Curriculum update – developments to May 2018
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Introduction

In December 2017 Welsh Government published an update outlining an approach to curriculum development and sharing the identification of ‘what matters’ within the six Areas of Learning and Experiences (AoLEs).

This paper
- provides an update on the work that has been undertaken over the past 5 months
- outlines the proposed development structure for all AoLEs and
- contains the latest drafts of ‘what matters’ statements with supporting rationale. They reflect the AoLE groups’ thinking in May 2018.

As part of an iterative process the AoLE groups will continue to refine the ‘what matters’ statements, in parallel with work to develop the progression frameworks.
Progress January – May 2018

The new curriculum, including the Achievement Outcomes, will be built on progression; so it is important to get our approach to progression right. This strand of development, therefore, is being delivered in collaboration with expert input through Camau, a partnership between Glasgow University and the University of Wales Trinity St David.

Since January the Pioneer network has been working with the Camau project to produce progression frameworks for each of the AoLEs. The pioneers have also refined those “What Matters” statements based on the progression frameworks, input from a wide range of experts and comments from their colleagues.

We have now reached the third checkpoint at which the Curriculum and Assessment Group (CAG) review progress on work to date and provide guidance and support for the next phase of work. At the beginning of May, CAG explored how the AoLEs were working on the progression frameworks, the approach to detail in each AoLE and the emerging curriculum structure. This took place over two days and was positive.

The development work between December and now builds on the work done previously to agree the approach to organising the knowledge, experiences and skills in the curriculum - the What Matters approach. Pioneers had developed draft “What Matters” statements with supporting rationales for each of the AoLEs.

The current phase of work, taking place over the summer term involves:

- Producing draft Achievement Outcomes - curriculum pioneers are using the progression framework to create these;

- Agreeing detail for the AoLEs – the curriculum pioneers are refining the essential knowledge, skills and experience needed to achieve the “What Matters” statements (and the four purposes). They are also working to ensure links and dependencies between each of the AoLEs are identified and fed into the next stage of development; and

- Testing the progression frameworks with the digital and professional learning pioneers. They are now testing them in their schools and clusters and will feedback into the next stage of the process in early July.

In addition to the wide range of experts now being engaged by each AoLE, the output of this work will be further tested with the CAG over the summer period.
The Draft AoLE Design Model

The attached diagram outlines the proposed development structure for all AoLEs within the new curriculum for Wales. We would like to emphasise that this is an AoLE design model – we do not envisage that the final online version of the curriculum will necessarily reflect this way of presenting the structure. Further details about each aspect of the model are outlined below.

A statement detailing how the AoLE supports the four purposes

As the model shows, each AoLE will include a statement outlining how it supports the four purposes of the new curriculum. As articulated in Successful Futures, each AoLE should make distinct and strong contributions to developing the four purposes of the curriculum. The statement also provides an introduction and a ‘way in’ to the AoLE and the related What Matters statements.

You will find draft statements for each AoLE in your annexes.

The What Matters statements and rationales

Each AoLE will have as many What Matters (headline) statements as necessary. They are used as a means of organising learning in order that learners have the appropriate knowledge, skills and experiences. When considered together, the What Matters span the breadth of the AoLE. They draw on key disciplinary knowledge and skills, make links with the four purposes of the new curriculum and therefore outline the essential aspects of learning within the AoLE.

A key criterion that the AoLE groups have met in developing each What Matters statement is that it must support at least one of the four purposes. In addition, the following criteria, outlined by Barbara Wintersgill as the key characteristics for her ‘Big Ideas for Religious Education’, have been adopted:

Big Ideas are:

i. criteria for the selection and prioritising of subject knowledge in the curriculum. If Big Ideas summarise what students’ understanding should be, the content selected must enable students to achieve that understanding.

ii. transferable to events outside the classroom. An essential indicator of understanding is the ability to transfer learning to new settings. Religions and non-religious worldviews can only be properly understood when students recognise them as important elements of 21st century life.

iii. memorable. If Big Ideas are to have this life-long impact they must be summarised in headlines that are short enough to be remembered but focused enough to act as reminders of their full significance.
iv. capable of differentiation so that they may become the basis of progression. Big Ideas can be expressed at increasing levels of complexity and sophistication to describe the understanding expected of different age groups.

They should also:

v. have long term relevance. Big Ideas reflect situations for the foreseeable future so that students will take from their school days understanding of religious and non-religious beliefs, practices and values that will help them understand their personal quest for meaning and the world in which they live.

vi. make sense of what might otherwise be confusing information/experiences and isolated facts. An important contributor to understanding is the ability to ‘join up the dots’, to see how the many different beliefs, practices and values of religions and non-religious worldviews relate to each other. Big Ideas help make these connections.

vii. act as lenses which, when used to ‘view’ content, help to clarify it. When used as a ‘lens’ through which to view a mass of possible content, Big Ideas illuminate what is relevant to RE and hide what is not.

viii. taken together, express the core or central concerns of the subject. The essential test of subject knowledge is that as well as meeting the above criteria it reflects what it central to the subject, not what is peripheral.¹

Each What Matters statement has an accompanying rationale that further explores what is captured in the statement and provides a justification as to why it is one of the aspects that matters most within the AoLE. The rationales must provide opportunities to ‘trigger’ connections between the four purposes, the What Matters statements and rationales themselves and the necessary knowledge, skills and experiences needed to achieve the What Matters.

You will find draft statements for each AoLE in your annexes.

Knowledge, skills and experiences key to achieving each of the What Matters

Recommendation 4 of Successful Futures states that each AoLE should provide rich contexts for developing the four curriculum purposes, be internally coherent, employ distinctive ways of thinking, and have an identifiable core of disciplinary or instrumental knowledge. Whilst the structure as a whole supports the four purposes and internal coherence, under each What Matters statement, the key knowledge, skills and experiences recommended as essential to achieving it will be articulated.

This element of the AoLE structure provides further detail to support the development of school level curriculum and to help learners progress towards achieving the What Matters statement. In order to achieve these aims, we see two sections to it:

- An indication of ‘content’ that is essential to be covered at some point on the continuum to reach the What Matters statement.
- An outline of progression that articulates the general nature of change across the continuum of learning to achieve the What Matters statement.

In articulating these elements, for each What Matters statement we draw on the following:

- Key knowledge, skills & experiences that reflect relevant disciplines and domains within the scope of the AoLE (this includes disciplinary and instrumental knowledge)
- Sequencing where appropriate
- Cross-Curriculum Responsibilities & Wider Skills
- Welsh dimension and international perspective where appropriate

Links to other What Matters statements within the AoLE as well as other AoLEs will also be made where appropriate.

An outline of ‘content’

In order to select appropriate ‘content’ (knowledge, skills and/or experiences), the AoLE representatives have worked to the following principles. They must:

- Provide the content needed to enable the outline of progression described below and to support learners in achieving the What Matters statement and the relevant four purposes.
- Be deemed as essential to the What Matters statement, reflecting relevant subjects, disciplines or domains within the scope of the AoLE, and/or to prepare learners for their future roles in education, work and society.
- Be broad enough to be meaningful across the continuum of learning (and not tied to specific Progression Steps) or sequenced alongside the Progression Steps if appropriate.

Attention is drawn to these elements as a link between the What Matters statement and the related progression outline (described below), as support for practitioners in planning school level curriculum. The ‘content’ must provide both sufficient support and allow the appropriate autonomy; allowing schools and clusters to plan their curriculum between progression steps and ultimately towards achieving each of the What Matters.
An outline of progression

The work completed to date by the AoLE groups in relation to the progression frameworks is essential to forming the basis for this aspect of the structure. For each What Matters statement, we propose that a broad description of progression is articulated, drawing on key knowledge (disciplinary and instrumental), skills and experiences and the general nature of change across school years considered essential to achieving the statement. The narratives will be developed in line with and at each of the Progression Steps (and expectations broadly at 5, 8, 11, 14 and 16) allowing clarity in relation to what individual learners should be working towards throughout the continuum of learning. This will form the basis for practitioners’ planning in order to support each individual learner in their journey along the continuum, and for professional dialogue between practitioners within and between schools. This will also reflect the aim outlined in Successful Futures that sound foundations in learning are the best basis for progression as well as supporting learners to progress along the continuum at their own pace.

Where appropriate, references will be made to literacy, numeracy, digital competence, the wider skills and the Welsh dimension and international perspective as Successful Futures outlines that they should be embedded in the AoLEs as well as addressed in the Achievement Outcomes.

Progression Steps and Achievement Outcomes

This element of the curriculum structure is being developed by the AoLE groups, and is their main focus over the coming months. The progression frameworks are the basis for this work. As outlined in Successful Futures:

- Progression Steps will be described at five points in the learning continuum, relating broadly to expectations at ages 5, 8, 11, 14 and 16.
- Progression Steps will take the form of a range of Achievement Outcomes.
- By signalling an emphasis on achievement in a broad sense, these outcomes broaden the scope of what we value in children and young people’s learning.
- Achievement Outcomes will be described from the learner’s point of view, using terms like ‘I have…’ for experiences and ‘I can…’ for outcomes.
- Achievement Outcomes will include:
  o Knowledge, Skills & Experiences
  o Cross-Curriculum Responsibilities and wider skills
  o Welsh dimension/ international perspective where appropriate
- Achievement Outcomes will contribute to achieving the four purposes.

The Achievement Outcomes, articulated for each Progression Step, will also contribute to achieving the What Matters and reflect the outline of progression provided in relation to the relevant key knowledge, skills and experiences recommended as essential to reach the relevant statement. They will be broad in
nature. However, we must ensure that the Achievement Outcomes include enough detail and clarity to ensure consistency in understanding and avoid variability in enactment, and possibly a need for further guidance and detail to be published at a later date.

**Guiding Principles**

The draft AoLE model also makes reference to guiding principles for each AoLE. These principles will support practitioners in delivering the What Matters. They are not the starting point for school level curriculum planning – the four purposes and the What Matters statements are; however these principles will be drawn upon to inform the design work. They may relate to:

- signature pedagogies
- assessment
- exemplification.

The aspects of learning deemed essential to achieving the What Matters statements will be included in the main structure of the AoLE. This includes, where appropriate, the cross-curriculum elements outlined below. Further suggestions about what ‘may’ or ‘could’ be developed through the related AoLE will be included in the guiding principles. These include:

- Possible opportunities for learners’ Welsh language skills to be developed.
- Further opportunities to develop cross-curriculum elements through the AoLE:
  - Literacy, numeracy and digital competence
  - Wider skills
  - Welsh dimension and international perspective
  - Enrichment and experiences
  - Careers and the world of work.

**Cross-Curriculum Elements**

AoLE groups are working to the principle that the aspects of the cross-curriculum elements essential to achieving a What Matters statement will be incorporated in the knowledge, skills and experiences section of the AoLE structure. Additional opportunities to embed aspects of the cross-curriculum elements through the AoLEs will also be identified in the guiding principles to support curriculum planning at school level. This approach has been adopted for all of the cross-curriculum elements outlined in the model.
Annex 1 Expressive Arts

Statement detailing how the AoLE supports the 4 purposes:

Through the Expressive Arts schools and teachers can encourage children and young people to develop their creative appreciation and talent and their artistic and performance skills. The Expressive Arts provide opportunities to explore thinking, refine, and communicate ideas, engaging thinking, imagination and senses creatively. They also promote exploration of issues of personal and cultural identity. Engagement with the expressive arts requires application, perseverance and close attention to detail, capacities that have benefits across learning more widely.

The expressive arts provide inspiration and motivation as they bring children and young people into contact with the creative processes, performances and products of others and stimulate their own experimentation and creativity. They provide many opportunities for experiences such as visits to theatres and galleries and for bringing the specialist expertise of, for example, artists and musicians into the classroom. Achievement in the expressive arts also provides a basis for lifelong participation and can ultimately contribute to a thriving economy and cultural life for Wales.

The Expressive Arts support ambitious, capable learners encouraging them to explore new and challenging areas of experience and to strive to improve their performance. By developing their creativity in a range of forms of expression; providing rich contexts and challenges within which they can work collaboratively, learning from critical appraisal of their work, learners become enterprising, creative contributors. Learners become ethical, informed citizens by understanding their own cultural identity and those of societies in other places and at other times, and to explore complex and difficult issues. Learners become healthy, confident individuals as the Expressive Arts help them to develop resilience and feel more confident as they gain enjoyment and personal satisfaction from creative expression; contributing directly to enriching the quality of their lives.
What Matters

1. Engagement in the arts nurtures creativity

In the expressive arts, learners can explore and create. They compose, devise, choreograph and make new work. Being able to understand their own responses and those of others can enrich their lives. Developing original responses through exploration and discovery fosters learners’ skills. They learn to select and prioritise ideas and materials. By taking measured risks in the creative process, learners become independent and confident decision makers and start to own their ideas and artistic work.

2. Artistic communication connects creator, creation and audience.

The arts are a universal language. They enable learners to communicate the culture and diversity of Wales and the wider world, expressing their ideas and feelings, and developing empathy and an awareness of self. Learners communicate both through and about the arts. Through dance, drama, digital media, visual arts and music learners explore, experience, create and express. As active recipients, they respond, and reflect. Subject specific knowledge supports learners to make links across different art forms and enhances their critical evaluation and encourages engagement. As learners develop their analytical and critical skills, they are able to appreciate the arts with increasing sophistication.

3. Expressive Arts reflect, time, place and culture.

Learners study the expressive arts through culture and society, locally, nationally and internationally. Engaging with art forms born out of key events, political movements and changes in society, including contemporary events, allows learners to explore and experience how the arts reflect humanity. Responding and reflecting to these learning opportunities enriches their lives through developing empathy, tolerance and appreciation of all cultures. The acquisition of creative skills and knowledge fosters the learners’ mental, physical and emotional resilience, developing learners’ social confidence. Experiencing, creating and expressing allows learners to become reflective individuals, with a mind-set to embrace challenge. Engagement with the expressive arts provides opportunities to connect with others, nurture relationships and develop mutual respect. Subject specific, theoretical and academic knowledge gives learners the tools for considering and evaluating the expressive arts.

4. Acquiring and refining artistic knowledge, skills and techniques enhances creative works

In the expressive arts, learners develop technical skills, so that they can participate and contribute meaningfully. These form the core of each subject: some skills and techniques cross disciplines while others are specific. They are developed and refined through experience. Transferable skills, such as problem solving, communicating, collaborating and evaluating, enable learners to participate successfully outside the classroom and in the workplace.
Annex 2 Health and Well-being

Statement detailing how the AoLE supports the 4 purposes:

Health and well-being is about the physical, psychological, emotional, cultural and social aspects of our lives.

Learners will gain knowledge and understanding about how their environment, mind and physical state affect their health, well-being and readiness to learn throughout their lives. They will engage critically with a range of information to support their decision making and their developing values and identities. Developing social skills and positive relationships helps them to become ambitious, capable learners and prepares them for the workplace.

Learners will have opportunities to engage creatively with challenging ideas relating to emotions and relationships. They will develop the skills to talk about these and become enterprising, creative contributors. Physical and other activity will provide learners with contexts for playing a range of roles in teams.

They will learn how to make positive choices and how these affect their own and others’ health and well-being. They will develop their understanding of different environments, cultures and communities, including the natural world. They will learn how to deal with these responsibly, appreciating the importance of contributing positively and respecting others. They will consider the social and ethical issues that impact on the health and well-being of society, becoming ethical, informed citizens.

Learners will learn what influences their health and well-being, including healthy eating, physical activity and misuse of substances, and how to make the right decisions. They will develop the skills and dispositions that enable them to become healthy, confident individuals. They will learn the importance of resilience, self-regulation, seeking support and developing positive relationships.
What Matters

1. Developing a healthy, active body has lifelong benefits

A healthy and physically active lifestyle has positive effects on physical, emotional and mental health and well-being. Physical development is closely linked to cognitive development during the early years, for example, in supporting speech and language development.

Developing a healthy and active body enhances learners’ confidence and motivation, physical competence, knowledge and understanding so that they lead healthy and active lifestyles. If learners enjoy regular physical activity and are provided with positive and informative experiences in respect of their physical health, they will develop the dispositions and motivation to lead healthy lifestyles as adults.

Understanding the factors that affect a healthy body, such as nutrition, hydration, physical activity, protection from infection, sleep and recovery helps learners to develop positive, informed behaviours. These behaviours support learners to care for and respect their bodies and support their self-worth, overall mood and energy levels.

Physical activity is also important in social and emotional development, for example positive relationships (for instance, in team games) and resilience (such as in competitive sport).

2. Our life experiences and how we respond to them impact on our feelings, thoughts and body

Life experiences can have an emotionally significant and lasting impact on health, confidence and identity. Exploring the pressures, influences, and favourable and adverse effects of such experiences supports learners to understand these. This increases their capacity to respond positively and appropriately to both positive and negative experiences.

Developing the right responses helps learners to understand and regulate their emotions. This develops their resilience, confidence and empathy, influencing their emotional and mental well-being. It has a direct impact on their readiness to learn.

3. Our decision making and actions impact on the quality of our lives and others

Decisions and actions, individually and collectively, have a clear, direct impact on the health and well-being of individuals and society. Making informed decisions is central to promoting healthy life choices, personal safety, well-being and positive health literacy. Learners need support to consider choices and to understand the risks and possible consequences of their decisions on themselves and others. This contributes directly to developing ethical, informed citizens.

Understanding what influences decision making (including knowledge, understanding, attitudes, values, emotions and beliefs) supports learners to make positive, considered and informed decisions. Learners also need to develop skills necessary to enable specific
decisions. Learners also learn how groups make decisions together, so developing their awareness of the role and importance of collective decisions.

4. **How we interact with our environments impacts on our health and well-being**

Environments have a fundamental impact on how identities and values are formed. Understanding the links across the health and well-being of individuals, society and environments supports learners to contribute positively to their immediate and wider communities. This equips them to navigate the potential dangers of some environments, including virtual ones. Engaging positively with their environment supports learners’ readiness to learn. This includes preparing to engage with environments through careers and the world of work.

5. **Relationships connect us with each other and the world**

Relationships, perceptions of relationships, and the cultural and social factors influencing them have a fundamental impact on health, well-being and personal identity. Learners will encounter diverse relationships, including friends, family, romantic, sexual, professional and spiritual relationships. Understanding these, how they function, and their differences supports learners to form positive relationships of their own.

Developing the skills to form and maintain positive relationships based on trust and mutual respect is key to enabling learners to become healthy, confident individuals. Knowing how to manage conflict, how to recognise unhealthy relationships, and when and how to seek support is also fundamental to health, safety and well-being.
Annex 3 Humanities

Statement detailing how the AoLE supports the 4 purposes:

Through exploring ‘what matters’ about the humanities, learners will study the past and present, imagine possible futures and learn about people, place, time and beliefs in order to become ambitious, capable learners. They will build, communicate and apply effectively a solid base of knowledge and understanding of historical, geographical, political, economic, religious and societal concepts.

Learners will develop a range of skills and dispositions to become enterprising, creative contributors and responsible citizens, improving the lives of people in their local community, Wales and the wider world. They will contribute positively to these and engage critically with local, national and global issues.

Through understanding and respecting different beliefs and understanding how to exercise their democratic rights and responsibilities, learners will become ethical, informed citizens. They will consider, explore and make informed choices about sustainability and the impact of their actions. They will learn about rights, values, ethics, beliefs and philosophy.

By developing their personal stances on matters of faith, spirituality, sustainability and social inclusion, they will become healthy, confident individuals, ready to lead fulfilling lives as valued members of society. Exploring their environment will help them to develop their well-being and their sense of place.
What Matters

1. **Our natural world is diverse and dynamic, influenced by physical processes and human actions.**

   Studying the humanities helps learners to identify, understand and analyse the dynamic nature of Wales and the world. Human responsibility for our natural world, can be influenced by diverse beliefs, practices, ethics and philosophies. Innovation, economic and technological developments have shaped and continue to shape our natural world. It is also important to understand how human actions can be influenced by, and affect, the natural environment. Physical processes have major impacts on places, environments, landscapes and the lives of people. Appreciating these complex patterns and connections between the past, present and future is important for the understanding of the cause and consequences of change.

2. **Society has been shaped and influenced by human behaviour and beliefs**

   In the past, societies have been formed and influenced by individuals, communities, political, economic factors, cultural values, religious beliefs and practices. Societies have experienced continuity and change that affected people’s lives, in Wales and the wider world. The causes and consequences of human interactions in the past have shaped society and how it has developed in different times and places. Exploring past human interactions has intrinsic value.

3. **Humanity faces many challenges and opportunities, that require informed and considered responses.**

   Understanding current local, national and global challenges and opportunities is essential to be an ethical and informed citizen. Learners should develop informed views about political, economic, technological, social, religious, cultural and environmental challenges and opportunities that people in Wales and the wider world face. Learners understand that beliefs, experiences and circumstances can influence the varied responses of themselves and others. By engaging with fundamental and philosophical questions about the challenges and opportunities that face humanity, learners will develop the knowledge and skills to form opinions, and understand values, beliefs and viewpoints.

4. **People view the experiences of humanity through a range of lenses.**

   Humanities provides learners with a variety of lenses through which they develop an understanding of the human experience. These lenses are drawn from a growing understanding of the disciplines that make up the Humanities, and the way in which they interconnect. They give learners an understanding of how others construct narratives to record and represent the human experience and how to understand, interpret, and represent the experience of humanity themselves. Learners appreciate how and why interpretations and representations are constructed in order to critically question and evaluate their validity.
5. **The process of enquiry allows people to make sense of and engage with the world.**

Studying the humanities develops the skills of disciplinary enquiry. Learners pose questions and develop hypothesis across the humanities. By gathering, evaluating and analysing evidence from a range sources, learners can interpret layers of meaning and connect information to attain relevant knowledge to inform their understanding. Through thinking critically and reflectively about the evidence they've analysed, they learn to make coherent, substantiated judgements. Learners critically evaluate the effectiveness of the enquiry process and how well it has helped them to make sense of and engage with the world.

6. **Citizens should be ethical, informed and engaged in life and work.**

Humanities encourages learners to think critically about ethical, economic, entrepreneurial or social engagement in their communities. Learners will understand their rights and responsibilities as ethical citizens, and the importance of ensuring that they respect the rights of others. Learners understand individuals' legal and moral responsibilities and the consequences of failing to act accordingly. Learners will develop an understanding of identity and are conscious of their own role in society and of the religious, moral and ethical influences on people’s lives.
Annex 4 Languages, Literacy and Communication

Statement detailing how the AoLE supports the 4 purposes:

Languages, literacy and communication are about developing knowledge, skills and dispositions in oracy, reading, writing and literature within and across languages. They also develop learners’ cultural understanding and identity, their sense of self, and their place and voice in society.

Languages, literacy and communication contribute to developing ambitious, capable learners who are effective communicators in Welsh, in English, in other languages and through digital media. Meaningful contexts will stimulate learners to acquire and apply skills, knowledge and understanding and develop positive attitudes to language learning.

Learning languages brings different perspectives. Being confident in using languages enables learners to adapt skilfully to different roles and contexts, think creatively, solve problems and take risks, becoming enterprising, creative contributors, both individually and collaboratively.

Languages, literacy and communication contribute to developing ethical, informed citizens. Learners gain the knowledge and skills they need to participate confidently and make their voice heard effectively. They will learn how to engage critically with languages and literature across a range of media. Languages and literature develop learners’ sense of identity, helping them to understand their culture and community, and gain a feeling of belonging. Developing skills in languages, literacy and communication can help learners to keep themselves and others safe in the real and virtual world. Healthy, confident individuals can articulate their feelings, interpret those of others, and develop positive relationships.
What Matters

1. **Understanding how languages are constructed, connected and evolving provides a foundation for all language learning.**

   Understanding the common features of and distinctions of languages provides a foundation for lifelong language learning. Understanding that languages have shared histories enables learners to build on connections between languages. Learners understand that languages evolve due to changes in society, culture, the environment and technology. This allows them to respond as active citizens.

2. **Languages help us to develop our own identity and interact with others in Wales and beyond in our multilingual world.**

   Learners are influenced by the languages around them. Early encounters with languages provide the foundation for communication and literacy. Through languages, learners respond critically and creatively, expressing their feelings, ideas and opinions in a real, digital and virtual world. Through languages learners can develop a sense of their own identity. This allows them the opportunity to belong as global citizens in their communities in Wales.

3. **Languages are used and adapted for different purposes, contexts and audiences.**

   Learners experience and engage with languages in a range of genres, forms and styles. This provides the foundations for creating and adapting their own language in an appropriate medium and register. Learners use languages to express thoughts, ideas and opinions for different purposes and audiences. Languages in a wide range of contexts allow learners to develop, practise and refine their skills.

4. **Improving the quality of our language enables us to communicate meaning with clarity, accuracy and appropriateness.**

   Understanding and applying the rules of grammar enables learners to convey meaning clearly, accurately and appropriately. Language learning includes risk taking and experimenting with and between languages. Reflecting on and learning from mistakes is also key to developing learners’ language skills. Creative use of languages involves the appropriate selection of vocabulary, idiom, punctuation and syntax.

5. **Literature promotes critical and creative thinking, stimulating the imagination and developing understanding of the world.**

   Learning about literature expands horizons both intellectually and creatively. Experiencing and responding to literature gives learners opportunities to engage with and discuss texts and ideas. It also enhances their understanding of the
experiences, beliefs and cultures of others. Through engaging with literature, learners begin to appreciate the creator’s craft. This inspires, informs and strengthens their own capabilities as readers, viewers, writers and creators. Literature can be a source of pleasure, contributing to our emotional and mental well-being.
Annex 5 Mathematics & Numeracy

Statement detailing how the AoLE supports the 4 purposes:

Mathematics and Numeracy AoLE promotes **Ambitious, capable learners, ready to learn throughout their lives** by...

- Demonstrating a depth of mathematical knowledge appropriate to age and ability
- Communicating mathematical ideas and methods both written and oral
- Developing secure mathematical and numerical skills in mathematical and numerical lessons and applying them to cross – curricular activities and experiences
- Encouraging pupils to be curious, open-minded, willing to accept mistakes and learn from them in a mathematical purposeful way
- Encouraging pupils to find and understand numerical information in a purposeful way in order to be independent, life-long learners
- Explaining mathematical concepts and ideas, checking solutions when problem solving
- Developing a keen ongoing interest in mathematics that is purposeful to pupils, future needs

Mathematics and Numeracy AoLE promotes **Enterprising, creative contributors, ready to play a full part in life and work** by...

- Encouraging learners to take risks when considering different ways of tackling mathematical and numerical problems
- Promoting mathematical and numerical problem-solving skills and reasoning skills for learners to confidently tackle a variety of problems, including real-world contexts
- Promoting creativity when looking at different ways of tackling problems
- Developing resilience when applying mathematical skills to creative challenges, working individually and in groups
- Instilling competency in learners to analyse mathematical situations and construct logical arguments in response

Mathematics and Numeracy AoLE promotes **Ethical, informed citizens of Wales and the world** by...

- Creating opportunities to have evidence based discussions
- Enabling the critical analysis of data to develop informed views on social, political, economic and environmental matters
- Promoting pupils’ understanding of personal, local, national and international finance
Mathematics and Numeracy AoLE promotes **Healthy, confident individuals, ready to lead fulfilling lives as valued members of society** by...

- Developing confidence and resilience to face and overcome challenges and solve problems in order to become independent life-long learners.
- Encouraging pupils to use their numeracy skills across the curriculum to make informed effective choices and decisions to ensure lifelong health and well-being.
- Instilling the knowledge and skills to manage personal finance and budgeting now and in the future, intercepting information and data to assess risk.
- Enabling the understanding and taking of different roles within a group to form positive relationships based upon trust and mutual respect.
What Matters

PLEASE NOTE:

The mathematics and numeracy material published here remains under development, in particular financial literacy. The Maths and Numeracy AoLE group, supported by the Welsh Government, believe that financial literacy should be given due prominence in the curriculum and are currently working on how best to achieve that.

1. The number system is used to represent and compare relationships between both numbers and quantities.

Knowledge and competence about number and quantities are essential for confident participation in the world, and as a foundation for further study and employment. Within mathematics the number system provides a basis for algebraic, statistical, probabilistic and geometrical reasoning as well as for puzzles and games. Like all symbol systems, number conventions are necessary tools for expression and use.

2. Relationships among variables are expressed and transformed using symbols, equations, models and functions.

Algebra is the symbol system we use to express and transform the structures of relationships between numbers, quantities and variables and is therefore a powerful tool for reasoning and problem-solving mathematics and in technology, finance, data handling and other workplace contexts. The connections between arithmetic and algebra, via structure, develop tools and skills for abstract reasoning from early learning onwards. Like all symbol systems, algebra conventions are necessary tools for expression in formal and imaginary mathematical worlds and also in the material world.

3. Elements and properties of spatial objects are visualised, analysed, and measured or proved.

From the earliest age, learners play with, manipulate, compare, name and classify shapes and structures. By reasoning about the sizes and properties of shapes and their surrounding spaces, learners make sense about the physical world and the world of mathematical shapes. As well as applications in many fields, including art, construction, engineering and astronomy, reasoning about the properties of shapes provides experience of logical deduction, while considerations about measurement can support numerical reasoning, and vice versa.

4. Statistics represent data and probability models chance; both support informed inferences and decisions.
Representing and managing data effectively enables us to state possible generalities, test hypotheses, draw conclusions, make predictions and manage risks while reasoning about uncertainty. Learners need to interpret, analyse and construct info graphics, diagrams, graphs, charts and data to develop informed reasoning about local, national and global matters. ICT makes it possible to use real and inspiring contexts that interest learners and enable data to be represented effectively in many different forms.
Annex 6 Science and Technology

Statement detailing how the AoLE supports the 4 purposes:

Through understanding ‘what matters’ about science and technology, learners will develop a secure understanding of the world and become confident, capable and creative.

Science and technology are dynamic. **Ambitious and capable learners** understand that knowledge is always subject to challenge from new evidence and technologies, and must reflect changes in scientific and technological understanding.

Science and technology use prediction, testing and questioning. Learners will understand that if repeatable observations, prototypes or experimental results do not support an idea, they have to be rejected, or modified and tested again. Learners who are **enterprising, creative contributors** embrace such challenges. They take risks, innovate and evaluate, and learn to generate solutions. They are resilient and purposeful.

Learners who are knowledgeable about science and technology become **ethical and informed citizens**, able to draw on and evaluate evidence to reach conclusions. Arguing rationally, morally, consistently and objectively supports their evaluation of evidence.

Learners who will become **healthy and confident individuals** know how to find information about physical and mental health and well-being. They are able to use what they know about the impact of nutrition and exercise on their bodies. Their knowledge and understanding of science and technology help them to live independent and fulfilling lives, and keep themselves and others safe.
What Matters

1. Life is diverse. Organisms interact with each other and their environment, evolving over time.

It is important to understand how humans, collectively and individually, fit into the living world. Our decisions and actions can have a significant impact on living things and their environment. Human activity can affect eco-systems. This may limit biodiversity and result in losing culturally valuable landscape and wildlife.

As a result of evolution through natural selection there are, and have been, many different kinds of organisms. Interactions between organisms can be beneficial or detrimental. All living things require a supply of energy and materials for which they may have to compete to survive.

The study of life helps learners understand environmental and health challenges, and how they can be addressed.

2. Matter is made of particles. Their arrangement and interaction explain the properties of all materials and substances.

The entire Universe, including ourselves, is made of matter. All matter, living and non-living, is made of particles. Atoms are the building blocks of matter. Materials are types of matter that we can make things from and can be a single substance or a mixture.

The structure of atoms determines the ways in which they combine to form new substances. The arrangement of atoms, and the bonding between them, determines the physical and chemical properties of different materials, which can influence their use.

Substances can undergo changes. Some changes happen naturally in the world around us, and inside all living things. We are able to control chemical reactions in order to make them more efficient, and to create new materials.

The study of matter helps learners to identify the benefits and potential risks of interactions between materials, and how we can make informed decisions to overcome challenges, create new products, and achieve technological advances.

3. The behaviour of the Universe is described by physical laws. These laws are based on models with which we can think and make predictions.

Our understanding of the universe is continually developing. The behaviour of the universe is described by physical laws. These laws are expressed as relationships between precisely defined quantities. The relationships between quantities can be described and explored using mathematics. An understanding of these laws, and
their consequences, gives learners a framework with which to describe and understand the Universe.

Improving our understanding of the universe helps us to use resources where energy is one of them (financial, social, natural being amongst others) responsibly while improving our health and well-being. Knowledge of the Physical laws allows learners to better understand how they interact with the world and make educated decisions that affect it.

4. **Computation is about applying precise algorithms to data to solve real world problems in an efficient and effective way.**

The rapid development of digital technologies impacts on society, changing the way we live, and how and what is done across science and technology. Data and computation provide a framework for understanding how to interact with and effectively use and create digital technologies. Such an understanding can have legal, social and ethical consequences for society including business, industry and the world of work, and prepares learners to engage in modern society safely, and develop skills for the future.

Computation provides the theoretical foundations for creating software and hardware systems that are bound by mathematical and physical constraints. Programming turns algorithms into instructions for execution by a computer. Software and system design requires learners to understand the hardware and operating environment, supporting the development of efficient and secure software and hardware.

5. **Science and technology enables us to engineer solutions.**

The development of materials and technical systems drives the advancement of society. Through working with materials, including ingredients, we learn about their properties and how they interact with each other. The application of a range of technologies can then help us to create products that improve our lives. The application of practical skills and knowledge which address real world challenges, helps learners develop problem solving and technological skills.

As populations grow, the demands on natural resources increase. This emphasises the need to carefully consider available resources as part of the design and engineering process. Learners should understand when developing solutions, that the application of science and technology often involves ethical, political, economic and ecological choices. These have implications individually, locally, globally and beyond.
6. **Scientific thinking and investigation can help us to understand and explain phenomena.**

Science is a consequence of human curiosity about the world around us. The scientific method involves systematic manipulation, careful observation and measurement of different factors. Learners can identify important relationships by hypothesising, observing and measuring, before presenting and analysing data. This enables the development of models that allow us to predict and understand the effects under investigation. Accurate models can be used to develop software to virtually conduct experiments to make new discoveries.

Evaluating the reliability of primary and secondary sources of evidence is an important part of the scientific process. If new evidence cannot be explained by current understanding, ideas have to be changed and models refined. Scientists should consider whether their investigative work has a negative impact on living things. Society should continually evaluate how effectively the resources committed to scientific endeavour, are used for the benefit of humanity.

7. **Design thinking underpins innovation and change.**

Design is a creative process that shapes our world. It involves intelligent exploration to develop solutions that meet society’s needs and wants.

Deep understanding of a problem, derived from careful enquiry, supports rigorous decision-making. This process, together with creative thinking, can lead to effective solutions. The design process should consider the wellbeing of users and any impact on the wider world. Issues of ergonomics, aesthetics, durability and obsolescence are considered.

Design is an iterative process. Through evaluating and refining design proposals, learners are encouraged to be innovative while learning from their successes and failures.

Through design thinking, learners are empowered to explore and realise their creative ideas.