

## 3.2 The NSP self-review, development and planning toolkit: Curriculum

### Overview

The LNF is a curriculum planning tool, focusing on literacy and numeracy across the curriculum. The LNF provides a continuum of learning that will enable learners, teachers and parents to understand what is being taught each year and how it links to learning in all subjects.

Schools are moving to create a clear picture of the development of learners' literacy and numeracy skills through teaching the skills explicitly, and developing and applying them in different subjects.

The *Curriculum planning guidance*<sup>50</sup> outlined a process for implementation which is augmented here. Schools are at different stages of development in implementing the LNF and the materials here are intended to support the process by suggesting ways to take forward literacy and numeracy across the curriculum. They are based on activities which some schools have already undertaken, and the examples aim to illustrate how they have put the process into practice.

This component provides a step-by-step guide to reviewing and developing the curriculum. It aims to explain the purpose of each step, who leads and participates in the activities and what the outcome(s) will be. The training packs on the Learning Wales website, including workshop materials, are another useful resource in supporting curriculum development<sup>51</sup>.

<sup>50</sup> January 2013, WAG 091/2013.

<sup>51</sup> See the Phase 1 guide, Annex 5.

### **What works? Evidence about good practice**

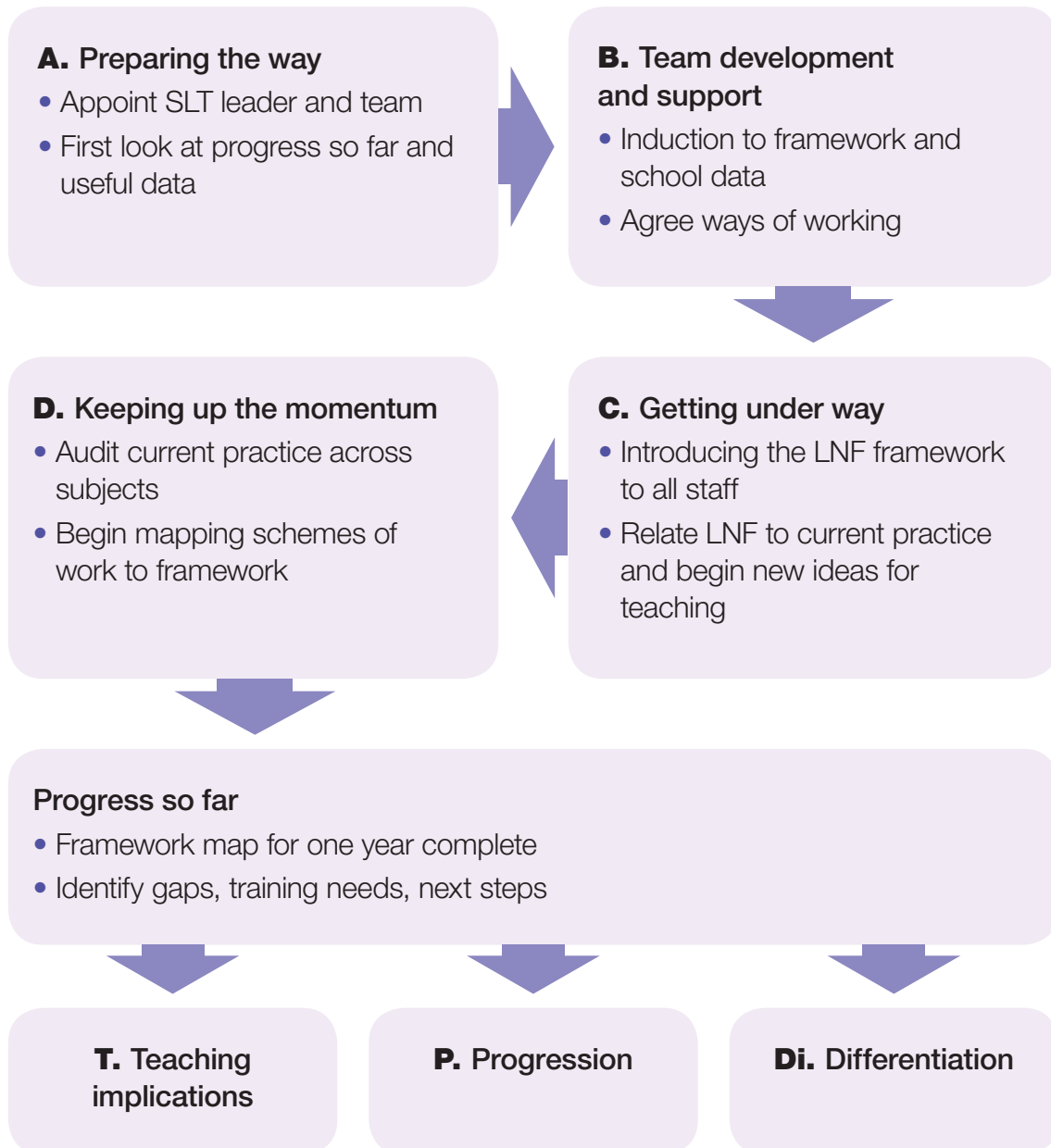
The step-by-step process is intended to support schools to implement the LNF successfully and to raise standards in literacy and numeracy. To achieve this:

- the curriculum provides systematic opportunities for developing learners' literacy and numeracy, based on the expectations in the LNF;
- approaches to teaching across subjects are coordinated and made consistent, to support the effective learning of literacy and numeracy;
- the focus across the curriculum is on learners' progression and providing effective challenges and support for achievement against the expectations in the LNF;
- provision is made for learners with ALN as well as for more able and talented (MAT) learners, adapting approaches and expectations to support progress for these learners;
- teachers' knowledge and understanding of literacy and numeracy and its contribution to learning in subjects is developed, so they are confident in incorporating the LNF into their teaching;
- there are systems for reviewing and improving the curriculum for literacy and numeracy over time, using achievement data from the classroom and the tests.

Successful schools have adapted their schemes of work to make sure pupils are prepared for the numeracy demands of different subject areas. In many of the schools, the co-ordinator arranges a different numeracy focus each term and produces classroom display materials and documentation to support this focus. They also organise whole-school projects and activity days on numeracy. These activities successfully make sure that teachers are reminded of the need to continue to improve pupils' numeracy skills and to apply these in a range of contexts.

*(Improving numeracy in key stages 2 and 3, Estyn, 2010)*

## Review and development process: curriculum



Next stage of the journey ...

**Key:**

**Preparing the way** column:

**Red** = alternative approach where cluster group decide to work together to produce a common whole-school literacy policy. This encourages consistency in strategies used across the curriculum within schools, between schools and between key stages, e.g. FP to KS2 and KS2 to KS3.

**What this might look like ...** column:

**Black** = Exemplar for both primary and secondary schools

**Green** = Primary school exemplar

**Blue** = Secondary school exemplar

**Red** = Cluster exemplar

**How much progress has been made with LNF implementation?**

In reaching judgements, use the following assessment criteria, which are consistent with those in the Progress Map:

**Red** = not in place

**Amber** = work has started but consolidation is needed

**Green** = in place and monitored regularly

## Step-by-step guidance: review, development and planning Curriculum

NSP model		School review		
A. Preparing the way	What this might look like ...	School (purpose, lead person, activity, outcome)	R	A G
<b>A.1</b> Senior leader (LNF leader) appointed, timeline agreed and resource allocated.	<p>Primary school A decided to appoint the person in charge of the curriculum (and not the coordinators for literacy/numeracy) as the initiative needed a person with an overview of the curriculum, a member of the SLT with authority. Additional non-contact time (approx. 2.5 hours a week) was designated to undertake this role.</p>			
<b>A.2</b> Cross-curricular team appointed. Decisions made on: <ul style="list-style-type: none"> <li>• how many in the team;</li> <li>• level of seniority;</li> <li>• inclusion of English/Welsh and mathematics specialists;</li> <li>• whether different teams for literacy and numeracy.</li> </ul>	<p>Secondary school B decided to group subjects – humanities, arts, sciences, technical subjects, PE/health/careers, etc., and one member each from English/Welsh, mathematics and ALN. There were separate groups for literacy and numeracy but a common timetable for the work. Each department was asked to appoint a contact person to work with the team.</p>			

<p><b>A.3</b> LNF leader revisits previous work on strengths and areas for development, from first Progress Map.</p>	<p>The LNF leader at Primary school C alerted the headteacher that although one of their priority areas was boys and writing, staff have since become concerned that the children's formal oral skills are not as good as they should be.</p> <p>Secondary school D realised, after whole-school intervention in lessons and tutor time, that progress had been made in working with fractions but there were still concerns with using simple ratios and fractions.</p>			
<p><b>A.4</b> LNF leader revisits data on attainment to support needs analysis, looking closely at aspects where learners did less well e.g. reading non-fiction, multiplying two- and three-digit numbers, using mental strategies to solve problems, in order to see which parts of the framework to focus on.</p>	<p>Secondary school E recently spent time working on a whole-school 'reading for pleasure' initiative, which helped with learners' confidence and stamina in reading, but not necessarily their skills. They want the LNF to be applied in all subjects, not just language and mathematics, so are looking at the full range of data available to decide on a specific skills focus for reading.</p>			

B. Team development and support	What this might look like ...	School (purpose, lead person, activity, outcome)	R	A	G
<p><b>B.1</b> LNF leader decides on proposed goal for the year and the termly process to get there, for discussion with team.</p> <p><i>Curriculum planning guidance</i> (January 2013, 091/2013, page 11) provides an overview of the process which can be adapted. (See Annex 3.2.i, page 92.)</p>	<p>In Secondary school F each team member is allocated to work with specific subject departments, so each team member has to find the best way of working with subject colleagues, and with the designated contact in each subject.</p>				
<p><b>B.2</b> Team meeting. Each team member brings annotated examples of literacy/numeracy in own teaching to discuss:</p> <ul style="list-style-type: none"> <li>• which elements of the framework are relevant;</li> <li>• which aspects and statements from the framework can be applied to the work,</li> </ul>	<p>Primary school G decided that the best way to help the team get to grips with what will be needed was to ask each team member to find examples from their own teaching where literacy/numeracy were included, preferably to give evidence of each element. Team members were asked to bring annotated copies of learners' work, or notes on what they had done (e.g. for oracy), to show which statements of the framework were relevant. These were produced as</p>				

and any first thoughts on whether the learner has reached the relevant statement for his/her year group;	slides so that they could easily be shared and kept as a bank of resources for later use.		
<ul style="list-style-type: none"> <li>any issues of task/activity/purpose/context which may be relevant.</li> </ul>	<p>From looking at the data, Primary school H found it had a number of different priorities. Some were related to different groups of learners and some to different year groups. However, when they looked at overall patterns of performance and the analysis of children's work they found that at the root of some of the data was children's weakness in extended writing and in their ability to transfer mathematical skills to everyday situations. So they decided that the areas which related to different groups of learners should wait until everyone had worked on the same element/aspect. This would ensure that everyone was familiar with the process.</p> <p>Note: this initiative could have been operated as a PLC.</p>		



<p><b>B.4</b> Team agrees ways of working, including responsibilities for noting decisions, keeping to deadlines, etc. Process (B.1) planned out, with milestone dates for phases completed, dates for team meetings.</p>	<p>Secondary school I was conscious that in the past some initiatives had faltered because they took too long to show progress. Short-term deadlines were agreed by the team and time was allocated as part of the agreed calendar of weekly staff meetings, to share and reflect on progress made.</p>				
<p><b>C. Getting under way</b>  <b>C.1</b> At a staff meeting, the LNF Leader (with headteacher support and using resources from NSP and the school's own data) outlines the importance of the initiative, emphasising that this will lead to changes in schemes of work and teaching, and hence to raising of standards.</p>	<p><b>What this might look like ...</b>  Primary school J had already spent time on this, convincing colleagues of the vital importance of these changes, so after a very quick summary, they moved swiftly on to the practical process.</p>	<p><b>School</b> (purpose, lead person, activity, outcome)</p>	<p><b>R</b></p>	<p><b>A</b></p>	<p><b>G</b></p>

<p><b>C.2</b> Practical planning for implementing the LNF across the curriculum included:</p> <ul style="list-style-type: none"> <li>the process outlined with a timeline and what will be expected by when;</li> <li>the team structure explained;</li> <li>asking for designated liaison person from each year group/subject;</li> <li>clarifying departmental/year group responsibilities.</li> </ul>	<p>Secondary school K decided to establish a PLC to pilot the process with three departments, so that models could be established for others to use and lessons learned put into practice.</p> <p>Secondary school L decided that it was essential for all teachers to be involved from the start to gain a full picture of what was already happening and the areas for development.</p>	
<p><b>C.3</b> In a full staff meeting, staff looked at the LNF to familiarise everyone with the elements in both literacy and numeracy and the year-by-year expectations by:</p> <ul style="list-style-type: none"> <li>choosing one year in the LNF and, in mixed</li> </ul>	<p>In Infants school M, foundation stage staff looked at the contexts in which literacy and numeracy were being taught, and identified the need to make more use of role play and the outdoor environment to give practical first-hand learning experiences.</p> <p>In Primary school N this included what is currently set and what new ideas could be used. They discussed how frequently such tasks might be set in particular subjects.</p>	

<p>year/subject groups, look at what is mentioned in one element;</p> <ul style="list-style-type: none"> <li>• relating this to current practice by teachers, e.g. different structures for writing in a specific year group/key stage;</li> <li>• discussing if the pattern for this year group holds for other years;</li> <li>• discussing the kinds of tasks that can be set to promote progress in both the subject and literacy/numeracy.</li> </ul>	<p>In Secondary school O it was found that teaching of data in the mathematics and science departments did not match and needed to be coordinated so that tasks were set appropriately.</p>		
<p><b>C.4</b> Summary and actions – recap and suggest that each teacher aims to set one new task in the next week which will integrate one aspect of literacy/numeracy (focus agreed) into teaching. It was</p>	<p>Secondary school P wanted to move quickly, so the leader thought it was important that all teachers had a go at setting a writing task, e.g. an account of a topic, to help to identify issues. Secondary school Q asked staff to double the amount of time they would usually spend on a number task in lessons to allow sufficient time to explain or recap on a skill.</p>		

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problems with the tasks and how they could be addressed.	<p><b>D.2</b> Team members work with department/phase/key stage/cluster colleagues to map the LNF against the national curriculum orders for subjects.</p> <ul style="list-style-type: none"><li>• Subject teams review subject Orders or framework and make decisions as to whether each statement links to the LNF, e.g. explicit links, implicit links or no link at all, and using a simple coding system, e.g. 'sometimes', 'always' or 'never'.</li></ul> <p>Using the LNF with coding for the statements will aid this process. (See Annex 4, page 390.) (See Annex 3.2.ii, page 93, for an example of</p>	<p>In Secondary school S this gave a context for the subsequent work on schemes of work, by showing how the LNF fitted the subject and was not an optional extra.</p> <p>In Primary school T it was decided not to bother with this step as they had recently checked their schemes of work against the orders and so were confident that the schemes of work would be a more useful next step.</p>			

matching the LNF to an art and design programme of study.) <ul style="list-style-type: none"><li>• Team members analyse these annotations to identify which aspects of the LNF can be readily covered and which may need more development.</li></ul>				
<p><b>D.3</b> Audit of current position.</p> <ul style="list-style-type: none"><li>• Team members help teachers to collect examples of literacy/ numeracy from all subjects in one year group, including nil returns.</li><li>• Team members meet to look at results of current practice and the new tasks just tried. This is correlated with the mapping against the subject Orders.</li></ul>	<p>In Primary school U these examples were: writing in literacy, and using number skills – as these were the easiest to collect. At this point quick wins were needed as this activity was to raise questions rather than find problems.</p>			

<ul style="list-style-type: none"> <li>All decide if previously agreed priorities are still the best ones.</li> </ul>	<p><b>D.4</b> Team members discuss where there are omissions and the reasons for this.</p> <ul style="list-style-type: none"> <li>Consideration is given to whether there is sufficient coverage across the curriculum and to whether some opportunities are being missed. Elements of literacy are relevant to all subjects/ages and all subjects can share the developing of oracy, reading and writing to some extent. The approach to numeracy may be different and is related to the challenge of the work and how far different subjects can contribute.</li> </ul>	<p>In Secondary school V it was agreed that history might not necessarily offer many opportunities to integrate numeracy. However, the Curriculum Deputy Headteacher was confident that:</p> <ul style="list-style-type: none"> <li>following the curriculum audit, coverage of numeracy across the curriculum was satisfactory;</li> <li>where opportunities had been identified to integrate numeracy into History lessons, they were meaningful.</li> </ul>		

<ul style="list-style-type: none"> <li>The team members decide how to handle the issue of this unevenness, keeping to the principle that all subjects should be able to develop literacy/ numeracy skills.</li> </ul>			
<p><b>D.5</b> Second session with all staff.</p> <ul style="list-style-type: none"> <li>Team members present analysis of work collected from across the curriculum and the mapping to the subject Orders. This reveals common features and differences in task, demand, relationship to framework.</li> <li>Draw out good practice<sup>52</sup>.</li> <li>Ask subject/year groups to select the types of tasks that suit different subjects best,</li> </ul>	<p>Primary school W found that in literacy the tasks tended to be rather limited, with closed answers, so they began to focus on more open-ended tasks in oracy and writing, using the LNF as a guide to what the tasks should focus on. In numeracy, many of the tasks were process-driven and there needed to be more opportunities to apply mental strategies consistently across the school.</p> <p>Secondary school X found the Welsh Government guidance on developing higher-order literacy skills (2010) makes useful links between subjects and types of writing.</p>		

<sup>52</sup> There are examples on [www.wales.gov.uk/docs/dcells/publications/100426higherorderliteriten.pdf](http://www.wales.gov.uk/docs/dcells/publications/100426higherorderliteriten.pdf)



including ones that they don't currently use.					
<p><b>D.6</b> Recap what is already in place and the importance of a coordinated approach.</p> <ul style="list-style-type: none"> <li>With team support, each subject/year to go through schemes of work for a specified year and insert explicit references to LNF where they already happen and insert tasks which will cover relevant aspects that are missing.</li> <li>Team members work with groups liaising closely to answer questions, deal with issues, support innovative ideas, etc.</li> </ul>	<p>In Primary school Y it proved straightforward to insert references to the LNF at headline level, so the staff moved to inserting references into lesson plans, e.g. in science, extracting and interpreting information from graphs was put into relevant lessons. (See Annex 3.2.ii, page 93, for an example of lesson planning which includes the LNF in a series of lessons.)</p> <p>After this had been done for three weeks, one of the team looked across all the plans for LNF-related work to see how consistent and useful the tasks were. This contributed to the more detailed mapping which ensures coverage of the LNF.</p>				
<p><b>D.7</b> Team meets to put together a map which contains all the coverage of the LNF for that year</p>	<p>In Secondary school Z, analysis from audits showed that measuring and data were used widely across the curriculum and the use of number skills was limited in lessons.</p>				

<p>group. Discuss where the challenges have been, what the gaps are. Team makes decisions on:</p> <ul style="list-style-type: none"><li>• revisiting the map for the one year group/ moving on to similar mapping for other year groups;</li><li>• how to deal with omissions from the LNF for the one year.</li></ul> <p>Report back to staff on the excellent work done so far and the next steps for mapping.</p>	<p>As a result of this, the school's initial focus was on number skills.</p>		
<p><b>D.8</b> LNF leader and team consider other major issues, which are likely to be:</p> <ul style="list-style-type: none"><li>• teacher knowledge of literacy and numeracy and of pedagogical approaches, and identifying any professional</li></ul>	<p>Secondary school AA identified quite fundamental issues about the level of challenge in tasks, lack of confidence in learners' ability to do tasks, teacher confidence in aspects of the LNF, e.g. grammar, specific reading skills, multiplication and division techniques, collecting and recording data. They also considered the implications of the</p>		

development needs; <ul style="list-style-type: none"> <li>• progression through the LNF;</li> <li>• differentiation to enable all learners (including more able and exceptionally able learners) to progress and more to reach the LNF expectations.</li> </ul>	reporting requirements. They decided to support teachers to be more confident in teaching the LNF, both in their own knowledge of literacy and numeracy and teaching strategies for teaching literacy and numeracy in the subjects, before anything else.	
<b>D.9</b> LNF leader gives feedback to staff on progress and decisions about next steps. The priority is to make the most impact as quickly as possible. Schools will differ in what they prioritise next. (Suggestions for tackling teaching implications, progression and differentiation can be found on pages 81, 84 and 87.)	In Secondary school AB there is a focus on literacy, and teachers of English, humanities and science have agreed to cover a range of writing tasks and teach learners the importance of audience, purpose, form and structure. Other subjects have identified the main kinds of writing in their areas and are looking at the LNF to see how to increase the challenge of these tasks through the years.	

The following sequences can be undertaken in the order the school thinks most useful. This sequence is an introduction to the sub-sections of Section 3 covering learning and teaching and school leadership (staffing: performance management and professional development).

T. Teaching implications	What this might look like ...	School (purpose, lead person, activity, outcome)	R	A	G
<p><b>T.1</b> Team decides priorities for the staff in the light of previous work. This includes</p> <ul style="list-style-type: none"> <li>• how to help teachers recognise new opportunities to develop literacy and numeracy;</li> <li>• any uncertainties in teacher knowledge which must be addressed;</li> <li>• agreement on pattern of teaching across subjects, including the contribution of English/ Welsh/mathematics and application other subjects.</li> </ul> <p>Each of these issues</p>	<p>Primary school A made use of a staff continuing professional development (CPD) audit to plan appropriate professional development activities. This included team planning between Years 3 and 4 teachers, and support from the regional consortium's expert teachers. They worked with the Year 6 teachers and members of the secondary school's history, RE and geography departments to develop extended writing opportunities in history as part of transition planning.</p>				

could be a topic for staff discussion and action.				
<p><b>T.2</b> How to help teachers recognise new opportunities to develop literacy and numeracy and include LNF in their teaching as a support, not a distraction, from subject learning.</p> <p>The LNF Lead makes links to previous work on pedagogy and teaching skills to extend teachers' classroom repertoires.</p> <p>The Welsh Government materials on higher-order literacy and mathematical skills are a useful guide to the breadth of skills and tasks.</p>	<p>Secondary school B created workshop materials which were then available on the school website for staff to follow, to encourage a consistent approach to specific aspects of literacy and numeracy. Annotated examples of learners' work from all departments were placed in the staff shared area which encourages sharing of good practice and helps make the cross-curricular links. This area is constantly updated as it forms the key part to staff development on numeracy.</p>			
<p><b>T.3</b> Identify any uncertainties in teacher knowledge which must be addressed, e.g. grammar, different structures in writing,</p>	<p>Primary school C found that teachers were uncertain about some aspects of grammar and how to teach them. The literacy coordinator assembled a short guide to the terms to be used which could be shared in every classroom. Staff workshops focused</p>			

<p>differences in skimming and scanning a text, using mathematical concepts in a variety of contexts.</p> <ul style="list-style-type: none"> <li>• Arrange for a range of ways to tackle this, e.g. written and video materials online, coaching/mentoring, support from literacy/numeracy coordinators in school or regionally, workshops modelling how to teach these aspects.</li> <li>• Ask staff to evaluate the most useful sources for them.</li> </ul>	<p>on how to teach grammar meaningfully in different contexts. (In Annex 3.2.iii, page 103, there is an example of how one school supported teachers' own knowledge of literacy.)</p>			
<p><b>T.4</b> Agree responsibilities for covering the LNF including:</p> <ul style="list-style-type: none"> <li>• how many writing, reading, oracy and numeracy tasks for each term for each year group for each</li> </ul>	<p>In Secondary school D it was agreed that English, Welsh, history and design and technology would most fruitfully focus initially on reading and writing; while PE, art and design and drama would focus on oracy. At the same time, it was agreed that geography, ICT, science and mathematics would focus on numeracy.</p>			

<p>subject, and the skills in LNF to be tackled. This will enable refinement of the previous mapping (D.5).</p> <ul style="list-style-type: none"> <li>the pattern of teaching across subjects, including the contribution of English/Welsh/mathematics and their application to other subjects.</li> </ul>				
<b>P. Progression</b>	<b>What this might look like ...</b>	<b>School</b> ( <i>purpose, lead person, activity, outcome</i> )	<b>R</b>	<b>A</b>
<p><b>P.1</b> In whole staff meeting the team introduces principles of progression in teaching the LNF. It is helpful to show how this meeting focus has arisen from the previous process.</p> <ul style="list-style-type: none"> <li>In a workshop, teachers discuss what makes work easier or harder, particularly in</li> </ul>	<p>In Primary school E this session began with a discussion about what the factors are that encourage progression. They looked at dimensions such as concrete/abstract, short/sustained, single/multiple ideas, familiar/unfamiliar, context, independence, straightforward/complex.</p> <p>These concepts were applied to literacy and numeracy and an overview was agreed which would guide teachers in setting up tasks related to the LNF. (Workshop 3 of LNF resources on the Learning Wales</p>			

<p>literacy and numeracy.</p> <ul style="list-style-type: none"> <li>• They then look at strands of progression in the LNF through the years, discuss the ways progression is found and decide how these are seen in their own classrooms.</li> <li>• They discuss anything that is new or unfamiliar and resolve queries.</li> </ul>	<p><a href="#">website was useful here.</a></p>			
<p><b>P.2</b> Discuss how tasks will differ to ensure the different skills are developed over time. Identify, possibly using examples from learners' work, how what the learners do relates to how the task is framed – the level of scaffolding, modelling, explicitness about the literacy and numeracy expected as well as subject content and what is valued in</p>	<p>For Key Stages 2 and 3 the following publications contain useful examples of tasks and how to develop skills:</p> <ul style="list-style-type: none"> <li>• <i>Developing higher-order literacy skills across the curriculum</i> (Welsh Government, 2010);</li> <li>• <i>Guidance on the teaching of higher-order reading skills – INSET opportunities for teachers of all subjects across the curriculum at Key Stages 2 and 3</i> (Welsh Government, 2010);</li> <li>• <i>Developing higher-order mathematical skills</i> (Welsh Government, 2011)</li> </ul> <p>The Assessment for Learning (section E) of the Assessment, recording and reporting</p>			



marking.	<p><b>P.3</b> In subject groups, devise detailed tasks which will activate the LNF and fit the subject content; tasks which are designed to fit the LNF and to build in progression (based on views of progression established in P.1). The other fundamental aspect of developing progression is responding to learners' writing, so the next move will be to agree how teachers will mark learners' work (leading to consideration of assessment, recording and reporting).</p>	<p>section (3.3, page 108) of this guide is also helpful here.</p> <p>Secondary school F used evidence from whole-school book monitoring/reviews to evaluate the effectiveness of their current marking policy. They used the initial LNF extended writing tasks that departments had collated (see D.3) to discuss whether the current marking policy reflected the requirements of the LNF.</p>			
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Di. Differentiation	What this might look like ...	School (purpose, lead person, activity, outcome)	R	A	G
<p><b>Di.1</b> The LNF Lead and the team decide that differentiation is a fundamental issue if:</p> <ul style="list-style-type: none"> <li>the majority of, or some, learners are not able to show the skills outlined in the LNF for their year group or are in advance of the expectations in the LNF then this needs to be addressed in a consistent way across the curriculum;</li> <li>the team members meet their subject contacts to discuss where issues are arising, in particular the literacy and numeracy of specific learners, groups of learners or classes;</li> <li>as well as looking at</li> </ul>	<p>After one half-term of integrating the LNF into teaching across the curriculum, Secondary school A decided to ask each subject to submit the names of learners who seemed to be performing well below their year group on the LNF and, if possible, identify what they seemed to find hard. They also asked for names of those who seemed to be exceeding the year group expectations.</p> <p>An analysis revealed some learners who were already known to be struggling with learning generally, as well as with literacy and numeracy. For these learners, who were already receiving extra provision, the support was reviewed to see if more focus on the LNF aspects might lead to faster progress. The analysis also suggested that some problems of literacy and numeracy were more widespread and were likely to be inhibiting learning across the curriculum.</p>				

learners' attainment in national and school tests, discussion should include identifying LNF features that the majority are struggling with and what the individual problems are.				
<p><b>DI.2</b> To deal with issues related to literacy and numeracy specifically, the team then meets to find common threads across subjects and also to identify where some subjects might need further help with integrating LNF into their teaching. Some issues are likely to be known, but other issues will be less clearly defined. The analysis needs to identify which can be tackled by working on differentiation of tasks,</p>	<p>In deciding its priorities, Primary school B took into account national data and their own learners' performance. They found problems with areas such as the range of reading strategies of more able children in Years 3 and 4, and some less confident learners in Years 5 and 6 who were not able to give clear oral explanations in formal language. They also identified groups of children who were very skilled in oracy but much less so in writing.</p> <p>Secondary school C looked at Year 7 learners and found that they knew their basic multiplication tables but were unable to make connections between the four operations or understand the connections between them, e.g. realise that division is the inverse of multiplication. They also noted</p>			

activities and classroom organisation (see Di.3 below), and where there needs to be a systematic approach to supporting learners who are not achieving at the expected levels (see Di.4 below).	that learners were not able to partition numbers and subsequently were unable to complete long multiplication calculations. Schools can use the numeracy diagnostic tool on the Learning Wales website for help with this: <a href="http://www.learning.wales.gov.uk/?skip=1&amp;lang=en">www.learning.wales.gov.uk/?skip=1&amp;lang=en</a>			
<b>Di.3</b> Staff workshop on techniques to use to support learners with different needs – language and maths staff could be helpful here as well as ALNCO and specialist support staff. A bank of techniques that staff can use would be helpful, e.g. by looking at the LNF for the years below, extra prompts can be provided for tasks for those who struggle, and looking at the LNF for years above can add extra challenge for the	Secondary school D realised that the majority of the calculations learners were asked to do involved whole numbers. Staff were encouraged to look at the LNF document and see how the use of decimals in lessons could create more challenge for identified learners.			



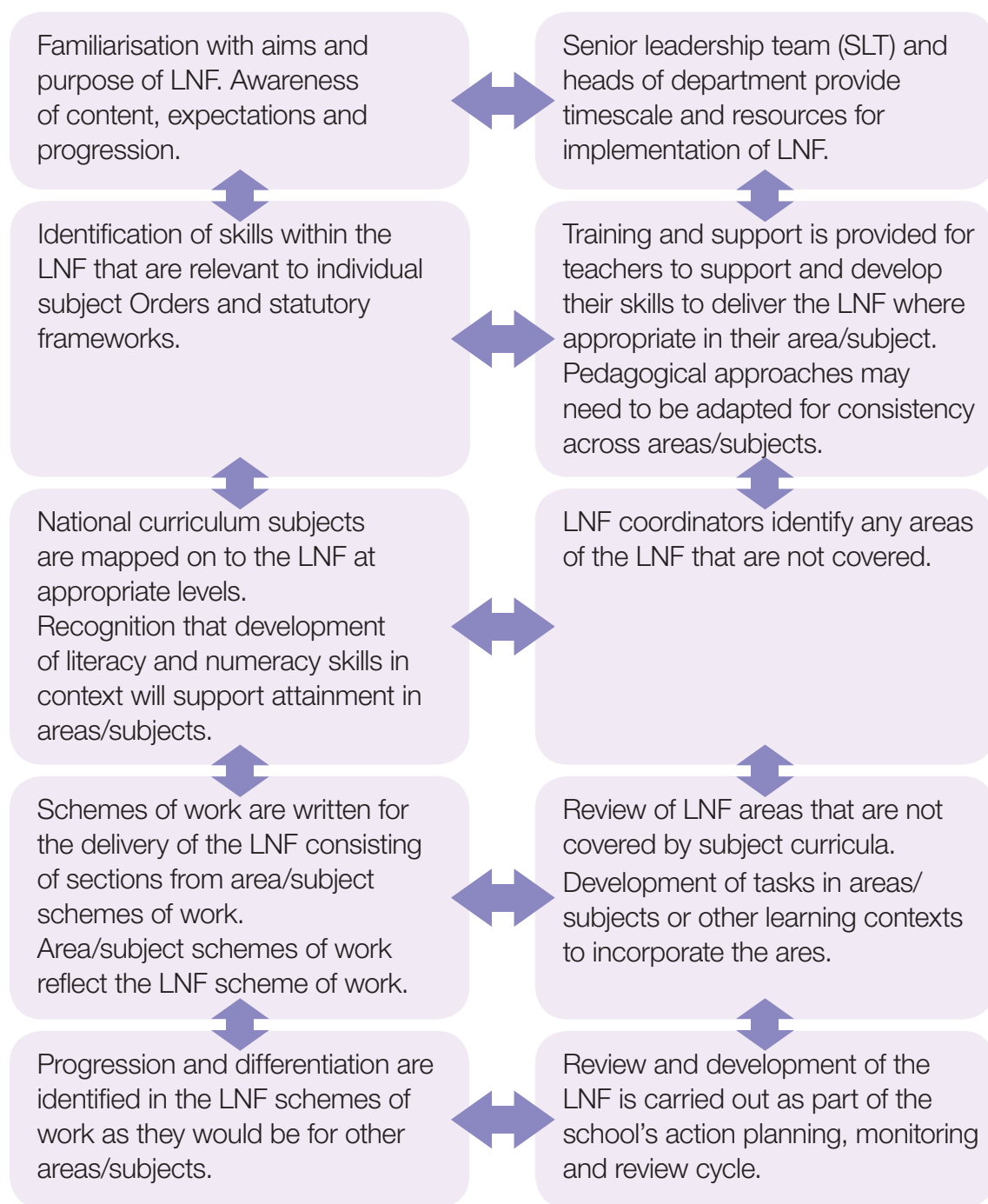
more skilled learners. Such examples could be put on the staff intranet area for ease of reference.					
<p><b>Di.4</b> The LNF Lead needs to consider the current systems and resources (e.g. national tests) for identifying and supporting those learners who need support beyond the usual timetable. These could be learners who struggle to succeed and those who are more able and need further challenges<sup>53</sup>. These systems may need adjusting in the light of the analysis to provide more targeted intervention, e.g. referrals for further individual pupil support, training learning support staff to</p>	<p>In Secondary school E, all Year 7 learners have whole-class English lessons and literacy lessons. In addition around 50 'intervention' lessons are put in place, targeting learners in Years 7, 8 and 9 who need one-to-one or small group support to develop their reading and/or writing skills. About 11 teachers from a range of subject areas use resources which have been provided by the literacy coordinator. These learners are identified through their results in the national reading tests. Intervention students remain on the programme until the school feels it is time for them to withdraw, thereby freeing up space to accommodate others. A tracking system brings together all relevant information including reading test scores.</p>				

<sup>53</sup> *Supplementary curriculum planning guidance* (Welsh Government, 2013).

<p>help individual learners in class or extra lessons. In addition a system is needed to follow up extra support to see if it is effective and if learners have moved on and so do not now need the extra support.</p> <p>The follow-up to these initiatives involves the use of assessments, both informal and formal, to identify problems and progress (see Section 3.3, page 108, of this guide).</p>		
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## Annex 3: Relating to Section 3

### 3.2.i: Flowchart from *Curriculum planning guidance* Curriculum implementation – Key Stage 3<sup>54</sup>



<sup>54</sup> *Curriculum planning guidance* (Welsh Government, 2013).

### 3.2.ii: Integrating literacy and numeracy into curriculum plans

#### Art and design

In this example the teachers were given their subject Orders and the LNF, and were asked to look for opportunities to include the LNF in their subject (sequence D.2).

Literacy component of the LNF – Year 8	ART AND DESIGN Programme of Study – SKILLS	
<p><b>READING STRATEGIES</b></p> <ul style="list-style-type: none"> <li>use their knowledge of: <ul style="list-style-type: none"> <li>word roots and families</li> <li>grammar, sentence and whole-text structure</li> <li>content and context</li> <li>to make sense of words, sentences and whole texts</li> </ul> </li> <li>use a range of strategies, e.g. speed reading, close reading, annotation, prediction, to skim texts for gist, key ideas and themes, and scan for detailed information</li> <li>be selective about which internet sources to download or quote depending on their reliability and structure.</li> </ul> <p><b>COMPREHENSION</b></p> <ul style="list-style-type: none"> <li>read with comprehension texts, on-screen and on paper, that are new to them, and understand the information in them</li> <li>locate and selectively use additional information and evidence from different sources</li> <li>use inference and deduction to understand layers of meaning</li> <li>make connections between texts, their themes and factual content, and identify any agreement and contradictions</li> <li>read around a topic that interests them and develop a broader understanding of it through research.</li> </ul> <p><b>RESPONSE AND ANALYSIS</b></p>	<p><b>Understanding, Investigating and Making should be regarded as integrated activities.</b></p> <p><b>Understanding</b> Pupils should be given the opportunities to:</p> <ol style="list-style-type: none"> <li>use their knowledge about the work of other artists, craftworkers and designers to enrich and inform their work through: <ul style="list-style-type: none"> <li>analysis</li> <li>comparison</li> <li>evaluation</li> </ul> <i>e.g. collect information about an artist from the internet, library, galleries or interviews and use the information to influence their own work</i> </li> <li>explore the diverse working practices of artists, craftworkers and designers from different: <ul style="list-style-type: none"> <li>periods</li> <li>places</li> <li>cultures</li> </ul> considering their purpose and intentions </li> <li>evaluate their work, methods and results of their investigation, modifying and refining their work through: <ul style="list-style-type: none"> <li>discussion</li> <li>reading</li> <li>writing</li> <li>reflection.</li> </ul> </li> </ol> <p><b>Investigating</b> Pupils should be given the opportunities to:</p> <ol style="list-style-type: none"> <li>develop specific skills for recording from: <ul style="list-style-type: none"> <li>observation</li> </ul> </li> </ol>	



## Science

This section shows examples of teaching plans in subjects with literacy/numeracy integrated into a sequence of lessons. Links to the LNF are highlighted in yellow.

This example is to support staff discussion in section D.6.

These are plans for two science lessons on Light in Year 3 based on work from St Julian's Primary School. The highlighted text shows where oracy, reading and writing are integrated into the science work.

**Year:** 3

**Area of Learning:** Science

**Term:** Summer term

**Topic:** Lights Up

<b>Literacy and numeracy skills/ subject skills</b>	<ul style="list-style-type: none"> <li>• Contribute to group discussion, sharing ideas and information. [Oracy: Expectation statement: 3.OC1]</li> <li>• Use talk purposefully to complete a task in a group. [oracy]</li> <li>• Form considered opinions.</li> <li>• Be able to explain that opaque objects block light sources and this is what causes shadows.</li> <li>• Develop their skills, knowledge and understanding by investigating the science behind everyday things.</li> <li>• Know how light travels and how this can be used.</li> </ul>
<b>Introduction</b>	<p><b>Lesson 1</b></p> <p>Group discussion – what do you think a shadow puppet is?</p> <p>Group to agree their definition of a shadow puppet.</p> <p>Establish what a shadow puppet is but keep explanation brief and try not to give too much information away.</p>

<b>Main activity</b>	<ul style="list-style-type: none"> <li>• Explain that in pairs children will make two puppets of rainforest animals. Free choice of the available materials.</li> <li>• In pairs children decide which materials to use for each puppet to complete in time limit.</li> <li>• When complete, children show their puppets and <b>explain how</b> they were made and which materials they used.</li> <li>• How can we test the shadow puppets to see if they work?</li> <li>• In <b>groups, discuss</b> explanation for the observed results for both the opaque and translucent puppets.</li> <li>• During the activity children take photographs of making the shadow puppets to be used in future sessions to explain results of investigation and produce instructions.</li> </ul>
<b>Plenary</b>	<p>Who made successful/unsuccessful shadow puppets? Why? Who can suggest ways to improve any of the shadow puppets?</p> <p><b>Differentiation</b></p> <ul style="list-style-type: none"> <li>• By outcome.</li> <li>• Teacher questioning.</li> <li>• Peer collaboration.</li> </ul>
<b>Thinking and ICT skills</b>	<p>Thinking skills: identify, develop and begin to describe relationships.</p> <p>Thinking through reflecting.</p> <p>ICT:</p> <ul style="list-style-type: none"> <li>• Use of digital camera to create pictorial reference.</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• Range of transparent/translucent/opaque materials.</li> <li>• Colour felts and pencils.</li> <li>• Lollipop sticks.</li> <li>• Sticky tape.</li> <li>• Scissors.</li> <li>• Light sources – torches, lamps, sun.</li> </ul>

Literacy and numeracy skills/ subject skills	<ul style="list-style-type: none"> <li>• Use a basic structure for writing. [3.WS1]</li> <li>• Use vocabulary related to the topic or subject context. [3.WL2]</li> <li>• Read short information texts independently with concentration. [3.RS3]</li> <li>• Develop their skills, knowledge and understanding by investigating the science behind everyday things.</li> </ul>
Introduction	<p><b>Lesson 2</b></p> <p>Remind children of the rules for writing effective instructions, already taught during their English lessons.</p> <ul style="list-style-type: none"> <li>• Heading.</li> <li>• List of materials.</li> <li>• Numbered.</li> <li>• Time order.</li> <li>• Use of imperative verbs.</li> </ul>
Main activity	<p><b>Group activity</b></p> <ul style="list-style-type: none"> <li>• Groups organise their photographs from the last lesson and discuss the process of making a shadow puppet.</li> <li>• On large sheets of paper groups record materials used and the order of construction.</li> <li>• Add list of useful imperative verbs to planning sheet.</li> </ul> <p><b>Individual activity</b></p> <ul style="list-style-type: none"> <li>• Children produce a set of instructions, including list of materials, which enable children in another class to produce an effective shadow puppet.</li> <li>• Support LA groups to produce a brief definition of opaque materials:</li> <li>• MA: produce independent definition of opaque materials.</li> <li>• HA: produce independent definition of opaque materials, and learners to add a brief description of why opaque materials need to be used in order to make effective shadow puppets.</li> </ul>

<b>Plenary</b>	<p>Children are given time to test out each other's instructions. Can they effectively produce a shadow puppet following only the instructions given? <b>Feed back to groups on their instructions, giving advice on how those instructions could be improved.</b></p> <p><b>Differentiation</b></p> <ul style="list-style-type: none"> <li>• By outcome.</li> <li>• Teacher questioning.</li> <li>• Peer collaboration.</li> </ul>
<b>Thinking and ICT skills</b>	<p>Thinking skills: identify, develop and begin to describe relationships. Thinking through reflecting.</p> <p>ICT:</p> <ul style="list-style-type: none"> <li>• Use of digital camera to create pictorial reference.</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• Range of transparent/translucent/opaque materials.</li> <li>• Colour felts and pencils.</li> <li>• Lollipop sticks.</li> <li>• Sticky tape.</li> <li>• Scissors.</li> <li>• Light sources – torches, lamps, sun.</li> </ul>

## Design and technology

Year 6: The focus is on developing learners' investigation and evaluation skills by looking at existing products; and introducing criteria for evaluation, technical vocabulary and ideas.

Lesson sequence	References to LNF
<p><b>Lesson 1</b></p> <ul style="list-style-type: none"> <li>• Collection of (non-working) kettles set out for class to examine.</li> <li>• Each child to note own 'best' kettle and why.</li> <li>• Teacher makes notes on whiteboard from suggestions by children.</li> <li>• Each child to make an annotated drawing of two different kettles, showing their key features, using appropriate language.</li> </ul>	

<p><b>Lesson 2</b></p> <ul style="list-style-type: none"> <li>• Teacher asks which kettle they would recommend to an old, frail person, to a big family, to a young child.</li> <li>• Children to identify criteria such as weight, size, automatic turn-off, etc. They discuss safety related to young children (e.g. danger from leads, hot water, hot to touch).</li> <li>• Children to give examples from their experience.</li> <li>• Key words noted by teacher.</li> </ul>	<p>Use strategies to spell correctly polysyllabic, complex and irregular words. [6.WG5]</p> <p>Collate and make connections (reading). [6.RA3]</p>
<p><b>Lesson 3</b></p> <ul style="list-style-type: none"> <li>• Class watch an electric kettle boil.</li> <li>• Children raise more safety issues – discuss stability, shape, heating mechanism, etc.</li> <li>• Teacher introduces a catalogue selling kettles and asks if the catalogue gives sufficient information for a buyer to make a choice. Children to suggest which criteria should be included, referring to notes made previously by teacher.</li> <li>• Children to work in pairs to present two kettles from the catalogue, contrasting their merits and problems, using technical language where needed.</li> <li>• Presentations provoke questions and suggestions.</li> <li>• Each child to make an annotated drawing of two different kettles, showing their key features, using appropriate language.</li> </ul>	<p>Contribute purposefully to group discussion. [6.OC1]</p> <p>Show understanding of main ideas and significant details. [6.RC3]</p> <p>Express issues and ideas clearly using specialist vocabulary and examples. [6.OS2]</p> <p>Respond to others with questions and comments. [6.OL3]</p> <p>Use features and layout which are constructed to present data and ideas clearly. [6.WS5]</p>

## Science

This section shows examples of teaching plans in subjects with literacy/numeracy integrated into the sequence, annotated to show links to the LNF.

This example is to support staff discussion in section D.6.

### Energy resources and the technology of the future (Year 7)

This is a part of a Year 7 science unit on Energy. Numeracy was also included, though not highlighted here. This unit shows the range of opportunities available to include different literacy aspects in a single science unit.

<b>Research topic</b>	Different forms of energy	
<b>Aims and objectives (content and skills)</b>	<ul style="list-style-type: none"> <li>Understand what is meant by energy and why it is important to us.</li> <li>Identify the different types of energy.</li> <li>Give examples of each type of energy.</li> </ul>	<b>Reading:</b> Select the main points, identify how information used to support them.
<b>Learning activities and outcomes</b>	<ul style="list-style-type: none"> <li>List five things where they need energy. Use sources to identify the different types of energy with examples for each.</li> <li>Key words with definitions and examples displayed in classroom, added to as needed.</li> <li>Construct Venn diagram to distinguish between the forms of energy that can and cannot be seen and forms can be seen sometimes.</li> </ul>	<b>Writing:</b> Use subject specific words and phrases.  <b>Writing:</b> Select and organise ideas.
<b>Resources</b>	Small whiteboards PowerPoint presentation: Who is in the energy bag?	

<b>Research topic</b>	Energy transferences
<b>Aims and objectives (content and skills)</b>	Understand that energy cannot be created or destroyed, but can only be transferred from one form to another (energy conservation).
<b>Learning activities and outcomes</b>	<ul style="list-style-type: none"> <li>• Energy Circus – groups devise form to record the equipment, and transferences. Also to record implications for energy in the home.</li> <li>• Use books and other sources to produce an information leaflet explaining the meaning of 'Conservation of energy' to a foreign visitor.</li> </ul>
<b>Resources</b>	PowerPoint presentations Circus energy sheet A collection of objects that exhibit energy transference

**Writing:**  
Adapt structures for different contexts.

**Writing:**  
Write a comprehensive account, presenting information processes and ideas clearly and appropriately.

<b>Research topic</b>	Renewable and non-renewable resources
<b>Aims and objectives (content and skills)</b>	<p>Understand the meaning of 'renewable' and 'non-renewable'.</p> <ul style="list-style-type: none"> <li>• Understand how resource energy can be harnessed to generate electricity, i.e. how does each one works and what the advantages and the disadvantages are.</li> <li>• Identify which resources are renewable and non-renewable and the advantages/disadvantages of the two groups.</li> </ul>
<b>Learning activities and outcomes</b>	<ul style="list-style-type: none"> <li>• Explore definitions of 'renewable' and 'non-renewable' resources, and add to words already recoded in books and in classroom.</li> <li>• Create a list of renewable and non-renewable resources.</li> <li>• Discuss wood/biomass as a renewable resource, and the reasons for this and the nuclear non-renewable resource.</li> </ul> <p>Learning method: 'Market Location'.</p> <p>A role is allocated to each team member. Learners work in same energy resource groups to devise a tool and produce a presentation on how the tool works and review its advantages/disadvantages.</p> <p>(Wheel of learning – research task [≈ 3 lessons] can be printed from the slides to stimulate learners.)</p> <p>As part of the introduction learners can create a sketch/drama to show how their tool works.</p>
<b>Resources</b>	<p>PowerPoint presentation</p> <p>Instruction sheet 'Market Location' + A3 learning packages.</p>

**Oracy:**  
Respond thoughtfully to others' ideas, asking pertinent questions.

**Oracy:**  
Present topics and ideas clearly, using formal language.



Research topic	Pulling learning together
Aims and objectives (content and skills)	Writing task: Energy resources
Learning activities and outcomes	<p><b>Task</b> Present information on the use of energy resources to generate electricity. Some learners are provided with a structure to support extended writing.</p> <p><b>Creating</b> – learners draft a letter in support of one kind of energy. In their plans they make choices about the best ways to present the content for effect.</p> <p><b>Evaluation</b> – (a) learners read each other's writing at the back of the lab and complete peer assessment; (b) teacher checks the language (using the marking code) and science, and provides feedback in the form of three stars and a wish [subject and linguistic comments].</p> <p><b>Redrafting</b> – learners redraft the task as homework. They keep both the original and final drafts as evidence of their work in science and literacy.</p>
Resources	

**Writing:**  
Organising  
Ideas and  
Information.

**Writing:**  
Identify  
areas for  
improvement  
in their  
writing, edit  
and redraft.

### **3.2.iii: Case study: supporting and developing teachers' own knowledge of literacy**

This case study shows how one school supported and developed teachers' own knowledge of literacy (sequence T.3).

Ysgol Gyfun Cwm Rhymni is an 11–18 comprehensive school. All subjects apart from English are taught through the medium of Welsh, although 98 per cent of learners come from non-Welsh-speaking homes. Developing literacy is, and always has been, a high priority at the school as it is seen as an integral part of successful learning and teaching.

One aspect of the school's literacy strategy is to provide constant guidance, training and support for staff, at all levels, who wish to improve their own linguistic accuracy, particularly in writing. The aim is to maintain a culture of respect for language and learning and high expectations of all.

A comprehensive, online language package has been put in place, on three levels, depending upon the requirements of the individual members of staff. Staff can decide to begin this flexible course at any time. Units are completed at the learners' own pace and returned promptly, with feedback along with the next unit, by the deputy headteacher who is in charge of learning and teaching and literacy. She is also available for one-to-one discussions, where necessary. Progress is tracked and monitored.

Forty members of staff, including teachers representing subjects across the curriculum, teaching assistants and other staff members volunteered for the project and are progressing at their own pace. This raises their awareness and knowledge of language and grammar, and increases their confidence so that they can be even better language models for learners.

This scheme is augmented by the Department of Welsh at Cardiff University; a highly successful INSET day was arranged at the school for the members of staff currently following the course. They received training from two lecturers, which focused on enriching language.

These strategies are included in the school development plan as well as performance management targets, which are monitored as part of the self-evaluation process.

### **3.2.iv: Case study: Cwmtawe Community School**

**Work undertaken since 2008 which has laid foundations for current work to embed the numeracy component of the Literacy and Numeracy Framework across the curriculum**

#### **Introduction**

The whole-school approach to numeracy has its foundations in work undertaken since the introduction of the new curriculum and the Skills Framework in 2008.

The school's objective was to ensure that skills became an intrinsic part of learning and teaching at Cwmtawe.

Having identified existing good practice in departments at Cwmtawe, the school undertook INSET in 'Developing number'. Core and non-core subjects provided examples of learning activities which demonstrated how a standardised approach to planning would familiarise learners with the universal language of the skills framework and allow them to transfer their skills across the curriculum.

This shared vision was further supported by the work of the School Improvement Working Group, who developed a standard scheme of work template. This ensured a more consistent approach to planning, skills development and assessment for learning across the curriculum.

The approach meant that learning activities which developed number skills were identified in all subject areas, and further opportunities to develop numeracy were also highlighted.

The school is confident that, as a result of these strong foundations, it will be able to adjust schemes of work to begin embedding the LNF. The framework adds greater depth to the Skills Framework and should provide teachers with the means to map the progression of learners.

#### **Numeracy codes and zones**

As part of the implementation plan for numeracy, the school's numeracy coordinator developed a coded version of the numeracy component of the LNF together with zones. Each expectation statement was given a letter and a number so that the statements could be identified easily. In addition, to help non-specialist teachers, the expectation statements were grouped into zones which showed progression. For example:

#### Zone 4 – Working with mental strategies (doubling and halving)

Year	Code	Description	Zone
3	3.N3	Use mental strategies to recall number facts within 20	4
2	2.N4	Use mental recall of number facts to 10 to derive other facts, e.g. doubling numbers and bonds of 10 (60 + 40)	4
1	1.N4	Use number facts within 10, e.g. doubling and halving, number bonds	4

The zone starts at the bottom. The expectation statements become progressively more challenging from 1.N4 to 3.N3.

#### Numeracy audit

First staff carried out an initial audit relating to 'Using Number Skills' in order to familiarise staff with the framework, build confidence and ensure focused planning. The remainder of the audit will take place in the 2013/14 academic year.

To complete the initial numeracy audit at Cwmtawe Community School, all the staff used the numeracy component of the LNF, the codes and the numeracy zones to help them map out their schemes of work against the NNF. The staff completed a paper audit sheet answering the following five simple questions:

- What element of numeracy do you currently teach (code and statement)?
- At which time of the year do you teach it (half-terms)?
- In what context is it taught in your lessons?
- Is there any opportunity to develop numeracy in the lesson?
- Can you give an example of how you teach numeracy?

Once all the information had been collected in, the numeracy coordinator collated it into an Excel spreadsheet. Colour coding was used to show:

- when a particular expectation statement was covered in a subject. The example below shows coverage of a selection of numeracy expectation statements for science over half terms for three years;

- actual coverage – denoted by a green cell; for example, expectation statement 9.N8 ('Use efficient methods to add and subtract whole numbers ...') was taught in Year 7 in the second half of the winter term and first half of the spring term;
- potential coverage – also denoted when a cell was coloured green;
- actual and potential coverage – shown on separate tabs. (The illustration below is an extract from the tab showing potential coverage.)

Numeracy Year		SUBJECT YEAR HALF	SCIENCE											
			7						8					
			1	2	1	2	1	2	1	2	1	2	1	2
			WINTER	WINTER	SPRING	SPRING	SUMMER	SUMMER	WINTER	WINTER	SPRING	SPRING	SUMMER	SUMMER
9	9.N8	use efficient written methods to add and subtract whole numbers and decimals of any size, including a mixture of large and small numbers with differing numbers of decimal places												
9	9.N9	multiply and divide whole numbers and decimals												
9	9.N10	use the order of operations including brackets and powers												
9	9.N11	make and justify estimates and approximations of calculations												
9	9.N12	choose the appropriate degree of accuracy to present answers												

From all the information provided from the audit, the numeracy coordinator created a master sheet that gave an overview of where each of the elements was already being taught and where they could potentially be taught across the school curriculum. The aim was to ensure that numeracy was introduced into lessons across the curriculum in a way that integrated sensibly with the subject content. The spreadsheet also gave a snapshot of the areas that were not being covered or were being covered in what appeared to be the wrong year.

- 9.N1 – *understand the importance of powers of 10* – is being taught in the spring and winter terms to Year 8 learners.
- 9.N8 – *use efficient written methods to add and subtract whole numbers and decimals of any size, including a mixture of large and small numbers with differing numbers of decimal places*. In the second illustration, below, it is evident that this is being taught in several terms. However, it has been highlighted as a potential area for further development.
- 9.N14 – *understand the risks involved in different ways of saving and investing* – is not being covered anywhere in the curriculum. The numeracy coordinator needs to find naturally occurring opportunities for this area, such as PSE.

[illegible]

POTENTIAL (NOT WITH ACTUAL)														POTENTIAL & ACTUAL														A	P	A	P	A	P	
7			8						9					7			8						9											
2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2						
SPRING			WINTER			WINTER			SPRING			SPRING			SUMMER			SUMMER			WINTER			WINTER			SPRING							

## Further information

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