



Llywodraeth Cymru  
Welsh Government

# The Curriculum for Wales – Progression Code

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**Audience** Education practitioners; maintained schools; funded non-maintained nursery settings; pupil referral units (PRU); education other than at school (EOTAS) settings; local authorities; regional education consortia; governing bodies of maintained schools; PRU management committees diocesan authorities; and Estyn.

**Further information** Enquiries about this document should be directed to:

Curriculum Realisation Unit  
Curriculum and Assessment Division  
The Education Directorate  
Welsh Government  
Cathays Park  
Cardiff  
CF10 3NQ  
e-mail: [curriculumforwales@gov.wales](mailto:curriculumforwales@gov.wales)



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**Additional copies** This document can be accessed from the Welsh Government's website at: [Curriculum and Assessment \(Wales\) Act | GOV.WALES](#)

**Related documents** The Curriculum for Wales Framework guidance can be found at: [Curriculum for Wales - Hwb \(gov.wales\)](#)

Mae'r ddogfen yma hefyd ar gael yn  
Gymraeg. This document is also available in  
Welsh.

# The Curriculum for Wales – Progression Code

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# 1. Introduction

1.1 This Code has been developed under Section 7 of the Curriculum and Assessment (Wales) Act 2021 (the Act). The Code sets out the ways in which a curriculum must make provision for all learners. Teaching and learning in a school's and setting's curriculum will not make provision for appropriate progression unless it accords with this Code. Further, a curriculum will not fully encompass the areas of learning and experience (Areas) unless it reflects appropriate progression and unless it accords with the Progression Code.

1.2 Therefore, any curriculum designed or adopted by a school or setting<sup>1</sup> must make provision that accords with the principles of progression set out in this Code. In respect of funded non-maintained nurseries the requirement is to adopt a curriculum that meets the requirements set out in the Act.

1.3 The Code sets out the 5 overarching principles of progression that span Curriculum for Wales requirements, as well as the more specific principles of progression for each of the Areas on which all maintained schools and funded non-maintained settings must base their curriculum. These principles of progression form part of the Curriculum for Wales Framework.

1.4 This Code applies to the following schools and settings:

- maintained schools and maintained nursery schools
- funded non-maintained nursery education providers<sup>2</sup>
- the teacher in charge of a pupil referral unit
- the management committee for a pupil referral unit
- a person who provides teaching and learning for a child, otherwise than at a maintained school, maintained nursery school or pupil referral unit (EOTAS) in a local authority in Wales<sup>3</sup>.

1.5 The requirement on schools and settings to use the principles of progression set out in this Code aligns with other requirements regarding the design and development of their curriculum under the Curriculum for Wales Framework.

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<sup>1</sup> In respect of funded non-maintained nurseries the requirement is to adopt a curriculum that meets the requirements set out in the Act. That means the proprietor has a choice as to whether to design a bespoke curriculum or to adopt the curriculum published by the Welsh Ministers pursuant to section 13 of the Act. In maintained schools and maintained nursery schools the head teacher must design a curriculum that meets the requirements set out in the Act.

<sup>2</sup> A funded non-maintained nursery setting is defined in section 80(1)(a) of the Act as nursery education that is provided:

- (i) by a person other than the governing body of a maintained school or maintained nursery school,
- (ii) under arrangements made between that person and a local authority in Wales, in the exercise of its duty to secure nursery education under section 118 of the School Standards and Framework Act 1998, and
- (iii) in consideration of financial assistance provided by the authority under the arrangements;

The term "nursery education" means full-time or part-time education suitable for children who have not attained compulsory school age.

<sup>3</sup> This refers to those learners who are not in a school or a PRU. This may be the case where illness prevents a learner from attending such settings.

- 1.6 This Code gives legal effect to the principles of progression. Those principles of progression are set out in pages 7 to 15 of this Code. They are also referred to in [Curriculum for Wales Framework guidance](#), published online on Hwb. Education practitioners and others with an interest in curriculum design and realisation may find it helpful to review these principles in the context of that online guidance, rather than separately as necessarily set out in this Code. The Framework guidance will be kept up to date online to reflect the requirements of this Code. The principles of progression though are mandatory requirements for those designing their curriculum and assessment arrangements.

## 2. Progression

- 2.1 A successful curriculum, supported by effective teaching and learning enables learners to make meaningful progress.
- 2.2 Progression in learning is a process of developing and improving in skills and knowledge over time. This focuses on understanding what it means to make progress in a given area or discipline and how learners should deepen and broaden their knowledge and understanding, skills and capacities, and attributes and dispositions. This is key to them embodying the four purposes and to progressing into different pathways beyond school.
- 2.3 As well as the overarching principles, principles of progression are also described in the context of each Area. However, schools and settings in their curriculum design and development will also wish to cross-reference to the [characteristics associated with each of the four purposes](#) in the planning of learning experiences. It is essential that learning progression not only reflects Area knowledge and understanding but also reflects the capabilities reflected in the four purposes, their [integral skills](#), and the [cross-curricula skills](#). While the four purposes do not explicitly refer to progression, they should inform the planning of all learning experiences within the Curriculum for Wales, which brings together content, pedagogical approaches and assessment practices to challenge and support learners.
- 2.4 Supporting learners to make progress is a fundamental driver of the Curriculum for Wales. Progression is reflected in the statements of what matters, the descriptions of learning for each of these statements and is also the primary purpose of assessment. Understanding how learners progress is critical to learning and teaching and should inform curriculum design, classroom planning and assessment.
- 2.5 Effective pedagogy is paramount to supporting progression. The pedagogical approaches used by practitioners should be selected to support progression and these will need to adapt to learners' needs. The Curriculum for Wales' [12 pedagogical principles](#) offer a non-exhaustive set of principles of effective teaching that help enable learners to progress, however they are not themselves discrete pedagogical tools. They should be considered alongside these mandatory principles of progression to inform how best to support learners to progress.
- 2.6 The pace at which learners progress will be individual to each learner. For example, progression for those with additional learning needs (ALN) may not correlate with the broad two to three year progression step as expressed in the descriptions of learning. Pace of progression should be evaluated by the professionals working with

learners with ALN. More generally, as schools and settings develop their curriculum they need to remain mindful of a variety of ways in which learners may progress at different points in the learning journey, and over different lengths of time. While there may be particular threshold concepts that represent a significant shift in a learner's understanding, these are not linked to specific ages, nor will they happen at the same time in different Areas for individual learners.

- 2.7 Support for progression should provide space for diversion, reinforcement and reflection as a learner develops over time to new levels. Progression will require learners to revisit the concepts outlined in the statements of what matters, developing a more sophisticated understanding and application of these as they progress. Consequently, this is not linear, or simply moving from one topic to another, without making connections between learning and developing understanding of the underlying, shared fundamental concepts.
- 2.8 The principles of progression provide a mandatory requirement of what progression must look like for learners. As a school or setting develops their curriculum, it must enable learners to progress in the dimensions set out below. This provides national expectations for the ways in which learners are expected to progress throughout the continuum of learning. The principles describe what it means for learners to progress and the capacities and behaviours practitioners must seek to support, regardless of a learners' stage of development. They are designed to be used by practitioners to:
- understand what progression means and should look like in a given Area
  - develop the curriculum and learning experiences to enable learners to progress in the ways described
  - develop assessment approaches which seek to understand whether this progress is being made
- 2.9 The principles of progression below are distinct from descriptions of learning which provide specific reference points of what progression looks like as learners work towards the statements of what matters at different points on their journey. Together, practitioners can use these two elements to understand what it means for learners to progress, and use this alongside the four purposes to inform learning, teaching and assessment.

## 3. Principles of progression

### 3.1 Overarching principles

3.1.1 Five principles of progression underpin progression across all Areas. The principles are as follows.

3.1.2 **Increasing effectiveness** - As learners progress, they become increasingly effective at learning in a social and work-related context. As they become increasingly effective they are able to seek appropriate support and independently identify sources of that support. They ask more sophisticated questions and find and evaluate answers from a range of sources. This includes increasingly successful approaches to self-evaluation, identification of their next steps in learning and more effective means of self-regulation.

**3.1.3 Increasing breadth and depth of knowledge** - Learners need to acquire both breadth and depth of knowledge. As learners progress, they develop an increasingly sophisticated understanding of concepts that underpin different statements of what matters. They see the relationships between these and use them to further shape, make sense of and apply knowledge. This consolidates their understanding of concepts.

**3.1.4 Deepening understanding of the ideas and disciplines within the Areas** - Holistic approaches are particularly important in early learning as learners engage with the world around them. Learners should become increasingly aware of ways in which ideas and approaches can be coherently grouped and organised. As they progress they need to experience and understand disciplinary learning in each of the Areas and see these in the context of the four purposes and the statements of what matters.

**3.1.5 Refinement and growing sophistication in the use and application of skills** - Learners need to develop a range of skills including: physical, communication, cognitive and Area specific skills. In the early stages of learning, this range of skills includes focus on developing gross and fine motor; communicative and social skills. They also develop the skills of evaluating and organising information in applying what they have learned. As learners progress, they demonstrate more refined application of existing skills, and will experience opportunities to develop new, more specific and more sophisticated skills.

Over time, learners become able to effectively organise a growing number of increasingly sophisticated ideas, to apply understanding in various contexts and to communicate their thoughts effectively, using a range of methods, resources or equipment appropriate to their purpose and audience.

**3.1.6 Making connections and transferring learning into new contexts** - Learners should make connections with increasing independence; across learning within an Area, between Areas, and with their experiences outside of school. Over time these connections will be increasingly sophisticated, explained and justified by learners. They should be able to apply and use previously acquired knowledge and skills in different, unfamiliar and challenging contexts.

## **3.2 Expressive arts**

**3.2.1 Increasing effectiveness as a learner** - Progression is demonstrated in moving from doing something with support towards autonomy and sophistication. Progression is likely to grow out of gradual use and re-use of known skills, but could also, on occasion, present as a big qualitative jump.

As learners make progress they increasingly evaluate and create more and more sophisticated creative work independently and with increased collaboration with others. They gain greater confidence by being able to explore, experience, interpret, create and respond through the expressive arts' disciplines within a safe environment. Their evaluation of their own and others' work reflects a developing understanding of process as well as product, and resilience in receiving, and persistence in acting upon, feedback.

**3.2.2 Increasing breadth and depth of knowledge** - Learners demonstrate progression in the Expressive Arts Area by exploring, experiencing and creating increasingly complex meaning. Linking new learning to existing knowledge develops an increased sophistication of conceptual understanding. Moreover, learners learn and refine different types of knowledge and skills including the techniques, processes and skills required to create and interpret in each field of the arts. Additionally the integral skills of creativity; synthesis; critical thinking; and understanding of social and cultural contexts are crucial to this Area.

**3.2.3 Deepening understanding of the ideas and disciplines within areas of learning and experience** - Progression is demonstrated through the continuing development of the knowledge, skills and capacities required to appreciate, create, explore, respond and reflect both within specific disciplines and in combinations of disciplines. In the early stages, learning is characterised by a growing curiosity for being creative and innovative by exploring with a range of resources and materials in various domains. Combining disciplines occurs purposefully but remains organic. As learning progresses, learners become increasingly aware of the expressive arts' disciplines and their key features, including (though not necessarily limited to) art, dance, drama, film and digital media, and music. Learners make links in the creative process across the disciplines to explore, create, interpret and respond.

**3.2.4 Refinement and growing sophistication in the use and application of skills** - Levels of control, accuracy and fluency in using a range of arts' skills will grow as learners progress. For example, in early stage learning this might be characterised by using simple body movements in composing a dance and identifying fundamental aspects such as speed, direction and levels when evaluating one's own work and the work of others. At a more advanced stage of progress, learners might create and evaluate the success of interaction among various aspects of movement in a complex choreographed dance. As they progress, learners continually develop in depth and refine with a growing sophistication these key arts' skills in different disciplines and/or in interdisciplinary activity.

**3.2.5 Making connections and transferring learning into new contexts** - Learners increasingly appreciate the possibility of combining disciplines within the Area in order to appreciate and to achieve/produce creative outcomes. Progression is also characterised by more sophisticated use of relevant skills within individual disciplines and the growing ability to transfer existing skills and knowledge into new contexts within this Area and across other Areas.

### **3.3 Health and well-being**

**3.3.1** Progression within the Health and Well-being Area must enable learners to revisit and deepen learning in concepts within the statements of what matters across a wide range of topics and aspects of health and well-being. Learners' contexts, their personal concerns, interests and circumstances will all have an impact on what enables them to progress and the pace at which they progress. This is particularly relevant in the context of feelings and emotions.

**3.3.2 Increasing effectiveness as a learner** – Learners progress by developing their independence and agency in matters relating to health and well-being: resulting in a

growing responsibility for their own health and well-being. Support from peers and supporting adults is an important enabler of progress and as learners progress in an aspect of well-being, progression includes developing the capacity to recognise when help is needed, and where and how to seek that support. Increasing effectiveness also means increasing self-regulation: recognising their feelings and adopting strategies to respond to these in a healthy way. As learners develop progression in effectiveness will include a developing ability to make, justify and evaluate decisions across the range of statements of what matters.

**3.3.3 Increasing breadth and depth of knowledge** - Progression will mean learners developing an increasingly sophisticated understanding of the fundamental concepts outlined in the statements of what matters and of a range of aspects, topics and issues relating to their health and well-being and that of others. Progression will require learners to revisit aspects, topics and issues, developing knowledge at a deeper level. Learners' knowledge of these aspects also progresses from the concrete to the abstract: understanding consequences, implications and underlying principles. This progression supports learners to develop conceptual knowledge and critical understanding in a range of aspects of health and well-being and personal behaviour.

**3.3.4 Deepening understanding of the ideas and disciplines within Areas** - As learners progress, they develop an appreciation of the significance of a range of aspects of their health and well-being that are contained within the statements of what matters and what can influence these aspects. Viewing different aspects and topics related to health and well-being through the lens of different statements of what matters. As such, progression means learners developing an increasing understanding of how the statements of what matters interlink and being able to apply these in exploring and understanding a variety of topics and issues.

**3.3.5 Refinement and growing sophistication in the use and application of skills** - Progression means learners developing their confidence, motivation competence in a skill, developing increasing accuracy and proficiency. Progression in health and well-being occurs across a wide range of skills, including: physical, emotional, psychological and social skills. This will also include more practical skills that also support learners in their health and well-being. The development of many skills will rely, to some extent on learners' wider developmental milestones. This is reflected in descriptions of learning: earlier progression focuses on learners developing awareness of a range of skills and later progression supports increasing accuracy, complexity and proficiency in those skills.

**3.3.6 Making connections and transferring learning into new contexts** - As learners progress, they develop connections between aspects of health and well-being and a wide range of topics and issues. This is underpinned by a deepening understanding of the statements of what matters, recognising the underlying common themes and principles between different issues, both within the Area and within learning in other Areas. As learners progress, the variety, complexity and nuance of the contexts they consider increases, in line with their needs, experiences and wider development. Across the continuum of learning, a critical step for learners in health and well-being is transferring understanding from their own well-being to that of others; becoming more socially responsible. Progression means learners developing an appreciation and regard for the needs of others and the impact of decisions, actions and circumstances on them. The development of empathy, care

and respect for others is critical to this. As learners become more socially responsible, they progress from primarily considering themselves, to considering others, both in their own relationships with others and in wider local, national and international contexts, developing the capacity of advocacy on behalf of themselves and of others.

### **3.4 Humanities**

**3.4.1 Increasing effectiveness as a learner** - As learners make progress within this Area, they will be asking increasingly sophisticated enquiry questions. They will show a greater independence in finding suitable information, making informed predictions and hypotheses, and making judgments including about reliability and utility. They will also become more able to effectively work with others, especially, but not limited to, taking part in social action.

**3.4.2 Increasing breadth and depth of knowledge** - Progression in the Humanities Area is demonstrated by learners engaging with an increasing breadth and depth of knowledge and underlying concepts. Learners increasingly develop the capacity to organise and make links across propositional knowledge, to identify and develop more powerful concepts related to the area of study, and to make supported judgements in more complex contexts.

Learners connect new ideas and information to knowledge acquired from previous learning from within and outside school and use it to build an increasingly clear and coherent understanding of the world around them.

**3.4.3 Deepening understanding of the ideas and disciplines within Areas** - Progression within this Area is demonstrated in the early stages as learners experience holistic approaches to exploring the world around them and are supported in shaping an understanding of themselves in the world. Learners will move on to more focused awareness of the lives of others, in their own social context, elsewhere in the world and in different eras. As they move through the continuum of learning, learners have an increased understanding of the defining features of the constituent disciplines (including history; geography; religion, values and ethics; business studies and social studies) and how these can be brought together to provide different lenses through which to view issues and address questions or problems.

**3.4.4 Refinement and growing sophistication in the use and application of skills** - As learners experience, understand and apply increasingly complex concepts, they show an increasing accuracy and fluency in using a variety of skills identified in the descriptions of learning and statements of what matters.

As they progress, learners will be continually refining and developing a growing sophistication of key disciplinary skills, including those relating to enquiry such as framing questions and using evidence to construct and support an answer, and relating that to representation and interpretation of enquiry results. Progression in this Area is demonstrated through an ability to work with an increasing number and sophistication of sources of information, and a growing understanding of how to resolve contradictory or conflicting accounts.

**3.4.5 Making connections and transferring learning into new contexts** - Progression in this Area is also characterised through more sophisticated use of relevant skills and the growing ability to transfer existing skills and knowledge into new, and increasingly unfamiliar contexts. As learners progress, they will be able to make links within and between periods and places, identifying similarities and differences, changes and continuities, and use the understanding of concepts to identify connections between new and previous learning. With greater understanding of the world, of other people and their values, in different times, places and circumstances, of their environment and how it has been shaped, learners will demonstrate greater ability to influence events by exercising informed and responsible citizenship.

## **3.5 Languages, literacy and communication**

**3.5.1** Learners will have varying proficiencies in their languages and, to ensure a robust foundation for second and subsequent languages, early steps (such as grapheme-phoneme correspondence) are revisited in each language.

**3.5.2 Increasing effectiveness as a learner** - As they move along the continuum of learning, learners will build on basic linguistic skills to develop a capability that enables them to overcome a range of communicative challenges successfully. These include, for example:

- asking increasingly sophisticated questions
- finding information independently
- making evaluative and critical judgements about the ideas and viewpoints and the means of communication in what they hear, read, and view
- using language effectively to convey their own ideas and viewpoints on various topics.

They will develop the language skills necessary to discuss and evaluate their learning in languages.

**3.5.3 Increasing breadth and depth of knowledge** - Progression in this Area is represented as a coherent continuum. The learner grows holistically in their understanding and purposeful use of languages, literacy and communication when listening and reading, when speaking and writing and when interacting and mediating in a wide range of contexts.

Learners develop an increasingly sophisticated understanding of linguistic concepts that support the more conscious and self-aware development of skills to communicate effectively through speech, writing, gestures, images or other media.

They also progress in their breadth and depth of conceptual knowledge by encountering ideas in languages and literature, initially in more personal and local contexts and moving as they progress to connect with more complex communications in a multilingual world. Learners thus acquire a gradually more nuanced understanding of different viewpoints and increasing command of the skills needed to interpret, evaluate, articulate and respond to differing perspectives.

**3.5.4 Deepening understanding of the ideas and disciplines within Areas** - Progression in this Area is a continuum of increasingly complex engagement with ideas and communicative purposes and of development of language awareness. These are demonstrated in:

- responding to communications when listening, reading, or receiving language in other ways
- producing them when speaking and writing or through other means of communication.

Drawing on a learner's whole linguistic repertoire – however uneven that may be – enables them to progress in all languages. Understanding linguistic concepts in the language of instruction, for example, can be applied to learning a new language, which facilitates progression in that language as well as improving understanding of the way in which their own languages work. While learners may be at different points of progression in different languages, a focus on plurilingualism allows them to call upon their knowledge of a number of languages to make sense of a spoken or written text, whatever their command of that language, and to increasingly understand and learn from the relationships between different languages.

**3.5.5 Refinement and growing sophistication in the use and application of skills** -

Progression in the refinement and sophistication of skills moves from literal and simple communicative purpose to more abstract, inferred or implied and nuanced levels of meaning with more complex purposes. Oral language precedes and underpins pre-literacy skills. Learners gradually develop greater awareness of language and more sophistication in using this awareness to achieve intended purposes in interpreting and producing communications in speech or writing or through other means.

For younger learners the acquisition of language follows the same sequence as for older learners, although the speed at which it does so can vary considerably. As learners experience, engage with, understand and apply increasingly complex ideas and language awareness, accuracy and fluency in using communication skills grow.

Progression in this Area is also seen in the production of language. As learners become more accomplished, they can adapt and manipulate language to communicate effectively to a range of different audiences. This allows learners to form and develop strong relationships and the confidence to use their voice in society.

Second language learners may use formulaic language with few mistakes initially and, as they progress and when being more ambitious and spontaneous in their use of language, they may appear to make more mistakes. This intrinsic part of successful language learning leads to becoming more fluent and accurate language users. Second language or bilingual learners may not necessarily show the same pattern of linguistic progression as first language learners.

**3.5.6 Making connections and transferring learning into new contexts** - Progression in this Area has a significant inter-relationship with the learning in all other areas. The learner moves forward along the progression continuum partly through exposure to rich challenges and resources offered by other Areas. The thinking needed to understand and to communicate all learning is closely related to that which enables

learners to develop receptive, interpretive and expressive language skills. They progress in the languages, literacy and communication set out in this Area alongside the development of disciplinary literacy in the other curriculum Areas.

The ability to transfer existing knowledge and skills into new contexts is an integral part of progression in this Area. This includes the social and cultural aspects of language. As learners develop an understanding of additional languages, patterns of language use are identified, adapted and applied in new contexts. Modes of communication are adapted for different audiences, and to different disciplinary contexts. Skills in learners' first and second languages enable learning in subsequent languages. As learners progress, they will be able to make links within and between ways of communicating, making good choices about effective methods of communication.

### **3.6 Mathematics and numeracy**

3.6.1 In the Mathematics and Numeracy Area the model of progression is based on the development of five interdependent proficiencies, outlined below. These can be considered as both longitudinal and cross-sectional. To ensure progress in any mathematics learning, proficiencies should be developed and connected in time and should also develop over time.

3.6.2 The following interdependent proficiencies have been used in developing the descriptions of learning and are central to progression at each stage of mathematics learning. Numeracy involves applying and connecting these proficiencies in a range of real-life contexts, across the curriculum. Each proficiency may relate to multiple overarching principles of progression, as set out below.

3.6.3 **Conceptual understanding** - Mathematical concepts and ideas should be built on, deepened and connected as learners experience increasingly complex mathematical ideas. Learners demonstrate conceptual understanding through being able to explain and express concepts, find examples (or non-examples) and by being able to represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract.

An increasing breadth of knowledge is achieved through the learners being introduced to new mathematical concepts. Depth of knowledge is achieved through learners being able to represent, connect and apply a concept in different ways and in different situations. The concepts that learners are introduced to will become increasingly complex, and understanding the way in which concepts connect will contribute to a growing understanding of the ideas within this Area. An understanding of how mathematical concepts underpin learning help learners make connections and transfer learning into new contexts.

3.6.4 **Communication using symbols** - Learners should understand that the symbols they are using are abstract representations and should develop greater flexibility with the application and manipulation of an increasing range of symbols, understanding the conventions of the symbols they are using.

The introduction and application of a new concept will involve developing an understanding of how symbols or expressions are abstract representations that

succinctly describe a range of situations, thus contributing to a growing understanding of the nature of mathematics. The introduction of new symbols will add to the breadth of knowledge and the communication with symbols will contribute to refinement and growing sophistication in the use and application of skills.

- 3.6.5 **Fluency** - As learners experience, understand and effectively apply increasingly complex concepts and relationships, fluency in remembering facts, relationships and techniques should grow, meaning that facts, relationships and techniques learned previously should become firmly established, memorable and usable.

Development of fluency and accuracy reflects the refinement and a growing sophistication in the use and application of skills.

- 3.6.6 **Logical reasoning** - As learners experience increasingly complex concepts, they should also develop an understanding of the relationships between and within these concepts. They should apply logical reasoning about these relationships and be able to justify and prove them. Justifications and proof should become increasingly abstract, moving from verbal explanations, visual or concrete representations to abstract representations involving symbols and conventions.

Refinement and growing sophistication in the use and application of skills will be demonstrated through the application of increasingly sophisticated logical reasoning. The development of an understanding of relationships between mathematical concepts and the development of justifications and proofs, leads to a growing understanding of the nature of mathematics and helps learners make connections and transfer learning into new contexts. The development of justifications and proof help support the increasing effectiveness of learners.

- 3.6.7 **Strategic competence** - Learners should become increasingly independent in recognising and applying the underlying mathematical structures and ideas within a problem, in order to develop strategies to be able to solve them.

Recognising mathematical structure within a problem and formulating problems mathematically in order to be able to solve them relies on an understanding of the ideas and disciplines within areas of learning and experience alongside a depth of knowledge. It also supports making connections and transferring learning into new contexts and developing increasing effectiveness as a learner. The recognition of the power of mathematics in enabling the representation of situations should lead to a growing appreciation of the usefulness of mathematics.

## 3.7 Science and technology

- 3.7.1 **Increasing effectiveness as a learner** - Problem-solving and design tend to be iterative; the development of skills-related resilience and self-efficacy become important to enable learning through a 'trial and improve' approach. Through this learners develop their application of skills, as well as resilience as they understand the benefit of failure in this Area to discover new ways of doing things. Over time there is an increased independence in learning, including interdependence in peer group learning. Learners should develop an awareness of their increasing sophistication of understanding and an ability to regulate their own thinking.

- 3.7.2 Increasing breadth and depth of knowledge** - Progression in the Science and Technology Area is demonstrated by learners exploring and experiencing increasingly complex ideas and concepts that sit within the statements of what matters. Knowledge moves through exploration from a personal understanding of the world to an abstract view that enables learners to conceptualise and justify their understandings. Progression of learning is not linear but cyclical with learners revisiting existing knowledge, linking this with their new learning, and adjusting schema in light of new discovery.
- 3.7.3 Deepening understanding of the ideas and disciplines within areas of learning and experience** - Progression in this Area includes the development of a deep understanding of the learning expressed within all the statements of what matters within the Area and the complex relationships and connections which exist between them. Investigative skills and domain specific knowledge which are developed within the context of one statement of what matters can be applied in others. Iterative approaches to problem-solving from computer science and design and technology can also be beneficial to all sciences. Early stage learning will be typified by a holistic approach to asking questions and exploring the world around the learner, with increasing specialisation at later stages.
- 3.7.4 Refinement and growing sophistication in the use and application of skills** - Investigation, exploration, analysis, problem-solving, and design are key skills required as learners work along the continuum of learning in this Area. As a learner makes progress, there is increasing sophistication in the way in which they apply prior learning in this Area, explore and investigate problems, and the resulting formulation of creative solutions. There is a refinement and increasing accuracy in what learners are able to do and produce both in the physical and digital environments.
- 3.7.5 Making connections and transferring learning into new contexts** - As learners progress across the continuum they will increasingly be able to make links between current learning and other experiences and knowledge developed within and beyond this Area. This will include making links with knowledge and experiences from outside the school environment. Problems within science and technology involve ethical or moral dilemmas and it is an increased understanding in the way in which these dilemmas are or even should be approached which will signify progression. Learners will develop the capacity to apply their learning in science and technology to inform their thinking and action beyond the classroom.