. Adapt and refine choreography for different audiences, contexts and purposes. Demonstrate technical control, expression and performance fluency to enhance meaning and impact. Design and lead warm up/cool down, showing increasing flexibility and variety of stretching.	**Know:** Genre, style, structure, drama skills and production skills influence meaning, interpretation and audience impact. Drama skills can be controlled and adapted to create and sustain complex, believable characters and communicate a specific interpretation. Production skills, including lighting, sound, set, props, costume, hair and make-up, contribute to atmosphere, meaning and interpretation. Roles such as performer, director, designer, stage manager and technician can be used to develop a performance.	**Do:** Stage and present drama that communicates a clear artistic intention. Take on roles such as performer, director, designer, stage manager or technician, applying specialist skills in acting and production. Select and use production skills purposefully to enhance meaning, atmosphere and audience impact. Apply, control and adapt drama skills to create and sustain believable characters and communicate a performance concept. Justify dramatic and production choices in relation to audience, purpose, context and interpretation.

						Use appropriate drama vocabulary to describe and reflect on work.
	Includes, but not limited to • presentation formats such as exhibitions, portfolios, digital showcases, design pitches and public presentations • evidence of creative development such as concept generation, research, experimentation, refinement and resolved outcomes **Notes** Art and design work can be presented in a range of formats for different audiences, purposes and contexts. Effective presentation may communicate the creative journey, including research, development, refinement and final outcomes. Presentation decisions should consider audience, purpose and context. Increasing independence supports the selection, refinement and presentation of creative work. Creative processes and final outcomes can be presented together to demonstrate the progression and evolution of ideas.		**Includes, but not limited to** • dance styles and genres such as contemporary, Highland, ballet, jazz, hip-hop and social dance forms • choreographic approaches such as independent and collaborative dance-making • performance elements such as lighting, music, props, costume and dynamics • performance opportunities such as school events, showcases, productions, community events and interdisciplinary projects **Notes** Dance can be created, refined and performed in a range of styles, genres and contexts. Choreography may be developed independently or collaboratively to communicate artistic intention and respond to audience and purpose. Performance elements can be selected and combined to enhance meaning, atmosphere and audience engagement. Experiences across different performance contexts support the development of confidence, adaptability and performance skills. Increasing independence supports the planning, creation, refinement and presentation of dance work for specific audiences and purposes.			**Includes, but not limited to** • performance opportunities such as small-scale productions, full-class productions and site-specific performances • a range of dramatic genres, styles and forms • drama skills such as voice, movement and characterisation • production skills such as lighting, sound, set design, props, costume, hair and make-up **Notes** Drama can be developed from initial concept through rehearsal to performance. Production elements can enhance atmosphere, context and audience engagement. Different genres, styles and forms provide opportunities to explore a range of theatrical approaches and perspectives. Performance decisions should consider audience, purpose and context. Increasing independence supports the planning, development, refinement and presentation of dramatic work.
	Film and Screen			**Music and Music Technology**		
Fourth Level	**Understand:** Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.			**Understand:** Artistic choices shape interpretation, deepen meaning and create impact for specific audiences and purposes.		
	Know: Film and screen content is created to inform, entertain, persuade or influence an intended audience. Film and screen techniques, such as shot types, framing, camera movement, sound and editing, are selected and used to shape meaning and audience response. Editing and sequencing of image and sound establishes structure, pace and coherence in film and screen products, impacting audience engagement. Legal and ethical considerations, including copyright and permissions, influence the use of image and sound.	**Do:** Edit, produce and present a finished film and screen product for a clear purpose and intended audience. Select and apply camera, sound, lighting and editing techniques with control to communicate ideas. Undertake production roles, applying appropriate technical and creative skills in the development of film and screen work for others.		**Know:** Instrumental/vocal technique and control contribute to overall performance and production quality. Performance, recording and production are shaped by musical elements, style and performance directions, including dynamics, tempo, articulation and phrasing. Microphone placement and recording methods, can affect the quality and impact of recorded music. Personal interpretation influences the communication of musical ideas and character. Analysis, evaluation and reflection support the refinement of musical performance.	**Do:** Select and prepare appropriate repertoire and/or creative material for specific audiences, purposes and contexts. Perform, record or produce music with accuracy, fluency, tone and expression, applying musical and technological skills to realise artistic intention. Interpret notation, performance directions and production requirements to communicate character, meaning and artistic intention. Analyse, evaluate and refine performances and productions through reflection and feedback. Apply musical and technological skills with increasing independence.

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	Includes, but not limited to • film and screen products such as short films, documentaries, campaign videos, experimental films and digital media content • presentation opportunities such as screenings, digital platforms and exhibitions • film techniques such as high-angle, low-angle and Dutch-angle shots. Pan, tilt and tracking movements. Framing techniques such as symmetry • production design elements such as set, props, costume and make-up **Notes** Film and screen products can be created and shared for a range of audiences, purposes and contexts. Camera angles, movement, framing and production design can be combined to communicate meaning, mood, perspective and audience response. Creative and technical choices influence how stories, messages and ideas are interpreted. Presentation and distribution methods should be selected according to audience, purpose and context. When using music, sound or other media, consideration should be given to copyright, permissions and responsible use of content. Increasing independence supports the planning, creation, refinement and presentation of film and screen work.	**Includes, but not limited to** • performance opportunities such as solo and ensemble performances, concerts, competitions, community events and recordings • repertoire such as music from a range of styles, genres, cultures and historical periods • technical and expressive skills such as melodic and rhythmic accuracy, tone, phrasing, articulation, dynamics, tempo, mood, character and stylistic awareness • musical information such as notation, dynamics, tempo markings, articulation and performance directions • digital music projects such as audio recordings, sound editing, effects processing and multimedia productions **Notes** Music can be prepared, refined and presented for a range of audiences, purposes and contexts. Repertoire should provide appropriate challenge and opportunities to develop technical, expressive and interpretive skills. Performance decisions can be informed by notation, musical directions and personal interpretation. Technical control and expressive understanding contribute to effective and engaging musical performances. Listening, reflection and evaluation support the ongoing development of performance and musicianship skills. Digital technologies can be used to create, record, edit, enhance and present musical work. Increasing independence supports the selection, preparation, performance and presentation of music and digital projects. Musical elements at this level: melody, harmony, rhythm, tempo, dynamics, timbre, style, texture and structure.

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<table>
<tr><td>Strand</td><td colspan="5">Self-expression
Self-expression is how learners use the expressive arts to explore and communicate their thoughts, emotions and ideas.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Art and Design</td><td colspan="2">Dance</td><td>Drama</td></tr>
<tr><td colspan="2">Understand: Self-expression communicates a creative voice through purposeful choices.</td><td colspan="2">Understand: Self-expression communicates a creative voice through purposeful choices.</td><td>Understand: Self-expression communicates a creative voice through purposeful choices.</td></tr>
<tr><td>Know:
Artistic practice develops over time through exploration, reflection and experimentation.

Artists and designers develop individual approaches within wider cultural contexts.

Understanding personal values, experiences and interests influence decisions and shape creative identity.</td><td>Do:
Plan and produce coherent work that explores ideas, themes, a brief or set of problems.

Describe creative and visual choices and explain how they relate to the purpose or intention of the work.

Reflect on personal influences and creative practice in relation to other artists, movements or contexts.</td><td>Know:
Dance can communicate complex feelings, ideas, experiences, perspectives and messages, allowing performers and choreographers to express individual identity and viewpoints.

Meaning in dance can be influenced by personal, cultural and social experiences, as well as by the choices made by the choreographer, performer and audience.

Dance can provide a powerful form of personal expression, reflection and communication and can contribute positively to mental, emotional, social and physical well-being.</td><td>Do:
Develop and refine movement material through experimenting with different choreographic approaches, selecting the most effective choices to communicate intent.

Collaborate effectively within a group to integrate different experiences, perspectives and viewpoints into a cohesive dance work.

Use dance as a means of reflecting on and expressing personal experiences, identity and viewpoints, while showing awareness of the perspectives of others.</td><td>Know:
Drama can be used to express and explore complex ideas, feelings, experiences and viewpoints.

Performance and production choices can shape how ideas and identity are communicated.

Different perspectives can influence how characters, situations and themes are presented.</td><td>Do:
Create, adapt or develop drama that communicates a clear idea, feeling or viewpoint.

Use performance and production choices deliberately to shape meaning.

Develop characters and situations that communicate different or contrasting perspectives.

Justify creative choices and explain how they support intention.

Reflect on and refine work using appropriate drama vocabulary.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• creative approaches such as portfolio projects, themed investigations and extended design briefs
• sources of inspiration such as personal, historical and contemporary influences
• design considerations such as audience, purpose, context and interpretation

Notes
Art and design projects can provide opportunities for sustained investigation, development and refinement of ideas.

Personal, historical and contemporary influences can inform creative thinking, decision-making and outcomes.

Creative choices should be informed by consideration of audience, purpose and context.

Interpretation may vary between individuals and can be influenced by experiences, knowledge and perspectives.

Research, exploration and reflection support the development of informed and purposeful creative outcomes.</td><td colspan="2">Includes, but not limited to
• themes such as relationships, belonging, change, conflict, aspirations and age-appropriate social issues
• choreographic approaches such as collaborative dance-making, negotiation, compromise and shared decision-making
• dance works that communicate multiple, layered or contrasting meanings and interpretations

Notes
Dance can communicate complex ideas, themes and perspectives, including multiple or contrasting meanings rather than a single emotion or message.

Themes can be explored through movement to communicate experiences, viewpoints and artistic intentions.

Collaboration involves valuing different perspectives while negotiating, compromising and working towards a clear shared creative intention.

Choreographic decisions should support the effective communication of meaning to an audience.</td><td colspan="2">Includes, but not limited to
• stimuli such as personal, imagined, cultural, social and thematic starting points
• drama approaches such as devised drama, scripted performance, adaptation and directing
• dramatic concepts such as character, motivation and relationships

Notes
Drama can be developed in response to a range of stimuli to explore ideas, experiences, perspectives and themes.

Character, motivation, relationships, viewpoint and theme can be developed purposefully to communicate meaning and dramatic intention.

Different perspectives and complex themes should be explored with sensitivity, respect and consideration of diverse viewpoints.

Rehearsal and reflection support the refinement of intention, communication and effectiveness.</td></tr>
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<table>
<tr><td></td><td>Increasing independence supports the planning, management and realisation of extended creative projects.</td><td colspan="2">Reflection and discussion can support the development, refinement and evaluation of creative and collaborative processes.

Interpretation of dance may vary between audiences and can be influenced by individual experiences, knowledge and perspectives.</td><td>Encourage more developed exploration of character, motivation, relationships, viewpoint and theme.

Learners should make deliberate choices about voice, movement, space, structure and production elements.</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Film and Screen</td><td colspan="2">Music and Music Technology</td></tr>
<tr><td colspan="2">Understand: Self-expression communicates a creative voice through purposeful choices.</td><td colspan="2">Understand: Self-expression communicates a creative voice through purposeful choices.</td></tr>
<tr><td>Know:
Creative vision and voice can be expressed and developed through filmmaking.

Choices and decisions are important when making and sharing films that express and explore personal feelings and experiences.</td><td>Do:
Plan, produce and edit a film and screen product that explores personal ideas, feelings or perspectives.

Consider the choices being made when planning a film and screen product that expresses and explores personal feelings and experiences.</td><td>Know:
Composers and performers develop distinctive styles shaped by influences, experiences and context.

Creative and deliberate use of musical elements can communicate ideas, emotions and perspectives.

Music reflects personal, cultural, stylistic and social contexts.</td><td>Do:
Compose, arrange, improvise or perform music that expresses themes, ideas or narratives.

Justify musical decisions in relation to purpose, audience and meaning, describing emerging musical identity, influences and aspirations.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• topics and themes of personal, local, national or global relevance and interest
• creative considerations such as audience, purpose, representation, ethics and responsible content sharing

Notes
Creative work can be developed in response to topics and themes that are meaningful, relevant and engaging for the intended audience.

Consideration should be given to ethical, responsible and respectful content creation and sharing.

Creative choices should reflect awareness of audience, purpose, context and potential impact.

Discussion and reflection can support informed decision-making when creating, presenting and sharing work.</td><td colspan="2">Includes, but not limited to
• creative works such as extended compositions, group arrangements, performance programmes, independent projects and collaborative projects
• themes and influences such as personal, historical, cultural and contemporary contexts
• research and analysis sources such as composers, performers, musical styles and musical traditions

Notes
Music can be created, performed and refined through both independent and collaborative processes.

Extended creative projects provide opportunities to develop, sustain and communicate musical ideas over time.

Personal, historical, cultural and contemporary influences can inform creative decisions and musical outcomes.

Analysis of composers, performers and musical styles can support understanding of musical conventions, techniques and artistic intentions.

Musical elements can be selected, combined and manipulated purposefully to communicate meaning, style and expression.

Reflection, evaluation and critical listening support the development and refinement of compositions, arrangements and performances.

Increasing independence supports informed decision-making, creative ownership and musical confidence.

Musical elements at this level: melody, harmony, rhythm, tempo, dynamics, timbre, style, texture and structure.</td></tr>
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<table>
<tr><td>Strand</td><td colspan="5">Reflect and Respond
Reflect and Respond is the process of observing, interpreting and evaluating artistic work. It involves noticing creative choices, considering their impact and developing informed responses that deepen understanding of the Expressive Arts.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Art and Design</td><td colspan="2">Dance</td><td colspan="2">Drama</td></tr>
<tr><td colspan="2">Understand: Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.</td><td colspan="2">Understand: Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.</td><td colspan="2">Understand: Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.</td></tr>
<tr><td>Know:
Visual elements, design concepts and creative decisions shape meaning, understanding and impact.

Artwork can be interpreted through multiple perspectives.

Reflection informs creative development and personal practice.</td><td>Do:
Analyse art and design using visual and contextual vocabulary.

Evaluate how effectively art and design can communicate ideas, messages and viewpoints.

Critically reflect on creative decisions identifying impact.

Refine personal art and design work in response to evaluation and feedback.</td><td>Know:
Dance communicates ideas, themes and perspectives shaped by choreographic intention, cultural context and performance choices.

Evaluation and reflection should consider technique, expression, structure and impact of artistic development and performance quality.</td><td>Do:
Analyse choreography using appropriate dance vocabulary.

Justify and evaluate the effectiveness of choreographic and performance choices.

Reflect on and evaluate choreography and performances to identify strengths and areas for refinement.

Justify creative decisions in relation to artistic intention, audience engagement and impact.</td><td>Know:
Drama choices can be used deliberately to shape meaning, mood and audience response.

Performance and production choices can create different interpretations.

Evaluation can help refine and strengthen dramatic work.</td><td>Do:
Analyse how performance and production choices shape meaning and audience response.

Justify creative choices using evidence from performance.

Evaluate work and use feedback to refine performance.</td></tr>
<tr><td></td><td colspan="2">Includes, but not limited to
• critical approaches such as visual analysis, contextual analysis and interpretation
• art and design vocabulary such as line, colour, shape, form, pattern, texture and tone
• discussion and evaluation of personal creative choices, processes and outcomes

Notes
Critical frameworks can support the analysis, interpretation and evaluation of art and design work.

Independent discussion, debate and evaluation support the development of informed opinions and critical thinking.

Visual elements can be analysed individually and in combination to understand how meaning, impact and visual relationships are created.

Reflection throughout the creative process supports the development, refinement and justification of creative decisions and outcomes.

Evaluation can be informed by consideration of purpose, audience, context and creative intention.

Analysis and reflection support increasingly informed and personal responses to art and design.</td><td colspan="2">Includes, but not limited to
• review approaches such as written, verbal and practical responses.
• research sources such as choreographers, dance companies, performances and peer and professional dance works.
• reflective and evaluative activities such as peer discussion, comparison of performances, constructive feedback and self-evaluation.
• dance examples from a range of styles, genres and cultural contexts.

Notes
Appropriate dance vocabulary supports the analysis, discussion and evaluation of choreography and performance.

Research into choreographers, dance companies and performances can support understanding of different artistic approaches, influences and contexts.

Comparing choreography and performances can support analysis of style, intention, technique and audience impact.

Peer discussion and evaluation can provide constructive feedback to support the development and refinement of dance work.</td><td colspan="2">Includes, but not limited to
• areas for analysis such as characterisation and relationships, voice, movement, use of space, structure, style, dramatic conventions and production elements such as set, lighting, sound, costume and props
• performance experiences such as live and recorded theatre
• comparative approaches such as exploring different interpretations, performance choices and theatrical approaches

Notes
Discussion and evaluation of drama should consider intention, impact and audience.

Responses should be supported by relevant examples from performance and production.

Analysis can focus on how dramatic and production choices contribute to meaning, mood and audience response.

Comparing different interpretations can support understanding of how alternative creative choices may influence meaning and impact.

Specific and constructive feedback can be used to refine, develop and improve dramatic work.</td></tr>
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		Written, verbal and practical reviews can be used to communicate informed responses and evaluations. Reflection throughout the choreographic and performance process supports decision-making, refinement and continuous improvement. Analysis and evaluation can be informed by consideration of creative intention, performance quality, audience response and artistic choices.	Live and recorded performances provide opportunities to explore how theatre-makers communicate ideas and influence audience understanding. Reflection and evaluation support informed judgement, critical thinking and increasingly independent creative decision-making.

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<table>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Film and Screen</td><td colspan="2">Music and Music Technology</td></tr>
<tr><td colspan="2">Understand: Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.</td><td colspan="2">Understand: Evaluating artistic work involves making informed judgements about choices, context and interpretation that explain meaning and impact.</td></tr>
<tr><td>Know:
Reflecting and reviewing creative and technical development supports the pre-production, production and post-production stages.

Creative and technical choices shape meaning, impact and audience response.

Responding to a variety of different film and screen products helps to inform creative choices.

Feedback can inform the development of future creative choices and technical skills.</td><td>Do:
Evaluate effectiveness of technical and creative choices.

Pre-production: select appropriate film and screen products that relate to a given brief and give an informed response, with confident use of film and screen vocabulary.

Production: review and adapt throughout production, with a considered response to feedback from a variety of people.

Post-production: Reflect on own film to make informed choices about next steps.

Provide feedback to support improvement.

Receive and consider feedback to improve future projects.</td><td>Know:
Using musical elements in relation to purpose, audience and context shapes the meaning, expression and impact of music.

Musical concepts and vocabulary can be used to describe, explain and justify creative choices.

Interpretations of music are shaped by cultural, historical and personal perspectives.

Reflection and refinement support musical development.</td><td>Do:
Critically analyse music, explaining how musical elements are used to achieve intended impact.

Evaluate and justify opinions using relevant music vocabulary and evidence.

Make informed judgements about how well music communicates purpose and meaning.

Reflect on performance, listening and composition experiences, identifying strengths and areas for improvement.</td></tr>
<tr><td colspan="2">Includes, but not limited to
feedback sources such as teachers, peers and industry specialists
reflection and evaluation activities such as planning reviews, production reviews, post-production reviews, self-evaluation and peer feedback
Notes
Feedback from a range of sources can support the development, refinement and improvement of film and screen work.

Reflection should take place throughout planning, production and post-production to inform creative and technical decision-making.

Constructive feedback can be used to identify strengths, address challenges and support the achievement of intended outcomes.

Ongoing evaluation supports the refinement of ideas, processes and final products.

Increasing independence in responding to feedback can support confidence, critical thinking and effective creative practice.</td><td colspan="2">Includes, but not limited to
musical experiences such as live and recorded music, comparative listening and exploration of different repertoire, performances and interpretations
reflective approaches such as self-evaluation, peer feedback, discussion and critical review
Notes
Engagement with live and recorded music can support comparison of repertoire, performance approaches and musical interpretation.

Appropriate music vocabulary can support the analysis, discussion and evaluation of musical features, performances and compositions.

Critical thinking involves forming informed opinions and justifying responses using evidence from listening, performing and composing experiences.

Reflection and feedback throughout composing, performing and listening activities support the development, refinement and evaluation of musical work.

Musical elements can be identified, analysed and manipulated to understand how they contribute to style, expression, meaning and audience response.

Increasing independence supports the development of informed judgements, musical understanding and creative decision-making.

Musical elements at this level: melody, harmony, rhythm, tempo, dynamics, timbre, style, texture and structure.</td></tr>
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<tr><td>Strand</td><td colspan="4">Cultural Awareness and Understanding
Cultural Awareness and Understanding is recognising and valuing Scotland’s artistic heritage while appreciating creative traditions, practices and perspectives from diverse cultures, times and places. It develops awareness of the beliefs, customs and ideas that shape creative expression.</td></tr>
<tr><td></td><td colspan="2">Art and Design</td><td colspan="2">Dance</td><td>Drama</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Understand: Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.</td><td colspan="2">Understand: Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.</td><td>Understand: Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.</td></tr>
<tr><td>Know:
Art and design styles and movements develop through changing historical and contemporary contexts.

Understanding of the relationship between symbolism, cultural references and design choices and how visual language shapes interpretation and response.

Artists and designers can reinforce, challenge and shape cultural values, traditions and beliefs through their work.</td><td>Do:
Compare and justify informed responses to art and design from different cultures, traditions and historical and contemporary contexts.

Recognise how artistic and design styles, symbolism and creative choices shape interpretation, meaning and cultural understanding.</td><td>Know:
Dance genres, traditions and performance contexts across cultures and periods use movement, costume, music and staging to shape meaning and audience response.

Scotland has a rich and evolving dance heritage, which reflects its history, communities, social traditions and cultural identity.</td><td>Do:
Analyse dances from different cultural contexts using dance vocabulary to explain meaning.

Create and perform a dance inspired by a selected cultural context.

Adapt aspects of a Scottish Dance style to create a piece of dance.</td><td>Know:
Drama can explore, question and challenge ideas about culture, identity and society.

Cultural, historical and social context can shape the meaning of drama.

Playwrights, theatre-makers and audiences may interpret cultural ideas in different ways.</td><td>Do:
Create or respond to drama that explores culture, identity, place or society.

Analyse how cultural, historical or social context shapes drama choices and meaning.

Make and justify choices that communicate a cultural perspective.

Evaluate how effectively drama represents or challenges cultural ideas.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• art and design from local, Scottish and wider-world contexts, such as historical and contemporary works, expressive and design practices and age-appropriate social, cultural and political themes
• historical movements, styles and timelines
• media such as drawing, painting, digital technologies and 3D modelling
• materials such as pencils, oil pastels, charcoal and watercolours

Notes
Exploring art and design from different times, places and contexts supports understanding of diverse creative practices, perspectives and influences.

Engagement with historical and contemporary works can support awareness of how art and design reflect and respond to social, cultural and political ideas.

Age-appropriate exploration of social and political themes can encourage critical thinking, discussion and informed personal responses.

Historical movements and timelines can support understanding of change, continuity and influence within art and design.

Media and materials can be selected and applied purposefully to communicate ideas and realise creative intentions.</td><td colspan="2">Includes, but not limited to
• dance styles and contexts such as social dance, theatrical dance, contemporary dance and dance traditions from local, Scottish and wider-world cultures
• choreographic approaches such as adapted choreography and original choreography
• dance vocabulary such as movement, rhythm, dynamics, space, relationships, structure and motif

Notes
Exploring dance from a range of cultures, styles and contexts can support understanding of diverse traditions, identities and approaches to movement.

Choreography can be adapted, developed and created with increasing independence to communicate artistic intention and respond to audience and purpose.

Analysis of dance can support understanding of how dance elements contribute to meaning, mood and audience response.

Appropriate dance vocabulary supports the description, discussion, analysis and evaluation of dance processes, performances and outcomes.

Reflecting on dance from different contexts can support informed creative choices and deeper appreciation of dance as an art form.</td><td>Includes, but not limited to
• theatre experiences such as contemporary and historical Scottish theatre, theatre from different cultures and periods, live theatre, recorded performances, festivals, workshops and engagement with theatre-makers and cultural organisations
• areas of study such as plays, playwrights, practitioners, theatre companies, performance styles and theatrical traditions
• dramatic themes such as culture, identity, belonging, community, heritage, language and social change

Notes
Engagement with a range of theatre traditions, cultures and historical periods can support understanding of diverse dramatic practices, perspectives and influences.

Context can influence the creation, interpretation and meaning of drama and audience responses may vary according to experience, background and perspective.

Drama provides opportunities to explore and communicate ideas relating to culture, identity, belonging, heritage, language and society.

Complex themes and issues should be explored with sensitivity, respect and consideration of different viewpoints.

Analysis and evaluation can be supported through reference to context, intention, audience and impact.</td></tr>
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<table>
<tr><td></td><td>Critical engagement with a range of art and design contexts can support analysis, comparison and the development of informed creative decisions.</td><td colspan="2"></td><td>Experiences of live performance, workshops and engagement with theatre-makers can deepen understanding of drama as an art form and its role within communities.</td></tr>
<tr><td></td><td colspan="2">Film and Screen</td><td colspan="2">Music and Music Technology</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.</td><td colspan="2">Understand: Cultural, historical and societal contexts shape artistic choices, styles and movements and shape how creative expression is understood and interpreted by different people and communities.</td></tr>
<tr><td>Know:
The ways that film and screen products from diverse cultural, historical and societal contexts use creative choices to shape meaning, viewpoint and audience interpretation.</td><td>Do:
Plan, create and edit film or screen products for a specific audience, using creative choices to explore cultural, historical and societal contexts and experiences.</td><td>Know:
Music both reflects and shapes cultural values, identities, experiences and historical developments.

Music is sustained, adapted and reinterpreted across generations through evolving traditions, technologies and practices.</td><td>Do:
Listen to and analyse music from different cultural contexts, using appropriate vocabulary to describe features and justify responses.

Perform, improvise and compose music from a range of contexts, selecting and combining musical elements to communicate cultural meaning and intention.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• film and screen products such as live-action films, documentaries, animations, music videos and advertisements from local, Scottish and global contexts
• film and screen texts that represent a range of cultures, identities, perspectives and experiences

Notes
Viewing and creating film and screen products can support understanding of diverse cultures, perspectives and ways of communicating ideas.

Film and screen products can provide opportunities to explore and express identity, culture, experiences and viewpoints.

Personal experiences, knowledge and perspectives can influence how film and screen texts are interpreted and understood.

Engagement with local, Scottish and wider-world screen content can support appreciation of different stories, traditions and ways of seeing the world.

Reflecting on a range of film and screen products can support critical thinking, discussion and informed creative decision-making.</td><td colspan="2">Includes, but not limited to
• musical styles and traditions such as local, Scottish and wider-world music
• instruments associated with different musical styles, genres and traditions

Notes
Listening to and exploring music from a range of styles and traditions can support understanding of their distinctive features and characteristics.

Musical elements can be identified, analysed and discussed using appropriate music vocabulary.

Instruments contribute to the sound, texture and character of different musical traditions and genres.

Recognising how musical elements are combined can support performance, composition, improvisation and evaluation.

Comparing music across different contexts can support informed responses and deepen musical understanding.

Musical elements at this level: melody, harmony, rhythm, tempo, dynamics, timbre, texture, structure and style.</td></tr>
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Health and Wellbeing Know-Do-Understand Strands

<table>
<tr><td>Strand</td><td colspan="5">Communities in Action
How people participate in and contribute to communities, and how communities influence people’s experiences and opportunities.</td></tr>
<tr><td rowspan="5">Fourth Level</td><td colspan="2">Food and Health</td><td colspan="2">Physical Education, Physical Activity and Sport</td><td>Personal and Social Education</td></tr>
<tr><td colspan="2">Understand:
Changes within interconnected communities can have consequences for people, resources and opportunities.</td><td colspan="2">Understand:
Changes within interconnected communities can have consequences for people, resources and opportunities.</td><td>Understand:
Changes within interconnected communities can have consequences for people, resources and opportunities.</td></tr>
<tr><td>Know:
Environmental pressures, structural factors and global events affect production, supply and access.

Local food and textile choices connect to wider environmental, economic and social consequences.

Equity and sustainability of food and textiles can involve balancing social, economic and environmental considerations.

Employment opportunities in the food and drink industry can change in response to local, national and global conditions.

Policy, regulation and organisations can influence consumer behaviour.</td><td>Do:
Analyse how environmental, social and economic factors influence access to food and textiles.

Produce and evaluate a food or textile outcome. Justify resource and provenance decisions by considering their local, national or global consequences.

Evaluate relationships between production, resources, sustainability and communities.

Investigate food and textile career pathways and their relationship to skills and interests.

Evaluate policy, regulation and a food or textile organisation’s influence on consumer behaviour.</td><td>Know:
Community structures, provision and access influence participation.

Community physical activity and sport settings can provide pathways into volunteering, coaching and employment.

Governing bodies and organisations can influence how physical activity and sport are organised, accessed and developed.</td><td>Do:
Evaluate the likely benefits, limitations and unintended consequences of a change to community physical activity provision.

Evaluate how organisations and participation pathways shape access to physical activity, sport and related roles.</td><td>Know:
Identity is complex and can change over time, and this can contribute to community cohesion.

Conflict, climate, technological development and economic change can affect communities differently.

Local communities are connected to wider national and global systems.

Social structures affect how opportunities and resources are experienced by diverse groups within communities.

Community structures can give people and organisations unequal influence over decisions, resources and representation. These differences can affect opportunities within communities.</td><td>Do:
Discuss how aspects of identity interact and contribute to community experiences.

Analyse how local, national and global factors affect communities.

Analyse how distributions of power can create or promote equity and equality.

Evaluate individual, collective and systemic responses to community challenges using evidence.

Analyse how unequal influence over community decisions and resources affects representation and opportunities.</td></tr>
<tr><td colspan="2">Includes, but not limited to:
Equity and sustainability factors
• sources of food and textile materials
• production methods
• transport and distribution
• working conditions</td><td colspan="2">Notes</td><td colspan="2">Notes
Systemic responses involve changes to policies, structures or services that shape community conditions.</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="5">Relationships
How people form and experience relationships, and how communication, difference, needs, rights, boundaries, expectations and power shape those relationships.</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Food and Health</td><td colspan="2">Physical Education, Physical Activity and Sport</td><td>Personal and Social Education</td></tr>
<tr><td colspan="2">Understand:
Interacting needs, expectations and differences in power can influence relationships.</td><td colspan="2">Understand:
Interacting needs, expectations and differences in power can influence relationships.</td><td>Understand:
Interacting needs, expectations and differences in power can influence relationships.</td></tr>
<tr><td>Know:
Shared food experiences can involve competing dietary, cultural and practical requirements. Decisions about these requirements can affect inclusion and participation.</td><td>Do:
Evaluate how decisions about competing food requirements affect inclusion and participation in shared food experiences.</td><td>Know:
Leadership distributes influence and responsibility in different ways.

Leadership approaches can affect relationships, decision-making and participation within physical activity and sport.

Cultures within physical activity and sport can challenge or reinforce discrimination and inequality.</td><td>Do:
Analyse how power and expectations affect participation.

Apply and adapt leadership approaches during physical activity to support equitable participation.

Evaluate how practices or culture within physical activity and sport can support or restrict equitable participation.</td><td>Know:
Changing needs, circumstances and expectations can affect relationships.

Rights and responsibilities can interact within complex relationships.

Gender based violence reflects and reinforces inequalities in power and status.

Social and cultural attitudes can reinforce or challenge expectations and inequalities within relationships.

Power can influence autonomy, consent and decision making within relationships.

Discrimination and unequal power can affect relationships and outcomes.

Relationship decisions can involve diverse perspectives, rights and ethical considerations.

Abuse may involve patterns of coercion, control, intimidation or exploitation.</td><td>Do:
Evaluate how communication and negotiation can support relationships as needs, circumstances and expectations change.

Evaluate how rights and responsibilities influence choices within relationships.

Evaluate how social and cultural attitudes can reinforce or challenge inequalities within relationships.

Evaluate how power influences autonomy, consent and decision-making within relationships.

Evaluate how discrimination and unequal power affect relationships and the choices available to people.

Justify decisions about relationship issues using relevant evidence, rights and ethical considerations.

Analyse patterns of coercion, control, intimidation or exploitation within abusive relationships.</td></tr>
<tr><td colspan="2">Notes</td><td colspan="2">Notes</td><td colspan="2">Includes, but not limited to:
Family relationships
parents and children
carers and children
siblings
extended family members
Patterns of abusive behaviour
coercion
control
intimidation</td></tr>
</table>

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			• exploitation **Notes** Changes in behaviour, wellbeing or circumstances can raise concerns but do not, by themselves, establish that abuse has occurred.

Strand	**Habits for Health** How repeated behaviours and routines develop into habits, what sustains and changes them and how these influence health and wellbeing.					
Fourth Level	**Food and Health**		**Physical Education, Physical Activity and Sport**		**Personal and Social Education**	
	Understand: Changes in circumstances and influences can affect how people maintain, adapt or change established habits.		**Understand:** Changes in circumstances and influences can affect how people maintain, adapt or change established habits.		**Understand:** Changes in circumstances and influences can affect how people maintain, adapt or change established habits.	
	Know: Long-term food habits, combined with other lifestyle factors can increase or reduce the risk of future health conditions. Evidence about diet and health varies in quality. Advertising and social media can influence consumer habits.	**Do:** Analyse how interacting influences contribute to dietary patterns. Evaluate and justify a food related decision using relevant dietary and health evidence. Analyse how information and consumer influences can affect judgement and established food habits.	**Know:** Patterns of physical activity can have cumulative effects on health, functioning and participation. Physical activity needs, preferences and opportunities can change across life stages. Lifelong participation can involve different activities, pathways and roles. Physical activity habits can be maintained, modified or replaced as circumstances change. Knowledge and evidence can inform decisions about physical activity habits.	**Do:** Review a pattern of physical activity and explain its possible effects over time. Compare activities, pathways and roles available at different life stages. Investigate a pathway or role which takes account of a specific need, preference or circumstance. Develop and adapt a physical activity plan for a period of change. Use relevant information to explain a decision about maintaining, modifying or replacing a physical activity habit.	**Know:** Periods of change can strengthen, disrupt or reshape established habits. Evidence about health behaviours varies in reliability and relevance to different circumstances. Wider social, technological, economic and environmental contexts influence health behaviours.	**Do:** Analyse how changing circumstances can affect established habits. Evaluate the reliability and relevance of evidence about health behaviours in different circumstances. Justify a response to changing health habits using evidence and considering wider factors that support or limit choices.
	Notes		**Notes** Lifelong participation means engagement in physical activity across life stages. Activities, pathways, roles, frequency and forms of participation can change over time.		**Notes**	

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<table>
<tr><td>Strand</td><td colspan="5">Mental, Emotional, Social and Physical Health (MESP)
How mental, emotional, social and physical health factors interact to influence feelings, responses, participation and decisions.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td>Food and Health</td><td>Physical Education, Physical Activity and Sport</td><td colspan="3">Personal and Social Education</td></tr>
<tr><td>Understand:
Interactions between mental, emotional, social and physical factors can change across contexts and influence responses and decisions in different ways.</td><td>Understand:
Interactions between mental, emotional, social and physical factors can change across contexts and influence responses and decisions in different ways.</td><td colspan="3">Understand:
Interactions between mental, emotional, social and physical factors can change across contexts and influence responses and decisions in different ways.</td></tr>
<tr><td>Know:
Social, cultural, emotional and digital influences can interact to shape beliefs about food, bodies and health.

Health information and claims vary in reliability and can influence judgement and food-related decisions.

Specialist support can address concerns involving food, body image or health.</td><td>Do:
Analyse interacting influences on a complex food or body related decision.

Evaluate relevant information or claims and justify an informed response.

Explain when specialist support may be appropriate.</td><td>Know:
Cognitive, emotional, social, physical and environmental factors interact to influence movement, participation and performance.

Attention, anticipation, decision-making, emotions and physical state can change as performance conditions change.

Regulation strategies have different effects depending on performer, task and context.

Motivation, confidence, leadership and group cohesion can affect performance.</td><td>Do:
Adapt movement and performance decisions in response to interacting physical, cognitive, emotional and social demands.

Evaluate the effectiveness of different responses across changing performance contexts.

Evaluate performance decisions using relevant evidence.

Evaluate how interacting cognitive, emotional, social and physical factors influence the effectiveness of a group performance.</td><td>Know:
Complex decisions can involve interacting thoughts, emotions, relationships, physical responses, values and circumstances.

Stress and uncertainty can affect judgement.

Reliable information and appropriate support can strengthen decision-making.

Mistakes, setbacks and feedback can provide valuable information for decision making.

Sources and support vary in purpose and effectiveness.

Self-awareness and reflection can support growth and decision making.</td><td>Do:
Analyse interacting influences within a complex decision or challenge.

Evaluate different responses to challenges and setbacks using evidence.

Use evidence and judgement to make decisions in complex or unfamiliar situations.</td></tr>
<tr><td>Includes, but not limited to:
Food and health information and claims
• dietary trends
• weight-management claims
• claims about weight-loss medicines
• specific diets

Specialist support
• dieticians
• qualified healthcare professionals
• specialist eating disorder services

Notes</td><td>Includes, but not limited to:
Cognitive factors
• attention
• concentration
• perception
• memory
• anticipation

Notes
Cognitive factors concern how people attend to, process and use information. These factors can affect how people interpret cues, select actions and adapt during physical activity.</td><td colspan="3">Notes
The effects of regulation strategies can vary according to individual needs, strengths and circumstances.</td></tr>
</table>

	Different sources of support address different food, body image and health concerns.		

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<table>
<tr><td>Strand</td><td colspan="5">Safety
How people recognise, assess, manage and evaluate risk to make informed decisions about safety.</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Food and Health</td><td colspan="2">Physical Education, Physical Activity and Sport</td><td colspan="2">Personal and Social Education</td></tr>
<tr><td colspan="2">Understand:
Complex and uncertain circumstances can alter how multiple factors combine to influence safety.</td><td colspan="2">Understand:
Complex and uncertain circumstances can alter how multiple factors combine to influence safety.</td><td colspan="2">Understand:
Complex and uncertain circumstances can alter how multiple factors combine to influence safety.</td></tr>
<tr><td>Know:
Food safety decisions can involve biological, chemical, physical and allergen hazards.

Risk controls differ according to food, process, environment and people involved.

Preventative controls reduce the likelihood and consequences of harm.

Food safety regulations and regulatory organisations establish requirements for managing risks within food systems.</td><td>Do:
Assess interacting risks within complex food or textile processes.

Select, apply and evaluate appropriate controls.

Justify safety decisions using relevant evidence or guidance.

Apply relevant food safety requirements to a specified process and evaluate their implications for risk management.</td><td>Know:
Risk changes through interactions between the participant, activity, environment and circumstances.

Decisions made under pressure involve balancing benefits and possible consequences.

Risk-management strategies need to adapt as circumstances change.</td><td>Do:
Anticipate changing risks and adapt movement, strategy or equipment accordingly.

Justify decisions about participation or performance using evidence from the context.</td><td>Know:
Complex safety decisions can involve competing risks, rights and consequences.

Manipulation, coercion and social influence can affect risk perception.

Digital environments can present benefits and risks.

Reliable information and specialist support matter when risks are complex or serious.

Substance use can have immediate and longer-term health consequences.

Using substances together can change their effects and increase risk.</td><td>Do:
Evaluate risk across complex physical, social and digital contexts.

Evaluate the reliability of information used in a safety decision.

Compare possible responses and consequences.

Justify when specialist or emergency support is appropriate.

Evaluate how substance use and interactions between substances can affect health and risk.</td></tr>
<tr><td colspan="2">Includes, but not limited to:
Areas of food regulation
• food hygiene
• allergen information
• nutrition labelling
• food promotion and placement

Notes
Food Standards Scotland and local authorities have roles in overseeing and enforcing food law.</td><td colspan="2">Notes</td><td colspan="2">Notes</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="4">The Growing Body
How the body functions, grows, develops and adapts throughout life, including the roles of interacting body systems, puberty, nutrition and movement.</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Food and Health</td><td colspan="2">Physical Education, Physical Activity and Sport</td><td colspan="2">Personal and Social Education</td></tr>
<tr><td colspan="2">Understand:
Interactions between body systems can influence how the body functions and adapts across life stages.</td><td colspan="2">Understand:
Interactions between body systems can influence how the body functions and adapts across life stages.</td><td colspan="2">Understand:
Interactions between body systems can influence how the body functions and adapts across life stages.</td></tr>
<tr><td>Know:
Energy and nutrient requirements reflect interacting biological and lifestyle factors.

Dietary patterns can affect brain health and other body systems over time.

Nutrient deficiency and excess can affect body function.

Nutrition claims vary in reliability and strength of evidence.</td><td>Do:
Adapt a food plan as nutritional requirements change across life stages.

Justify adaptations using nutritional evidence and changing life stage needs.

Evaluate the reliability and strength of evidence supporting nutritional information or health claims.</td><td>Know:
The musculoskeletal and nervous systems interact to coordinate and control movement.

Physical activity, sleep and recovery can influence brain and body function across life stages.

The cardiovascular and respiratory systems interact to support physical activity.

Movement can be adapted through changes in technique, timing, coordination or movement mechanics.

Training principles can be combined and adapted to meet different physical activity needs and goals.

Methods of practice can be selected and adapted according to individual needs, the activity and the intended movement, participation or performance goal.

Physical, emotional and cognitive responses to activity, training and recovery vary between individuals and over time. Information about these responses can inform decisions.</td><td>Do:
Explain how interacting body systems contribute to movement and physical activity.

Observe and analyse movement, then select an appropriate adaptation for an identified need or goal.

Apply or adapt selected training principles to meet a physical activity need or goal.

Select and adapt a method of practice to support an identified movement, participation or performance goal.

Monitor and compare responses, then use the findings to make and explain decisions about physical activity, technique, practice or recovery.</td><td>Know:
Brain structure and function continue to change across life stages.

Hormonal and reproductive processes can vary across the life stages and can affect body function.

Fertility and reproductive health change across the life stages.

Contraceptive methods differ in mechanism, effectiveness and protection.

STIs differ in transmission, prevention, testing and treatment.

Health information varies in reliability.</td><td>Do:
Analyse changes in brain structure and function across life stages.

Analyse how hormonal and reproductive changes affect body function across life stages.

Analyse how reproductive and sexual health needs can change across the life stages.

Compare reproductive health options using reliable information.

Evaluate reproductive and sexual health information.

Justify evidence-informed responses to specified reproductive or developmental health situations.</td></tr>
<tr><td colspan="2">Notes</td><td colspan="2">Notes
Performance is the application of movement skills, knowledge and decision-making to achieve an intended purpose in physical activity. Performance can be individual or shared. Goals can vary according to the person, activity and context.</td><td colspan="2">Notes</td></tr>
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Languages Know-Do-Understand Strands

<table>
<tr><td>Strand</td><td colspan="4">Understanding Language

This strand develops learners' understanding of how people make sense of language. It examines how vocabulary, grammatical structures and the organisation of texts help people understand spoken and written language across different contexts.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: People understand texts through the interaction of vocabulary, context and the organisation of information and ideas.</td><td colspan="2">Understand: The way language functions in texts depends on audience and purpose.</td></tr>
<tr><td>Know:
Vocabulary and structural choices or context can change meaning, emphasis and perspective.

Language is structured to organise and sequence ideas within sentences and texts.

Different text types organise ideas and information in different ways.

Texts may present different perspectives on the same topic or experience.</td><td>Do:
Identify main ideas, supporting detail and opinions in texts containing straightforward language.

Understand ideas, perspectives and information in different text types containing straightforward language.

Use prior knowledge of context, structure and vocabulary to understand unfamiliar straightforward language.</td><td>Know:
Purpose and audience shape how people understand language.

Meaning can be explicit or implicit.</td><td>Do:
Identify and understand purpose and audience in texts containing straightforward language.

Use context and language features to interpret what is implied in a text.</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
</table>

<table>
<tr><td>Strand</td><td colspan="5">Using Language

This strand develops learners' understanding of how people use language to create meaning. It focuses on how vocabulary, structures and language choices enable people to communicate information, ideas, opinions and feelings for different purposes, audiences and contexts.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: People use and sequence language to describe events, organise ideas, express perspectives and justify opinions.</td><td colspan="2">Understand: People structure and adapt language to suit purpose, audience and context.</td><td>Understand: People select, adapt and combine tools and strategies to support language use.</td></tr>
<tr><td>Know:
Straightforward language is used to describe events, organise ideas, express perspectives and justify opinions.

Language changes according to when things happen.

Straightforward language expresses ideas in familiar and some unfamiliar contexts.</td><td>Do:
Describe events, organise ideas, express perspectives and justify opinions using straightforward language.

Combine sentences and organise ideas with a range of linking features using straightforward language.</td><td>Know:
Purpose, audience and context affect language choice in texts.

Register and style help people to communicate appropriately in different situations.</td><td>Do:
Adapt and reorganise language to suit different audiences, selecting vocabulary appropriate to purpose, audience and context.

Use appropriate register and style depending on purpose, audience and context.</td><td>Know:
Successful communication does not depend on perfection.

Independent use of language learning strategies, including tools and resources such as dictionaries, grammar references or digital tools, helps to improve language use.

Different strategies and tools can be combined and applied to maintain communication.</td><td>Do:
Use dictionaries, grammar references, sentence frames or digital tools to check and improve language.

Independently select and adapt strategies and tools to support communication.</td></tr>
<tr><td colspan="2"></td><td colspan="2">Notes
Purpose describes the intent and reason for communication, such as to entertain, inform or give opinions.

Register describes the level of formality used in communication and can include vocabulary choice and ways of addressing people.

Style refers to the way language is expressed, which can include sentence structure, tone and vocabulary choice.</td><td colspan="2">Notes
Grammar references are tools which support learners to understand, apply and check grammar rules. Examples include grammar guides or glossaries.</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="4">Language for Interaction

This strand develops learners' understanding of how communication is created through interaction with other people. It considers how shared meaning is built collaboratively through listening, responding, questioning and adapting language during interaction.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: People interact to exchange ideas, opinions and information to negotiate meaning in familiar and unfamiliar contexts.</td><td colspan="2">Understand: People adapt language in response to audience, purpose and context during interaction.</td><td>Understand: People maintain shared meaning through clarification and expressing ideas in different ways.</td></tr>
<tr><td>Know:
Interacting involves taking turns using straightforward language to exchange ideas, opinions and information.</td><td>Do:
Express opinions and reasons using straightforward language across conversations or exchanges.</td><td>Know:
Language can change during interaction to maintain meaning.

Different forms of interaction and transaction patterns reflect context and audience.</td><td>Do:
Respond to others and develop ideas when interacting.

Maintain interaction in familiar and some unfamiliar contexts.

Adapt language to suit context, audience and purpose.</td><td>Know:
Straightforward expressions clarify and improve meaning in interaction.</td><td>Do:
Express ideas differently to clarify or improve meaning.</td></tr>
<tr><td colspan="2">Notes
Negotiate describes the reciprocal process of working out meaning in an interaction.</td><td colspan="2">Notes
Purpose describes the intent and reason for communication, such as to entertain, inform or give opinions.</td><td></td></tr>
</table>

<table>
<tr><td>Strand</td><td colspan="2">Identity and Belonging

This strand develops learners' understanding of how languages, relationships, communities and experiences contribute to identity and belonging. It recognises how language reflects who people are, how they see themselves and how they connect with others.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Identity and belonging reflect diverse lived experiences and may be expressed differently across and within communities and contexts.</td></tr>
<tr><td>Know:
People within the same community may have different identities and diverse experiences.
People may express different aspects of their identity through different languages or across different contexts.</td><td>Do:
Understand and describe identity and belonging through straightforward language in familiar contexts.

Compare diverse experiences and expressions of identity and belonging across and within communities and contexts where a language is used.</td></tr>
<tr><td colspan="2"></td></tr>
</table>

<table>
<tr><td>Strand</td><td colspan="2">Perspectives and Worldviews

This strand develops learners' understanding of how experiences, cultures and values influence the way people interpret the world. It explores how language provides insight into different viewpoints and supports respectful engagement with the perspectives of others.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Values and experiences shape perspectives and worldviews.</td></tr>
<tr><td>Know:
Values and experiences affect how people understand and respond to situations.

Communities and cultures may prioritise different values or experiences.</td><td>Do:
Understand and respond to other people's perspectives through straightforward language.

Express and compare perspectives using straightforward language.

Compare how values and experiences can shape different perspectives and worldviews.</td></tr>
<tr><td colspan="2"></td></tr>
</table>

Strand	**Cultures and Traditions** This strand develops learners' understanding of the cultures and traditions associated with the languages people use. It highlights how customs, beliefs and cultural practices reflect communities, evolve over time and contribute to cultural understanding.	
Fourth Level	**Understand:** Cultures and traditions reflect the diversity of experiences within and across communities where a language is used.	
	Know: People within the same culture or community have different traditions and experiences.	**Do:** Recognise diversity in traditions and experiences within familiar cultural contexts. Identify ways that place, community or experience can influence cultures and traditions. Give brief reasons why traditions, events or activities may be important. Compare similarities and differences within and across cultures or communities.
	Notes Diversity of experiences can include differences in traditions, routines, beliefs or celebrations within the same community or place.	

Strand	**Pattern and Structure** This strand develops learners' understanding of how languages are organised to create meaning. It examines how patterns and relationships within and across languages support understanding, communication and language learning.	
Fourth Level	**Understand:** Language patterns and structures can be selected and adapted to suit purpose, audience and context.	
	Know: Straightforward language patterns support organising ideas to suit purpose, audience and context. Linking features structure ideas across longer texts and interactions containing straightforward language.	**Do:** Recognise, select and adapt straightforward patterns and structures across texts or interactions. Adapt familiar straightforward language patterns to suit purpose, audience and context. Link straightforward ideas across longer texts and interactions using a range of structures.

Strand	**Pronunciation and Writing Systems** This strand develops learners' understanding of how pronunciation and writing systems represent language. It demonstrates how sounds, intonation, stress, orthography and other language-specific features contribute to meaning and clear communication.	
Fourth Level	**Understand:** People use knowledge about pronunciation and writing systems to support the development of accuracy and control of language across familiar and unfamiliar contexts.	
	Know: Pronunciation and writing systems are structured and systematic. Accuracy and consistency in applying rules of pronunciation and writing systems support fluency and control.	**Do:** Use pronunciation and writing systems with increasing accuracy and consistency when using straightforward language. Use pronunciation and writing systems to understand, adapt and review straightforward language in familiar and some unfamiliar contexts.
	Notes Fluency describes the ability to communicate with ease and confidence in the target language. Fluency does not require complete accuracy and is not dependent on extensive vocabulary. Control is the ability to manage and maintain communication in the target language by applying known vocabulary, grammar and structures.	

<table>
<tr><td>Strand</td><td colspan="3">Language Learning Strategies

This strand develops learners' understanding of the strategies, tools and approaches that support successful language learning. It emphasises how strategic thinking, reflection and the purposeful use of resources support independence, problem-solving and the transfer of learning across languages.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Selecting, adapting and combining tools and strategies supports increasingly independent language use.</td><td>Understand: People use knowledge of patterns and groups of words to work out the meaning of unfamiliar language.</td></tr>
<tr><td>Know:
Tools such as dictionaries, grammar references or digital tools support independence.

Strategies, such as skimming and scanning, help us to work around gaps in knowledge.

Different strategies and tools can be combined and applied to communicate and understand language.</td><td>Do:
Use dictionaries, grammar references or digital tools to check meaning or form.

Use a range of strategies, such as skimming and scanning, to understand texts containing unfamiliar language.

Independently select and adapt strategies and tools to support communication.</td><td>Know:
Word families and word patterns help us to understand unfamiliar language.

Inference skills help us to understand language in unfamiliar contexts.</td><td>Do:
Identify word families and patterns across words to understand unfamiliar language.

Use context and known patterns to infer meaning from texts containing unfamiliar language.</td></tr>
<tr><td colspan="2">Notes
Grammar references are tools or resources which support learners to understand, apply and check grammar rules, such as grammar guides, notes or glossaries.

Skimming is engaging with a text quickly to extract the main idea or purpose, without focussing on individual words.

Scanning is engaging with a text quickly to find specific information.</td><td>Notes
Word families are groups of words that are related by a shared meaning, pattern or root. Word families can occur within a language, or across multiple languages.

Word patterns refer to elements of words which change meaning or grammatical function. Features of words, such as prefixes, suffixes and word endings, often recur across languages and help people work out the meaning of unfamiliar or new words.</td></tr>
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Literacy and English Know-Do-Understand Strands

<table>
<tr><th>Strand</th><th colspan="2">Communicating and Interacting</th></tr>
<tr><td rowspan="2">Fourth Level</td><td colspan="2">Understand: Adapting style and content in interactions deepens understanding, advocacy and self-expression.</td></tr>
<tr><td>Know:
Ways in which aspects of communication can be used to support, challenge and/or persuade others, such as:
-tone
-techniques, for example use of visual, written, digital resources
-rhetorical devices, for example, rule of three, inversion, rhetorical questions
-evidence and/or reasoning and register/style.

The effect of using different question types, including open, closed, probing and leading.

Ways to deepen and broaden a discussion, such as:
-questioning
-refuting
-agreeing and/or reflecting on others’ contributions
-building on ideas.

Ways to manage disagreement and reach compromise, such as:
-active listening
-turn taking
-identifying common ground
-collaborative problem solving.

Positive group dynamics are supported by a range of approaches to encourage trust, respect and inclusion.

The impact of internal bias on interactions, such as how personal beliefs, assumptions and values can influence decision making and ways in which people respond to others.</td><td>Do:
Experiment with and use aspects of communication to support, challenge and/or persuade others.

Use a range of question types for different purposes.

Contribute to the positive dynamics of group discussion and adapt communication style according to context and the needs of others. Examples may include:
-thoughtful and relevant questioning
-encouraging or challenging opinions or ideas, with reference to supporting detail or reasoning
-posing and responding to questions chosen to encourage a particular response
-responding to others’ challenges in a structured way supported by evidence
-responding sensitively to others’ comments
-helping to compromise or resolve disagreements.

Acknowledge and reflect on occasions when internal bias has shaped the style or content of communication.</td></tr>
<tr><td></td><td colspan="2">Notes
The variety of languages which young people bring to the setting can be used as a resource to enrich development of communicating and interacting. In all settings, young people and adults will speak a range of home languages, including Scots. Decisions around dialect diversity should be made at a local level, ensuring the educational benefits for young people are fully understood and embraced.

Practitioners should support all young people to develop knowledge and skills by enabling them to interact with others in ways that are best aligned to their individual strengths and needs. This can include the use of assistive technologies.

See glossary for definitions of the following terms: group dynamics, internal bias, tone.</td></tr>
</table>

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<table>
<tr><th>Strand</th><th colspan="4">Story and Identity</th></tr>
<tr><td rowspan="2">Fourth Level</td><td colspan="2">Understand: Stories, real and imagined, can construct representations of identities, voices, experiences and perspectives in ways that may foreground or marginalise people, communities and cultures.</td><td colspan="2">Understand: Selecting and creating texts for personal purpose and enjoyment empowers and enriches understanding of ourselves, others and the wider world.</td></tr>
<tr>
<td>Know:
The ways in which people, communities and cultures are represented in texts can be influenced by the interests and intentions of their creators.

Identity, voices and experiences are constructed and conveyed through the use of text features such as setting, language and characterisation.

Some voices can appear to be foregrounded in texts, while others are found to be missing and this can reflect the wider context in which the text was created and/or the perspective, stance or intention of the author.

The foregrounding or exclusion of voices has an impact on how individuals, communities and societies are perceived.</td>
<td>Do:
Engaging with texts (reading, listening, watching)
Analyse and evaluate the impact of foregrounding and excluding voices in stories.

Analyse and evaluate the extent to which the foregrounding and exclusion of voices in stories reflects the author’s stance or intention.

Analyse and evaluate text features, including genre conventions and how they are used to construct identities and voices through their representation of experiences, communities and cultures e.g.:
-narrative point of view
-style
-mood
-word choice, imagery, sentence structure.

Compare and contrast stories and narratives that reflect different perspectives, voices, communities.

Creating texts (writing, speaking, creating)
Create stories that include a range of perspectives, identities and voices.

Explore own experiences, identity and/or perspectives, by creating texts such as:
-personal reflective
-persuasive
-poems, stories, plays
-speeches
-film shorts, animations, vlogs.

Create texts that take account of their impact on others.

When creating texts, make deliberate choices that support the presentation of a particular point of view through, for example, content, structure, style, language.</td>
<td>Know
Books, stories and other texts, aligned with evolving personal interests and aspirations, chosen by the learner for purpose and enjoyment.</td>
<td>Do:
Engaging with texts (reading, listening, watching)
Use strategies to select and engage with stories and other texts aligned with personal preferences and interests.

Share and discuss stories and other texts which are personally enjoyable and meaningful.

Creating texts (writing, speaking, creating)
Create stories and other texts alone and with others in ways which are personally enjoyable and meaningful.</td>
</tr>
<tr><td></td><td colspan="4">In planning learning and teaching, Story and Identity should be used alongside Tools for Reading Comprehension and Tools for Writing.</td></tr>
</table>

	Notes Texts selected for the curriculum should reflect diversity including ethnicity; cultural and social backgrounds; positive reflections of disability; gender and family structure. They can also be presented in a variety of languages, including Scots. All learners should have the opportunity to see themselves and their own experiences reflected in texts and to learn about the experiences of a variety of identities, communities and cultures, building empathy and understanding. Learning and teaching can be planned to challenge, rather than reinforce biases. Identities, voices and perspectives can be discerned in texts as representing the experiences or views of different kinds of people. For example, they can be traced in the words or behaviour of a character, or they may be implicit in selection of detail or in the language of the creator of the text. Exploring these concepts can allow learners to notice where some voices are foregrounded. This can also lead to exploration of which voices might be missing from texts. In turn, learners can play and experiment with voice in the texts that they create for themselves, for example, choosing to adopt a certain voice in order to entertain or challenge a particular audience. The curriculum can support learners to develop positive identities as readers and writers. Reading and writing personally selected texts is important for reading and writing enjoyment, learning and wellbeing. Enjoyment of texts plays a role in developing skills and knowledge for reading and writing, at the same time as being a valuable end in itself. Practitioners should support all young people to both engage with and create text forms that are best aligned to their individual strengths, needs and interests. This can include the use of assistive technologies.

Strand	How Texts Work	
Fourth Level	**Understand:** People choose how to engage audiences by using text features and genre conventions to convey ideas and themes and to represent different voices and perspectives.	
	Know: Texts in different forms created for a range of purposes and audiences, which can include imaginative/creative texts (novels, poems, plays), informative texts (news reports, manuals, guides, keynote speeches, podcasts), argumentative/persuasive texts (opinion pieces, campaign materials (environmental or community), advertisements and trailers. A range of texts which fulfil purposes, such as discussing ideas, sharing opinions, taking a perspective (online blogs, journalistic articles, informative websites), texts in all forms created for a range of purposes and audiences. Structural features of written, spoken and other texts, such as introductions, conclusions, topic sentences and linkage. The main ideas and/or themes as they are explored in texts. Common genres and their associated genre conventions, such as comedy, historical fiction, documentary or horror. In all forms of texts, language, structure and other features vary depending on the intended audience. Structural features of written, spoken and other texts, such as introductions, conclusions, topic sentences, linkage. Examples of text features used across forms to convey ideas and themes such as: -word choice -sentence structure e.g. lists, non-sentences, inversions -imagery e.g. simile, metaphor, personification -sound techniques e.g. alliteration, onomatopoeia, rhythm -use of techniques to create tone and mood -narrative techniques e.g. characterisation, setting, dialogue, point of view, build-up of tension/suspense, symbolism, motif -persuasive techniques e.g. emotive language, use of direct address, facts and evidence (including data) -persuasive techniques, such as emotive language, use of direct address, facts and evidence (including data)	**Do:** **Engaging with texts (reading, listening, watching)** Identify purpose and audience for texts. Identify, analyse and evaluate text features, including genre conventions and how they are used to convey ideas and themes. Evaluate how effectively the main ideas and/or themes in texts are conveyed, supporting personal responses with evidence from the text. Compare and contrast texts with similar themes. **Creating texts (writing, speaking, creating)** Create written, spoken and other texts. Create texts for different purposes and audiences such as: -imaginative (e.g. narrative fiction, personal reflective, poetry and drama in a range of genres and/or exploring themes and ideas) -informative (e.g. reports and syntheses such as investigations in social studies or sciences) -persuasive/argumentative (e.g. articles, speeches, reviews). Vary language, structure and other features depending on the intended audience. Play and experiment with narrative techniques, genre conventions and style to contribute to overall impact of texts in written, spoken and other forms.

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	-a range of other language techniques used in written, spoken and other types of texts. In all forms of texts, language, structure and other features vary depending on the intended audience.	
	In planning learning and teaching, How Texts Work should be used alongside Tools for Reading Comprehension and Tools for Writing.	
	Notes As young people move from the earlier to the later stages of the level the curriculum should offer a sequence of fiction and nonfiction texts that ensures progression through increasing breadth and challenge. Texts selected for the curriculum should reflect diversity including ethnicity; cultural and social backgrounds; positive reflections of disability; gender and family structure. They can also be presented in a variety of languages, including Scots. All learners should have the opportunity to see themselves and their own experiences reflected in texts and to learn about the experiences of a variety of identities, communities and cultures, building empathy and understanding. Texts presented in written or print form are central to developing understanding, knowledge and skills. In addition, other forms, including those central to young people's everyday lives, such as visual and digital texts, can be used to support development of conceptual understanding. Practitioners should support all young people to both engage with and create text forms that are best aligned to their individual strengths, needs and interests. This can include the use of assistive technologies. Creating written and spoken texts, such as solo talks, for real-life audiences can be engaging and motivating for young people. Audiences can include organisations in the local community, visitors to the setting/school or younger children. See glossary for definitions of the following terms: **alliteration, characterisation, emotive language, metaphor, onomatopoeia, plot, register, setting, simile, tone and word choice.**	

Strand	Information Literacy					
	Understand: The cyclical nature of research involves applying strategies to find and revise information from a widening range of sources.		**Understand:** Critically evaluating the authority, accuracy and relevance of information determines its credibility.		**Understand:** The creation of evidence-based texts is enabled by synthesising information from a variety of sources.	
	Know:	**Do:**	**Know:**	**Do:**	**Know:**	**Do:**
Fourth Level	The research process is iterative, with the final result strengthened by adapting inquiry questions as new evidence is gathered. Effective research is objective and actively counters bias by considering different voices, viewpoints and perspectives. Online searches can be refined through the use of advanced search techniques to produce more relevant and targeted results. Search engines, information systems and algorithms prioritise and organise information in different ways, for example, sponsored results, AI responses, paid content.	**Engaging with texts (reading, listening, watching)** Consider how the emergence of new evidence affects the initial research inquiry and adapt or narrow the focus as necessary. Select and use evidence to support conclusions, making sure they reflect different viewpoints and perspectives. Use advanced search strategies to narrow online searches and refine results, such as: Use site: ; Use filetype: pdf; search engine filters such as date, country. Conduct online searches to identify the most relevant information by looking beyond what appears within 'top results'.	Evaluation frameworks such as 'RADAR' and 'The CRAAP Test' gauge the credibility of information by assessing for relevance, purpose, accuracy etc. The authority of an author or text creator affects the credibility of a source. Ways in which factual information can be manipulated through the selective use of evidence, the omission of information or perspectives, the misleading use of statistics and the deliberate use of information out of context (misinformation and disinformation).	**Engaging with texts (reading, listening, watching)** Analyse the credibility, authority, purpose and evidence presented in sources and be aware of ways to spot inaccurate claims. Apply strategies to evaluate information and determine the extent of own agreement with the evidence, summaries and conclusions drawn. Fact check information by tracing it to its original source and assessing the quality of the evidence provided, for example, using references and links to track back information.	The synthesis of information supports the development of understanding, insights, opinions and conclusions. Conclusions should be determined by a strong evidence base from a range of sources. Choices around text structure and presentation affect audience engagement. Decisions about what information or perspectives to include, omit or emphasise can influence an audience's understanding. Ways to cite sources in order to give created texts credibility. The use of digital tools such as generative AI raises ethical questions about authorship, ownership, originality, reliability and fair use.	**Creating texts (writing, speaking, creating)** Synthesise information from a range of sources and perspectives to develop own understanding, insights, opinions and conclusions. Develop and justify arguments and interpretations using the evidence selected. Communicate information clearly and concisely in a range of appropriate formats to engage an audience, such as written reports, individual and group presentations, infographics, podcasts. Communicate information in a way that fairly represents different perspectives. Reference sources with a clear and consistent referencing style, such

						as a full bibliography where appropriate. Make informed decisions about when the use of generative AI is appropriate and ethical and report all uses transparently.
	In planning learning and teaching, Information Literacy should be used alongside Tools for Reading Comprehension and Tools for Writing.					
	Notes Young people progressively evaluate the relevance, reliability and credibility of information for a range of purposes, including creating new texts. Information sources include those central to young people's everyday lives, such as visual and digital texts. These can be used in addition to written sources such as books, newspapers and magazines to support the understanding of information literacy. See glossary for definitions of the following terms: **disinformation, evaluation frameworks, misinformation.**					

Strand	Tools for Reading Comprehension			
Fourth Level	**Understand:** Background knowledge, disciplinary knowledge and vocabulary support interpretation, inference and comprehension of written texts.		**Understand:** Skilled readers evaluate and adapt as they engage with written text, automatically selecting appropriate repair strategies when meaning breaks down.	
	Know: A range of existing and new knowledge across topics and curriculum areas. Specialist disciplinary vocabulary. Prefixes and suffixes. Word origins and roots support understanding of vocabulary used across the disciplines.	**Do:** Draw upon own existing and new disciplinary knowledge to support interpretation, inference and comprehension. Broaden and deepen vocabulary through interactions, listening, watching and reading texts. Use word roots, prefixes and suffixes and their meanings in words (etymology/morphology) to support reading comprehension.	**Know:** Strategies which support monitoring and repair of understanding of written texts, such as: -activating background/topic/curricular knowledge -making connections to own experiences -making connections between texts -predicting -generating questions -visualising -summarising.	**Do:** Make personal connections to text content. Generate own questions before, during and after reading to deepen understanding. Make predictions based on patterns and themes and seek textual evidence to challenge or justify. Monitor understanding throughout reading. Recognise when meaning breaks down and select from appropriate strategies to repair understanding. Summarise main ideas, distinguishing essential from less relevant information. Make connections across texts, disciplines and experiences. Synthesise information from different sections and sources. Identify overarching ideas and messages.
	How Texts Work, Story and Identity and Information Literacy provide the contexts in which young people should develop their Tools for Reading Comprehension. All learning contexts, curriculum areas and subject disciplines are also important contexts in which young people develop Tools for Reading Comprehension.			
	Notes Background knowledge, built across curriculum areas, disciplines and personal experience improves vocabulary and makes an important contribution to young people's reading comprehension. See glossary for definitions of the following terms**: etymology, morphology, prefix, suffix.**			

<table>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: The rules and conventions of grammar and punctuation, both when observed and when manipulated can affect meaning and create impact in written texts.</td><td colspan="2">Understand: Reading with accuracy and automaticity bridges word recognition and reading comprehension of written texts from across disciplinary areas, contributing to the reader’s overall understanding.</td></tr>
<tr><td>Know:
Accurate use of the following punctuation:
-paragraphs
-apostrophes as contractions
-apostrophes for possession
-commas (listing, parenthesis, separation of main and subordinate clause)
-ellipses
-colons or semicolons.

Accurate punctuation of parenthesis and direct speech.

A range of sentence types, such as simple, complex, non-sentences, lists and inversions.

A range of sentence openings.

Past, present and future tenses.

First, second and third-person point of view.</td><td>Do:
Recognise and use punctuation such as commas, ellipses, parentheses, speech marks, colons and semicolons to read with accuracy, automaticity and comprehension (see also reading fluency).

Recognise and comment on the effect of different sentence structures, such as sequences of short simple sentences to build tension, or use of lists to emphasise volume.

Recognise and comment on the effect of using past, present and future tenses.

Recognise and comment on the effect of first, second and third person point of view.

Recognise and comment on the effect of writers’ manipulation of the rules of grammar and punctuation, such as beginning a sentence with a conjunction; non-sentences without verbs; or non-use of speech marks for dialogue.</td><td>Know:
Written texts from across disciplinary areas.</td><td>Do:
Read unfamiliar words with accuracy and automaticity.

Read texts independently and with appropriate pace to develop understanding.

Show awareness of tone, volume or speed when reading aloud independently.

Notice and take account of punctuation including commas, ellipses, parentheses, speech marks, colons and semicolons, whilst reading aloud.</td></tr>
<tr><td colspan="4">How Texts Work, Story and Identity and Information Literacy provide the contexts in which young people should develop their Tools for Reading Comprehension.

All learning contexts, curriculum areas and subject disciplines are also important contexts in which young people develop Tools for Reading Comprehension.</td></tr>
<tr><td colspan="4">Notes
Between Third and Fourth Level, the sequence of texts offered should reflect increased complexity in vocabulary, syntax and grammatical structures.</td></tr>
</table>

<table>
<tr><th>Strand</th><th colspan="2">Tools for Writing</th></tr>
<tr><td rowspan="2">Fourth Level</td><td colspan="2">Understand: Writers use the processes of generating ideas, planning, drafting, editing and revising to express their creativity, increasing their impact upon their intended audience.</td></tr>
<tr><td>Know:
Model texts in different forms created for a range of purposes and audiences which could include:
-imaginative and creative texts e.g. short stories, poems, scripts
-informative texts e.g. news reports, guides
-argumentative/persuasive texts such as opinion pieces, campaign materials (e.g. environmental, community), advertisements.

A range of texts which fulfil purposes such as discussing ideas, sharing opinions, taking a perspective (online blogs, journalistic articles, informative websites).</td><td>Do:
Observe examples of writing skills and techniques in model texts and experiment with these in own writing.

Generate ideas for own written texts in response to stimuli.

Plan writing, making use of preferred planning approaches.

Draft own written texts, varying language, structure, genre conventions, style (language techniques).

Select written texts to edit, revise and publish/share.

Edit texts to improve content/ideas and structure, grammar, punctuation and spelling.

Publish/share selected written texts with real-life audiences.</td></tr>
</table>

<table>
<tr><td></td><td colspan="4">How Texts Work, Story and Identity and Information Literacy provide the contexts in which young people should develop Tools for Writing.

All learning contexts, curriculum areas and subject disciplines are also important contexts in which young people develop Tools for Writing.</td></tr>
<tr><td></td><td colspan="4">Notes</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Understand: Writers both observe and manipulate the rules of grammar and punctuation, creating impact in written texts and engaging a variety of audiences in different ways.</td><td colspan="2">Understand: Knowledge of letter patterns and word roots support spelling and written communication across disciplines.</td></tr>
<tr><td>Know:
Accurate use of the following punctuation:
-paragraphs
-apostrophes as contractions
-apostrophes for possession
-commas (listing, parenthesis, separation of main and sub-ordinate clause)
-ellipses
-colons
-semicolons.

Accurate punctuation of parenthesis and direct speech.

A range of sentence types and structures, such as simple, complex, lists, non-sentences, inversions.

A range of sentence openings.

Past, present and future tenses.

First, second and third-person point of view.</td><td>Do:
Use a variety of sentence types and lengths to achieve particular effects.

Select appropriate tense, according to the purpose of the written text.

Select appropriate person, according to the purpose of the written text.

Manipulate grammar, sentence structure and punctuation to achieve particular effects.</td><td>Know
Specialist disciplinary vocabulary.

Words with multiple meanings or uses across the curriculum, such as ‘solution’ is used differently in Mathematics, Art and Design and Sciences.

A prefix is a part of a word which is added at the start to change its meaning, such as un-happy = unhappy.

A suffix is a part of a word which is added at the end to change its meaning, such as help - ful = helpful.

Word origins and roots support understanding of vocabulary used across the curriculum.

Glossaries and dictionaries provide concise definitions of specialised terms.

Thesauruses outline words that have the same/similar meanings.

Word roots and their families, such as sign/signal/signature, heal/health.

Prefixes and suffixes which require changes to the root word, such as explain/explanation, separate/separation, calf/calves.</td><td>Do:
Use spelling knowledge to spell new words from across disciplinary areas.

Use knowledge of word origins and roots to support spelling of disciplinary vocabulary.

Use less common prefixes and suffixes, including those that require changes to the root words.

Apply spelling knowledge to a variety of word types, such as letter/sound (grapheme/phoneme) relationships, morphemes, spelling rules/patterns.</td></tr>
<tr><td colspan="4">How Texts Work, Story and Identity and Information Literacy provide the contexts in which young people should develop Tools for Writing.

All learning contexts, curriculum areas and subject disciplines are also important contexts in which young people develop Tools for Writing.</td></tr>
<tr><td colspan="4">Notes
See glossary for definitions of the following terms: apostrophe, colon, comma, direct speech, ellipses, etymology, first person, grapheme, inversion, non-sentence, parenthesis, phoneme, prefix, second person, semicolon, suffix, third person, verb tenses.</td></tr>
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Literacy and Gàidhlig Know-Do-Understand Strands

<table>
<tr><th>Strand</th><th colspan="6">Feartan na Gàidhlig/Features of the Gaelic Language</th></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand:
A broad and adaptable vocabulary enables precise communication and expression across diverse contexts.</td><td colspan="2">Understand:
Dialectal variation adds to the richness of the language, with unique features connected to specific regions.</td><td colspan="2">Understand:
Grammatical structures support accuracy, clarity and meaning of communication.</td><td colspan="2">Understand:
Idiomatic language allows for rich and authentic communication and expression.</td></tr>
<tr><td>Know:
A wide vocabulary across familiar, unfamiliar and specialist contexts.</td><td>Do:
Identify and understand vocabulary across varied contexts.

Apply and adapt vocabulary accurately across varied contexts.

Use appropriate sources and resources to develop and expand vocabulary.</td><td>Know:
Dialectal variation in:

Colloquial phrases, for example Dè Do: chor?/Dè tha Do:l?/Dè man a tha thu? Sìon/càil/dad/rud.

Dialectal variation of verbal noun forms, for example cantainn/cantail, ag ràdh/ag ràdhainn.

Specific examples, connected to local dialect. *</td><td>Do:
Understand dialectal variation of words and phrases.

Use local dialectal variation of words and phrases. *</td><td>Know:
Grammar rules related to:

Perfect verbal forms.

Passive forms.

Relative clauses.

Conditional clauses.

Possessive/genitive forms.</td><td>Do:
Explain, analyse and apply grammatical forms.

Use knowledge of grammar to correct errors accurately.</td><td>Know:
A wide range of idiom and structures:

Proverbs, for example Nuair a thig an latha, thig comhairle…

Fronting with ’s e/an e and ’s ann/an ann for example ’S ann rithese a bha mi a’ bruidhinn,
An e ball-lìon a bha thu a’ cluich?</td><td>Do:
Recognise and analyse idiomatic expressions.

Use idiomatic expressions spontaneously.

Use natural Gaelic language structures across varied contexts.</td></tr>
<tr><td colspan="2">Includes, but not limited to
Adult and peer modelling of high-quality Gaelic.
Contexts such as literature, media, culture and society (not exhaustive).
Specialist contexts, for example areas of research, locally relevant or personal interest topics.

Notes
NEW Stòrlann Gaelic Language Framework.
Advice on Gaelic Education – section ten.</td><td colspan="2">Includes, but not limited to
Exposure to a range of dialects to ensure comprehension of dialectal variation.
*Dependent on context, highlighting and applying locally relevant dialect may be appropriate.</td><td colspan="2">Includes, but not limited to
Revisiting grammar points covered previously to support recall and consolidation.
Sensitive error handling and use of corrective feedback.

Notes
New Stòrlann Gaelic Grammar Framework.
Advice on Gaelic Education – section ten.</td><td colspan="2">Includes, but not limited to
Natural language structures might include:
Use of passive voice.
Use of copula in plural form for classification, identity and emphasis, for example 's iongantach… b' iad….
Similes and proverbs.

Notes
Stòrlann Gaelic Language Framework.
Advice on Gaelic Education – section ten.</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="4">Conaltradh agus Leasachadh Cànain/Communication and Language Development</td></tr>
<tr><td rowspan="5">Fourth Level</td><td colspan="2">Understand:
Interpreting social cues enhances spoken communication and interaction.</td><td colspan="2">Understanding:
Listening to and understanding spoken Gaelic requires attention to language, context and listening strategies.</td></tr>
<tr><td>Know:
A wide range of explicit and implicit social cues and how they can vary by context, audience and intent.</td><td>Do:
Analyse and explain how subtle and complex social cues shape meaning and interaction.

Evaluate the impact of social cues on communication in different situations.</td><td>Know:
Strategies and resources used to interpret spoken Gaelic.</td><td>Do:
Use contextual information and resources to interpret meaning in spoken Gaelic.

Analyse and infer meaning of vocabulary, idiom and grammatical structures.</td></tr>
<tr><td colspan="2">Includes, but not limited to
Social cues - facial expression, body language, tone, gesture, visuals/signs/symbols (including implicit and explicit cues).
Approaches - group discussion and collaborative problem-solving, drama, debate and role-play to explore complex interactions.
Analysis of real-life and simulated scenarios.

Notes
Use of Child Support Plans if required.</td><td colspan="2">Includes, but not limited to
A wide variety of Gaelic texts aligned with strengths and needs.
Strategies - inference-making and using contextual clues.
Resources including dictionaries, wordlists, glossaries and transcripts.
Identifying contextualised grammar features and linking these to rules and principles, for example 'Chuireadh an leabhar air bhog...' - highlighting passive form.

Notes
See definition of a text.</td></tr>
<tr><td colspan="2">Understand:
Critical listening involves analysing how language and delivery influence meaning and reliability.</td><td colspan="2">Understand:
The effectiveness of spoken Gaelic is founded upon accurate pronunciation, grammar and vocabulary.</td></tr>
<tr><td>Know:
How language and delivery influence meaning, impact and reliability in spoken texts.</td><td>Do:
Interpret and evaluate ideas, messages and supporting detail.

Analyse how language, structure and delivery influence meaning and audience response.

Evaluate spoken texts, information, assumptions and unsupported claims.</td><td>Know:
Language features and strategies that support clarity, accuracy and refinement in spoken Gaelic.</td><td>Do:
Select and use vocabulary, idiom and grammatical structures to communicate ideas clearly.

Adjust tone, pace and non-verbal cues to support meaning and engagement.

Adapt spoken language to emphasise meaning and effect.

Use a range of strategies to repair and clarify communication.</td></tr>
<tr><td colspan="2">Includes, but not limited to
Language - idiom, rhetorical features, emotive and figurative language.
Structure – opening, body and conclusion, signposting, chunking and repetition.
Delivery - tone, speed, emphasis and register, emotional and logical appeal, rhetorical questions, use of evidence or anecdotes.
Reliability – is information consistent, accurate or supported by evidence?</td><td colspan="2">Includes, but not limited to
Language features - use of specialist vocabulary and idiom, accuracy of language, register, tone, pace, stress and pronunciation.
Non-verbal cues - gestures, facial expression and body language.
Strategies to repair breakdown in communication - asking for clarification, rephrasing or seeking further detail and support peer corrective feedback.

Notes
New Stòrlann Gaelic Language Framework.
New Stòrlann Gaelic Grammar Framework</td></tr>
<tr><td>Fourth Level</td><td colspan="2">Understand:
Effective spoken communication requires deliberate adaptation of language, structure and delivery to suit audience and purpose.</td><td colspan="2">Understand:
Engaging with a range of Gaelic texts challenges and shapes thinking through exposure to diverse ideas and perspectives.</td></tr>
</table>

<table>
<tr><td></td><td>Know:
Conventions and structures used in spoken communication and how they vary according to purpose and audience.</td><td>Do:
Use prepared and spontaneous Gaelic for a range of purposes and contexts.

Apply conventions of form, structure and style.

Organise and synthesise ideas using linked, coherent explanation and evaluation.

Manage interactions by clarifying, extending and linking ideas.

Adapt interactional strategies to support collaboration and engagement.

Adapt language and delivery to suit audience and purpose.</td><td>Know:
Types of Gaelic texts that present diverse ideas, perspectives and viewpoints.</td><td>Do:
Select and engage with Gaelic texts for different purposes, including for personal interest.

Evaluate the relevance and impact of texts.</td></tr>
<tr><td></td><td colspan="2">Includes, but not limited to
Genres and conventions – both formal and informal in nature, extended activities, including monologues, paired/group discussions, presentations, debates and drama.
A wider range of conversational markers and interjections, for example ‘Aig a’ cheart àm’, ‘Feumaidh mi aideachadh’, ‘Air an dara làimh’.
Interactional strategies - including others, body language, positioning in group settings.
Negotiating meaning - responding to differing viewpoints and using appropriate interactional cues.
Supporting engagement - engaging with and encouraging others, synthesising ideas.</td><td colspan="2">Includes, but not limited to
Formal and informal pieces, transcripts from, for example news items, podcasts and literary texts.
Relevance and impact – such as cultural, social and moral dimensions.

Notes
Informal pieces might include appropriate texts from wider media sources.
Evaluating relevance and impact of texts can take place in a collaborative and/or creative way, such as through group discussion, or book club type activities.
See definition of a text.</td></tr>
<tr><td></td><td colspan="2">Understand:
Knowledge of language patterns supports accurate reading of unfamiliar and specialist texts.</td><td colspan="2">Understand:
Critical reading of texts is deepened through scrutinising language, structure, viewpoint and context.</td></tr>
<tr><td></td><td>Know:
Features of orthography and language and how they support decoding and interpretation.</td><td>Do:
Apply knowledge of language patterns to decode and interpret unfamiliar words.

Deduce meaning of unfamiliar language using context and resources.</td><td>Know:
A range of reading strategies and how they support understanding, analysis and evaluation of texts.</td><td>Do:
Use reading strategies to analyse and evaluate texts.

Analyse how language, vocabulary and structure contribute to meaning and effect.

Evaluate ideas, viewpoints and messages within texts.</td></tr>
<tr><td></td><td colspan="2">Includes, but not limited to
Phonological patterns – broad and slender vowels and consonants, lenition, consonant clusters and vowel length.
Morphological patterns – compound and derived forms (‘ro-innleachd’, ‘ath-chuairteachadh’), abstract nouns (tuigsinn ⇒tuigse).
Etymological patterns – loanwords/adapted words and word families (fàs, fàsach, a’ fàs).

Notes
Reading aloud may support decoding of words, as appropriate to learner needs.</td><td colspan="2">Includes, but not limited to
A wide variety of Gaelic texts aligned with strengths and needs.
Pre-reading strategies - prior-knowledge, previewing text and identifying key vocabulary.
During reading - skimming, scanning, context clues and rereading.
Post-reading - summarising, responding to questions and small group/class discussion.
Analytical strategies - author viewpoint and bias, use of language and techniques.
Evaluation - theme, impact, message and comparison.

Notes
See definition of a text.</td></tr>
<tr><td>Fourth Level</td><td colspan="2">Understand:
Written Gaelic uses conventions and stylistic choices to achieve purpose and impact.</td><td colspan="2">Understand:
Reviewing and editing improve how effectively ideas and information are communicated in writing.</td></tr>
</table>

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	Know: How genres, conventions and purposes of written texts influence style and language choices.	**Do:** Create texts for a range of purposes using appropriate conventions and structures. Organise and synthesise ideas logically using a coherent structure. Deepen ideas using description, explanation or exemplification. Adapt language and stylistic features to suit genre, purpose and audience.	**Know:** Processes that ensure clarity and coherence in written Gaelic.	**Do:** Use planning strategies to structure and develop writing. Select and use vocabulary, idiom and grammatical structures to communicate ideas clearly. Apply spelling patterns and grammatical structures accurately to support clarity. Use reference tools and feedback to review and improve writing. Consider feedback and adapt writing to improve clarity and effect on the reader.
	Includes, but not limited to Genres and forms – fiction, nonfiction, poetry, report, short story and articles. Use of language and stylistic features such as simile, metaphor, punctuation, tone, including poetic forms such as rhyme and meter. **Notes** A range of stimuli to support writing, for example adult modelling and written or spoken model texts. See definition of a text. Gaelic Orthographic Conventions provide clarification on spelling.		**Includes, but not limited to** Planning strategies including structural planning, language planning, graphic organisers and model texts. Effective use of reference tools - dictionaries and grammar resources. Feedback strategies/models, such as correction codes/marking schemes, class discussion and feedback. **Notes** New Stòrlann Gaelic Grammar Framework New Stòrlann Gaelic Language Framework	

Strand	**Compàirteachas agus Buintealas/Participation and Connecting with Others**			
Fourth Level	**Understand:** Gaelic identities are diverse and are shaped by cultural, linguistic and social influences across local and global contexts.		**Understand:** Using Gaelic across a wide range of contexts develops confidence and supports meaningful connections.	
	Know: Features of Gaelic identities across local, national and international contexts and how language, culture and community shape identity.	**Do:** Analyse and evaluate themes relating to identity and diversity within Gaelic and other cultural contexts. Compare and explain connections between Gaelic identities and other linguistic or cultural communities. Create texts that explore personal identity and connections to Gaelic and wider cultures.	**Know:** Authentic contexts and opportunities in which Gaelic can be used, including social, cultural, educational and professional settings.	**Do:** Use Gaelic to contribute to projects, performances and collaborative activities. Communicate using Gaelic in a range of settings beyond the main learning environment. Participate in local and national experiences that involve the use of Gaelic.
	Includes, but not limited to Activities such as literature, drama, media, sport or online events. Contexts - cultural, social, educational and digital (both physical and online). Gaelic communities, locally and globally, including digital platforms. Explore education, career, and pathways linked to Gaelic, where available. **Notes** Texts might include spoken or written texts - reflective, creative or personal.		**Includes, but not limited to** Events, visits, debates, podcasts, short films in or beyond immediate learning setting. Contexts and settings – interviews, digital media, community interactions, careers fairs, Comunn na Gàidhlig, Spòrs Gàidhlig, Fèisean nan Gàidheal or An Comann Gàidhealach.	

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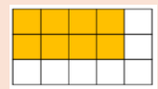
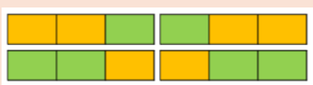
Strand	Dualchas Cultarach agus Coimhearsnachd/Gaelic Cultural Heritage and Community	
Fourth Level	**Understand:** Cultural heritage reflects and strengthens the relationships between communities, language and place.	
	Know: Features of Gaelic cultural heritage and how these reflect relationships across contexts.	**Do:** Investigate and analyse features of Gaelic cultural heritage, including local and wider contexts. Evaluate how heritage connects language, community and place, using relevant examples.
	Includes, but not limited to Features of Gaelic cultural heritage - music, literature, festivals and local/national events. Exploration of heritage through place names, landscapes, stories and landmarks. Local heritage, such as place names, landscapes, stories and landmarks, where appropriate. Alternatively, focus on national culturally significant aspects of Gaelic heritage.	

Strand	Luachadh agus Tagrachd/Appreciation and Advocacy			
Fourth Level	**Understand:** Language rights protect access, representation and equity, supporting the development of Gaelic across society.		**Understand:** The future vitality and visibility of Gaelic depend on active advocacy by individuals and communities.	
	Know: Ways in which Gaelic and other minority languages have been marginalised and how these impact on languages in the present day. Key language rights within national and international policy, and how these support equality, education and cultural representation.	**Do:** Analyse how language rights are applied by communities, organisations and institutions to support Gaelic. Evaluate the effectiveness of national and international policies in supporting and promoting Gaelic. Communicate findings about how language rights are protected and applied in different contexts.	**Know:** Ways in which Gaelic can be promoted and the role of individuals and groups in advocating for Gaelic language and culture.	**Do:** Advocate for language and culture through discussion, presentations and projects. Contribute to and support community or school initiatives that promote Gaelic. Participate in activities that support the status and development of Gaelic.
	Includes, but not limited to Examples of legislation, social attitudes, economic factors, policies and practices related to Gaelic, to provide an important context for framing contemporary developments. UNCRC and Scottish Languages Act, European Charter for Regional or Minority Languages, Local Authority and public body plans and development. Relevant development groups, connections with external speakers/groups. Opportunities to explore Gaelic language growth through Learning for Sustainability.		**Includes, but not limited to** Promotion opportunities - creative projects, community initiatives, local and national events and digital platforms. Careers and Pathways, Social Enterprise Academy and Youth Philanthropists Initiative opportunities, where available. Involvement in creative activities, including drama and other performances.	

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Numeracy and Mathematics Know-Do-Understand Strands

Strand	**Quantity, Numbers and the Algebraic Properties of Number** The focus on quantity is to understand value and size. Determining quantities in the world around us often involves solving problems that draw on a range of mathematical concepts. Numbers help us count, order, compare and express values. Number sense contributes to mathematical fluency, building accuracy, flexibility and efficiency. The algebraic properties of number provide a lens through which learners can generalise how numbers and operations on numbers interact.
	Number systems and structures
Fourth Level	**Understand:** Scientific notation uses powers of ten to represent numbers, enabling very large and very small numbers to be written and compared efficiently.
	Know: Any number can be written in scientific notation, $a \times 10^n$, where $1 \leq \mid a \mid < 10$ and n is an integer. The arithmetic operations on number can be applied to numbers expressed in scientific notation.
	Do: Convert numbers to and from scientific notation. Solve contextualised problems which involve numbers expressed in scientific notation, using a calculator as appropriate.
	Notes Appropriate contexts could be taken from other curriculum areas including microscopic and large-scale measurements from Science and processor speeds, data transfer speeds and memory access times in Technologies. **New key mathematical language (Learners)** scientific notation

	Number relationships and operations
Fourth Level	**Understand:** Equivalence and multiplicative relationships underpin operations with fractions and mixed numbers, supporting the combination, scaling and comparison of quantities.
	Know: Finding a fraction of a fraction is the same as multiplying these fractions together. In grouping problems, the size of each group can be a fraction.
	Do: Solve contextualised problems by adding and subtracting mixed numbers, expressing solutions in their simplest form. Multiply fractions by fractions, including improper fractions, initially using a pictorial approach, for example, $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$  Solve contextualised problems by multiplying fractions, expressing solutions in their simplest form. Solve contextualised problems that involve division by a fraction (whole number answers only), using pictorial approaches, for example, working out how long four tins of cat food would last if a cat ate two thirds of a tin each day. 
	Notes Using a pictorial approach to develop an understanding of multiplication and division of fractions avoids an over reliance on memorised procedures - the area model provides a useful pictorial approach to multiplication of fractions. Make connections to increasing a quantity by a fraction of that quantity and its equivalence to percentage increase - possible contexts could be an overtime rate of time and a half, adding VAT of 20% or one fifth to a price. **New key mathematical language (Learners)** simplest form

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	Proportional reasoning	
Fourth Level	**Understand:** Ratios can be used to describe, partition and scale quantities while maintaining proportional relationships between parts and wholes.	
	Know: Ratios can be used to describe and find proportions of a whole and to compare the balance of constituent parts within different mixtures.	**Do:** Partition quantities into a given ratio and solve associated contextualised problems. For example, 20 litres of purple paint is made by mixing blue and red paints in the ratio of 3:1, this means that there are 4 shares of 5 litres, with 15 litres of blue paint and 5 litres of red paint. 

	Patterns and sequences	
Fourth Level	**Understand:** Sequences that follow additive and multiplicative patterns can model real-life situations to make predictions and solve problems.	
	Know: A geometric sequence is one where the ratio of two consecutive terms is always the same. The next term of a geometric sequence is found by multiplying the previous term by this common ratio. The common difference in an arithmetic sequence appears in its n^{th} term formula. When terms in an arithmetic sequence are plotted against their position in that sequence, a straight line is formed with a gradient equal to the common difference. Arithmetic and geometric sequences can be used as mathematical models to represent and predict change in real-world situations.	**Do:** Identify whether or not a sequence is geometric by looking for a common ratio. Investigate and model contextualised situations using geometric sequences. Interpret the meaning of the common ratio, make predictions and describe any limitations of the models devised. for example, the rice and chessboard legend, compound interest, depreciation and inflation, the r figure for spread of disease. Develop arithmetic sequences that model physical or pictorial patterns, or real-life situations. Determine and interpret its n^{th} term formula, use algebraic or graphical representations to make predictions and communicate conclusions within the context. Select and justify whether an arithmetic or geometric sequence is the most appropriate model for given situations. For example, modelling a saving scheme that increases by £5 each week with an arithmetic sequence and modelling a population that grows by 5% each year with a geometric sequence.
	Notes Make explicit connections to the mathematical modelling process by using multiplicative sequences to represent, predict and interpret patterns of growth and decay in real-world contexts - connections could be made to Science in how immunity and vaccinations reduce the spread of disease. Make connections between the terms in an arithmetic sequence with linear functions in Shape, Space and Measurement. Arithmetic and geometric sequences have a rich and ancient history across the world, such as in the construction of the pyramids in Egypt. **Excludes** Finding the nth term of Geometric sequences and finding the sum of terms in any sequence. **New key mathematical language (Learners)** geometric sequence, consecutive terms, gradient	

	Expressions, equations and relationships
Fourth	**Understand:** The use of brackets enables expressions to be written in equivalent forms according to the distributive law.

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Level

Know:
The distributive law can be applied to find equivalent forms of expressions. This is known as expanding brackets and its inverse operation is known as factorising.

Do:
Find equivalent expressions by expanding brackets using the distributive law and simplifying where appropriate by using manipulatives and algebraic approaches.

Factorise expressions by identifying the highest numerical common factor using manipulatives and algebraic approaches.

Model contextualised situations using expressions with and without brackets, for example, adding two to a number then multiplying by six has the same result as multiplying by six then adding twelve.

Notes
Make connections to multiplication and the distributive law for numerical calculations in 2nd Level Number relationships and operations using manipulatives or pictorial approaches including algebra tiles and the grid method.
Area and perimeter problems provide opportunities for modelling situations using expressions.
Includes but is not limited to
Multiplication across brackets by a positive or negative number only.
New key mathematical language (Learners)
distributive law, expanding brackets, equivalent form, factorising

Fourth Level

Understand: Algebra represents relationships between quantities, allowing patterns to be generalised, situations to be modelled and unknown values to be determined.

Know:
Quadratic equations contain a term with a squared variable.

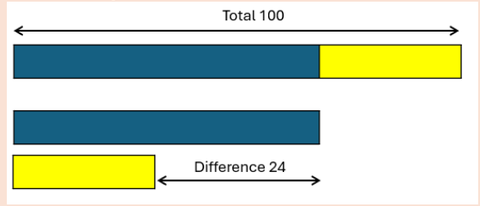
Do:
Solve, by applying inverse operations, linear equations of the form $ax \pm b = cx \pm d$ where a, b, c and d are integers.

Solve linear equations by expanding brackets.

Solve quadratic equations of the form $x^2 = a$ where $a > 0$ and explain why there are two solutions.
For example, if $x^2 = 9$, then $x = \pm 3$ as $3^2 = 9$ and $(-3)^2 = 9$.

Using the same strategies as for solving equations algebraically, change the subject of a formula (single-step or two-step examples only).

Model situations involving two unknown quantities with one solution by identifying relationships, representing them using manipulatives or spatial representations and interpret solutions within the context of the problem. For example, finding the number of blue and yellow counters given that the total number of counters is 100 and there are 24 more blue counters than yellow counters. This could be solved using bar models.



Notes
Algebra, although abstract at this stage of learning, is the language that forms the basis for further mathematical study.
Excludes
Equations with solutions that are not integers - however, it should be made clear that this is for simplicity at this stage and solutions to equations and inequations can be fractions.
Use of an algebraic approach to find the solution to problems with two unknowns and one solution.
New key mathematical language (Learners)
quadratic equation, squared variable, inverse operations, linear equations

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	Finance	
Fourth Level	**Understand:** Financial systems support individuals, communities and governments and involve risks, responsibilities and opportunities.	
	Know: In the UK, tax is a compulsory contribution collected by governments to fund public services. For most employed people in the UK, Income Tax and National Insurance are automatically deducted before they receive their pay. By paying National Insurance contributions, individuals can build up their state pension, which is a benefit they will receive when they reach the state retirement age. A payslip provides a detailed summary of an employee's earnings (gross pay), deductions such as taxes and contributions toward a workplace pension and take home (net) pay. VAT is a tax charged at a percentage on most goods and services sold in the UK. Council Tax in Scotland is set and collected locally and used to fund council services.	**Do:** Describe some of the public services funded by taxes, for example, the NHS, education and transport. Interpret key information presented on payslips in a range of scenarios. Perform checks on related calculations and use the information provided to explain the connections between earnings, deductions and take-home pay. Identify the types of goods and services that are subject to VAT. Perform related calculations using the appropriate rate of VAT. Identify and discuss the local rates for council tax and the services it funds.
	Insurance offers financial protection against the risk of events that would cause loss, damage or expense. The price of insurance policies depends on a wider range of factors. In many cases, insurance is not compulsory.	Compare the benefits and costs of a variety of personal insurance products, for example, home insurance, car insurance, travel insurance, pet insurance. Discuss the roles played by risk and personal circumstances in choosing to purchase an insurance policy and in the pricing of policies.
	Missing or making late payment(s) for borrowed money, products or services can have negative financial and legal repercussions.	Discuss the costs and risks associated with missing or making late repayments, for example, additional penalty fees, account closures, reduced borrowing power, debt collection or creditors taking legal action.
	An investment is money spent on a valuable item, or put into a project, business or account with the aim of making a financial gain. Some investments carry higher risk, increasing the possibility of financial loss.	Investigate and discuss examples of real-life investment opportunities, identifying some of their associated risks and rewards.
	Notes The way tax is used in the UK to fund public services and how taxes vary across the world, could be explored making connections to Equality and Society in Social Studies. Connections could be made to learning about the public sector within Systems in Technologies (Business). Examples of investments could include property, stocks and shares and high interest savings accounts. Examples of risk factors for investments could include fluctuating values in volatile markets and unforeseen events. Make connections between risk and probability in Information, Data and Uncertainty, for example, a consumer may choose to have personal accident insurance if they take part in a contact sport and they are self-employed, they may choose not to have life insurance if they have no dependents. **Excludes** Calculations involving rates of Income Tax and National Insurance are not required, however discussions might include that there are different rates of tax depending on how much is earned. **New key mathematical language (Learners)** Income Tax, VAT, national insurance, council tax, payslip, deductions, pension, protection, late payments, investment, risk	

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<table>
<tr><td>Strand</td><td colspan="2">Shape, Space and Measurement
Ideas of shape and space support the development of visualisation skills, spatial reasoning, understanding the effects of transformations, recognising symmetry, and making sense of mathematical structures. Exploring position and movement provides a foundation for thinking spatially. Sorting, comparing and describing the properties of two-dimensional shapes and three-dimensional objects helps build geometric understanding. Coordinate geometry connects with algebra to provide meaning for critical ideas, such as linear models and proportional reasoning. Trigonometry builds on geometric principles by offering methods for calculating angles and distances.</td></tr>
<tr><td></td><td colspan="2">Position and movement</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Relationships between angles formed by intersecting and parallel lines determines how angle measures are calculated from known values.</td></tr>
<tr><td>Know:
When a straight line (transversal) intersects a pair of parallel straight lines, alternate and corresponding angles are formed. Pairs of alternate angles are equal in size. Pairs of corresponding angles are equal in size.</td><td>Do:
Investigate and describe the relationships between angles made by intersecting and parallel lines.

Calculate the size of angles in diagrams which include intersecting and parallel lines.</td></tr>
<tr><td colspan="2">Notes
Geometric software could be used to explore the relationships between angles formed by intersecting lines, parallel lines and transversals, including links to complementary and supplementary angles.
There are opportunities to make generalisations, develop logical reasoning and skills in justification and proof when calculating the size of related angles.
New key mathematical language (Learners)
intersect, vertically opposite, parallel, alternate/corresponding angles</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Transformations describe mathematically how shapes can be manipulated to change their position or orientation.</td></tr>
<tr><td>Know:
Reflection and translation are types of transformation of shapes.

A translation of a point or shape is a movement or a series of movements in two dimensions.

Points and shapes can be reflected on a Cartesian grid.</td><td>Do:
Visualise then identify the position of points after reflections in the x and y axes and the line $y = x$.

Visualise then draw 2D shapes after reflections in the x and y axes.

Draw shapes after translations described by a horizontal and/or vertical movement on a four-quadrant grid.

Identify and describe translations and reflections of points and shapes on a four-quadrant grid.</td></tr>
<tr><td colspan="2">Notes
Make connections to completing and creating designs with line symmetry in reflection activities.
Excludes
Knowledge of the effect on the coordinates of points when undergoing reflections, but spotting patterns and making generalisations can be encouraged.
The same is true for the effects under translations, but this does serve as a precursor to vectors.
New key mathematical language (Learners)
transformation, translation</td></tr>
<tr><td rowspan="2">Fourth Level</td><td colspan="2">Understand: Linear models represent situations where the rate of change is constant, allowing the relationship between two variables to be described, interpreted and used to make predictions.</td></tr>
<tr><td>Know:
The relationship between the x and y coordinates of every point that lies on a straight line on a Cartesian grid can be described algebraically.

The equation of a vertical line is of the form $x = a$ as all points have a common x coordinate.
The equation of a horizontal line is of the form $y = b$ as all points have a common y coordinate.
Where a line is neither vertical nor horizontal, its equation is of the form $y = mx + c$.

The gradient of a straight line is the ratio of the change in vertical height to the change in horizontal distance and describes the steepness of its slope.</td><td>Do:
State the equation of vertical and horizontal lines plotted on a four-quadrant grid.

Use a given formula to generate points lying on a straight line and plot them to create a graphical representation.

Calculate the gradient of a sloping line plotted on a four-quadrant grid.

Compare how gradients look on paper to how they feel in reality, for example, by running or walking on a treadmill or pathway of a given gradient and comparing it to its drawn equivalent.</td></tr>
</table>

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	Linear equations can be used to model relationships between variables in real-world contexts. Directly proportional relationships are a special type of linear relationship.	Construct linear models from contextualised situations involving two variables, for example, a cooking time of 20 minutes per kilo plus 15 extra minutes, a club membership that involves a joining fee and a monthly cost, an exchange rate from dollars to Euros.
	The gradient and intercept of a linear graph have meanings that depend on the context being modelled.	Interpret the meaning of gradients and intercepts within these contextualised situations. Use linear models to solve problems. Discuss and evaluate the suitability and limitations of linear models for representing real situations. For example, a linear model of a mobile phone tariff which assumes a constant cost for GB of data will break down if there are data caps, bundles, discounts, or unlimited data plans.
	Different representations (tables, graphs, equations and contextual descriptions) can describe the same relationship.	Match given contextual descriptions, tables of values, equations and graphs, justifying the matches made.
	Notes Investigate and identify gradients in real-life contexts within the local environment, including how they are represented and their impact. Contexts could include ramps, paths, roads, treadmills, where gradients might be given as a ratio or a percentage. Make connections between generating points which lie on a straight line and arithmetic sequences from Quantities, Numbers and the Algebraic Properties of Number by linking gradient and common difference. **New key mathematical language (Learners)** equation of a straight line, gradient	

	Properties of shapes and solids	
	Understand: Relationships between the sides and angles of right-angled triangles determine how unknown measurements are calculated.	
	Know:	**Do:**
Fourth Level	The name given to the longest side in a right-angled triangle is the hypotenuse. This side lies opposite the right angle.	Identify the hypotenuse in any right-angled triangle.
	The Theorem of Pythagoras describes the relationship between the areas of the squares on the three sides in any right-angled triangle.	Investigate and describe the relationship between the lengths of the sides in right-angled triangles.
	The Theorem of Pythagoras can be used to calculate the length of any side of a right-angled triangle given the lengths of the other two sides.	Calculate the length of any side of right-angled triangles using the Theorem of Pythagoras, expressing solutions as exact values (using irrational numbers, such as $\sqrt{2}$ where necessary), or as appropriately rounded decimal fractions.
	Trigonometry in right-angled triangles describes the relationship between the ratio of the lengths of its sides and its acute angles.	Identify sides of right-angled triangles, based on a given acute angle, using the terms opposite, adjacent and hypotenuse.
	Three trigonometric ratios (sine, cosine and tangent) can be used to calculate the length of a side or the size of an acute angle in a right-angled triangle.	Calculate the length of any side of right-angled triangles using trigonometry.
	Inverse functions, often written as $f^{-1}(x)$, reverse the effect of the original function, mapping outputs back to their corresponding inputs.	Use inverse trigonometric functions to calculate the size of acute angles in right-angled triangles using trigonometry. Use Pythagoras' Theorem and trigonometry to model, estimate and solve measurement problems in real and geometric contexts.
	Notes Geometric software could be used to investigate the relationship described by the Theorem of Pythagoras. The associated inequations describing the relationship between the sides of acute angled triangles and of obtuse angled triangles could also be discussed. **Excludes** Problems which involve both Pythagoras or Trigonometry and circle geometry.	

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	New key mathematical language (Learners) hypotenuse, Pythagoras, trigonometry, sine, cosine, tangent, inverse functions

Fourth Level	**Understand:** Relationships between angles formed by lines meeting or intersecting circles determine how angle measures are calculated from known values.	
	Know: A tangent is a straight line that meets the circumference of a circle at a single point of contact. It is perpendicular to the radius of the circle at that point of contact. A chord is a line segment that joins any two points on the circumference of a circle. The triangle enclosed by the diameter of a circle and any two other chords is right-angled. The triangle enclosed by two radii and a chord is isosceles.	**Do:** Identify tangents and chords in diagrams which include circles and straight lines. Investigate and describe the nature of the triangle created by a diameter and a third point placed on the circumference of a circle, for example, by using geometric software. Calculate the sizes of angles in diagrams which include circles and straight lines.
	Notes Geometric software could be used to explore the angles formed by lines which are related to circles, including links to complementary and supplementary angles and triangle properties. There are opportunities to make generalisations, develop logical reasoning and skills in justification and proof when calculating the size of these angles. **Excludes** Problems which involve both Pythagoras or Trigonometry *and* circle geometry. **New key mathematical language (Learners)** chord	

	Proportional reasoning

Fourth Level	**Understand:** Proportional relationships, including the dimensions of similar shapes, determine how quantities that scale together are compared, analysed and generalised.	
	Know: Shapes which have been enlarged or reduced in size proportionally are said to be mathematically similar. Angle sizes remain unchanged. Proportional relationships can be expressed algebraically.	**Do:** Calculate linear scale factors using corresponding measurements on pairs of similar shapes. Calculate measurements using these scale factors. Construct, solve and interpret algebraic models representing contextualised proportional relationships.
	Notes Example of contextualised problems could include finding the average speed for a journey of 119 kilometres which takes 3 hours 24 minutes or given that the exchange rate is €1·13 to the pound, calculating the number of pounds you would receive in exchange for €320. **Excludes** The construction of formulae describing unfamiliar proportional relationships and finding constants of variation. **New key mathematical language (Learners)** corresponding	

	Measures
Fourth	**Understand:** Relationships within and between shapes and solids can be used to derive and justify measures of area, surface area and volume.

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Level	Know:	Do:
	The areas of kites, rhombuses and trapeziums can be derived from the areas of triangles.	Calculate the area of kites, rhombuses, parallelograms and trapeziums given their dimensions.
	The surface area of a 3D solid is the sum of the areas of its faces and curved surfaces.	Find the surface area of cuboids, cylinders and triangular prisms by calculating the area of each face or curved surface. Calculate and interpret surface areas in contexts including covering, packaging and manufacture.
	The volume of triangular prisms and cylinders can be calculated by finding the product of the area of their cross-sections and their lengths.	Calculate the volume of triangular prisms and cylinders given their dimensions. Calculate the length of a triangular prism or cylinder, given its volume and the area of its cross-section. Model and solve contextualised problems involving the quantity of liquid, in millilitres and litres, in containers which take the form of cylinders.
	Measurements and calculated values have varying degrees of accuracy.	Solve contextualised, multi-step problems, using a calculator as appropriate, maintaining accuracy until the final solution is found.
	Significant figures are digits in a number that carry meaningful information about its precision and accuracy. Numbers can be rounded to a specified number of significant figures.	Express solutions to contextualised measurement problems to a specified or appropriate number of significant figures.
	Premature rounding impacts on the accuracy of calculations involving area, surface area and volume.	Notice, discuss and explain the errors that could be introduced by premature rounding.
	Notes Stress the effect of premature rounding or truncation on the precision of answers to calculations, for example, when using different approximations of pi. Make connections to Quantity, Numbers and the Algebraic Properties of Number by building formulae for the volumes of triangular prisms and cylinders. **Includes but is not limited to** Calculations involving volume with dimensions given in differing units. **New key mathematical language (Learners)** significant figures, accuracy, error, premature rounding	
Fourth Level	**Understand:** The Earth's rotation determines how time zones standardise time of day across regions of the world.	
	Know: As the Earth rotates on its axis, each part of the world experiences a different stage of the day or night, so the world is split into different time zones. Co-ordinated Universal Time (UTC) is used as the standard time against which all the other time zones in the world are referenced.	**Do:** Model and solve problems involving multiple time zones in the contexts of scheduling, communications and travel.
	Notes Spatial approaches, such as using parallel time lines for each time zone, are appropriate for calculations at this level. There are around 40 unique time zones used across the world. Make connections to the rotation of the earth, the history of travel and navigation and the impact this has had on our modern world. **New key mathematical language (Learners)** time zones, Co-ordinated Universal Time (UTC)	

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<table>
<tr><td>Strand</td><td colspan="2">Information, Data and Uncertainty
Information and data are everywhere. They influence our decisions and predictions, and help us analyse and interpret the world around us. Probability helps us navigate uncertainty and risk. By providing structured methods, mathematics allows us to collect, organise, analyse and represent information accurately and objectively. Statistics help us identify and make sense of patterns and trends, measure variation, and draw reliable conclusions.</td></tr>
<tr><td></td><td colspan="2">Data management</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: The design and wording of survey questions can introduce bias, affecting the reliability and validity of the evidence collected.</td></tr>
<tr><td>Know:
The wording of survey questions can lead to the collection of unreliable or biased information. This may be deliberate but often is not.

Leading questions are those which suggest a particular answer.

Loaded questions are those which are unfair or impossible to answer.

Double-barrelled questions are those which ask two things at the same time.</td><td>Do:
Identify features of given survey questions that could lead to a bias in responses, including leading, loaded and double-barrelled questions.
For example, ‘How much did you enjoy our new easy-to-use checkout page?’ is leading because it pushes responders towards a positive response.
‘When will we stop wasting taxpayer money on unreliable wind and solar energy?’ is loaded because by answering, responders inadvertently agree that taxpayer money is wasted and that renewable energy is unreliable.
‘Do you agree that the government should increase funding for affordable housing and should raise the minimum wage?’ is double-barrelled because does not give the option of agreeing with one policy but not the other.

Make suggestions as to how given survey questions could be made more neutral or accurate in their framing.</td></tr>
<tr><td colspan="2">Notes
Make connections to Evidence and Enquiry within Social Studies and to business contexts, for example, reader polls conducted by news outlets, surveys collecting political views, product satisfaction surveys.
New key mathematical language (Learners)
unreliable, bias, loaded question, double-barrelled question</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Grouping data into intervals organises large data sets but reduces detail.</td></tr>
<tr><td>Know:
Numerical data can be grouped into class intervals and organised in a grouped frequency table.

This enables efficient organisation but comes with a loss of detail.

Histograms are charts which show the distribution of grouped numerical data.</td><td>Do:
Interpret the notation associated with class intervals, for example, $1 \leq x < 2$.

Organise given data sets into grouped frequency tables where class intervals have been provided.

Identify key features of grouped numerical data sets from given histograms.</td></tr>
<tr><td colspan="2">Notes
Select data sets and histograms from meaningful contexts across the curriculum, for example, the age distribution of a population from census data (population pyramid), the resting pulse rates of people of a similar age.
Includes but is not limited to
Only equally sized class intervals for histograms.
New key mathematical language (Learners)
grouped frequency table, histogram, class intervals</td></tr>
</table>

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	Data analysis and interpretation	
Fourth Level	**Understand:** The ways in which data is collected and presented can emphasise or obscure particular conclusions.	
	Know: Data and visualisations can be manipulated or presented out of context to influence opinions. This raises ethical considerations about how data is collected, presented and interpreted. Data representations may be inadvertently misleading or difficult to interpret.	**Do:** Analyse a wide range of given and created data visualisations and explain how design choices influence the message being communicated. Identify and explain features which make visualisations effective, ineffective or misleading.
	Notes Examples of misleading data representations include unrepresentative samples, graphs with truncated or unevenly marked axes, proportions not adding to 100%, misleading or incorrect use of bubbles or other spaces, scale issues on pictographs and bar charts. These can be found in the media, advertising, company reports and news articles. The source of the data represented by any visualisation should always be taken into consideration when assessing its reliability. Headlines may mis-represent the data they are based on, in order to create talking points and controversy. Examples linked to current news stories may promote interesting discussion.	
Fourth Level	**Understand:** The distribution of data sets can be described and compared using measures that capture central tendency, spread and position.	
	Know: The medians of the lower and upper halves of a data set are called the lower and upper quartiles. A five-figure summary shows key characteristics of a data set. It includes the lowest, highest, median, upper and lower quartile data values. A box plot is a spatial representation of the five-figure summary of a data set's distribution. The variability and typical value of two or more data sets can be compared using box plots.	**Do:** Find the upper and lower quartiles of numerical data sets. Produce five figure summaries for numerical data sets. Interpret given box plots by describing the distribution of data sets they represent. Compare two or more numerical data sets using five-figure summaries and box plots by referencing their position and distribution.
	Notes Box plots are sometimes known as box and whisker diagrams. Include vertical and horizontal examples of box plots. Make connections to distributions shown by dot plots when interpreting box plots, this might include matching exercises. Pay particular attention to central tendency and extreme values. Examples of numerical data sets that could be compared include numerical weather data in two or more locations, comparing sales before and after an advertising campaign, comparing census information between countries or different time periods. **New key mathematical language (Learners)** lower and upper quartiles, five-figure summaries, box plot	

	Probability	
Fourth Level	**Understand:** Probabilities derived from data are used in real-life contexts to assess risk and inform decision-making.	
	Know: Probability models, derived from data, are used in real-life contexts and in industry to make and refine predictions, assess risk and make informed choices and decisions. There are common misconceptions about probability that can affect the reliability of decision making.	**Do:** Compare possible outcomes and assess risk in real-life contexts by using probability models, for example, comparing the likelihood of injury in different sports and pastimes, deciding whether to delay a journey based on the likelihood of disruption, identifying risks that might affect a local business. Justify choices or decisions using probability, explaining the reasoning behind them. For example, when planning a project or event, identify and assess risks to inform contingency planning. Identify situations where past events are mistakenly thought to affect future outcomes. Explore situations where probabilities are counter intuitive.
	Notes Counter-intuitive examples might include the Monty Hall problem, the chances of a coin landing on heads after a long run of tails (the gambler's fallacy), mistaking serious consequences for statistical risk such as the safety of road travel vs air travel, the relative safety of power generation methods (the availability heuristic).	

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Religious Education Roman Catholic Know-Do-Understand Strands

Strand	**Seeking God's Presence in Our Lives** ***"Finding God in all things" - St Ignatius*** God is present throughout creation and creation is continually drawn towards its Creator. Although the misuse of human freedom has introduced sin and suffering into the world, salvation through Jesus Christ enables us to know, love and serve God in this life and to share eternal life with Him.	
Fourth Level	**Understand:** Human nature is open to God.	
	Know: Scripture passages* teach about what it means to be open to God. What Original Sin is and what that means for humanity. Mary was preserved from Original Sin. The Sacraments restore our relationship with God. Mary and the Saints teach us to be aware of God in our lives.	**Do:** Articulate your own belief in the presence of God in your life by explaining Catholic teaching on what it means to be open to God. Articulate your own belief in the presence of God in your life by explaining how Original Sin changes our relationship with God. Articulate your own belief in the presence of God in your life by explaining how the ways in which the Sacraments restore that relationship. Articulate your own belief in the presence of God in your life by explaining how examples from Mary or the Saints that show a relationship with God gives "fullness of life" * Participate in prayer and reflection that develops your awareness of God in your daily life.
	Notes * See Fourth Level Scripture texts.	

Strand	**Knowing we are made in God's Image** ***"Our Lord does not come down from Heaven every day to lie in a golden ciborium. He comes to find another heaven which is infinitely dearer to Him - the heaven of our souls, created in His Image" -St Therese of Lisieux*** Created in the image and likeness of God, every person possesses equal dignity, unique gifts and a personal vocation to live life to the full. Although original sin inclines humanity towards sin, the Holy Spirit strengthens and guides us to overcome it and grow towards full communion with God through Jesus Christ.	
Fourth Level	**Understand:** Every human person is created in the image of God and called to grow in holiness and fulfilment through a lifelong relationship with Him.	
	Know: Through Jesus Christ, the image of God in humanity is restored by God's grace. Human life is sacred because every person is created by God and is called to live with God forever in eternal life.	**Do:** Analyse and interpret scriptural images of life's journey, making connections between creation, vocation and eternal fulfilment in God*. Recall prior learning about Original Sin. Reflect on how we can use our conscience to inform our actions. Describe how life's journey towards fulfilment with God in eternal life can be influenced by how we understand key events within life. Investigate the life of a holy man or woman who has responded to God's call*. Prayerfully discern God's call in my life, recognising how an informed conscience shapes moral decisions and responses throughout life's journey*.
	Notes * See Fourth Level Scripture texts	

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Strand	**Believing in One God revealed to us** ***Faith is to believe what you do not yet see; the reward for this faith is to see what you believe." – St Augustine*** God reveals Himself throughout history as Father, Son and Holy Spirit, inviting humanity into relationship with Him. This revelation reaches its fullness in Jesus Christ, and the Church, guided by the Holy Spirit, continues to proclaim and deepen our understanding of God's truth.		
Fourth Level	**Understand:** How key people and events in the New Testament reveal God's loving and saving nature, deepen our insight into the Trinity, and impact our personal faith response.		
	Know: Key events from the New Testament* reveal the Mystery of God. Sacred Tradition and Sacred Scripture* together make a single sacred deposit of faith (Magisterium).	**Do:** Reflect on how your understanding of God has developed through knowledge and use of the Magisterium. Identify how reflecting on Magisterium impacts personal faith journey.	
	Notes *See Fourth Level Scripture Texts.		

Strand	**Encountering the life, death and resurrection of Jesus Christ** ***"The Cross is the school of love"- St Maximillian Kolbe*** Jesus Christ is fully divine and fully human, revealing God's love through His life, death and resurrection. Through Baptism, believers enter into God's life and share in Christ's mission. In raising Jesus from the dead, God conquers sin and death, offering humanity redemption and the hope of eternal life as His sons and daughters.					
Fourth Level	**Understand:** In Jesus, God enters and transforms human nature and exists at the centre of all creation.		**Understand:** The centrality and significance of the death and resurrection of Jesus helps us to understand Jesus as Son of God and Son of Man.		**Understand:** Studying the world 2,000 years ago helps us truly understand who Jesus was, why His message was so unexpected, and how His life still transforms ours today.	
	Know: Why God became man and the need for salvation. In the incarnation, God saved us, reconciled us and made us his adopted children. Jesus Christ, true God and true Man, has always existed. Jesus' teaching on repentance and conversation is a model for Christian living.	**Do:** Explore Creation and Fall, covenant events and the New Covenant. Participate in prayer and reflection that deepens our relationship with God. Explore and reflect on Scripture* which demonstrates this. Consider situations in my own life and reflect on how they could be transformed by following this example.	**Know:** The events surrounding the death and resurrection of Jesus are central to the Christian understanding of Jesus as Son of God and Son of Man. The celebration of the Eucharist is central to our understanding of the death and resurrection of Jesus.	**Do:** Explore the events surrounding the Death and Resurrection of Jesus considering the Christian understanding of his divinity, humanity, redemption and salvation. Explain how this is significant to Christians today. Reflect on how the Paschal Mystery is central to our lives. Prepare liturgies to express in words and actions a more mature belief in Jesus.	**Know:** Jesus did not meet the Jewish expectation of Messiah and was rejected.	**Do:** Interrogate Scripture* to evaluate whether Jesus fulfilled the Jewish expectation of the Messiah. Consider the impact of Jesus as Messiah in my everyday life.
	Notes * See Fourth Level Scripture texts		**Notes** * See Fourth Level Scripture texts		**Notes** * See Fourth Level Scripture texts	

Strand	**Nurturing faith through Church and the Sacraments** ***"Our redeemer's visible presence has been passed into the Sacraments." - St Leo the Great*** The Church proclaims and teaches the faith, nurturing believers in their relationship with God. Through the seven Sacraments, established by Christ and entrusted to His Church, believers encounter Christ and participate in the mystery of His death and resurrection, receiving the grace to grow in faith and live as His disciples.	
Fourth Level	**Understand:** Through the Holy Spirit and the Sacraments, the Church forms disciples who reveal Christ to the world.	
	Know: The Sacraments make Christ present to nourish our relationships with God and each other. The Holy Spirit inspires and empowers the Church to fulfil its prophetic and missionary role in our world.	**Do:** Reflect on the significance and effects the Sacraments have on my own life and faith development and that of others*. Consider and express how I can participate more fully in the Sacraments. Explain how the Holy Spirit "builds, animates and sanctifies the Church". * Describe how the Church gives witness to her prophetic mission through Catholic Social teaching. Reflect on my own contribution to the mission of the Church through prayer and Christian action.
	Notes ** See Fourth Level Scripture Texts *See stage specific core learning relating to the Seven Sacraments: S1: Detailed focus on Sacraments of Initiation S2: Detailed focus on Sacraments of Service S3: Detailed focus on Sacraments of Healing	

Strand	**Exploring the Word of God:** ***"Ignorance of Scripture is ignorance of Christ."–St Jerome*** Inspired by the Holy Spirit, Sacred Scripture reveals God's plan of salvation and speaks to His people in every age. United with Sacred Tradition, the Word of God nourishes and strengthens faith, leading us to a deeper understanding of God's mystery and guiding Christian life.			
Fourth Level	**Understand:** Sacred Scripture and Sacred Tradition together communicate God's revelation and are authentically interpreted by the Church.		**Understand:** Knowledge of Scripture, particularly the New Testament, informs and sustains the life of Christians today.	
	Know: What is meant by Sacred Tradition. Sacred Scriptures are a product of the Tradition of the Faith of the Church. * The Church interprets the Sacred Scriptures through the Magisterium*. Sacred Tradition is authoritative and has shaped faith knowledge and practice.	**Do:** Explain the relationship between Sacred Tradition and Revelation. Investigate how the Apostles responded to the life and teaching of Jesus. Explain how the early Church was sustained by their teaching, example and practice. *	**Know:** What Biblical texts* communicate about how God spoke to people in the past and continues to speak to people today. St. Matthew wrote his Gospel for Christians who had converted from Judaism. The main theme of St. Matthew's Gospel is that Jesus is the promised Messiah who has established the Kingdom of God.	Do: Describe the ways in which people 'hear' God speaking to them in today's world. Research a contemporary Christian witness. Describe the impact of God's message on their life and on the lives of others. Explain why it is important to understand the background to the Gospel of St. Matthew.

				Explain how the New Testament* is instructive for Christians today. Research how the New Testament sustains the life of Catholics today through the liturgy and in the Sacraments. Pray and reflect using Scripture, the Rosary and the liturgical calendar
	Notes * See Fourth Level Scripture Texts.		**Notes** * See Fourth Level Scripture Texts.	

Strand	**Responding through Prayer, devotion and Liturgy** ***You have made us for yourself O Lord and our heart is restless until it rests in you"-St Augustine*** Prayer, sacred spaces and liturgy nurture our relationship with God and enable us to respond in praise and worship to the Father, Son and Holy Spirit. Through the Liturgy, Christ's saving work is made present, most fully in the Eucharist, where Christ's sacrifice unites the prayer, work and lives of the faithful.	
Fourth Level	**Understand:** Prayer, the Sacraments, and encountering Christ's Real Presence in the Eucharist form our conscience, deepen our relationship with God, and inspire us to live out our faith.	
	Know: God always hears our prayer and responds to them in different ways. The importance of Mary in the prayer life of Christians. That Sacred Liturgy enables the Church to follow Christ's example through worship, proclamation and service of charity. Christ is present in the Mass, and we receive Him in the Eucharist. The central importance of Easter within the liturgical year and for Christians.	**Do:** Explain the meaning of certain prayers** and explain why these help develop my relationship with God. Share an informed opinion of my preference of forms of prayer. Organise, lead and participate in liturgies in school and in the parish. Why Mary is important as a model for all Christians who intercedes with her son on our behalf. Articulate why Mary is, honoured through prayers, shrines and devotions. Explain the meaning of Jesus as the Paschal Lamb and what His sacrifice means for our salvation. Explain how we share in Christ' prophetic Mission when we proclaim the Good News in word and action. Explain the significance of the ritual and symbols of Sunday Mass for sustaining our faith and promoting our Mission. Prayerfully reflect on what I learn through Sunday Mass and my participation in it. Respond to this reflection through my choices and action in daily life. Prepare, lead and participate fully in moments of prayer, reflection, and organised liturgies that reflect my learning.
	Notes * *See Fourth Level Scripture Texts ** See Fourth Level Prayer Grid	

<table>
<tr><td>Strand</td><td colspan="4">Journeying to Holiness through Christian Living

“If you are who God meant you to be then you will set the world aflame.” – St Catherine of Sienna

Christians are called to holiness and to participate in building God's Kingdom of justice, love and peace. Grounded in the Beatitudes, this calling begins with conversion of heart and bears fruit in self-giving love, reconciliation and compassionate service of those in need.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: The teachings of Christ challenge us to transform the world.</td><td colspan="2">Understand: Encountering wisdom and compassion influence our relationships with God and our conscience.</td><td colspan="2">Understand: Church teaching and reconciliation inform my moral decisions to foster communion with God.</td></tr>
<tr><td>Know:
The meaning and relevance of the 10 Commandments and the Beatitudes for Christian living today.

Justice means a right relationship with God and humankind.

The Church promotes and advocate for justice and peace in the world through its teachings, Catholic schools, parishes and organisations.</td><td>Do:
Explore and articulate how the 10 Commandments and Beatitudes inform Christian understanding of the Kingdom of God and therefore impacts on faith action and belief.

Research and apply Church teaching* on justice and peace to discussions, written work and faith witness action.

Prayerfully respond to learning about the Kingdom of God and Christ’s call to holiness.</td><td>Know:
There are situations where wisdom and compassion brought about peaceful resolutions to conflict at local and international level.</td><td>Do:
Apply my knowledge and understanding of justice and peace to:

Christ’s teaching on “revenge and love of enemies” *

St. Paul: “One body, many parts” * and on “Love” *;

Describe how I can contribute to the common good by promoting and living in peace with others.</td><td>Know:
We are all called to do good, practice virtue and avoid evil*.

About situations requiring reconciliation are the consequence of human nature.

Ways to inform and develop my conscience.

Church teaching on indulgences, suffrage, purgatory and the four ‘last things’ - death, judgement, heaven and hell.

Church teaching on social justice and issues of peace and the response of Christians (individuals and groups) to this teaching.</td><td>Do:
Explore and share own opinion on personal and wider societal situations which require reconciliation in society today.

Articulate Jesus’ teaching on the Golden Rule to decisions which pose a moral challenge to choose right action, such as relating respect for human sexuality.

Participate in prayers, liturgies and actions that focus on the Golden Rule or God’s grace to heal situations needing peace and or reconciliation in society.

Evaluate different ways we can each contribute to peace and reconciliation in the world.</td></tr>
<tr><td colspan="2">Notes
* See Fourth Level Scripture List.</td><td colspan="2">Notes
* See Fourth Level Scripture List.</td><td colspan="2">Notes
* See Fourth Level Scripture List.</td></tr>
</table>

<table>
<tr><td>Strand</td><td colspan="2">World Religions
(To explore the principles and theology guiding the teaching of world religions, please consult This Is Our Faith, which outlines our Catholic approach to interfaith understanding.)
Fosters an understanding of major world religions through the lens of Catholic teaching on interreligious dialogue. Encouraging pupils to recognise and respect the sincere search for truth that takes place in other faith communities, it promotes constructive dialogue, mutual trust, and shared understanding.</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Core religious worldviews can offer answers to ultimate questions and contribute to shared values in a diverse society.</td></tr>
<tr><td>Know:
How world religions derive their core values from revelations, scripture, prophets, and sacred leaders.

Key religious perspectives on ultimate questions: human nature, destiny, evil and suffering, and life after death.

The important role of religious diversity in Scottish and global culture.</td><td>Do:
Evaluate how world religions address ultimate questions and influence individual moral choices.

Compare and contrast Catholic teachings on evil, suffering, and life after death with those of another world religion.

Express how shared values across faiths contribute positively to common good in society.

Explain how studying religious diversity can foster personal dialogue, openness, and mutual respect in a multicultural world.</td></tr>
<tr><td colspan="2">Notes</td></tr>
</table>

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Religious, Moral and Philosophical Studies Know-Do-Understand Strands

<table>
<tr><th>Strand</th><th colspan="4">Religion & Worldviews</th></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understanding: Diversity of belief across and within religion and worldviews can link to the sources they draw upon and the ways in which sources are interpreted.</td><td colspan="2">Understanding: Diversity of belief across and within religion and worldviews can have implications for adherents and society.</td><td colspan="2">Understanding: The practices and traditions of religion and worldviews can present opportunities and challenges for individuals, communities, and society.</td></tr>
<tr><td>Know:
Ways in which religion and worldviews interpret sources, including the teachings, ideas and/or examples of key figures.

Some of the conclusions reached about beliefs based on these sources.</td><td>Do:
Analyse and explain ways in which religion and worldviews interpret sources, including the teachings, ideas and/or examples of key figures.

Make connections between ways in which sources are interpreted and the beliefs they lead to.</td><td>Know:
Some of the implications of diversity of belief across and within religion and worldviews for their adherents.

Some of the implications of diversity of belief across religion and worldviews for wider society.</td><td>Do:
Analyse the implications of diversity of belief across and within religion and worldviews for their adherents.

Analyse the implications of diversity of belief across and within religion and worldviews for wider society.</td><td>Know:
Ways in which practices and traditions engaged in by religion and worldviews may present opportunities and challenges for individuals, communities, and society.</td><td>Do:
Explain ways in which practices and traditions engaged in by adherents of religion and worldviews may present opportunities and challenges for individuals, communities, and society.</td></tr>
<tr><td colspan="2">Includes, but not limited to
Organised religion: Buddhism, Christianity, Hinduism, Islam, Judaism, Sikhism. Including denominations, sects/schools, traditions within these and cultural variations of these.

Diverse spiritual approaches to life e.g. Paganism; Indigenous religions and belief systems.

Organised worldviews e.g. Humanism, philosophical perspectives and traditions.

Some methods of interpretation of sources: hermeneutics, literal/symbolic interpretations, doctrines.

Different understandings of key figures e.g. divine/divinely inspired; knowledgeable teachers, cultural and historical figures.

Ways in which key figures can influence adherents of religion/worldviews.

The ways in which differences of belief within and across religion and worldviews link to the sources they use and ways in which they interpret these sources.

Developing personal views about these beliefs and providing supporting justifications.</td><td colspan="2">Includes, but not limited to
Organised religion: Buddhism, Christianity, Hinduism, Islam, Judaism, Sikhism. Including denominations, sects/schools, traditions within these and cultural variations of these.

Diverse spiritual approaches to life, for example, Paganism; Indigenous religions and belief systems.

Organised worldviews, for example, Humanism, philosophical perspectives and traditions.

Social and cultural cohesion, prejudice and discrimination, inclusion/ exclusion.

The impact of differences of belief across and within religion and worldviews and the possible positive and negative implications of this for society more widely.</td><td colspan="2">Includes, but not limited to
Organised religion: Buddhism, Christianity, Hinduism, Islam, Judaism, Sikhism. Including denominations, sects/schools, traditions within these and cultural variations of these.

Diverse spiritual approaches to life e.g. Paganism; Indigenous religions and belief systems.

Organised worldviews e.g. Humanism, philosophical perspectives and traditions.

Cultural synthesis; integration; cultural evolution; marginalised groups; dominant cultures; prejudice; discrimination; stereotyping, scapegoating.

How practices and traditions engaged in by adherents of religion and worldviews can present opportunities for society, for example, intercultural understanding, social cohesion, demystifying, de-othering.

How the traditions engaged in may lead to challenges for society, for example, minority groups, dominant culture, prejudice and discrimination.</td></tr>
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Strand	Morality, Ethics and Values	
Fourth Level	**Understanding:** As society changes and new moral challenges arise, views *within* and *across* religion, worldviews, and philosophical perspectives on what is right and wrong may change and adapt.	
	Know: Examples of changes in society and how these can lead to moral and ethical challenges. How religion, worldviews and philosophical perspectives respond to these challenges. How ethical principles held by religion, worldviews and philosophical perspectives can change over time.	**Do:** Analyse the challenges presented by changes in society. Analyse how religion, worldviews and philosophical perspectives respond to these challenges. Analyse responses across religion, worldviews and philosophical perspectives to contemporary moral issues. Analyse responses from within religion, worldviews and philosophical perspectives to contemporary moral issues. Explain own views on these responses.
	Includes, but not limited to Ethical challenges in society arising from, for example developments in technology, medicine, changes in laws leading to debates around, for example war/conflict, sanctity/quality of life, social relationships. Ethical principles as expressed in codes, declarations and frameworks such as consequentialism, utilitarianism and UNCHR. How ethical principles can be analysed and drawn upon to support responses to moral issues.	

Strand	Questions, Arguments and Sources	
Fourth Level	**Understanding:** Using sources in different ways, religion, worldviews and philosophical perspectives develop arguments to support and challenge beliefs and ideas about religious and philosophical questions. These arguments can differ *across* and *within* religion, worldviews and philosophical perspectives.	
	Know: Arguments used to support different perspectives on religious and philosophical questions across and within religion, worldviews and philosophical perspectives. Different uses of sources across and within religion, worldviews and philosophical perspectives to support perspectives on religious and philosophical questions.	**Do:** Outline a range of religious and philosophical questions that are debated across and within religion, worldviews and philosophical perspectives. Describe arguments used to support different perspectives on religious and philosophical questions across and within religion, worldviews and philosophical perspectives. Explain how sources have been engaged with to develop the arguments used to support different perspectives on religious and philosophical questions across and within religion, worldviews and philosophical perspectives. Evaluate the arguments used to support different perspectives on religious and philosophical questions across and within religion, worldviews and philosophical perspectives.
	Includes, but not limited to Logical fallacies; evidence and claims; paradigms; theological/philosophical evidence; scientific evidence. The sources used by religion, worldviews and philosophical perspectives and the similar/different conclusions the use of these sources can lead to. The ways in which interpretations of sources supports reaching conclusions about these questions.	

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Sciences Know-Do-Understand Strands

Being Scientific: Building Our Skills

Strands	Scientific Investigation		Interpreting and Analysing		Evaluation in Science		Scientific Communication and Review	
Fourth Level	**Understand:** Scientific investigations are designed to test ideas by changing and measuring variables appropriately and controlling other relevant variables to improve the validity of findings.		**Understand:** Scientific knowledge becomes more reliable through evaluation of evidence, recognition of limitations, and critical review by others, so conclusions can be justified and refined.		**Understand:** Evaluating and refining scientific practice helps ensure findings are valid, reliable and trustworthy, supporting continuous improvement in future investigations.		**Understand:** Scientific thinking, knowledge and skills enable critical review so evidence, explanations and conclusions can be scrutinised and refined.	
	Know: The independent variable is what is changed in a scientific investigation. The dependent variable is what is measured in a scientific investigation to see the effect of that change. Using controlled variables improves the validity of an investigation. Scientific investigations use different methods; there is no single fixed approach. The scientific process is a systematic approach to investigation that involves asking questions, gathering and analysing evidence, testing hypotheses, communicating and reviewing findings.	**Do:** Identify and change the independent variable and observe the effect on the dependent variable. Design a scientific method independently. Select appropriate equipment for an experiment. Carry out practical hands-on science investigations safely, taking account of risks and hazards. Use scientific vocabulary: dependent variable, independent variable.	**Know:** **Processing information** An anomalous result is a result that is different from the others and does not fit the pattern or trend of the data. In scientific investigations, unexpected results are not assumed to be inaccurate and are considered carefully. Scientific conclusions relate to the aim and hypothesis and are based on the interpretation of data gathered during an investigation. **Systems thinking** Interactions within systems can cause feedback, delays and thresholds (tipping points). These can affect how the whole system changes over time and may lead to unintended outcomes. Feedback: when a change in a system leads to further change. Delay: when the effect of a change takes time to happen. Threshold or tipping point: a point where a further change can cause	**Do:** **Processing information** Identify the relationship between independent and dependent variables. Identify anomalous results. Use evidence to form conclusions in relation to the aim and hypothesis. Use scientific vocabulary: anomalous. **Systems thinking** Analyse relationships within systems and use feedback, delays and thresholds to explain or predict how a system may change. Apply systems thinking to scientific and environmental contexts.	**Know:** Methods can be refined to increase reliability and validity and improve the impact of the findings. Scientific practice can be evaluated in terms of ethics, respect and equity. Validity in science refers to the extent to which a method, experiment or measurement accurately addresses the aim of an investigation.	**Do:** Evaluate and justify improvements to scientific methods to increase reliability and validity of findings. Evaluate scientific practice in terms of respect, ethics and equity. Use scientific vocabulary: validity.	**Know:** Scientific knowledge develops through evidence, explanations and conclusions being scrutinised, discussed and reviewed by the scientific community.	**Do:** Check, review and feedback on other people's scientific findings. Refine scientific reports and findings based on feedback.

			a much bigger change in the system.					
	Includes, but not limited to • When a dependent variable cannot be measured directly, an observable change can be used as an indicator, for example, using the number of bubbles produced per minute to estimate the rate of photosynthesis. • A hazard is a source or situation with the potential to cause harm. • Risk depends on the likelihood and severity of harm occurring, taking account of exposure to the hazard, for example, using a Bunsen burner to heat water: - hazard: open flame and hot equipment - likelihood: low when used correctly - severity: high because burns can be serious - **e**xposure: limited through safe working distances and appropriate safety procedures - risk: low to moderate because exposure and likelihood are reduced		**Includes, but not limited to** • Examples of system interactions and features: - system (plant, nutrients and environment). Interaction (adding fertiliser increases plant growth). Threshold or tipping point (too much fertiliser damages plant or soil). Delay (effects on soil may take time). Unintended outcome (runoff causes algal growth in nearby water) - system (Earth's climate). Interactions (ice reflects sunlight; water absorbs it). Feedback loop (warming melts ice; less reflection of sunlight; more warming). Delay (climate changes occur over long timescales). Threshold or tipping point (loss of large ice-sheets becomes irreversible). Unintended outcome (acceleration of warming beyond initial cause). **Notes** • Systems thinking involves understanding how the parts of a system interact and influence one another, and how these interactions affect the behaviour of the system as a whole.		**Excludes** • Discussing relevance of a practical activity is covered at Senior Phase. At this level, only the relevance of sources is covered. **Notes** • Links to Science in Action: Taking scientific action.		**Includes, but not limited to** • Other people's scientific findings could be from other learners within the class or year. **Excludes** • At this level, scientific findings exclude research papers. **Notes** • Checking and feeding back on accuracy of scientific reporting and findings as detailed at Third and Fourth Level. • Evaluate = How good is it? • Critically evaluate = How good is it? What evidence supports that? What are its limitations, and how convincing is the evidence?	

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Our Scientific Knowledge: What We Understand So Far

<table>
<tr><td>Strand</td><td colspan="4">The Connected World</td></tr>
<tr><td></td><td colspan="4">Nature and Earth’s resources</td></tr>
<tr><td></td><td colspan="2">Nature</td><td colspan="2">Food and interdependence</td><td colspan="2">Materials and their properties</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Environmental and climate conditions shape different biomes, supporting life on Earth.</td><td colspan="2">Understand: When resources are limited, living things must compete to get what they need, enabling them to survive.</td><td colspan="2">Understand: Metals have different chemical properties and react in different ways, making them suited to different uses and applications in society.</td></tr>
<tr><td>Know:
The environment
A community consists of different species living and interacting in the same area.

A biome is a large region of the Earth that can be distinguished from other biomes by:
- the characteristic environmental factors that affect it, such as climate
- the particular animal community (fauna) and plant community (flora) that it supports

Human activities can change conditions within biomes, affecting the biodiversity they support.</td><td>Do:
Identify and compare the key features of different biomes.
Identify how human activity affects biomes and investigate nature-focused solutions.

Use scientific vocabulary: biome, fauna, flora, community.</td><td>Know:
Competition
A population is a group of organisms of the same species living in the same area.

Competition occurs when organisms require the same limited resources, such as food, water, space or light.

Competition can affect the survival and reproduction of organisms, leading to changes in population sizes and interactions within food webs.</td><td>Do:
Evaluate and justify the impact of competition on a food web.
Use scientific vocabulary: competition, population.</td><td>Know:
Properties and uses of metals
Metals can be arranged in order of reactivity according to their reactions with water, acids and oxygen.

Some metals react with water to produce a metal hydroxide and hydrogen gas.

Some metals react with acids to produce a salt and hydrogen gas.

Some metals react with oxygen to produce metal oxides.

The reactivity of metals has many practical applications in everyday life.

The reactivity of metals determines how they can be extracted from their ores.
- unreactive metals can be extracted from their ores by heating
- moderately reactive metals can be extracted from their ores by heating with carbon
- reactive metals have to be extracted from their ores by electrolysis</td><td>Do:
Compare reactions of metals to observe the property of reactivity.

Construct word equations to describe the reactions of metals.

Relate extraction methods to metal reactivity.

Apply knowledge of reactivity of metals to justify the selection and use of metals as solutions to everyday problems.

Use scientific vocabulary: metal hydroxide, metal oxide, reactivity, extraction.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• Different biomes include aquatic (freshwater and marine) and terrestrial (desert, forest and tundra).

Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action and for details.</td><td colspan="2">Includes, but not limited to
• Plants compete for light, water, nutrients and space.

Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action and for details.</td><td colspan="2">Includes, but not limited to
• Comparison of metal reactivity by reaction with water, acid and oxygen.

Excludes
• Formula equations for reactions of metals, as this does not need to be covered at this level.

Notes</td></tr>
</table>

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	• Progression from Third Level: - climate change and human activities, such as overfishing and urbanisation, can negatively affect biomes - human activities such as nature restoration, as with coral reef and peatlands, can positively impact on biomes • Link to Our Scientific Knowledge: The Connected World - Energy and climate change. • Link to Science in Action: Taking Scientific Action. - learners could, for example, apply learning of ecosystems and biomes to monitor and enhance a natural environment or location	• The word 'competition' has a different scientific meaning to its everyday use. • Link to Science in Action: Taking scientific action. - learners could for example apply learning about food production in practical real-life contexts	• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action and for details. • The reactivity of metals can be used in solutions to everyday problems such as: - choosing more reactive metals to make batteries more efficient - using less reactive metals in buildings so they don't rust or corrode quickly - using copper in wires because it is relatively unreactive and safe • The word 'reactivity' has a different scientific meaning to its everyday use.

<table>
<tr><td>Strand</td><td colspan="4">The Connected World</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Energy in society</td></tr>
<tr><td rowspan="4">Fourth Level</td><td colspan="2">Energy sources and security</td><td colspan="2">Energy and climate change</td></tr>
<tr><td colspan="2">Understand: Meeting future energy needs requires balancing energy sources, storage and demand, so societies can make informed decisions about reliable, sustainable and secure energy supplies.</td><td colspan="2">Understand: Scientific evidence helps to inform decisions about how to reduce greenhouse gas emissions and respond to the impacts of climate change on communities around the world.</td></tr>
<tr><td>Know:
Energy security
Innovative energy storage methods are important for expanding the use of renewable energy, as they allow energy to be stored when it is produced and used later when demand is high or supply is low.

Future energy security depends on reducing overall energy demand, as well as ensuring an appropriate balance of available energy sources and sufficient storage to meet needs.

Countries around the world experience different challenges and develop different solutions to meet the energy needs of their populations in a sustainable way.</td><td>Do:
Justify why energy security is important for a variety of communities and societies.</td><td>Know:
Climate change
Levels of carbon dioxide in the atmosphere depend on the balance of processes that release and remove carbon dioxide.

Methane is a powerful greenhouse gas produced by agriculture, waste decomposition and fossil fuel extraction.

Journey to net zero
Climate change is a local and global issue requiring collective action which is informed by scientific evidence.</td><td>Do:
Use evidence and data to identify how human activities affect greenhouse gas levels and contribute to climate change.

Use scientific vocabulary: methane, decomposition.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• Energy storage innovations include fast-charging Lithium batteries, battery walls to store solar energy generated in homes, and large-scale energy storage used in power stations.
• Energy security challenges may include resource availability, climate change, conflict, infrastructure limitations and increasing demand.Notes
• The application of knowledge and skills through real-life contexts will be a significant focus at Fourth Level. See Science in Action Big Idea for details.
• Learners should engage critically with evidence and contemporary case studies related to energy security and sustainability.
• Smart grid technologies can be used to integrate renewable energy sources and balance supply and demand across the electricity network.
• Link to Our Scientific Knowledge: The Connected World - Energy and climate change.
• Link to Science in Action: Taking Scientific Action.</td><td colspan="2">Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action and details.
• Link to Our Scientific Knowledge: The Connected World - Energy sources and security.
- Linking the science of climate change to responsible use of energy resources.
• Link to Science in Action: Taking Scientific Action.
- learners could for example apply learning and work collaboratively to take positive scientific action on a climate change issue</td></tr>
</table>

Strand	The Connected World	
	Space	
Fourth Level	**Understand:** Scientific discoveries and technologies deepen understanding of the changing Universe and enable continued exploration of space, leading to new knowledge and possibilities.	
	Know: **Solar System and the Universe** A black hole is a region of space that can form when a very massive star collapses, creating a gravitational field so strong that nothing, not even light, can escape. The Universe began from a very hot, dense state and has been expanding over time. This is known as The Big Bang Theory. **Exploring space** Space travel and habitation requires innovation and scientific solutions.	**Do:** Analyse evidence from space research and Earth observation to identify patterns, changes and impacts. Evaluate the environmental, social and ethical impacts of advances in space science and technologies. Use scientific vocabulary: black hole, The Big Bang Theory.
	Includes, but not limited to • This content at Fourth Level provides a light-touch introduction to vocabulary and concepts that learners may encounter in everyday life, media and popular culture. **Notes** • The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in Action for details. • Discoveries and images from space can inspire wonder and curiosity about the Universe. • Links can be made to environmental, ethical and economic considerations related to space innovation and exploration. • Link to Science in Action: Science Around Me - connection of innovation in science and technologies with space exploration beyond Earth.	

Strand	The Connected World	
	Health and disease	
Fourth Level	**Understand:** Vaccination prepares the immune system to recognise and respond rapidly to specific pathogens, reducing the spread and impact of infectious diseases.	
	Know: **Vaccination** Vaccines introduce inactivated weakened, or parts of pathogens to stimulate an immune response and develop immunity. Vaccines stimulate the body's immune system to develop protection against specific diseases without causing the illness itself. After vaccination, the immune system creates memory cells. If an individual is exposed to the same pathogen in the future, the memory cells will produce a faster response, reducing the chance of the individual becoming unwell. Booster vaccines may be required over the course of an individual's life as antibody and memory cell levels can decrease over time.	**Do:** Observe the growth of microbial cultures. Demonstrate an awareness of current affairs regarding vaccination programmes and disease outbreaks, both nationally and globally.
	Notes • The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in action Big Idea and for details. • Link to Our Scientific Knowledge: The Living World - Concept of life; Genetic variation; Digestive, respiratory and circulatory systems.	

The Living World

<table>
<tr><td>Strand</td><td colspan="3">The Living World</td></tr>
<tr><td>Sub-strand</td><td colspan="3">Survival of living things</td></tr>
<tr><td></td><td colspan="2">Concept of life</td><td>Genetic variation</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Living things depend on cellular processes for growth, maintenance and survival, making these processes essential for life.</td><td>Understand: Genetic information is organised in DNA, genes and chromosomes, providing instructions that influence an organism’s characteristics and how it functions.</td></tr>
<tr><td>Know:
Cellular processes
A cellular process, such as aerobic respiration, photosynthesis or cell division, is a series of biochemical reactions that take place within a cell to maintain its survival, growth and normal functioning.

Do:
Identify cellular processes and relate these to survival, growth and normal functioning in animal and plant systems.</td><td>Know:
Structure and organisation of genetic material
The four DNA bases are adenine, thymine, cytosine and guanine.

Adenine pairs with thymine, and cytosine pairs with guanine.

DNA is made of two strands twisted into a double helix, with each strand containing a unique sequence of bases.

Genes are sections of DNA that provide instructions for characteristics and how an organism functions.

Chromosomes are structures found in the nucleus that contain many genes.

Do:
Use models to describe the structure of DNA and how it is organised within an animal or plant cell.

Use scientific vocabulary: adenine, thymine, guanine, cytosine, double helix, bases, genes and chromosomes.</td></tr>
<tr><td colspan="2">Excludes
The learning below does not need to be covered in depth at this level.
• Cell division.
• Cellular respiration.

Notes
• Link to Our Scientific Knowledge: the living world - Plant systems (Third Level); Digestion, respiratory and circulatory system
• Link to Science in action: science around me; Informed and responsible decision making.
• The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in Action for details.</td><td>Includes, but not limited to
• Explore the innovations and ethical considerations of genetic applications.

Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="4">The Living World</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Systems for survival</td></tr>
<tr><td></td><td colspan="2">Digestive, respiratory and circulatory systems</td><td colspan="2">Reproductive systems in humans and other animals</td><td>Plant systems</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Digestion and respiration rely on the circulatory system to transport substances to and from cells, enabling energy release.</td><td colspan="2">Understand: Human fertility is affected by biological, environmental and lifestyle factors, which can affect the ability to reproduce.</td><td>Understand:</td></tr>
<tr><td>Know:
Cellular processes
Digestion is the process of breaking food down into small, soluble substances that can be absorbed by the body.

In cellular respiration, oxygen and glucose react to produce carbon dioxide and water.

The circulatory system transports essential substances, such as oxygen and nutrients, to and from cells so that cellular processes can occur.</td><td>Do:
Identify the importance of the circulatory, respiratory and digestive systems work together to support cellular processes.</td><td>Know:
Fertility
Fertility is the ability of humans and other animals to produce offspring.

In humans and other animals, fertility can be affected by factors such as age, health, lifestyle, environment and genetics.

Menopause is the stage when the menstruation cycle stops permanently and pregnancy can no longer occur.</td><td>Do:
Use scientific vocabulary: fertility, menopause.</td><td>Know:</td><td>Do:</td></tr>
<tr><td colspan="2">Notes
• Link to Our Scientific Knowledge: the living world - Concept of life.
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action Big Idea for details.</td><td colspan="2">Includes, but not limited to
• Explore the innovations and ethical considerations of fertility treatments.

Notes
• Link to Science in Action: Science around me; Informed and responsible decision making.
The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action Big Idea for details.</td><td></td><td></td></tr>
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The Chemical World

<table>
<tr><td>Strand</td><td colspan="4">The Chemical World</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Physical changes</td></tr>
<tr><td></td><td colspan="2">States of matter</td><td colspan="2">Mixtures</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand:</td><td colspan="2">Understand: Mixtures of liquids can be separated by distillation based on differences in their boiling points, allowing useful substances to be collected for specific purposes.</td></tr>
<tr><td>Know:</td><td>Do:</td><td>Know:
Separating mixtures
Different liquids have different boiling points.

This can be used to separate mixtures containing two liquids in a process known as distillation.</td><td>Do:
Relate the properties of solutions to their concentration.

Select the appropriate technique to separate liquids.

Use scientific vocabulary: distillation.</td></tr>
<tr><td colspan="2">Notes
The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in Action for details.</td><td colspan="2">Includes, but not limited to
• Properties of solutions might include colour intensity.
• Research into the disposing of chemicals might relate to concentration and its associated hazards.

Notes
• Link to Our Scientific Knowledge: the chemical world - Acids and bases; The connected world – Materials and their properties. Nature; Energy and climate change; Food and interdependence.
• Link to Science in Action: Taking scientific action; Science around me.
- exploring applications of distillation in everyday life
• The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in action for details.</td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="5">The Chemical World</td></tr>
<tr><td>Sub-strand</td><td colspan="5">Chemical changes</td></tr>
<tr><td></td><td colspan="2">Chemical reactions</td><td colspan="2">Rates of reaction</td><td>Acids and bases</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Chemical reactions involve energy transfers, and understanding these energy changes helps explain how reactions occur, and how the energy released or absorbed can be used for specific purposes.</td><td colspan="2">Understand:</td><td>Understand: Acids and bases react in a neutralisation reaction to form new substances, and the products of these reactions have many useful applications in industry and everyday life.</td></tr>
<tr><td>Know:
Signs of a chemical reaction
Chemical reactions involve energy changes.

In an exothermic reaction, energy is released (transferred) to the surroundings.

In an endothermic reaction, energy is absorbed (transferred) from the surroundings.</td><td>Do:
Classify reactions as exothermic or endothermic based on evidence of energy transfer.

Use scientific vocabulary: exothermic, endothermic.</td><td>Know:</td><td>Do:</td><td>Know:
Bases
A base is a substance which neutralises an acid.

Bases include metal oxides, metal hydroxides and metal carbonates.

Soluble metal oxides produce alkaline solutions.

Soluble non-metal oxides produce acidic solutions.

Neutralisation reactions
Acids and bases react to form water and a salt in neutralisation reactions.

When a metal carbonate is the base, carbon dioxide is also produced.

The name of the salt is determined by the acid and base used.

The salts produced in neutralisation reactions have a wide range of uses.</td><td>Do:
Carry out neutralisation reactions and identify the products.

Construct word equations for neutralisation reactions.

Exemplify the uses of salts in industry and everyday life.

Use scientific vocabulary: base, metal oxide, metal hydroxide, metal carbonate, non-metal oxide, salt.</td></tr>
<tr><td colspan="2">Includes, but not limited to
• Observable energy changes: temperature, sound, light.

Excludes
• Enthalpy change, calculating energy changes, making and breaking bonds.

Notes
• Endothermic reactions can feel cool because energy is transferred from the surroundings to the reacting substances.
• Energy is not ‘lost’ to the surroundings, it is transferred.
• Link to Our Scientific Knowledge: The Connected World – Materials and their properties. Nature; Energy sources and security; Energy and climate change.</td><td colspan="2"></td><td>Includes, but not limited to
• Naming salts - chloride, nitrate, sulfate salts.
• Uses of salts may include everyday applications such as in foods, household products, industry and medicines.

Excludes
• Salts of carboxylic acids.

Notes
• Link to Science in Action: Taking Scientific Action; Science Around Me.
- uses of salts in everyday applications such as in foods, household products, industry and medicines.
• The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in Action for details.</td></tr>
</table>

	• Link to Science in Action: Taking Scientific Action; Science Around Me. - how can endothermic reactions be used in injury recovery? - how can exothermic reactions be used to keep our homes warm? • The application of knowledge and skills through everyday contexts is a significant focus at Fourth Level. See Science in action details.		

Strand	**The Chemical World**			
Sub-strand	**Elements and compounds**			
	Elements and the periodic table		**Compounds**	
	Understand: Atoms are made of subatomic particles which helps explain how atoms interact.		**Understand:** Scientists use chemical formulae to communicate information about substances, helping to describe, identify and understand how the wide variety of substances in the Universe are made.	
Fourth Level	**Know:** **Structure of atoms** Atoms are made up of subatomic particles called protons, neutrons and electrons. The protons and neutrons are found in the nucleus of the atom. The electrons are arranged in shells which orbit the nucleus. The electronic configuration or structure of an atom is how the electrons are arranged in shells. Electronic structure can be shown as a list of numbers or as a diagram. The first shell holds up to two electrons; the second shell holds up to eight electrons. The third shell can hold up to 18 electrons but at this stage, only a subshell within it is considered, which contains up to eight electrons. **Properties of sub-atomic particles** Protons and neutrons have a mass of 1 atomic mass unit (amu), while electrons have a mass of almost zero. Protons have a charge of 1+, electrons have a charge of 1- and neutrons have no charge (neutral). **Atomic number and mass number** The atomic number of an element is equal to the number of protons in its atoms. Atoms are neutral as the number of positive protons is equal to the number of negative electrons.	**Do:** Use a model to illustrate atomic structure. Calculate the number of sub-atomic particles. Use scientific vocabulary: sub-atomic, protons, neutrons, electrons, charge, mass, atomic number, mass number.	**Know:** **Compounds** A molecule is a group of non-metal atoms bonded together. The chemical formula of a molecule uses the symbols to show the constituent elements, with the numbers indicating how many atoms of each element are present.	**Do:** Identify the elements present and number of atoms of each from a chemical formula. Use scientific vocabulary: molecule, formula.

	The mass number of an atom is equal to the sum of the protons and neutrons.			
	Includes, but not limited to • Use diagrams to represent the atomic structure of the first 20 elements in the periodic table. • Calculating the number of protons, neutrons and electrons from the mass number and atomic number of an element. **Notes** • The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.		**Includes, but not limited to** • Stating the number of atoms of each element present in a molecule given its formula. **Excludes** • Writing formula, valency rules. • Formula for substances where the numbers indicate a ratio. **Notes** The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.	

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The Physical World

<table>
<tr><td>Strand</td><td colspan="3">The Physical World</td></tr>
<tr><td>Sub-strand</td><td colspan="3">Electricity</td></tr>
<tr><td></td><td colspan="2">Electrical circuits</td><td>Static electricity and electromagnetism</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: The behaviour of electrical circuits depends on the relationship between potential difference, current and resistance, allowing circuits to be designed and controlled for different purposes.</td><td>Understand:</td></tr>
<tr><td>Know:
Circuits
Circuits can be set up in series or in parallel, and these arrangements behave in different ways when components are removed.

Some components and materials make it harder for electric current to flow through a circuit. This is known as resistance.

Total resistance in a series circuit is the sum of resistances.

Use of the relationship between voltage, current and resistance:
$R = \frac{V}{I}$
where R is resistance in ohms (Ω)
V is voltage in volts (V)
I is current in amperes (A)

Fuses are used to primarily protect the flex of the electrical device from current overload.</td><td>Do:
Measure current and voltage in series and parallel circuits.

Use diagrams and data to explain and predict circuit behaviour.

Use scientific vocabulary: current, voltage, resistance.</td><td>Know:</td><td>Do:</td></tr>
<tr><td colspan="2">Includes, but not limited to
• Measurements of voltage and current in series and in parallel or across different components.
• Learners will be expected to re-arrange $R = \frac{V}{I}$ equation.
• Mention reference to earth wire.

Notes
• The words ‘circuit’, ‘current’, ‘conductor’ and ‘cells’ have a different scientific meaning to their everyday use.
• Link to Our Scientific Knowledge: The Connected World - Energy sources and security.
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td><td colspan="2"></td></tr>
</table>

Strand	The Physical World

<table>
<tr><td>Sub-strand</td><td colspan="4">Forces</td></tr>
<tr><td></td><td colspan="2">Motion</td><td colspan="2">Forces and interactions</td></tr>
<tr><td rowspan="2">Fourth Level</td><td colspan="2">Understand: Acceleration is the rate of change of speed, and can be represented on a speed-time graph to analyse and interpret other aspects of motion.</td><td colspan="2">Understand: Motion due to interacting forces is governed by physical laws, which allow us to model and predict motion.</td></tr>
<tr>
<td>Know:
Representing motion
The relationship between speed, distance and time can be rearranged to calculate any one of these quantities when the other two are known.

Speed–time graphs can be used to show how the speed of an object changes over time.

The slope (gradient) of a speed–time graph represents acceleration.

Acceleration describes the rate of change of speed.

When the speed of an object decreases it has a negative acceleration.
Acceleration can be calculated using:
$a = \frac{\Delta v}{t}$
where:
a is the acceleration in m s^{-2}
Dv is the change in speed in m s^{-1}
t is the time in s
t is the time in s</td>
<td>Do:
Use and rearrange the relationship between speed, distance and time to calculate speed, distance or time in a range of contexts.

Create and interpret speed–time graphs to explain motion and changes in speed (acceleration).

Calculate acceleration given appropriate data.

Use scientific vocabulary: speed, acceleration, metres per second per second.</td>
<td>Know:
Mass and weight
Gravitational field strength describes the force acting on each kilogram of mass in a gravitational field. measured in newtons per kilogram (N kg^{-1}).

The weight of an object will change when it is moved to different locations with different gravitational field strengths.

Weight can be calculated using the equation
$g = \frac{W}{m}$
where:
g is the gravitational field strength in newtons per kilogram (N kg^{-1})
W is the weight in newtons (N)
m is the mass in kilograms (kg)

Laws of motion
Newton’s three laws of motion and how they affect motion of objects are:
- First law. A body remains at rest, or in motion at a constant speed in a straight line, unless it is acted upon by an unbalanced force.
- Second law. Summarised as the relationship for unbalanced force.
$F = ma$
F is the unbalanced force in newtons (N)
m is the mass in kilograms (kg)
a is the acceleration in metres per second per second (m s^{-2}).

Third law. If two objects exert forces on each other, these forces are equal in size but opposite in direction.

Multiple forces or systems
The motion of an object depends on how different forces act together on it.

Multiple forces can act on an object at the same time resulting in an unbalanced force or balanced forces.

Energy and motion</td>
<td>Do:
Calculate the weight of objects in different gravitational fields.

Use models and diagrams to explain how forces combine in systems.

Analyse forces acting within systems using diagrams, models and calculations (addition and subtraction).

Calculation of acceleration using Newton’s second law relationship.</td>
</tr>
</table>

			Energy is transferred when motion changes. Energy can be dissipated as heat owing to friction.	
	Excludes • Formal equations of motion do not need to be covered at this level beyond acceleration calculations from graphs. **Notes** • Learners will be expected to re-arrange equations at Fourth Level. • The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.		**Excludes** • The introduction of terminal velocity is not required at this level. **Notes** • Learners may think mass and weight are the same. This comes from everyday language where the terms are used interchangeably. Emphasise that mass stays the same, but weight depends on the gravitational field. • Learners may think forces act independently rather than as part of a system. Reinforce that forces interact within systems. • Learners will be expected to re-arrange equations at Fourth Level. • The words 'force' and 'weight' have a different scientific meaning to their everyday use. • The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.	

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<table>
<tr><td>Strand</td><td colspan="4">The Physical World</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Waves</td></tr>
<tr><td></td><td colspan="2">Sound</td><td colspan="2">Light</td></tr>
<tr><td>Fourth Level</td><td colspan="2">Understand: The speed and distance that sound travels depend on the medium it travels through, helping us predict its behaviour and use sound safely in different situations.</td><td colspan="2">Understand: Light changes direction in predictable ways as it passes between different materials, helping us explain how lenses and light technologies work.</td></tr>
<tr><td></td><td>Know:
How sound moves and changes
The speed of sound in air is approximately 340 metres per second (m s^{-1}).

Distance, speed and time for sounds are calculated using the equation:
$v = \frac{d}{t}$
where v is speed in metres per second (m s^{-1}),
d is distance in metres (m) and
t is time in (s).

The speed of sound depends on the properties of the medium and is usually faster in solids than gases.

Using sound in science and technology
Scientific understanding of sound is used to set safe limits for the volume of sound in places such as workplaces and public environments.</td><td>Do:
Analyse data relating to the speed of sounds in different materials.

Evaluate how scientific evidence informs sound regulation and noise management.

Identify ways in which sound technologies and noise pollution affect people and environments.

Identify practical uses of sound in everyday life and in the world of work.</td><td>Know:
How light behaves – refraction
Light travels at 300 000 000 metres per second in a vacuum (much faster than sound) and can travel through empty space (vacuum).

When light passes from one medium to another it undergoes refraction. This can be observed as a change in direction when the angle between the ray of light and the normal is greater than 0º.

A light ray travelling along the normal entering a different medium does not change direction.

A light ray entering a different medium at an angle to the normal will change its direction, so it is closer to the normal in the denser medium.

Lenses use refraction to manipulate light.

Using light in science and technology
Light technologies use light waves for communication, imaging, sensing and medicine.</td><td>Do:
Draw ray diagrams of examples of refraction.

Identify ways in which white light can be separated into different colours.

Identify practical uses of light in communication, medicine and society.

Interpret diagrams showing refraction.

Use scientific vocabulary: refraction.</td></tr>
<tr><td></td><td colspan="2">Notes
• Learners may think particles travel with the wave over long distances rather than vibrating back and forth.
• Learners will be expected to re-arrange the equations at Fourth Level.
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td><td colspan="2">Includes, but not limited to
• Examples of where lenses are used include:
- spectacles
- microscopes
- cameras
- refracting telescopes
- eyes
- imaging tools

Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
</table>

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<table>
<tr><td>Strand</td><td colspan="4">The Physical World</td></tr>
<tr><td>Sub-strand</td><td colspan="4">Waves</td></tr>
<tr><td></td><td colspan="3">Wave properties</td><td>Electromagnetic radiation</td></tr>
<tr><td>Fourth Level</td><td colspan="3">Understand: Waves properties such as wavelength, frequency and amplitude can be measured, and these properties allow for different practical applications.</td><td>Understand: Electromagnetic waves have different wavelengths and frequencies, and this explains their uses and effects.</td></tr>
<tr><td></td><td colspan="3"></td><td></td></tr>
<tr><td></td><td>Know:
Wave properties
Waves have properties including wavelength λ), frequency (f) and amplitude.

Wavelength (λ) is the distance between repeating points in a wave, such as the distance between successive wave crests. It is measured in metres (m).

Frequency (f) describes how many waves are produced or pass a point each second measured in hertz (Hz).

Properties affecting behaviour
Changes in wavelength and frequency affect how waves behave and interact with materials.

Waves can be compared and related
Wave speed depends on wavelength and frequency and is measured in metres per second (m s^{-1}).

The relationship between speed, frequency and wavelength of a wave can be expressed as:

$v = f\lambda$

Where:
v = speed (m s^{-1})
f = frequency (Hz)
λ = wavelength (m)
The speed, distance and time of a wave can be calculated using the following equation introduced in Forces (Motion) section:

$$v = \frac{d}{t}$$</td><td>Do:
Perform calculations involving wavelength, frequency and wave speed.

Learners will be expected to re-arrange the equations at Fourth Level.

Identify ways in which waves are used in communication, imaging and sensing technologies.

Use scientific vocabulary: wave speed and wavelength.</td><td>Know:
Electromagnetic spectrum
Electromagnetic waves have different wavelengths and frequencies across the electromagnetic spectrum.

All electromagnetic waves travel at the same speed in a vacuum, known as the speed of light, which travels at 300 000 000 m s^{-1}</td><td>Do:
Relate wavelength and frequency to the behaviour of electromagnetic radiation.

Evaluate the benefits, limitations and risks of different uses of electromagnetic radiation in society, technology and the environment.

Use scientific vocabulary: vacuum.</td></tr>
<tr><td colspan="2">Notes
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td><td colspan="3">Notes
• Technologies that use properties of the EM spectrum include communication, medical imaging and sterilisation of equipment.
• The application of knowledge and skills through everyday contexts will be a significant focus at Fourth Level. See Science in Action for details.</td></tr>
</table>

Science in Action: Be the Change

Strands	Taking Scientific Action	Science Around Me	Informed and Responsible Decision-making

	Understand: Critically applying scientific knowledge, skills and evidence supports responsible action, informed decision-making and evaluation of impact, helping to contribute to positive change.		**Understand:** Breaking down barriers in science enables diverse participation and responsible innovation that considers future, ethical, social, political, environmental, and economic impacts on global society.		**Understand:** Scientific evidence can be critically evaluated, helping people and society to make informed and responsible decisions to address scientific and societal issues.	
	Know: **Identify and plan** Critically evaluating the quality, validity, reliability and limitations of evidence strengthens actions. Decisions about actions may involve ethical, environmental, economic and social trade-offs. A project plan includes features such as project goal, success criteria, task breakdown (action plan), timelines and deadlines, roles and responsibilities, resource needs, risks and contingencies. **Take scientific action** Complex challenges are interconnected across environmental, social and economic systems and require systems-level thinking to identify sustainable responses. Scientific actions may create interacting short-term and long-term consequences across environmental, social and economic systems. **Collaborate and communicate** Constructive challenge, negotiation and shared decision-making can improve a response to a problem. **Evaluate and improve** Critical evaluation involves evaluating evidence of impact including intended and unintended outcomes and wider effects on environmental, social and economic systems. Sustainable change often depends on long-term monitoring, adaptation and collaboration.	**Do:** **Identify and plan** Investigate science-related issues affecting people, other living things and the environment, locally, nationally and globally. Gather and critically evaluate data quality and limitations. Generate innovative solutions which balance competing priorities and constraints to ignite change. Evaluate trade-offs and justify decisions about actions using scientific, ethical and societal considerations. Create and manage a project plan that includes risk assessment, contingencies, resource allocation and monitoring processes. Consider qualities and skills of individuals when assigning roles in a team or task. **Take scientific action** Analyse how changes in one system may influence other connected systems and use this understanding to justify actions. Take science-informed action on national and global issues. Be open to new ideas and approaches, demonstrating a growth mindset. Consider the resources needed to carry out a proposed action and any practical constraints. Refine solutions iteratively in response to testing, evidence and stakeholder feedback.	**Know:** **Science in our lives** Responsible scientific innovation requires evaluating competing environmental, social, political, and economic priorities to make informed, ethical choices about potential benefits, risks, and trade-offs. The impacts of scientific developments are not experienced equally. Responsible scientific use of artificial intelligence requires transparency, appropriate data inputs, testing and human oversight, as well as consideration of bias, errors, privacy and ethical implications, environmental costs and unequal access. Futures thinking uses evidence, trends and scenarios to explore possible consequences and inform preferred courses of action. **Science at work** Scientific careers increasingly involve collaboration across disciplines and the use of digital, communication, creativity and problem-solving skills. Innovation, creativity and entrepreneurship in science and STEM helps to create new jobs. The scientific community is working to remove barriers linked to participation in science and STEM pathways and careers through more inclusive practices.	**Do:** **Science in our lives** Recognise and explain why diversity and inclusion in science and STEM pathways and careers are important. Recognise how scientific developments affect diverse people or communities. Identify factors that affect access to science opportunities. Critically evaluate the environmental, social, economic and ethical implications of scientific innovations, including artificial intelligence. Consider and evaluate alternative future scenarios informed by scientific evidence and systems thinking. Use imagination to create and justify responsible scientific innovations to address global challenges. **Science at work** Identify ways in which the scientific community is working to remove barriers to participation in science pathways and careers.	**Know:** The strength of a scientific claim depends on the quality of the available evidence, including its source, relevance, consistency and limitations. Scientific evidence from multiple disciplines may be integrated to address scientific and societal issues. The focus of scientific research and development is influenced by ethical, social, political, environmental or economic factors. Scientific evidence informs and influences public decision making and policy, locally and globally. Scientific evidence may support multiple explanations, particularly when evidence is incomplete, uncertain or interpreted differently. Peer review is a process in which independent experts evaluate scientific research before publication to help assess its quality, validity and reliability.	**Do:** Evaluate sources of evidence and information based on relevance, validity, reliability and potential bias. Interpret scientific evidence and compare differences in interpretation. Identify ways in which scientific evidence influences public decision making. Justify a scientific decision or recommendation that considers in terms of risks, benefits and trade-offs.
Fourth Level						

		Use principles of equity and inclusion to create a positive change. **Collaborate and communicate** Treat others with respect and seek ways to co-operate, including resolving conflict. Lead collaborative scientific action and support others to contribute effectively. Proactively engage with a range of people and organisations to carry out actions. Communicate findings confidently and effectively with different audiences. **Evaluate and improve** Critically evaluate evidence of impact, including intended and unintended outcomes and systemic impacts, and justify improvements or further action.				
	Includes, but not limited to • Use principles of equity, equality, inclusion and Learning for Sustainability to affect change. **Notes** • Taking scientific action is an essential component of the Sciences curriculum. • Resources required - This does not imply that learners require access to a project budget or external funding. Cost and budgeting may be considered theoretically where appropriate. • Evaluate = How good is it? • Critically evaluate = How good is it? What evidence supports that? What are its limitations, and how convincing is the evidence?	**Includes, but not limited to** • Factors that affect access to science opportunities include protected and non-protected characteristics*; ethnicity, culture and race; disability and neurodiversity; gender and sex; linguistic; sexual orientation; family, for example, care-experienced, young carers, nomadic families, LGBT families, lone parents; religion and belief; socioeconomic and geography, for example, distance to school. • Data shows that women and those with intersecting characteristics and marginalised identities are less represented in STEM due to inequality and barriers. This can impact participation and engagement. **Notes** • Scientific developments may affect people unequally depending on their characteristics*, resources, geography, infrastructure and access to technology, for example, data which drives innovation can be biased towards one group, and healthcare misdiagnoses are more common for minority groups. Links to UNCRC Articles 28, 29 and 31. • Evaluate = How good is it? • Critically evaluate = How good is it? What evidence supports that? What are its limitations, and how convincing is the evidence?	**Includes, but not limited to** • The influence politics can have is in relation to scientific funding for research and development. **Excludes** • Detailed information about politics and political systems. **Notes** • Identifying misinformation or disinformation will likely involve evaluating sources of evidence for, relevance, validity, reliability and bias. • Link to Being Scientific: Evaluating Scientific Evidence.	

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Social Studies Know-Do-Understand Strands

Strand	**Causation** Causation explains why events and issues happen and what happens as a result.					
Sub-strand	**Geography**		**History**		**Modern Studies**	
Fourth Level	**Understand:** Causes and consequences may not always be deliberate.		**Understand:** Causes and consequences may not always be deliberate.		**Understand:** Causes and consequences may not always be deliberate.	
	Know: Geographical events and changes often have causes that vary in significance and may lead to intended and/or unintended consequences.	**Do:** Evaluate the significance of different causes of geographical events and changes. Explain the intended and/or unintended consequences for people, places and environments.	**Know:** Historical events and issues often had causes that varied in significance and may have led to intended and/or unintended consequences.	**Do:** Evaluate the significance of different causes of historical events and issues. Explain the intended and/or unintended consequences for people and societies.	**Know:** Contemporary events and issues often have causes that vary in significance and may lead to intended and/or unintended consequences.	**Do:** Evaluate the significance of different causes of contemporary events and issues. Explain the intended and/or unintended consequences for people, communities and societies.
	Notes • Significance may be considered in relation to scale, duration and impact, which may be limited or wide-reaching. • Judgements about significance should be supported using relevant evidence and examples. • Different interpretations may place different significance on particular causes and consequences.		**Notes** • Significance may be considered in relation to scale, duration and impact, which may be limited or wide-reaching. • Judgements about significance should be supported using relevant evidence and examples. • Different interpretations may place different significance on particular causes and consequences.		**Notes** • Significance may be considered in relation to scale, duration and impact, which may be limited or wide-reaching. • Judgements about significance should be supported using relevant evidence and examples. • Different interpretations may place different significance on particular causes and consequences.	

Strand	**Conflict** Conflict is a disagreement, tension or struggle within or between people, groups, societies, ideas or environments.					
Sub-strand	**Geography**		**History**		**Modern Studies**	
Fourth Level	**Understand:** Conflict is influenced by social, economic, environmental and political factors, and the consequences may not always be deliberate.		**Understand:** Conflict is influenced by social, economic, environmental and political factors, and the consequences may not always be deliberate.		**Understand:** Conflict is influenced by social, economic, environmental and political factors, and the consequences may not always be deliberate.	
	Know: Conflict, including environmental, resource and territorial conflicts, occurs when there are different demands on places and resources. These are influenced by social, economic, environmental and political factors, resulting in intended and/or unintended consequences.	**Do:** Explain how social, economic, environmental and political factors influence conflict. Explain the intended and/or unintended consequences of the conflict. Evaluate the strategies or potential strategies to manage the conflict.	**Know:** Conflict in the past, including wars, revolutions, genocide and ideological conflict, was influenced by social, economic, environmental and political factors, resulting in intended and/or unintended consequences.	**Do:** Explain how social, economic, environmental and political factors influenced the causes and course of conflict in the past. Explain the intended and/or unintended consequences of the conflict. Evaluate the attempts to address or resolve the conflict.	**Know:** Conflict, including disputes, wars, genocide and ideological conflict, is influenced by social, economic, environmental and political factors, resulting in intended and/or unintended consequences.	**Do:** Explain how social, economic, environmental and political factors influence conflict. Explain the intended and/or unintended consequences of the conflict. Evaluate the responses or potential responses to the conflict.

	Notes • Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience. • Not all conflict is violent. • Environmental conflicts may arise from climate change, environmental pressures, conservation, sustainability issues or competing demands on environments and natural resources. • Resource conflicts may occur when people, groups or countries compete for access to or control of resources such as water, energy, food, minerals or land. • Territorial conflicts may occur when people, groups or countries disagree over borders, ownership or control of land or seas. • Social factors may include population change, inequality, lifestyles or community needs. • Economic factors may include trade, development, employment, profit or demand for resources. • Environmental factors may include climate change, sustainability or availability of land and resources. • Political factors may include governance, policies, decision-making, ownership or control of resources and territory. • Intended consequences are outcomes that are planned or expected and may include changes to land use, management of resources or environmental protection measures. • Unintended consequences are outcomes that are not planned or expected and may include environmental damage, displacement, inequality, changes to land use, pressure on resources or ongoing tensions between groups or countries. • Attempts to manage conflict may include negotiation, planning, regulation, conservation measures or sustainable management approaches. • Responses to conflict may reduce, escalate or prolong conflict, although some conflicts may remain unresolved or ongoing. • People's experience of conflict differs. Practitioners should be mindful of children and young people's lived experiences of conflict (e.g. domestic abuse, displacement due to war) and provide support as appropriate.	**Notes** • Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience. • Not all conflict is violent. • Wars are organised, armed conflicts between groups or countries and may include civil wars, international wars or proxy wars. • Genocide is the deliberate attempt to destroy a national, ethnic, racial or religious group. • Ideological conflict occurs when competing beliefs, values or political ideas influence tension or conflict between people, groups or countries. • Social factors may have included inequality, identity, religion, beliefs, discrimination or social change. • Economic factors may have included trade, wealth, poverty, resources, industrialisation or competition for land and power. • Environmental factors may have included access to land or resources, climate, terrain, landscape, famine or disease. • Political factors may have included leadership, power, control, nationalism or competing ideologies. • Intended consequences are outcomes that are planned or expected. These may have included political reform, territorial change or shifts in power and leadership. • Unintended consequences are outcomes that are not planned or expected. These may have included political change, social division, migration, economic inequality, changes to borders or ongoing tensions between groups or countries. • Attempts to address or resolve conflict may have included treaties, negotiations, political reform, international agreements or the ending of fighting. • Attempts to address or resolve conflict may have reduced, reshaped or prolonged conflict. Some conflicts, however, were not resolved. • People's experience of conflict differs. Practitioners should be mindful of children and young people's lived experiences of conflict (e.g. domestic abuse, displacement due to war) and provide support as appropriate.	**Notes** • Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience. • Not all conflict is violent. • A dispute is a serious disagreement between people, groups or countries. • Wars are organised, armed conflicts between groups or countries and may include civil wars, international wars or conflicts over territory, ideology or resources. • Genocide is the deliberate attempt to destroy a national, ethnic, racial or religious group. • Ideological conflict occurs when people, groups or countries have competing beliefs, values or political ideas. • Conflicts may involve hate speech, intimidation, violence or acts of terrorism. • Social factors may include inequality, identity, religion, beliefs, culture or discrimination. • Economic factors may include poverty, wealth, trade, employment or access to resources. • Environmental factors may include access to land, water, energy or the impacts of environmental change. • Political factors may include power, leadership, rights, decision-making or competing ideologies. • Intended consequences are outcomes that are planned or expected and may include political change, international intervention or changes to laws, policies or governance. • Unintended consequences are outcomes that are not planned or expected and may include displacement, migration, trauma, political change, economic inequality, environmental damage or ongoing tensions between groups or countries. • Ways of addressing or responding to conflict may include protests, strikes, negotiation, peace agreements, sanctions, international intervention, humanitarian support or cooperation. • The media, governments or individuals may influence how conflict is understood, represented or responded to. • Responses to conflict may reduce, escalate or prolong conflict, although some conflicts may remain unresolved or ongoing. • People's experience of conflict differs. Practitioners should be mindful of children and young people's lived experiences of conflict (e.g. domestic abuse, displacement due to war) and provide support as appropriate.

<table>
<tr><td>Strand</td><td colspan="4">Cooperation

Cooperation is the process of working together to achieve goals or address challenges.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td colspan="2">Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Cooperation is affected by social, economic, environmental and political factors.</td><td colspan="2">Understand: Cooperation is affected by social, economic, environmental and political factors.</td><td colspan="2">Understand: Cooperation is affected by social, economic, environmental and political factors.</td></tr>
<tr><td>Know:
Cooperation in managing environments and resources is influenced by social, economic, environmental and political factors.</td><td>Do:
Identify the social, economic, environmental and political factors influencing cooperation.

Describe how the social, economic, environmental and political factors influence cooperation in managing environments and resources.

Evaluate the outcomes of cooperation for people, places and environments.</td><td>Know:
Cooperation between people, groups and countries in the past was influenced by social, economic, environmental and political factors.</td><td>Do:
Identify the social, economic, environmental and political factors influencing cooperation in the past.

Describe how the social, economic, environmental and political factors influenced agreements, partnerships or collective action in the past.

Evaluate the outcomes of cooperation for people, groups and countries in the past.</td><td>Know:
Cooperation in decision-making and responses to issues is influenced by social, economic, environmental and political factors.</td><td>Do:
Identify the social, economic, environmental and political factors influencing cooperation.

Describe how the social, economic, environmental and political factors influence cooperation in decision-making and responses to issues.

Evaluate the outcomes of cooperation for people, communities and societies.</td></tr>
<tr><td colspan="2">Notes
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Social factors may include housing, health, community needs, cultural heritage or quality of life.
• Economic factors may include employment, industry, trade, tourism, investment or access to resources.
• Environmental factors may include conservation, sustainability, climate change or protecting ecosystems.
• Political factors may include government priorities, legislation, international agreements or control over resources.
• Different people, groups and countries may place greater importance on some interests than others.
• Cooperation may involve governments, businesses, communities, environmental organisations or international organisations working together.
• Examples of cooperation may include:
  ○ managing shared systems or natural resources.
  ○ international cooperation on climate change.
  ○ agreements relating to quotas or energy production.
  ○ balancing economic development with environmental protection.</td><td colspan="2">Notes
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Social factors may have included religion, cultural identity, population change, living conditions or social reform.
• Economic factors may have included trade, wealth, industry, employment or access to resources.
• Environmental factors may have included land, food, water, settlement or responses to environmental challenges.
• Political factors may have included power, government decisions, conflict, diplomacy, territorial control or empire.
• Different people, groups and countries may have placed greater importance on some interests than others.
• Cooperation in the past may have taken the form of agreements, alliances, partnerships, trade networks, political unions or collective action.
• Examples of cooperation may include:
  ○ alliances during times of conflict.
  ○ trade agreements and trading partnerships.
  ○ cooperation linked to industrialisation and economic change.
  ○ collective action by workers through trade unions.
  ○ political unions and treaties.</td><td colspan="2">Notes
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Social factors may include rights, equality, health, education or community needs.
• Economic factors may include poverty, wealth, trade, employment, taxation, public spending, funding or access to resources.
• Environmental factors may include sustainability, climate change, land-use or environmental protection.
• Political factors may include government priorities, security, laws, international relations or the distribution of power.
• Different people, groups and countries may place greater importance on some interests than others.
• Cooperation may involve governments, public services, charities, pressure groups, trade unions, businesses or international organisations working together.
• Examples of cooperation may include:
  ○ countries working together within international organisations.
  ○ countries sharing information, resources, providing aid and expertise to address global challenges or threats.
  ○ governments, public services and organisations working together to address social issues.</td></tr>
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	○ land-use decisions involving housing, industry, recreation or conservation.	○ international cooperation during or after global conflicts.	○ pressure groups, trade unions and campaign organisations working with others to influence policy and decision-making.

Strand	**Enquiry** Enquiry is the process of asking questions, gathering information and using findings to develop knowledge and understanding and reach conclusions.					
Sub-strand	**Geography**		**History**		**Modern Studies**	
Fourth Level	**Understand:** Enquiry requires selecting and using information to reach and justify conclusions.		**Understand:** Enquiry requires selecting and using information to reach and justify conclusions.		**Understand:** Enquiry requires selecting and using information to reach and justify conclusions.	
	Know: Enquiry in Geography requires the selection, processing and use of information from observations, maps, fieldwork and other sources to develop explanations and reach conclusions.	**Do:** Identify questions about geographical issues. Evaluate, select and use methods and sources to gather information. Process and use information to describe and explain findings. Reach and justify conclusions.	**Know:** Enquiry in History requires the selection and use of information from primary and secondary sources to develop explanations and reach conclusions.	**Do:** Identify questions about historical issues. Evaluate, select and use primary and secondary sources to gather information. Use information to describe and explain findings. Reach and justify conclusions.	**Know:** Enquiry in Modern Studies requires the selection and use of information from surveys, interviews, media and other sources to develop explanations and reach conclusions.	**Do:** Identify questions about contemporary issues. Evaluate, select and use methods and sources to gather information. Use information to describe and explain findings. Reach and justify conclusions.
	Notes • The questions asked should help determine which information is relevant and useful to the enquiry. • Selecting means children and young people identifying and choosing methods and sources that are relevant to the question or enquiry. • Observations involve gathering information by looking at populations, places and environments. • A variety of map types, including physical, political and OS maps, can be used to locate places and identify geographical features and patterns. • Fieldwork involves gathering information and data directly from places and environments. • Other sources may include atlases, graphs, surveys, interviews, photographs, satellite imagery, radar, statistical data and digital sources such as Geographic Information Systems (GIS) and Artificial Intelligence (AI). • Findings and conclusions may be communicated through maps, diagrams, charts, reports, presentations or digital formats.		**Notes** • The questions asked should help determine which information is relevant and useful to the enquiry. • Selecting means children and young people identifying and choosing sources that are relevant to the question or enquiry. • Primary sources were created during the time being studied and may include artefacts, photographs, buildings, oral accounts and documents such as letters, diaries, speeches or newspaper articles. • Secondary sources were created after the time being studied and may include textbooks, documentaries, books, articles or digital sources including Artificial Intelligence (AI). • Findings and conclusions may be communicated through discussion, timelines, reports, presentations or digital formats.		**Notes** • The questions asked should help determine which information is relevant and useful to the enquiry. • Selecting means children and young people identifying and choosing methods and sources that are relevant to the question or enquiry. • A survey gathers information by asking questions to groups of people. This may include a survey that children and young people create or a survey from another source. • An interview gathers information through discussion with an individual or group. This may include an interview that children and young people conduct or an interview from another source. • Media sources may include print media, television, radio, websites and social media. • Other sources may include photographs, graphs, data, digital sources including Artificial Intelligence (AI), reports, polls, or leaflets and posters. • Findings and conclusions may be communicated through discussion, reports, presentations or digital formats.	

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<table>
<tr><td>Strand</td><td colspan="5">Environments
Environments are the natural and human-made conditions and surroundings that shape, and are shaped by, people's lives and actions.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td>Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Decisions about environments involve competing priorities and can have different consequences for people and places.</td><td colspan="2">Understand: Decisions about environments involve competing priorities and can have different consequences for people and places.</td><td>Understand: Decisions about environments involve competing priorities and can have different consequences for people and places.</td></tr>
<tr><td>Know:
Decisions about land use, resource use and environmental management involve competing priorities and have consequences for people, places and environments.</td><td>Do:
Describe strategies for land use, resource use and environmental management.

Explain how competing priorities affect decisions about land use, resource use and environmental management.

Describe the social, economic, environmental and political consequences of environmental decisions.</td><td>Know:
Decisions and actions during industrialisation, conflict, migration and colonisation changed environments and had lasting consequences for people and societies.</td><td>Do:
Explain how industrialisation, conflict, migration and/or colonisation changed environments in the past.

Explain how the needs, priorities and technologies of the time affected decisions and actions that changed environments.

Describe the social, economic, environmental and political consequences of environmental changes.</td><td>Know:
Different people, groups and governments have competing priorities for how environments should be managed and improved.</td><td>Do:
Describe the social, economic, environmental and political priorities of different people groups and/or governments.

Explain why different people groups and/or governments can have competing priorities.

Explain the consequences of decisions about environments for people, groups and societies.</td></tr>
<tr><td colspan="2">Notes
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Environmental management refers to actions taken to protect, use or improve environments.
• Sustainable approaches aim to balance environmental, social and economic needs now and in the future.
• Different groups may have competing views about how environments should be managed and used.
• Decisions about housing, transport, energy production, tourism, farming, industry and commerce can create benefits and challenges.
• Environmental changes such as climate change, flooding, coastal erosion, deforestation or habitat loss can affect people and places in different ways.
• Responses to environmental challenges may include conservation, renewable energy, flood management, sustainable transport, reducing pollution, improving air and water quality, or land-use planning.</td><td colspan="2">Notes
• Children and young people do not need to study all of these contexts together. They may be explored through selected historical examples.
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Industrialisation often changed landscapes through factories, mining, transport networks and urban growth.
• Migration often changed the use of land, settlements and resources both in places people left and places they moved to.
• Conflict often damaged, reshaped or created environments through destruction, reconstruction, fortifications and changing land use.
• Colonisation often altered environments through settlement, agriculture, extraction of resources and new systems of land ownership.
• Historical changes often had lasting environmental impacts that can still be seen today.</td><td>Notes
• Social, economic, environmental and political factors should be encountered across Fourth Level. Not all factors may be applicable to every context or learning experience.
• Environments in Modern Studies can refer to the social, economic and community settings in which people live, including their family circumstances, neighbourhoods, communities and access to resources and services.
• Governments, councils, businesses, charities, campaign groups, activists and local communities may all try to influence decisions.
• Different groups may have different priorities, such as improving housing, protecting green space, creating jobs, reducing poverty, improving public services, increasing safety or tackling inequality.
• Examples may include tensions between economic development and environmental protection, or between local and national priorities.</td></tr>
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Strand	**Equality** Equality is the state of being equal, especially in status, rights or access to opportunities, with equity helping to address different needs and barriers.					
Sub-strand	**Geography**		**History**		**Modern Studies**	
Fourth Level	**Understand:** Progress towards equality is shaped by the decisions, attitudes and actions of people, organisations and governments.		**Understand:** Progress towards equality is shaped by the decisions, attitudes and actions of people, organisations and governments.		**Understand:** Progress towards equality is shaped by the decisions, attitudes and actions of people, organisations and governments.	
	Know: Decisions that affect planning, infrastructure and investment can reinforce or reduce inequalities between people, places and environments.	**Do:** Describe differences in planning, infrastructure and/or investment between places. Explain how decisions affecting planning, infrastructure and investment can reinforce or reduce inequality. Explain how different people, places and environments experience the same decision differently.	**Know:** Social attitudes, political decisions and public institutions have reinforced or reduced inequality for different people and groups in the past.	**Do:** Describe how social attitudes, political decisions and/or public institutions reinforced or reduced inequality. Explain how people or groups challenged inequality. Explain the impact of actions taken by people and groups to make progress towards equality.	**Know:** Social attitudes, political decisions and public institutions can reinforce or reduce inequality for people and groups.	**Do:** Describe how social attitudes, political decisions and/or public institutions reinforce or reduce inequality. Explain how different people and groups may experience inequality. Explain how people and groups can challenge inequality.
	Notes • Planning may include decisions about how land and resources are used and where homes, services and transport are located. • Infrastructure may include transport networks, digital connectivity, utilities and public facilities. • Investment may include spending on transport, housing, healthcare, education and regeneration. • Differences in planning, infrastructure and investment can affect people's access to services, resources and opportunities. • Investment, infrastructure and planning decisions may reduce inequality by improving access for communities, but unequal investment can reinforce existing inequalities. Structural inequality can be reinforced or reduced by the way systems, institutions and societies operate. • Equity involves addressing different needs and barriers, including those created or maintained by systems and institutions, to reduce inequality.		**Notes** • Social attitudes influence how people and groups are viewed and treated in society. These may include the beliefs, values and expectations held by individuals and society. • Political decisions may have included laws, government policies, public spending and voting rights. • Public institutions may have included organisations such as schools, the National Health Service (NHS), the police, courts and local authorities. • Social attitudes, political decisions and public institutions may have reinforced or reduced inequality at different points in history. • Structural inequality may have developed over time when social attitudes, political decisions and public institutions created or maintained unequal rights and opportunities. • Individuals and groups challenged inequality through actions such as protest, campaigns, reform movements and legal change. • Equity involves addressing different needs and barriers, including those created or maintained by systems and institutions, to reduce inequality.		**Notes** • Social attitudes influence how people and groups are viewed and treated in society. These may include the beliefs, values and expectations held by individuals and society. • Political decisions may include laws, government policies, public spending and voting rights. • Public institutions include organisations such as schools, the NHS, the police, courts and local authorities. • Social attitudes, political decisions and public institutions can reinforce or reduce inequality through the policies they adopt and the services they provide. Structural inequality can be reinforced or reduced by the way systems, institutions and societies operate. • Approaches to promoting equality may include legislation, public policy, education, targeted support and awareness campaigns. • The same decision or policy may affect people and groups differently, depending on their circumstances or experiences. • Equity involves addressing different needs and barriers, including those created or maintained by systems and institutions, to reduce inequality.	

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<table>
<tr><td>Strand</td><td colspan="4">Evidence

Evidence is information used to answer questions and support, challenge or develop explanations and conclusions.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td colspan="2">Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Evidence may be more or less useful, reliable or trustworthy for different purposes.</td><td colspan="2">Understand: Evidence may be more or less useful, reliable or trustworthy for different purposes.</td><td colspan="2">Understand: Evidence may be more or less useful, reliable or trustworthy for different purposes.</td></tr>
<tr><td>Know:
The reliability, trustworthiness and usefulness of evidence in Geography can be affected by the accuracy of the information, omission, misinformation and/or disinformation.</td><td>Do:
Evaluate evidence using scale, location, timing, purpose, perspective, bias and/or presentation.

Identify and explain inaccuracies, omissions, misinformation or disinformation.</td><td>Know:
The reliability, trustworthiness and usefulness of evidence in History can be affected by the accuracy of the information, omission and/or its relevance to the question being asked.</td><td>Do:
Evaluate evidence using type, timing, purpose, perspective, bias and/or exaggeration.

Identify and explain inaccuracies, omissions and relevance to the question being asked.</td><td>Know:
The reliability, trustworthiness and usefulness of evidence in Modern Studies can be affected by the accuracy of the information, omission, misinformation and/or disinformation.</td><td>Do:
Evaluate evidence using type, perspective, bias, exaggeration, purpose, timing and/or presentation.

Identify and explain inaccuracies, omissions, misinformation or disinformation.</td></tr>
<tr><td colspan="2">Notes
• The relevance of influencing factors will vary depending on the evidence, but each should be encountered across Fourth Level.
• Reliability refers to whether information is consistent, accurate and can be supported by other evidence.
• Trustworthiness refers to the extent to which evidence can be believed, taking account of factors such as bias, purpose, accuracy and omissions.
• Usefulness refers to how well evidence helps answer a question, support an explanation or justify a conclusion.
• Accuracy refers to whether information is correct, factual and free from errors.
• Omissions occur when relevant information, evidence or perspectives are left out, intentionally or unintentionally, and may affect understanding of an issue.
• Misinformation is false or inaccurate information shared without the intention to mislead.
• Disinformation is false or misleading information shared deliberately to influence, manipulate or deceive.
• Evidence and representations of the world reflect the choices and perspectives of those who create them.</td><td colspan="2">Notes
• The relevance of influencing factors will vary depending on the evidence, but each should be encountered across Fourth Level.
• Reliability refers to whether information is consistent, accurate and can be supported by other evidence.
• Trustworthiness refers to the extent to which evidence can be believed, taking account of factors such as bias, purpose, accuracy and omissions.
• Usefulness refers to how well evidence helps answer a question, support an explanation or justify a conclusion.
• Accuracy refers to whether information is correct, factual and free from errors. Some information may be inaccurate or misleading. This may happen by mistake (misinformation) or deliberately (disinformation).
• Omissions occur when relevant information, evidence or perspectives are left out, intentionally or unintentionally, and may affect understanding of an issue.
• Evidence and representations of the world reflect the choices and perspectives of those who create them.</td><td colspan="2">Notes
• The relevance of influencing factors will vary depending on the evidence, but each should be encountered across Fourth Level.
• Reliability refers to whether information is consistent, accurate and can be supported by other evidence.
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<table>
<tr><td>Strand</td><td colspan="5">Perspective

Perspective is the way people understand and interpret the world based on who they are and where they come from.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td colspan="2">Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Perspectives can influence how people, places, events and issues are understood, explained and responded to.</td><td colspan="2">Understand: Perspectives can influence how people, places, events and issues are understood, explained and responded to.</td><td colspan="2">Understand: Perspectives can influence how people, places, events and issues are understood, explained and responded to.</td></tr>
<tr><td>Know:
Social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to geographical issues.</td><td>Do:
Explain how social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to geographical issues.</td><td>Know:
Social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to historical issues.</td><td>Do:
Explain how social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to historical issues.</td><td>Know:
Social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to contemporary issues.</td><td>Do:
Explain how social, economic, environmental and political perspectives can lead to different understandings, explanations and responses to contemporary issues.</td></tr>
<tr><td colspan="2">Notes
• Social, economic, environmental and political perspectives should be encountered across Fourth Level. Social, economic, environmental and political perspectives may not be applicable to every context or learning experience so should be encountered across Fourth Level as a whole.
• Social perspectives may focus on the needs, experiences and wellbeing of people and groups.
• Economic perspectives may focus on resources, employment, trade and economic activity.
• Environmental perspectives may focus on the natural environment and the impacts of human activity.
• Political perspectives may focus on decision-making, governance and policy.</td><td colspan="2">Notes
• Social, economic, environmental and political perspectives should be encountered across Fourth Level. Not all social, economic, environmental and political perspectives may be applicable to every context or learning experience.
• Perspectives can come from people living at the time, while others come from people interpreting the past later. Past perspectives may differ from those held today.
• Social perspectives may focus on the experiences and lives of people and groups.
• Economic perspectives may focus on resources, wealth, trade and economic activity.
• Environmental perspectives may focus on the influence of the natural environment and human interaction with it.
• Political perspectives may focus on power, leadership, governance and decision-making.</td><td colspan="2">Notes
• Social, economic, environmental and political perspectives should be encountered across Fourth Level. Not all social, economic, environmental and political perspectives may be applicable to every context or learning experience.
• Social perspectives may focus on the experiences, needs and wellbeing of people and groups.
• Economic perspectives may focus on resources, employment, taxation, spending, wealth, poverty and economic priorities.
• Environmental perspectives may focus on environmental impacts, sustainability and the use of resources.
• Political perspectives may focus on power, governance, rights, responsibilities and decision-making.</td></tr>
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<table>
<tr><td>Strand</td><td colspan="4">Power

Power is the ability to influence, control or cause change.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td colspan="2">Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Power is uneven.</td><td colspan="2">Understand: Power is uneven.</td><td colspan="2">Understand: Power is uneven.</td></tr>
<tr><td>Know:
Natural processes and their impacts are distributed unevenly across places and environments.</td><td>Do:
Explain why the impacts of natural processes vary between places and environments.

Explain how uneven impacts affect people, places and environments.</td><td>Know:
Power in the past was distributed unevenly between people, groups and countries, with some having greater control over decisions, resources and people than others.</td><td>Do:
Explain why some people, groups or countries held more power than others in the past.

Explain how the distribution of power affected different people, groups or countries.</td><td>Know:
People, groups, institutions and countries have different levels of influence over decisions and opportunities to participate in decision-making processes.</td><td>Do:
Explain why people, groups, institutions and/or countries have different levels of influence over decisions and opportunities to participate in decision-making processes.

Explain how the differences in power can affect people, groups and countries.</td></tr>
<tr><td colspan="2">Notes
• Natural processes and their impacts are distributed unevenly across the world. For example:
  ○ Tectonic activity is concentrated mainly along plate boundaries, meaning some places are more likely to experience earthquakes and volcanic activity than others.
  ○ Exposure to flooding, coastal erosion and deposition varies between places.
  ○ Glacial processes occur only in particular environmental conditions.
• The same natural process may have different impacts depending on where and when it occurs.
• Some places experience opportunities associated with natural processes, such as fertile soils, water supply and renewable energy generation. Some places also experience opportunities for tourism.
• Some places experience more challenges associated with natural processes, such as natural hazards, environmental change and resource scarcity.
• Different factors can increase or reduce the impacts experienced by different places and populations. For example:
  ○ Social factors may include population density, health and access to support.
  ○ Economic factors may include wealth, infrastructure, technology and access to resources.
  ○ Environmental factors may include location, climate, climate change, relief, geology and exposure to hazards.
  ○ Political factors may include planning, governance, investment and emergency response.</td><td colspan="2">Notes
• Power in the past was often concentrated in the hands of rulers, governments, elites or other dominant groups or countries. Other groups often had limited power or influence.
• Different factors influenced who held power. For example:
  ○ Social factors may have included education, class, status, gender, sex, sexual orientation, race, ethnicity, culture and religion.
  ○ Economic factors may have included wealth, land ownership, employment, trade and access to resources.
  ○ Political factors may have included laws, systems of government and the use of military power to enforce or defend decisions.
• Uneven distribution of power may have affected rights, opportunities, wealth, living conditions, freedoms and access to resources.
• Power imbalances may have existed between governments and citizens, landowners and workers, colonisers and indigenous peoples, or political and religious authorities.
• People and groups may have challenged power imbalances through protest, reform, resistance or revolution.</td><td colspan="2">Notes
• Influence refers to the ability to affect decisions, actions or opinions.
• Unequal influence can affect whose views are heard, represented and acted upon. This can be affected by different factors. For example:
  ○ Social factors may include education, class, status, gender, sex, sexual orientation, race, ethnicity, culture and religion.
  ○ Economic factors may include wealth, income, employment and access to resources.
  ○ Political factors may include representation, voting systems, laws and government decisions.
• Unequal influence can affect whose rights are protected, whose interests are represented and who has access to opportunities and decision making.
• Some people and groups may face barriers to participation in decision-making processes such as limited access to information, resources, representation or opportunities to have their views heard.
• Information and media can influence how issues are understood, discussed and responded to within society.
• Misinformation and disinformation may affect how individuals and groups understand issues and participate in decision-making.
  ○ Misinformation is false or inaccurate information shared without the intention to mislead.
  ○ Disinformation is false or misleading information shared deliberately to influence, manipulate or deceive.</td></tr>
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	• Uneven impacts can affect people's safety, wellbeing, opportunities and quality of life. • Responses to natural hazards and environmental change can reduce or increase the impacts experienced by different places and populations.		• People and groups may seek to address unequal influence through voting, campaigning, activism, lobbying or collective action.

Strand	**Society** Society is how people organise themselves and share ways of life.					
Sub-strand	**Geography**		**History**		**Modern Studies**	
Fourth Level	**Understand:** Societies change and adapt over time.		**Understand:** Societies change and adapt over time.		**Understand:** Societies change and adapt over time.	
	Know: Population and settlement patterns change over time and influence how places change and adapt.	**Do:** Describe changes in population and settlement patterns over time. Explain the factors influencing population and settlement change. Explain how these changes create opportunities and/or challenges for places now and in the future.	**Know:** Societies adapted to changes that transformed the way people lived and worked.	**Do:** Describe ways in which societies changed over time. Explain how societies adapted to these changes. Explain how different people and groups experienced these changes.	**Know:** People and groups in societies participate in different ways and their actions can influence change.	**Do:** Describe different ways people and groups can participate in society. Explain how people and groups can influence the societies they live in. Explain why some forms of participation can be more effective than others.
	Notes • Population and settlement patterns change over time because of demographic change, economic development and environmental factors. • Places adapt to changing populations through changes to housing, transport, infrastructure, services and land use. • Population and settlement change can create opportunities and challenges for places now and in the future, including economic growth, changing demand for housing and services, pressure on infrastructure or rural decline. • Changes in population and settlement patterns influence the economy, environment, services and quality of life in different places.		**Notes** • Changes in past societies may relate to industrialisation, migration, technological developments, conflict or social reform. • These changes influenced work, housing, communities, transport, education, health and daily life. • People and groups experienced change differently depending on factors such as age, gender, sex, sexual orientation, ethnicity, race, education, occupation, wealth or social class. • Some aspects of society changed rapidly, while others showed continuity over time.		**Notes** • Participation means taking part in society and civic life to influence decisions, support communities or bring about change. Different approaches can include raising awareness, lobbying decision-makers, organising campaigns, protesting, using the media or participating in public consultations. • People and groups participate in different ways, including campaigning, volunteering, community action, charities, pressure groups, trade unions, joining political parties, standing as a candidate and voting. • The effectiveness of participation can depend on factors such as public support, resources, leadership, media coverage, government responses or the methods used. • Different forms of participation may have different impacts on individuals, communities and society, creating both opportunities and challenges.	

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<tr><td>Strand</td><td colspan="4">Systems
Systems are ways in which people, places and natural processes are connected and interact with each other.</td></tr>
<tr><td>Sub-strand</td><td colspan="2">Geography</td><td colspan="2">History</td><td colspan="2">Modern Studies</td></tr>
<tr><td rowspan="3">Fourth Level</td><td colspan="2">Understand: Systems interact in different ways.</td><td colspan="2">Understand: Systems interact in different ways.</td><td colspan="2">Understand: Systems interact in different ways.</td></tr>
<tr><td>Know:
Atmospheric systems involve interacting processes that create and change weather patterns.</td><td>Do:
Describe weather conditions using maps and synoptic charts.

Explain how air masses, pressure systems and/or weather fronts interact to create weather conditions.

Explain how atmospheric conditions interact with features of a place to produce different weather patterns.</td><td>Know:
Systems in the past, including trade and migration networks and government systems, interacted in ways that contributed to change in societies.</td><td>Do:
Describe connections between different systems within and between societies or places.

Explain how trade and migration networks and/or government systems interacted.

Explain how interactions between systems contributed to change in societies.</td><td>Know:
Government, justice and welfare systems can interact in making and carrying out decisions in society.</td><td>Do:
Describe how government, justice and/or welfare systems make and carry out decisions.

Explain how government, justice and/or welfare systems can interact in making and carrying out decisions.

Explain how government, justice and/or welfare systems can affect people’s lives.</td></tr>
<tr><td colspan="2">Notes
• Atmospheric processes may include the movement of air, changes on air pressure, temperature and moisture.
• Weather systems may include air masses and high and low-pressure systems.
• Synoptic charts may show air pressure, isobars, weather fronts, wind direction and wind speed.
• Weather maps, radar and satellite images are used to interpret and predict weather patterns.
• Features of a place that interact with atmospheric conditions may include latitude, altitude, relief, proximity to the sea and the built environment.
• Interactions between atmospheric conditions and features of a place can result in variations in temperature, precipitation and the wind.</td><td colspan="2">Notes
• Connections between systems may be explored within a society or between different societies and places.
• Trade networks are connections between people and places through which goods, resources and information are exchanged.
• Migration networks may include voluntary and forced movements of people within and between countries, including migration linked to work, conflict, persecution and enslavement.
• Government systems may include democratic and non-democratic systems and different levels of government.
• Government systems make decisions, create laws and organise public services.
• Government systems may interact with other systems through decisions about laws, taxation, trade, movement and territory.
• Interactions between systems may have contributed to changes in settlement, population, economic activity, communication and connections between people and places.</td><td colspan="2">Notes
• Government systems may include democratic and non-democratic systems. They may include different institutions or levels of government, elected or unelected representatives, laws, policies and decision-making processes.
• Justice systems may include laws, courts, police, legal processes and prisons.
• Welfare systems may include services and support relating to health, housing, income and social care.
• Making and carrying out decisions can involve different systems. For example, a government decision may lead to changes in laws, services or support.
• Systems can affect people’s lives in different ways, including their rights and responsibilities, access to services and support and experiences of laws and decisions.
• How systems interact can vary between societies or countries.</td></tr>
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Technologies Know-Do-Understand Strands

Strand	Identify, Define, Explore and Articulate (IDEAs)					
Sub-Strand	Business		Design and Engineering		Computing Science	
Fourth Level	**Understand: Successful innovation is achieved through a structured and evidence-based design process that balances user needs, testing evidence and real-world constraints.**					
	Know: Innovation is an ongoing iterative process that continuously improves or develops new products and services to meet the needs and wants of the market. Entrepreneurs consider the feasibility of their idea by looking at the costs associated with developing it. Entrepreneurs use available data such as financial performance and feedback from the market to evaluate if the enterprise has reached its outcomes or agreed success criteria. Barriers to becoming an entrepreneur could include limited access to finance and support, cultural and social barriers and fewer professional connections. A business plan outlines key aspects of a business idea, such as the marketing plan, resources, costs, projected sales and profits. Business plans can be used to secure finance from investors such as banks, shareholders, venture capitalists and government. A customer persona is a description of the ideal customer that includes details about their lifestyle, income, wants and buying patterns and helps the organisation understand target groups. The Unique Selling Point (USP) highlights what makes a product or service different from competitors and can influence customer	**Do:** Collaborate effectively with others to solve an identified problem or respond to a brief within an enterprise activity or event planning context. Calculate simple costing of a project, event or product to determine pricing strategy and likely profitability. Evaluate the outcomes of the enterprise activity and the effectiveness of decisions made. Investigate barriers to becoming an entrepreneur and identify sources of support for certain groups. Prepare a business plan or pitch for an enterprise idea or investment opportunity. Identify products and services targeted towards different customer segments. Consider the use of customer personas to build up a picture of the target market. Develop and/or evaluate an organisations marketing strategy towards their target market.	**Know:** Designers consider constraints that apply to any proposal made. A research methodology is the overall, systematic plan a researcher follows to conduct a study and answer a specific research question. Iterative design is non-linear. Designers may return to earlier stages based on testing and feedback. Designers balance making changes to a design with constraints such as cost, safety, available materials and practical requirements. Subjective data is information based on personal experiences, feelings, opinions, or perceptions that cannot be measured or independently verified by someone else. Objective data is factual, measurable, and observable information that does not change based on personal feelings, opinions or bias.	**Do:** Plan a strategy to complete design activities. Use different forms of physical and digital modelling to test ideas. Justify why a model type is suitable for testing. Use test results and feedback to improve and refine ideas. Assess a design against given design criteria, justifying the findings and recommending improvements. Critique an existing product using subjective and objective data.	**Know:** Constraints, such as time, audience, purpose and resources, influence design decisions. Design communicates how data, processes, user interactions and system behaviour work together. Development can be undertaken collaboratively, with different roles contributing to a solution. Algorithms can be refined from high-level ideas into increasingly detailed solutions. Algorithms can use sequence, nested selection, repetition and logical operators. Testing is a planned process used to evaluate functionality, usability and reliability. Evaluation uses success criteria to judge the efficiency, reliability and suitability of a solution.	**Do:** Analyse requirements, constraints and research findings to justify design decisions. Create detailed designs that communicate data structures, processes and user interactions. Refine high-level designs into detailed algorithms and subprocesses. Build solutions that reflect planned designs and requirements. Work with others to develop and refine solutions. Create and apply test plans using defined success criteria. Evaluate solutions for usability, reliability, efficiency and suitability. Improve solutions using testing evidence and feedback.

	choice. A marketing strategy includes information about the target market and range of promotional techniques including advertising, sales promotion and social media campaigns.					
	Includes, but not limited to Feasibility consideration can include costing, breakeven analysis or the effects of external factors or other constraints may have on the idea. **Notes** Entrepreneurship plays a role in enabling individuals from marginalised groups to overcome social and economic barriers, build wealth and create change in their communities. People from marginalised backgrounds often face barriers to becoming entrepreneurs.		**Includes, but not limited to** Design considerations such as function, users, aesthetics, materials, safety, performance, market, safety, ergonomics and sustainability. Methodologies can be user experiences, artefact analysis, focus groups, case studies, mood-boards, user trials and questionnaires.		**Includes** Stepwise refinement, nested structures, multi-branch selection (IF / ELSE IF / ELSE).	

Strand	**Make It Happen**							
Sub-Strand	Business		Design and Engineering		Computing Science		Cyber	
Fourth Level	**Understand:** Successful solutions require technical skill, precision and informed decisions about how tools, resources and technologies behave and interact.							
	Know: Administrative functions require a high level of skill in using different software applications. Business documents use a variety of tools to support accuracy, professional presentation and the image of the organisation. Tools and features in software such as settings menus, templates and shortcuts can be customised to give users control over appearance and functionality and make the software more efficient and user-friendly. Digital platforms support communication, collaboration and productivity in workplaces. Frontier technology is the	**Do:** Reflect on how skills are improving over time and how they can be used to help the operation of an organisation. Make informed decisions and justify the choice of application for completing a task. Combine tools and features and use them across different applications to create professional-looking documents. Consider the implications for the organisation and workforce of using digital platforms to communicate and collaborate. Imagine ways frontier technologies can be	**Know:** Sectional views reveal internal features that are not visible externally. Graphical representations of assemblies represent how components fit and interact. The tools and precision of the techniques used affect the cutting, shaping and assembly of materials to a desired size. The maximum allowed deviation from a desired size is called the tolerance.	**Do:** Create orthographic and pictorial-drawings which include appropriate dimensions and sectional views . Extract information from a working drawing to measure and mark accurately when laying out materials. Make and assemble virtual and physical models to a tolerance.	**Know:** Interactive systems are based on computational ideas such as logic, events and data. Nested selection is used to handle hierarchical decisions within other decisions. Nested repetition is used to repeat actions inside other repeated actions. Logical operators include NOT, which reverses a condition. Different types of errors such as logic, input or system errors, require different approaches to identify and resolve them. In a human-centred design process, AI can help create prototypes	**Do:** Create data-driven and interactive systems that allow users to explore and understand information. Combine multiple interactions or rules to create behaviours for a system. Refine and optimise how a system responds to improve performance and usability. Debug systematically, explaining the process and reasoning. Create AI solutions using structured prompts that define inputs, conditions and outputs. Refine AI prompts iteratively to improve accuracy, usability and	**Know:** An organisation can employ a security tester to target specific areas of a system and report identified vulnerabilities. Operating systems are used by devices, including smartphones, cars, supercomputers, home appliances and desktops. They manage the hardware, software and applications on the device. A command line lets users control a computer by typing commands rather than clicking with a mouse.	**Do:** Demonstrate that a security test agreement has been followed and present the information gathered to the client. Research examples of where independent, ethical hackers have highlighted vulnerabilities in large tech companies' computer systems. Control the functions of the computer using the command line within an operating system or simulation to perform file management tasks or gather system information.

	newest and most advanced form of innovation and may require significant upfront investment. Frontier technology has the potential to Improve efficiency, communication, decision-making and productivity in the organisation. Frontier technology can create new industries and jobs and lead to economic growth. Frontier technology can raise ethical, environmental, social and security concerns and issues over equal access.	applied in business environments to improve business operations, efficiency or customer experience. Consider the potential risks and rewards to an organisation of investment in and adoption of frontier technology. Investigate potential new careers in new industries.			and solutions, but the designer has a role in ensuring the design meets users' requirements.	reliability and ensure user requirements are met.		
			Includes, but not limited to Design principles, such as alignment and contrast. Design elements, such as typography; photographs and graphics. Techniques such cropping and colour matching Line types such as outline, hidden detail, centre lines and cross hatching and symbols, which may include ☐, ⌀ or r . Constraints such mate, align and centre axis. Modelling techniques such as extrude or revolve. Editing techniques such as mirror, fillet, chamfer or pattern.		**Includes, but not limited to** Programming or web development environments where young people can write, test, debug and improve their code. No-code or low-code solutions include creating or editing websites and apps using markup or styling syntax, querying data with basic SQL, building interactive games or simulations with development tools, and training and using AI models to create dashboards, apps, websites, prototypes, games, and data solutions. Physical computing solutions where the code created controls inputs, outputs and behaviour in physical systems (see Systems strand). **Excludes** Deeply nested or highly complex structures that reduce readability. Advanced list operations, for example, sorting algorithms or multi-dimensional arrays.		**Includes, but not limited to** Basic command-lines tasks, such as listing files and folders, navigating between folders, creating, copying and renaming files and folders, running programs and scripts.	

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Strand	Systems							
Sub-Strand	Business		Design and Engineering		Computing Science		Cyber	
Fourth Level	**Understand:** Interactions between technological, social and digital systems can create complex outcomes that are difficult to predict or control.							
	Know: Economic growth is the increase in a country's production of products and services over time. Gross Domestic Product (GDP) measures economic growth and is the total value of everything a country produces. GDP does not measure the economic value of the paid and unpaid work taking place in the care economy. The size and importance of Scotland's industrial sectors have changed over time. Inflation is the sustained increase in prices over time. Inflation affects the cost of living. Inflation can be caused by changes in demand and supply. Public, private and third sector organisations have different objectives, ownership, control and sources of finance. Financial statements can be compared over time to identify changes in performance or to measure the success of decisions.	**Do:** Consider the positive and negative effects of economic growth on the people of Scotland. Explore the role of the care economy in economic growth and prosperity. Consider the pattern and possible causes of change in Scotland's industry over time. Reflect on the effects of industrial change on the Scottish economy and on the people of Scotland. Examine changes in prices over time and consider the causes and effects of these changes on the people of Scotland. Identify and compare the features and objectives of organisations in different economic sectors. Analyse financial statements to uncover trends and patterns in performance over time. Compare the financial performance of different organisations based on analysis of financial statements.	**Know:** Systems can be expressed using recognised conventions such as flow charts, logic gates, truth tables and Boolean expressions. An open-loop system is a type of system in which the output has no effect on the input or control action. A closed-loop system uses feedback to automatically monitor its output and make real-time adjustments to reach a target without human intervention. Energy wastage is the use of more energy than needed, or the loss of energy as unusable heat, sound or light during a conversion process.	**Do:** Construct or simulate a system with and without feedback. Explore how closed-loop systems use feedback to react to changes. Identify energy wastage in a system.	**Know:** System performance depends on the interaction of hardware, data and processes. Constraints such as processing capacity, storage, data volume and bottlenecks affect system performance. Some systems operate using predefined rules while others use data to identify patterns and adapt outputs. Data processing may occur locally or across distributed systems, creating trade-offs in performance, scalability, security and efficiency. Network communication relies on addressing, protocols and packet transmission. Data is transmitted using packet switching across interconnected networks. Transmission media and distance influence signal quality and reliability. Network performance depends on interacting factors including bandwidth, latency, traffic and demand. Network hardware manages, routes and controls data flow.	**Do:** Analyse how hardware, data and processes influence system performance. Evaluate systems and recommend improvements based on identified constraints. Compare rule-based and data-driven systems. Develop and test physical systems that use feedback to control behaviour. Explain how network hardware and services support communication. Analyse factors affecting network performance and reliability.	**Know:** Cyber resilience is an organisation's ability to anticipate, withstand, recover from and adapt to adverse cyber events, attacks or data breaches. A resilience framework provides a structured process for identifying and assessing cyber risks and planning how to recover. Digital forensics is the process of collecting and analysing digital evidence after a cyber incident.	**Do:** Respond to evolving cyber-attack scenarios or simulations and explain the decisions made. Explain the need to balance security with other considerations including usability, cost and ethics.

	Organisations will compare their financial performance with competitors to make decisions about improving efficiency, profitability or both. Financial statements provide a clear record of how money is managed and may be shared with stakeholders.							
	Includes, but not limited to Measures relating to the standards of living for the people of Scotland could include inflation, unemployment and interest rates. **Excludes** Ratio analysis. **Notes** UK Generally Accepted Accounting Practice (GAAP) provides guidance on the types of financial statements that may be shared with different groups of stakeholders.		**Includes, but not limited to** Logic gates at this level could include AND, OR NOT. External conditions could include weather, website traffic or changes in production demand.				**Notes**	

Strand	**People and Planet**							
Sub-Strand	Business		Design and Engineering		Computing Science		Cyber	
Fourth Level	**Understand:** Responsible technological decisions require balancing ethical, social, environmental and economic considerations.							
	Know: Many organisations have an aim of corporate social responsibility (CSR). They consider the effects of their actions on communities, society and the environment. Environmental, social and governance (ESG) frameworks provide a way to assess an organisation's ethical and sustainable impact. Greenwashing Is when organisations make	**Do:** Consider the advantages of CSR aims for organisations, employees, society and the environment. Critically examine environmental claims made by organisations by comparing CSR aims with measurable outcomes or performance indicators. Explore different ways of implementing a wellbeing economy in Scotland.	**Know:** A user persona is an imaginary person who represents a group of people who might use a product. A persona helps designers understand what users need, like and find important when creating something. Planned obsolescence is the deliberate design of a product to have a limited useful life.	**Do:** Create personas to understand the needs and requirements of specific users. Investigate the social, environmental and ethical drawbacks of mass manufacturing or production. Consider the Rs of sustainability when designing a new product. Investigate the social, environmental and	**Know:** Human-centred design requires a balance between the needs, experiences and wellbeing of people. It must also support organisational aims, such as creating AI and data-driven systems that drive innovation and profit. AI systems learn from data. Some data may contain social bias, leading to decisions and outputs that may be	**Do:** Identify the competing aims of users, organisations and designers of AI and data-driven systems. Identify how social bias within data sets can affect the outputs of AI systems and consider the effects on equalities. Identify the reasons why frameworks exist to regulate data and AI systems.	**Know:** Cyber attacks can cause data breaches and system outages, that disrupt operations and lead to production stoppages, financial losses and damage to supply chains. National security cyber threats are risks posed by malicious groups or individuals using digital technologies to disrupt, damage or gain unauthorised access to systems that are critical	**Do:** Explore real life examples of cyber attacks and consider their effects on organisations.

	exaggerated claims for marketing purposes. A wellbeing economy is an economic approach that prioritises the wellbeing of people and the health of the environment, rather than focusing only on economic growth or Gross Domestic Product (GDP).	Consider the effects of a wellbeing economy on communities, society and the environment.	Emerging material technologies offer new opportunities, scope and possibilities when designing products. Globalisation of manufacturing is the process in which companies spread design, sourcing, production and assembly across different countries. Supply chains are used by companies to build items using parts and labour from all over the world.	ethical drawbacks of globalisation of manufacturing and international supply chains. Investigate how local industries and traditional craft practices contribute to sustainable and responsible product manufacture.	unfair to some people or groups. AI, data-driven systems and other advances in technology can transform industries and affect the jobs people do and how tasks are completed.	Consider the effects of advances in AI, data-driven systems and other technologies on people living and working in Scotland.	to the nation's infrastructure, institutions, services, economy and public safety.	
	Notes Scotland's National Strategy for Economic Transformation and National Performance Framework (NPF) outline how a wellbeing economy could be achieved and measured in Scotland.		**Notes** Knowledge from this strand can be applied in context through design tasks in IDEAs.				**Notes** The UK government identified cyber security as a Tier 1 threat in its National Security Strategy.	

Strand	**A Data Rich World**							
Sub-Strand	Business		Design & Engineering		Computing Science		Cyber	
Fourth Level	**Understand:** The quality, quantity, structure and balance of data determine how reliably analyses can be performed and how accurately technologies, including AI systems, generate outputs.							
	Know Primary and secondary methods of market research each have value and help to inform decision-making. Understanding the advantages and disadvantages of each helps organisations choose the most effective approach. Good decisions rely on a range of data and information and balancing from balancing evidence, context and human judgement.	**Do:** Evaluate market research methods and select the most suitable for a specific purpose. Explore tools and functions that help to present data and information visually to help users identify trends, patterns and make comparisons between data sets. Write and execute multi-criteria queries to elicit data to solve specific problems.	**Know:** Human and user data provide evidence about people's characteristics, interactions and experiences that can inform design decisions. The reliability of these decisions depends on the quality and representativeness of the data. Design decisions depend on the quality, accuracy and appropriateness of data gathered from modelling and testing.	**Do:** Identify where different types of data would be used throughout the design of a product or system. Gather and use a range of data to support design decisions.	**Know:** Data can be represented in different formats without changing its underlying meaning, although quality, structure or metadata may be affected. Data formats influence file size, quality, compatibility and transmission efficiency. Validation improves data quality by identifying data that does not meet defined constraints.	**Do:** Import, export and convert data between file formats. Select and justify appropriate file formats for a given purpose. Create, modify and use structured data models. Apply validation techniques to improve data quality. Use code to query, filter, transform and visualise data.	**Know:** UK GDPR requires organisations to consider data security and data protection at all stages of data handling. End-to-end encryption is a secure communication method that locks data on a device, keeps it scrambled while travelling and unlocks it only on the recipient's device. It ensures that no third party can read or tamper with messages.	**Do:** Explore the advantages and disadvantages of using end-to-end encryption. Explore how to identify a digital certificate. Identify real-world examples or possible contexts where a data poisoning attack could cause serious harm.

	Critical evaluation of online sources can lead to more informed decision- making in an organisation. Effective AI prompts can improve clarity and quality of outputs. Data analysis software is used to analyse, sort and filter large sets of numerical data combining functions including lookup and referencing formulas. Data analysis software can be used to present complex data in visual ways such as in charts, conditional formats and pivot tables to help communicate patterns, comparisons and trends. Data management software allows users to create input forms or interfaces to input information. This reduces errors and makes systems easier to use. Data management software can present data in a clear, organised and readable way. It can be used to summarise, analyse and communicate information to a specific audience.	Design a form to capture data for entry. Create a report to display the results of a query for a user.	Safety regulations, environmental requirements, costs and the availability of materials and parts ensure products are legal, safe, affordable and practical to manufacture.		Data quality affects the reliability of analysis, processing and decision-making. Structured data models support efficient storage, retrieval, linking and querying of data. Data can be queried, transformed and visualised using code. AI systems use algorithms and data to generate predictions, classifications and decisions. The behaviour of AI systems is influenced by both algorithms and training data. Data set size, quality and representation affect AI system performance and outcomes. AI models may perform well during training but poorly when presented with new data.	Evaluate the quality and suitability of data for a specific purpose. Train and test AI models using different data sets. Compare how training data affects model outputs. Investigate the effects of data set size, quality and balance on outcomes. Evaluate the accuracy, reliability and fairness of AI outputs. Explain the limitations of AI models using evidence from testing. Evaluate the suitability of AI outputs for different purposes.	A digital certificate is an electronic statement that proves the identity of a person or organisation on a network. It is used to establish trust and enable secure communication over the internet. Data poisoning is a cyber security attack that targets machine learning and AI systems by deliberately injecting false, misleading or malicious data into a data set used to train a model.	
	Notes	**Notes** This is not intended to be taught as a standalone unit. Instead, its knowledge and skills should be integrated into learning experiences within the Systems, IDEAs and Make it Happen strands, where they can be applied in authentic design and engineering contexts.		**Notes** Digital tools to manipulate data include simple querying using structured query language (SQL), preparing data for use within an AI system, using data in a spreadsheet application and interrogating a data set using a high-level language.				

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Declaration

The content of this document was written by the author, exercising full professional judgement. Education Scotland approved AI tools were used to support review, clarity and quality assurance. Education Scotland staff retain full responsibility and have reviewed and approved all content.

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Version History

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Version 1.0	4 November 2026	First released

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