

Skills framework for 3 to 19-year-olds in Wales



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- Audience** Teachers, headteachers and governing bodies of maintained schools in Wales; all funded non-maintained settings; colleges and other learning providers who work with 14 to 19-year-olds in Wales; local education authorities; initial teacher training providers; teacher unions and school representative bodies; church diocesan authorities; national bodies in Wales with an interest in education.
- Overview** This publication is a key part of the revised, more learner-centred and skills-focused curriculum in Wales to be implemented from September 2008. It provides guidance about continuity and progression in thinking, communication, ICT and number for learners from 3 to 19 and beyond.
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The Background section contains important information about how the framework has been designed and can best be used.

Please take time to read this material and bear it in mind when using Sections 1–4.

Background

Why has the framework been developed?

The Education Reform Act of 1988 set out the requirements for a balanced and broadly based curriculum which:

'prepares... pupils for the opportunities, responsibilities and experiences of adult life.'

There is, however, strong consensus in schools that the current subject Orders cannot alone adequately fulfil this requirement since many place an emphasis on detailed subject knowledge rather than skills development. Whilst it is important to retain a common entitlement, there is also a need to offer different pathways through learning in order to suit the aptitudes and interests of learners and to meet the requirements of employers and others.

These requirements are outlined in the summary report of the Future Skills Wales 2003 Generic Skills Survey that states:

'Of the employers reporting skills gaps, lack of IT skills is the most common problem, followed by communication skills... showing initiative, problem solving and ability to learn.'

(Future Skills Wales 2003 Generic Skills Survey Summary Report – see www.futureskillswales.com)

In the publication, *Excellent Schools*, Estyn had already recognised this situation and stated that:

'Schools will need to devote attention to developing attitudes to learning – affecting the disposition of learners and developing their learning skills – as well as to delivering formal instruction.'

(Excellent Schools: A vision for schools in Wales in 21st century, Estyn, 2002).

These comments were reflected by ACCAC in its advice, *Review of the school curriculum and assessment arrangements 5–16* (2004), where there is a recommendation that:

'the National Curriculum Orders are revised to develop a learner-centred, skills-focused curriculum that is relevant to the 21st century and inclusive of all learners. The aim should be for the revised curriculum to be first taught in September 2008.'

The advice also suggests that:

'the Welsh Assembly Government should consider, as a long-term goal, the vision of a radically revised curriculum that is more overtly learner-centred and skills-focused, and not necessarily subject-based.'

ACCAC concluded that a revised curriculum should have a clear focus on the needs of learners and the process of learning, accompanied by fuller attention to the development and application of skills. The goal should be to develop a curriculum with appropriate learning activities that:

- focuses on and meets learners' needs
- is inclusive and provides equality of opportunity
- equips learners with transferable skills
- supports bilingualism
- is relevant, challenging, interesting and enjoyable for all learners
- transforms learning to produce resourceful, resilient and reflective lifelong learners
- is achievable and adequately resourced.

If learning can be personalised to meet the needs of individuals, their education will be correspondingly more successful and enduring. Hence the current commitment to focus on the learner in the revised curriculum.

How is the framework organised?

The framework has been developed with the aim of providing guidance about continuity and progression in thinking, communication, ICT and number for learners from 3 to 19 and beyond. These are skills that will enable learners of any age to become successful, whether in school, the workplace, at home or elsewhere, and they need to be firmly embedded into the experience of learners across all their learning. Their development underpins the requirements of employers and others, and will help to address current concerns about skills' shortages in Wales and other parts of the United Kingdom, Europe and the wider world.

The framework is organised into four sections – the development of thinking, communication, ICT and number across the curriculum. It aims to use language congruent with statements relating to other areas of education – for example, the wording of the Foundation Phase Outcomes and that of the Key Skills qualifications – so that each complements and reinforces the other. It is hoped that teachers will use the four individual sections together to underpin their planning and provide cohesive learning experiences for all learners.

A Glossary relating to the section on Developing thinking can be found on page 16.

How is progression described?

During its early development, the framework showed six stages of progression, notionally linked to broad expectations at the beginning of the Foundation Phase, the end of that phase, the end of Key Stages 2, 3 and 4 and Post-16. The two final stages also relate to Key Skills qualifications, Levels 1, 2 and 3 and it is hoped that learners who have the appropriate skills will also meet the challenge of attaining the appropriate qualifications.

Although it is recognised that learning and skills' development does not always happen in a neat linear way, the framework is still presented in a six-column continuum for the sake of clarity. However, skills' development is cyclical or spiral rather than linear, and is linked to the complexity of the activities involved. This means that some of the skills at the 'end' of the continuum might be demonstrated at a simple level by quite young learners – for example, the ability to evaluate what has been achieved – and such skills will be refined and extended as the learners' experiences and challenges widen and become more complex. Equally, some of the skills described at the beginning of the continuum can quite appropriately be demonstrated by young adults.

The framework assumes that the skills identified in each stage of progression have been demonstrated – at least at a simple level – by learners before they move to the next stage. Progression is cumulative as well as being linked to increasing challenge in the resources used, the concepts explored, and the contexts in which the skills are developed.

Broadly, progression in tasks moves from the concrete to the more abstract, from simple to complex, from personal to the bigger picture, from the familiar to the unfamiliar. Learners progress from needing support to more independent working. They move from listening and interacting with others in a general way to a situation where they choose to work with others as a deliberate strategy for reaching understanding. In these ways they become both independent and interdependent learners.

In some columns, arrows have been used in order to avoid the use of spurious descriptions of progression in adjacent column(s). These indicate that the skills described previously continue to apply to learners at subsequent stages and that more challenging tasks would enable further progression.

For some learners, particularly those with additional needs, the notional relationship with age will not be relevant. For learners with more complex needs, a focus on the skills in the framework will provide opportunities to meet individual priorities across the curriculum.

What is the framework's relationship to the whole curriculum?

This framework is **not** intended to be a curriculum framework. It underpins the Foundation Phase framework, all the subjects of the national curriculum, plus the frameworks for personal and social education (PSE), careers and the world of work (CWW) and religious education (RE), and aims to ensure a coherent approach to learning and to progression. Its greatest value will therefore be to support planning.

Throughout the revision of the subject Orders and frameworks, care has been taken to ensure consistency with the skills framework. The skills framework applies to all children and young people from their earliest contact with the education system through to the time they leave school or college as young adults. There is no expectation, however, that all subjects will cover all the skills defined. A selective approach is needed.

The framework is not language-specific but aims to support bilingual development. The skills outlined particularly in Developing thinking and Developing communication can be successfully developed in English and Welsh and, indeed, in other languages. Learners should be given opportunities to practise and develop these skills in more than one language and to recognise that skills learned in one language should support the development of skills in another.

In order to achieve compatibility with existing qualifications, one of the starting points used in designing the framework were the Level 1, Level 2 and Level 3 Key Skills qualifications. The communication, number and ICT frameworks are broadly similar in title to current Key Skills, and the requirements of the final two columns of each relate to the wording of the Key Skills qualifications. In such ways we have sought to provide alignment to the Learning Core of 14–19 Learning Pathways generally and to the Welsh Baccalaureate in particular.

While the framework does not explicitly cover the three wider Key Skills of Working with others, Improving own learning and performance and Problem solving, these are integrated throughout. Improving own learning and performance and Problem solving, while seeded across the whole framework, are most fully covered by the section Developing thinking. In the framework, the following references clearly demonstrate these aspects:

- *'Plan the process/method to be used.'*
- *'Regularly check progress, make ongoing revisions to process/method where necessary.'*
- *'Decide whether the process/method was successful; describe any amendments made; suggest how the process/method could be improved.'*

The whole of the Developing thinking section is underpinned by the principles involved in creative and critical thinking though creative thinking is especially prominent in the references:

- *'Develop and begin to combine a variety of imaginative ideas, possibilities and alternatives, including those of others.'*
- *'Experiment confidently with own and others' ideas; begin to take risks with ideas, going beyond the conventional.'*
- *'Link the learning to unfamiliar or more abstract situations.'*

In addition, there are further opportunities for working creatively in other sections of the framework, particularly Developing communication.

- *'Choose words to create effects. Choose an appropriate form, sequence and layout to suit audience and purpose.'*
- *'Communicate ideas and emotions through work in art, craft, design, dance, drama, media and music.'*
- *'Use given ICT resources to help create, present and safely share... ideas.'*

Direct references to critical thinking can also be found, such as:

- *'Explain patterns and relationships and identify uncertainties.'*
- *'Identify and assess bias and reliability.'*
- *'Identify the learning/thinking strategies they have used.'*

Working with others is a key element in thinking and communication, where the value of collaborative working in learning is especially recognised, as seen in the following references:

- *'Listen to the contributions of others, considering their points of view...'*
- *'Make significant contributions to discussions...'*
- *'Consider others' views to inform opinions and decisions.'*

Working with others occurs both explicitly and implicitly across the framework. Explicit emphasis is given to it in Developing thinking through the emphasis on group talk and collaboration and, in Developing communication, especially in the Oracy element. Where it is not explicit, there is an assumption that learners will work in different ways – sometimes independently but often, especially during the planning and developing stages of their thinking, in pairs and groups of various size and composition. This collaborative approach is crucial in helping learners to test and refine their ideas, to form new concepts and deepen their understanding. Interacting with others in this way is sometimes referred to as social construction.

The advantage is that, in engaging in group discussion and interaction in a safe, reflective environment, learners will become more confident, extend their own understanding and increasingly be able to take responsibility for their own learning. Engagement in such activities will also help learners to develop skills appropriate to skills-based qualifications.

The framework thus provides an underpinning for learning generally and a preparation for those learners who are seeking to attain the Core certificate within the Welsh Baccalaureate and those seeking skills accreditation within their chosen 14–19 Learning Pathway.

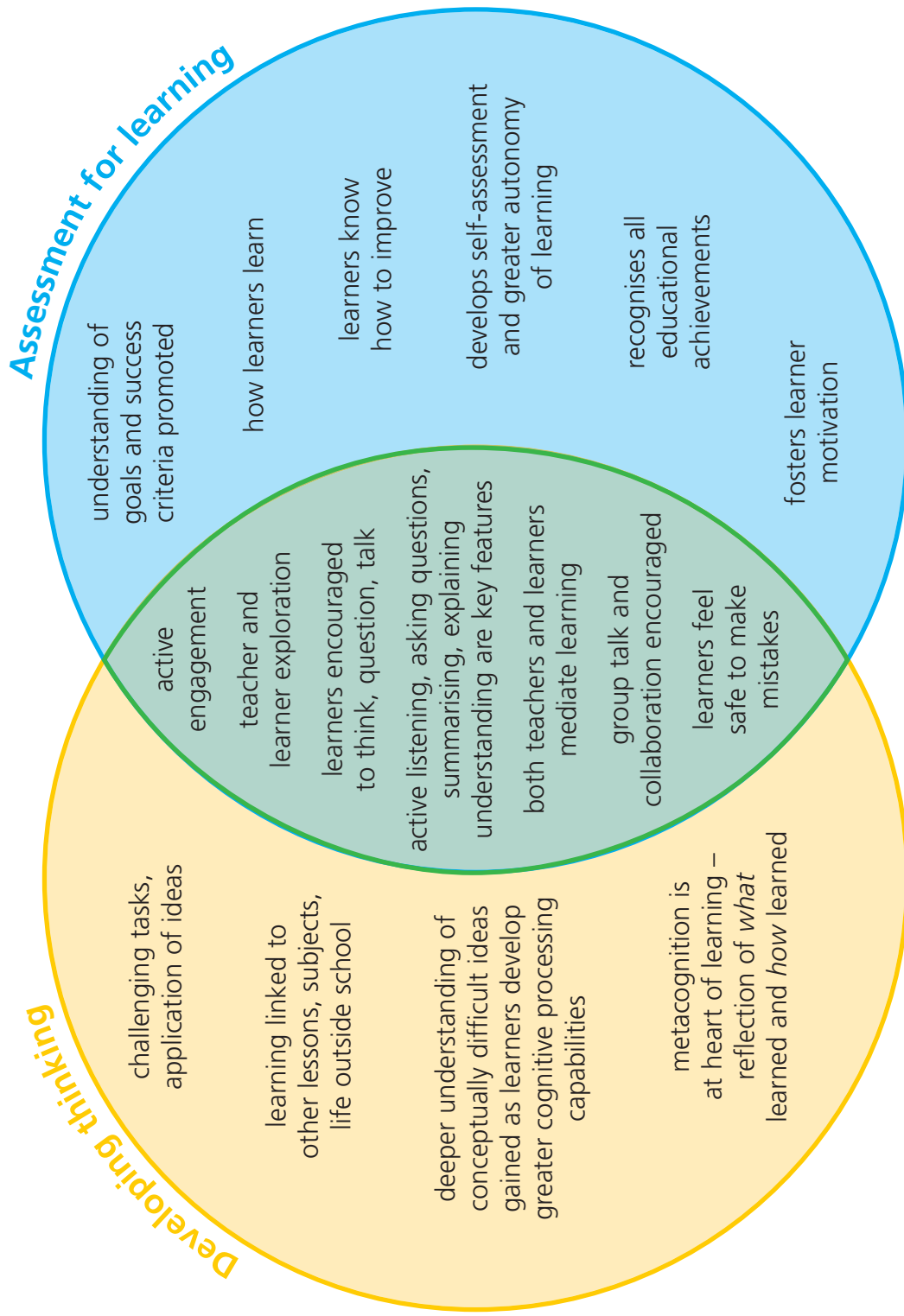
Section 1

Developing thinking across the curriculum

Developing thinking can be defined as developing patterns of ideas that help learners acquire deeper understanding and enable them to explore and make sense of their world. It refers to processes of thinking that we have defined as plan, develop and reflect. These processes enable learners to think creatively and critically to plan their work, carry out tasks, analyse and evaluate their findings, and to reflect on their learning, making links within and outside their formal learning environment. Although we are born with a capability to think, there is ample evidence that we can learn to think more effectively.

It could be said that, in the past, the process of learning has been taken for granted and has at times seemed mysterious. As evidence from research and practice has been increasingly aligned and interwoven, a number of barriers have been overcome. The most notable have been in the fields of developing thinking and assessment for learning. Both developing thinking and assessment for learning rely on basic principles of pedagogy such as questioning technique and articulating strategies.

A comparison of the features of developing thinking with assessment for learning



Taken from *Why develop thinking and assessment for learning in the classroom?* (Welsh Assembly Government, 2007)

One of the remaining barriers is a lack of a universal vocabulary for teachers to talk to their learners about their learning. The framework for progression in developing thinking and its glossary attempt to overcome this barrier. The terminology used is as simple as possible yet relates to current research in this area.

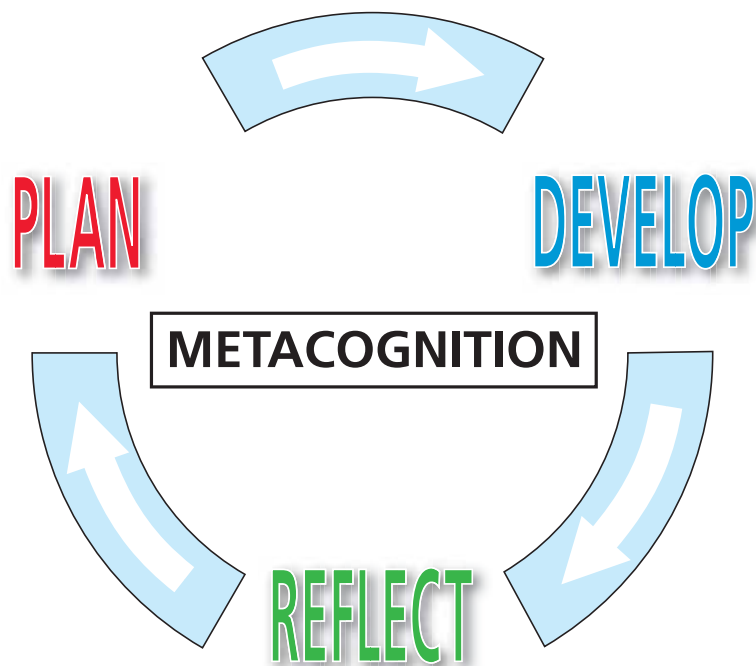
Metacognition (thinking about thinking) is the central and crucial process in developing thinking, as evidenced by both research and practice. In other words, learners need to reflect on learning and intentionally apply the results of reflection to further learning. However, reflection should not happen only after a task has been completed. It should take place at the start of the task, and as the task is being carried out, as well as when looking back at the whole experience.

Metacognition therefore is involved in several areas such as:

- knowledge and understanding of thinking processes
- making sense of the task
- knowledge of strategies and methods, how and when to use them
- monitoring and evaluating learning from the success (or otherwise) of chosen strategies or methods
- making connections across contexts.

Metacognition is therefore at the heart of the framework for developing thinking although not explicitly stated. Schools have found that using terms that help learners to describe their thinking and learning is especially productive. These terms are used on a daily basis to scaffold learners' understanding of the learning process. A selection of terms, relating to metacognition, can be found in section 5.6 of the booklet that is part of the DVD pack, *Developing Thinking Across the Curriculum* (BBC Wales, Estyn, Welsh Assembly Government, 2007).

The whole process of developing thinking is seen, in this model, as spiral so that learning from reflection can be fed back into this or the next task. The progression has been devised to be process-led, so that it should fit in readily with current classroom practice.



The processes of developing thinking, namely plan, develop and reflect, should not be seen as a set style of learning and teaching. Instead they typify the processes that the learner will go through in order to progress thinking and as such should be used flexibly. As suggested earlier for reflection, each process does not have a specific place in a task or in a lesson. If learners were to approach every task by starting to plan, then develop and finally reflect, they would soon become demotivated and learning would slow. Some tasks or lessons may follow a straightforward cycle of plan, develop and reflect. However, most will require learners to use the three processes interchangeably as they carry out a task. For example, in order to plan it is always wise to reflect on past experiences both within and outside school. It may be that a task or lesson requires learners to hone their skills in one process, for example analysing their findings (develop). In order to analyse, a range of thinking principles will be used such as *activating prior skills, knowledge and understanding; thinking about cause and effect and making inferences; thinking logically and seeking patterns; considering evidence, information and ideas; forming opinions and making decisions; linking and lateral thinking*. These principles are from across the three processes involved in the spiral.

Further details about *Why develop thinking?* and *How to develop thinking*, as well as video clips of actual lessons, can be found in the *Aiming for Excellence: Developing Thinking Across the Curriculum* pack jointly badged by BBC Wales, Estyn and the Welsh Assembly Government, distributed in 2007.

Section 1 Developing thinking across the curriculum

Progression

Learners' progression in developing thinking is described as you read across the columns from left to right. Progression is cumulative; skills identified in each stage of progression will have been demonstrated – at least at a simple level – by learners before they move to the next stage.

Progression can be seen in terms of the refinement of these skills and by their application to tasks that move from: concrete to abstract; simple to complex; personal to the 'big picture'; familiar to unfamiliar.






Learners progress from needing support to more independent working. They move from listening and interacting with others in a general way to a situation where they choose to work with others as a deliberate strategy for reaching understanding. In these ways they become both independent and interdependent learners.



The arrows within the columns indicate that the skills described previously continue to apply to learners at subsequent stages and that more challenging tasks would enable further progression.

Plan

Asking questions	Ask why, what, how, where, when, etc.	Ask questions related to context and listen before asking further questions.	Ask relevant questions and begin to link questions into sequences. Give reasons for choice of questions.	Ask questions that build on responses to earlier questions.	Ask more probing questions.	Identify the problem and set the questions to resolve it.
Activating prior skills, knowledge and understanding	Show awareness of personal needs and skills.	Identify and make links with prior skills and knowledge related to context.	Identify gaps and begin to build on existing skills, knowledge and understanding required for the task.	Build on existing skills, knowledge and understanding required for the task.	—→	—→
Gathering information	Choose from given options where to find information and ideas.	Suggest where to find information and ideas related to context.	Suggest how to find relevant information and ideas.	Suggest a range of options as to where and how to find relevant information and ideas.	Evaluate options.	—→
Determining the process/method and strategy	Choose from given options what to do and how to do it.	Plan, with support, the process/method to be used.	Plan the process/method to be used.	Suggest alternative processes/methods; identify the learning/thinking strategy to be used.	Explain why the process/method and strategy have been selected and identify possible problems.	Take account of possible problems when justifying why the strategy(ies) is to be used.
Determining success criteria	Identify, in response to questions, some basic success criteria for what is going to be done.	Determine some success criteria.	Determine success criteria and give some justification for choice.	Justify choice of success criteria.	—→	—→

Develop

Generating and developing ideas	Show curiosity and explore everyday stimuli.	Generate imaginative ideas and possibilities.	Develop and begin to combine a variety of imaginative ideas, possibilities and alternatives, including those of others.	Develop and combine a variety of imaginative ideas, possibilities and alternatives.	
Valuing errors and unexpected outcomes	Show surprise at unexpected outcomes.	Describe errors and unexpected outcomes.	Begin to make use of errors and unexpected outcomes.	Make use of errors and unexpected outcomes.	Value errors and unexpected outcomes and see the opportunities they present. Build on unexpected outcomes as well as successes to re-evaluate.
Entrepreneurial thinking	Favour the familiar when presented with new ideas.	Begin to experiment with own and others' ideas.	Experiment confidently with own and others' ideas.	Begin to take risks with ideas, going beyond the conventional.	Take calculated risks with ideas, weighing up potential pros and cons. 
Thinking about cause and effect and making inferences	See simple links between cause and effect in everyday routines; make and try out simple predictions.	Identify links between cause and effect; give reasons for inferences/ predictions.	Use some prior knowledge to explain links between cause and effect or justify inferences/ predictions.	Use prior knowledge to explain links between cause and effect and justify inferences/ predictions.	
Thinking logically and seeking patterns	Identify obvious observed differences.	Identify and describe similarities and differences by making simple comparisons.	Identify, describe and begin to explain patterns and relationships.	Explain patterns and relationships and identify uncertainties.	Analyse patterns and explore uncertainties. 
Considering evidence, information and ideas	Begin to understand that some things are 'fact'.	Consider evidence, information and ideas to begin to distinguish between 'facts', beliefs and opinions.	Consider different interpretations and distinguish between 'facts', beliefs and opinions, giving reasons. Begin to recognise bias and reliability.	Identify and assess bias and reliability.	Evaluate in order to gauge bias, reliability and validity. 

Forming opinions and making decisions	Begin to express own opinions and make decisions in everyday routines.	Form opinions and make decisions by weighing up some pros and cons.	Form considered opinions and make informed decisions.	Consider others' views to inform opinions and decisions.	Take different perspectives to inform opinions and decisions.	
Monitoring progress	With support, follow the chosen process/method.	Follow the planned process/method.	Follow the planned process/method, making some amendments where necessary.	Regularly check progress, making ongoing revisions to process/method where necessary.	Justify any amendments.	

Reflect

Reviewing outcomes and success criteria	Begin to link outcomes to success criteria.	Link outcomes to success criteria.	Begin to evaluate outcomes against success criteria.	Evaluate outcomes and how far success criteria fully reflect successful outcomes.	Refine success criteria in the light of experience for future occasions.	
Reviewing the process/method	Show or describe some of what has been done; identify, in response to questions, what worked and what didn't.	Identify what worked and what didn't; begin to suggest how the process/method could be improved.	Decide whether the process/method was successful; describe any amendments made; suggest how the process/method could be improved.	Justify amendments/improvements.		
Evaluate own learning and thinking	Show, in response to questions, some of what has been learned/found out.	Describe what has been learned/found out.	Describe how they have learned, and identify the ways that worked the best.	Identify the learning/thinking strategies they have used.	Justify the learning/thinking strategies used and suggest other strategies that might have worked.	Evaluate and refine learning and thinking strategies for future occasions.
Linking and lateral thinking	Make links between everyday routines in different contexts.	Link the learning, with support, to other situations.	Link the learning to similar situations, within and outside school.	Link the learning to dissimilar but familiar situations, within and outside school.	Link the learning to unfamiliar or more abstract situations.	Integrate the learning and link it to more abstract situations.

Fold out to see the complete grid.

Glossary – to describe the meanings of terms used in this progression and some used elsewhere in thinking.

Abstract – relating to theory rather than a real/actual situation/context.

Big picture – relating to a wide range of circumstances, some of which will be far away from the day-to-day life of the learner.

Concrete – relating to a real/actual situation/context.

Evaluate – think carefully about something before making a judgment about its value, importance or quality.

'Fact' – something that could be taken as reality.

Interdependent – close co-operation between learners, e.g. within a focused small group discussion.

Justify – explain fully the evidence and reasons for reaching a particular decision or conclusion.

Learning – the skills, knowledge and understanding gained from carrying out the task. This should relate to the strategies used and the metacognitive elements as well as the subject-centred learning.

Metacognition – thinking about own thinking; tracing how the task is being/was tackled to understand own thinking and learning process.

Process/method – the procedure for the task – the 'what to do' and the 'how to do it'.

Strategy – a way of working to achieve something, especially one that can be applied over time/in other situations, e.g. listing positives and negatives as basis for evaluation.

Success criteria – the predicted elements of a high quality outcome.

Other important terminology for teachers

Concrete preparation – ensuring that the task/problem is understood.

Social construction – interacting with others to deepen understanding.

Cognitive conflict – setting the challenge.

Bridging – making links within/outside subject area.

Section 2

Developing communication across the curriculum

The communication section of the framework leads on from much of the work done over the past few years on developing literacy across the curriculum. It links elements from the proposals for Language, Literacy and Communication Skills and Welsh Language Development in the Foundation Phase, levels for early literacy, the national curriculum Orders for Welsh, Welsh second language, English and modern foreign languages, and the Key Skills qualification, also called Communication, though it does not follow the format of any of these sources. The skills of communication have been separated as far as possible from the subject content of the language subject Orders. However, the communication section aims to support bilingual and multilingual development. Language skills learned in one language should support the development of knowledge and skills in another.

Developing communication should take place across the whole curriculum and the section has been organised into four elements relating to oracy, reading, writing and wider communication skills. Communication is taken to mean all forms of communication, not only that which depends on developed, unimpaired speech and hearing. The use of the word 'talk' in the first column of Oracy, therefore, refers to any kind of communication made by a speaker at an early stage of development. The Wider communication skills section includes non-verbal communication of all kinds – including gesture, mime, signing – and the expression of ideas and emotions through other mediums such as music and art.

The strands of each element are as follows:

Oracy:	Developing information and ideas Presenting information and ideas
Reading:	Locating, selecting and using information using reading strategies Responding to what has been read
Writing:	Organising ideas and information Writing accurately
Wider communication skills:	Communicating ideas and emotions Communicating information

Section 2 Developing communication across the curriculum

Progression

Learners' progression in developing communication is described as you read across the columns from left to right. Progression is cumulative; skills identified in each stage of progression will have been demonstrated – at least at a simple level – by learners before they move to the next stage.

Progression can be seen in terms of the refinement of these skills and by their application to tasks that move from: concrete to abstract; simple to complex; personal to the 'big picture'; familiar to unfamiliar.

Learners progress from needing support to more independent working. They move from listening and interacting with others in a general way to a situation where they choose to work with others as a deliberate strategy for reaching understanding. In these ways they become both independent and interdependent learners.

The arrows within the columns indicate that the skills described previously continue to apply to learners at subsequent stages and that more challenging tasks would enable further progression.

Oracy

Developing information and ideas

Listen and respond to others in familiar contexts, asking questions to obtain simple/specific information.

Show an awareness of the needs of the listener, asking questions and responding to the contributions of others.

Show an increasing awareness of the social conventions of discussion and conversation, contributing and responding appropriately.

Listen to the contributions of others, considering their points of view. Be flexible in discussions and respond aptly to what they hear.

Listen carefully, noting the strengths and weaknesses of viewpoints or lines of reasoning and show adaptability. Make significant contributions to discussions.

Listen perceptively, evaluating the strength of arguments and the thinking of others, identifying key messages. Make significant contributions to discussions, taking a range of roles and helping to move discussions forward.

Presenting information and ideas

Talk to themselves and to others and understand many more words than they can speak. Use simple vocabulary to convey meaning.

Communicate with increasing confidence to peers and others. Begin to modify their talk to the requirements of the audience, using a growing vocabulary.

Communicate clearly and confidently in a way that suits the subject, audience and purpose, using a range of vocabulary, including some key words related to subjects.

Communicate clearly and effectively in a way that suits the subject, audience and purpose. Use a wide and subject-specific vocabulary.

Communicate coherently, engaging the interest of listeners. Use appropriate language forms.



Reading						
Locating, selecting and using information using reading strategies	Begin to differentiate between print and pictures.	Decode text and begin to find simple information using organisational devices and available clues to deduce meaning.	Use a range of word identification skills and different strategies to locate and reorganise ideas and information from different sources.	Use different reading strategies to locate, select and summarise information, identifying accurately the key points.	Use a range of strategies to identify key points, ideas and lines of reasoning.	Select, summarise and synthesise ideas and information.
Responding to what has been read	Look at texts with/without an adult, showing interest or enjoyment.	Respond to what is read, expressing opinions about major events or ideas and making connections between reading and own experiences.	Confirm their understanding by responding to texts orally and/or in writing, and taking into account the opinions of others.	Discuss and evaluate texts, using inference and deduction where necessary and considering carefully the interpretations of others.	Discuss and show appreciation of texts, evaluating the writer's techniques.	Discuss texts, showing appreciation both of the text itself and of a range of interpretations.

Writing						
Organising ideas and information	Experiment with mark-making using a variety of instruments on paper and/or other materials.	Write short creative and factual passages. Check work and sometimes correct errors.	Plan, organise and present ideas and information. Improve writing by redrafting.	Plan, organise and present ideas and information. Proofread and revise writing.	Write clearly and confidently, presenting ideas and information appropriately. Proofread, edit and revise work.	Write coherently, presenting ideas and information logically and effectively.
Writing accurately	Choose words for variety and interest and spell simple words correctly/in a phonetically plausible way. Use simple punctuation and sentence structure.	Choose words to create effects. Choose an appropriate form, sequence and layout to suit audience and purpose. Spell most common words accurately, using a range of punctuation and sentence structures to enhance meaning.	Write effectively to suit audience and purpose, choosing appropriate vocabulary, punctuation and sentence structure. Spell accurately.	Write effectively, choosing from a repertoire of vocabulary and sentence structures, matching style to audience and purpose. Spell and punctuate accurately.	Write effectively, choosing from a repertoire of vocabulary and sentence structures, matching style to audience and purpose. Spell and punctuate accurately.	Write coherently for a full range of audiences and purposes, choosing from a wide repertoire of sentence structures and vocabulary.

<p>Communicating ideas and emotions</p>	<p>Begin to represent and respond to ideas and emotions through self-initiated and structured play activities that develop creative ideas.</p>	<p>Represent and respond to ideas and emotions through self-initiated and structured play activities that develop creative ideas.</p>	<p>Communicate ideas and emotions through work in art, craft, design, dance, drama, media and music.</p>	<p>Communicate ideas, emotions and information more elaborately through a range of mediums.</p>	<p>Communicate ideas, emotions and information consistently and more complexly through elaborate work in a range of mediums.</p>	<p>Communicate ideas, emotions and information coherently through more complex and elaborate work in a range of mediums.</p>
<p>Communicating information</p>	<p>Represent and respond to information in different forms using pictures, sounds and symbols.</p>	<p>Represent and respond to information in different forms using pictures, sounds, symbols, diagrams and maps.</p>	<p>Represent and respond to information in different forms including pictures, sounds, symbols, diagrams, maps, tables and graphs.</p>	<p>Respond to a range of information and ideas in different forms. Integrate different forms into effective presentations.</p>	<p>Respond to an increasing range of information and ideas in different forms. Integrate different forms into presentations demonstrating control, proficiency and perception.</p>	<p style="text-align: center;">↑</p>

Fold out to see the complete grid.

Section 3

Developing ICT across the curriculum

As with the sections for communication and number, the ICT section of the framework leads on from much of the work done on developing ICT across the curriculum in the past few years. It sets out six stages of progression in ICT capability and brings together skills from the *Information and communication technology in the National Curriculum for Wales Order* and the ICT Key Skills requirements.

The framework has two strands:

- finding and developing information and ideas
- creating and presenting information and ideas.

The first strand is about searching for information for specific purposes, and bringing together or processing that information in different forms to develop new information, which could be used to inform judgements and help make decisions. The second strand maps capability in using ICT to communicate ideas, thoughts and intentions, selecting appropriate ways of giving information with the intended recipient or audience in mind.

The main indicators of progression in ICT capability in the two strands are:

- a developing sense of purpose and audience for the work
- increasing competence and sophistication in the creative use of software functions
- the gradual change from using given ICT resources to choosing and selecting resources to suit the task and purpose.

This framework does not attempt to replicate the entire content of the ICT Order. Instead, it includes a selection of skills from the ICT Order which offer clear opportunities for cross curricular delivery and the support of learning and teaching in a range of subject areas.

Safe and appropriate use of ICT is embedded throughout the framework. Learners develop both their purposeful application of ICT skills and techniques and their understanding of the benefits and risks of using current and emerging technologies. They gain an understanding of the importance of adopting safe and legal practices which minimise risks to data, themselves and others when using digital communications. Learners progress from working safely with support to working safely and responsibly without supervision, based on a thorough understanding of the issues and risks involved.

Section 3 Developing ICT across the curriculum

Progression

Learners' progression in developing ICT is described as you read across the columns from left to right. Progression is cumulative; skills identified in each stage of progression will have been demonstrated – at least at a simple level – by learners before they move to the next stage.

Progression can be seen in terms of the refinement of these skills and by their application to tasks that move from: concrete to abstract; simple to complex; personal to the 'big picture'; familiar to unfamiliar.

Learners progress from needing support to more independent working. They move from listening and interacting with others in a general way to a situation where they choose to work with others as a deliberate strategy for reaching understanding. In these ways they become both independent and interdependent learners.

The arrows within the columns indicate that the skills described previously continue to apply to learners at subsequent stages and that more challenging tasks would enable further progression.

ICT skills framework

Become aware that information exists in a variety of forms.	Begin to find different sources of information with support.	Find suitable information from given sources using simple searches, to support a range of activities.	Find relevant information from a variety of sources using key word and multiple word searches on data files and internet sources.	Find different types of information from a range of ICT sources, including data files, DVDs, internet, and non-ICT sources, including written notes, lists, diagrams, selecting relevant information.	Identify suitable sources of information for information using multiple search criteria, and interpret and select what is needed for different purposes.
	Begin to develop information and ideas, combining text and images.	Develop/model information and ideas by processing data from given sources to support their activities in a range of subjects, and begin to ask questions about bias of information sources.	Develop/model information and ideas for specific purposes by processing data from a variety of sources, checking accuracy and plausibility of information.	Develop and refine information, making informed judgements about its plausibility, accuracy and relevance.	Derive new information on which to make judgements and draw conclusions.

Finding and developing information and ideas

Creating and presenting information and ideas

	<p>Become aware that ICT can be used to communicate ideas.</p>	<p>Use given ICT resources to help create, present and safely share their ideas, including text/word-banks, images.</p>	<p>Create and present their ideas for a given purpose by combining different forms of information, including text, images, sound, with some sense of audience.</p>	<p>Create and present information and ideas by combining a variety of different forms of information, including text, images, graphs, music files, with a developing sense of audience for their work.</p>	<p>Create and present information and ideas in consistent ways for different purposes by combining information from different sources, matching the needs of the audience.</p>	<p>Create and present information and ideas to meet the intended purpose and audience, selecting and using different layouts and techniques for different tasks.</p>
	<p>Safely share information with others, including the use of e-mail; virtual learning environments (VLEs).</p>	<p>Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments (VLEs).</p>	<p>Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments (VLEs).</p>	<p>Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments (VLEs).</p>	<p>↑</p>	<p>↑</p>

Fold out to see the complete grid.

Section 4

Developing number across the curriculum

The section for developing number across the curriculum leads on from much of the work done over the last few years on developing numeracy across the curriculum, most of which was focused on Key Stage 2 and Key Stage 3. There has been much discussion over the past twenty years or so about what numeracy is, but there is general agreement that it involves more than just calculating correctly; it also involves 'the ability to use number correctly and appropriately across a wide range of situations and contexts. This includes using number and graphical techniques to represent, interpret and analyse data as well as, for example, measuring, saving and spending, describing and comparing properties of shapes.' (*Aiming for Excellence in Key Stage 3: Raising standards in literacy and numeracy*: BBC Wales/Estyn/Welsh Assembly Government/ACCAC, 2003)

The section is intended to be as inclusive as possible. For this reason, the title was chosen to be 'number' rather than 'numeracy' in order to be equally valid for the youngest and oldest learners, as well as those with additional learning needs. Number skills can be applied at all ages in different situations across the curriculum, as appropriate to learners' abilities, achievements and stages of development, contributing to a deeper understanding of subject contexts.

The section links elements from Mathematical Development in the Foundation Phase, early mathematical development for learners with additional needs, the revised mathematics national curriculum Programmes of Study, and the Basic/Key Skills qualification, Application of Number, though it does not follow the format of any of these sources. All of the content of this section is included in either Mathematical Development or the mathematics Programmes of Study. However, it is not intended to tie in closely with either, rather to identify ways of using number that are pertinent to several Areas of Learning or subjects across the curriculum. Similarly, it relates to much, but not all, of Application of Number, particularly, though not exclusively, in the last two columns.

The format chosen for Developing number has three main elements each with several strands, though these are not intended to be independent of each other.

Use mathematical information	Calculate	Interpret and present findings
Using numbers	Using the number system	Talking about and explaining work
Measuring	Using a variety of methods	Comparing data
Gathering information		Recording and interpreting data and presenting findings

Section 4 Developing number across the curriculum

Progression

Learners' progression in developing number is described as you read across the columns from left to right. Progression is cumulative; skills identified in each stage of progression will have been demonstrated – at least at a simple level – by learners before they move to the next stage. Progression can be seen in terms of the refinement of these skills and by their application to tasks that move from: concrete to abstract; simple to complex; personal to the 'big picture'; familiar to unfamiliar.

Learners progress from needing support to more independent working. They move from listening and interacting with others in a general way to a situation where they choose to work with others as a deliberate strategy for reaching understanding. In these ways they become both independent and interdependent learners.

Use mathematical information

<p>Using numbers</p>	<p>Use numbers in games and role play.</p>	<p>Use whole numbers in practical situations; use fractions in the context of simple shape. Recognise and use coins of different values.</p>	<p>Use decimals in the context of money and measures; use negative numbers in the context of temperature; use fractions and percentages to estimate, describe and compare proportions of a whole in practical contexts.</p>	<p>Use ratio and proportion in practical contexts, including currency exchange rates, value for money and scale drawings.</p>	<p>Use whole numbers, decimals, fractions, percentages, negative numbers, ratio and proportion in a variety of ways in practical contexts, including scale drawings, maps and plans.</p>	<p>Read and understand ways of writing very small and very large numbers.</p>
<p>Measuring</p>	<p>Compare two or more objects by direct comparison of physical properties.</p>	<p>Measure and compare length and mass; order events in time.</p>	<p>Choose and use everyday units of measure and familiar measuring equipment; read scales to an appropriate degree of accuracy.</p>	<p>Use more precise measuring equipment with finer calibrations. Make reasonable estimates of a range of measures in everyday situations. Use correct units for compound measures such as volume, density or speed.</p>	<p>Read scales on a range of measuring equipment to given levels of accuracy.</p>	<p>Make accurate and reliable observations choosing suitable equipment; measure in a variety of appropriate units.</p>

	Count a small number of objects.	Collect data systematically by counting and by measuring. Read, understand and extract data presented in lists, tables, charts, simple graphs and diagrams.	Gather information in a variety of ways, including from questionnaires or databases. Choose data from given information presented in a variety of numerical and graphical ways.	Recognise the difference between, and the implications for, gathering discrete and continuous data. Access and choose data from information presented in a variety of ways and from different sources.	Get relevant information from different sources, including written and graphical material, and first hand by measuring or observing.	Choose how to obtain relevant information from different sources.
Gathering information						

Calculate

Using the number system	Join in with familiar number rhymes and songs.	Choose the appropriate operations when solving addition and subtraction problems.	Recognise the number operations needed to solve problems. Order large numbers to develop an awareness of size/magnitude and chronology.	Order negative numbers and decimals.	Identify suitable calculations to get the results needed for the task. Convert measurements between systems, e.g. currencies and mass.	Choose appropriate methods to get the results needed, including grouping data when appropriate.
Using a variety of methods	Begin to use the concept of 'more'. Match pairs of related objects or pictures.	Use a variety of mental strategies to add and subtract small numbers.	Use a variety of methods of mental, written and calculator computation; solve numerical and practical problems, approximating or estimating as appropriate; check that the results make sense by referring to the size of numbers or the context.	Check the accuracy of results using mental estimation, approximation and inverse operations to decide whether or not the results make sense.	Work to the level of accuracy required. Check calculations using different methods to make sure that they make sense. Use formulae to calculate in practical and everyday situations.	Carry out calculations involving two or more steps, with numbers of any size, with and without a calculator. Check methods and results to identify and correct any errors. Show clearly methods of carrying out calculations and give the level of accuracy of the result.

Interpret and present findings

<p>Talking about and explaining work</p>	<p>Talk about or show an awareness of activities involving number.</p>	<p>Use the language of number, shape and comparatives, and the symbols for addition, subtraction, multiplication and division when talking about work.</p>	<p>Use the language of position (including coordinates and compass points) and movement, data and measures when talking about work.</p>	<p>Use correct mathematical language, symbols and notation when presenting work.</p>	<p>Use mathematical terminology and notation correctly when describing and explaining methods and findings.</p>	<p>Describe results, highlighting main findings and explaining how they meet purpose.</p>
<p>Comparing data</p>	<p>Match objects or pictures; sort objects according to a given criterion.</p>	<p>Sort objects, using one or more criteria.</p>	<p>Describe and compare sets of discrete data, using the mode, mean, median or range as appropriate.</p>	<p>Compare two sets of continuous data.</p>	<p>Use basic ideas of correlation to determine the interdependence of two variables.</p>	<p>Compare sets of data in a variety of situations, using percentage, range, mean, mode and median as appropriate.</p>
<p>Recording and interpreting data and presenting findings</p>	<p>Record numbers initially by making marks or drawing pictures.</p>	<p>Record, interpret and present data in simple tables, lists, pictograms, charts, graphs and diagrams.</p>	<p>Record, interpret and present data in charts, diagrams, tables and graphs. Label graphs and their axes appropriately. Recognise that some conclusions can be uncertain or misleading.</p>	<p>Choose from, construct and interpret a variety of methods of presenting data, including pie charts, scatter graphs, line graphs. Recognise that some interpretations can be misleading.</p>	<p>Record and present gathered data in fully labelled formats, with titles, scales, axes and keys as appropriate.</p>	<p>Select and use effective methods to illustrate findings, to identify and show trends, and make comparisons.</p>

Fold out to see the complete grid.

Notes