



Leading Improvement: Pedagogy and Practice

The second book in
a series for Primary
headteachers and deputy
headteachers



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Contents

Foreword	2
Aims of the booklet	3
Section one	
What is pedagogy?	4
'Folk' pedagogy	4
Theories of learning	5
What pedagogical approach is best for teaching which aspects of subject knowledge?	6
Section two	
Pedagogy and personalisation	9
Pedagogical approaches in the National Strategies	9
Some pedagogic approaches in mathematics	10
Ensuring children make two or more levels of progress in mathematics	12
Principles of guided group work for literacy and mathematics	18
Pedagogical approaches in different modes of teaching – whole class, guided, independent and one-to-one learning	21
Section three	
Background information to accompany Lesson Study video footage	28
Section four	
A lead learner	30

Leading Improvement

Primary Framework Headteacher CPD

Day 4

Pedagogy and your school

Foreword

Dear Colleague

It is 18 months since we published 'Leading Improvement Using the Primary Framework', which marked the beginning of a twice-yearly series of discussions between the National Strategies and Primary Headteachers, led by local authorities. The aim of these discussions is:

1. to share and develop approaches to 'leading improvement', which evidence shows work well in improving learning and progress and in closing achievement gaps
2. to do so in a way that also provides headteachers with a detailed understanding of the support and materials that the National Strategies have planned for teachers and whole schools. (Headteachers tell us that this helps them to get the most from the Primary Framework and online resources while planning and leading their own school's improvement.)
3. to share what has worked well in local schools.

Pedagogic leadership

A colleague quoted in this booklet states that: 'As a headteacher my prime job is to lead teaching, learning and achievement. I organise everything else around this key priority.'

This booklet aims to help headteachers do just that. We recognise that as well as requiring a body of knowledge – about the curriculum, about subjects and the progress we aim for children to make – teaching relies on a set of skills or techniques. This booklet addresses some of the most highly effective and well-evidenced of these skills and techniques. It also addresses how they can be developed and sharpened for maximum effect in classrooms.

The booklet provides a 'toolkit' of pedagogic approaches and shows how school leaders can analyse, develop and deploy these pedagogic approaches across the school – through whole-class teaching, through group work, through independent learning and one-to-one tuition in order to engineer highly effective and motivating learning.

Pete Dudley



Director, National Strategies Primary

Aims of the booklet

- To identify the pedagogical techniques that form part of the activities we manage in schools to support learning.
- To give particular consideration to the sophisticated pedagogical techniques of Lesson Study, guided work and one-to-one tuition.
- With a more accurate understanding of the pedagogical repertoire, to be able to identify current strengths in the schools you lead, as well as pedagogical techniques that could be reinforced.

The booklet contains the following sections

- What is pedagogy?
- What are the pedagogies in our schools?
- Pedagogical content knowledge.
- Learning about pedagogy in our school.

Intended as a stand-alone publication in its own right, this booklet is also designed to accompany Day 4 of the Headteacher CPD on Leading Improvement with the Primary Framework. Some of the material will be used during the day, and other elements are supplementary, to inform work back in school or for those interested in going more deeply into some of the concepts presented. It also offers an easy way to share the content and ideas from this professional development day with other school leaders in your school.

Section one focuses on pedagogy and learning theory as an important body of thought and analysis of the things we do to support learning.

Section two moves from theory to practice, showing how these theories of pedagogy connect with familiar work in schools such as personalisation, the National Strategy and different modes of classroom learning, for example whole-class, independent work, one-to-one tuition and with a particular model of guided work.

Section three is a background to using Lesson Study as a technique for analysing the implementation of these pedagogies in schools.

Section four looks at the role of the headteacher as lead learner and supports you in taking an overview of pedagogy in your school.

Section one

Section one focuses on pedagogy and learning theory as an important body of thought and analysis of the things we do to support learning.

What is pedagogy?

The word 'pedagogy' is from the Greek for 'leading children to school.'

We use it to describe:

- the principles and methods of instruction
- the art or science of being a teacher.

'Pedagogy is the act of teaching together with its attendant discourse of theories, values, evidence and justifications. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decision of which teaching is constituted.'

Extract from *Essays on Pedagogy* by Alexander, R.J. (2008) London, Routledge, p 47. Used with kind permission

We know more now about learning than we ever have done and this knowledge has grown significantly in the last 20 years. Where our beliefs about learning are informed by this knowledge the resulting pedagogies can be powerful. However, beliefs about how children learn are often not well informed.

A Czech educationist who was a very influential figure in the development of pedagogy visited a number of schools in England. He commented that he had observed too much teacher talk and not enough pupil talk (ref. Watkins, C., *Learning: a sense maker's guide*, ATL, 2003). His name was Comenius and the school visits he made were 400 years ago.

In 1981, the educationist Brian Simon wrote an influential article 'Why no pedagogy in England?', lamenting the fact that the (largely Eastern) European attention to pedagogy seemed almost completely lacking in England's schools. In 2004 Professor Robin Alexander wrote a follow-up 'Why still no pedagogy in England?'

A teacher's pedagogy is informed by: 'beliefs about how children learn, the context in which the learning takes place and the purpose of the learning.' (Excellence and Enjoyment, 2004). A pedagogy, therefore, is more than a teaching strategy; it is about how we lead learning. Teachers and practitioners regularly discuss teaching and learning and refer to teaching methods or teaching approaches and to learning skills and learning styles. The notion of a fitness-for-purpose pedagogy is about deciding what teaching approach might best lead children to the desired learning outcomes.

'Folk' pedagogy

Until relatively recently, the dominant knowledge base behind much teaching was what Jerome Bruner has described as 'folk pedagogy'.

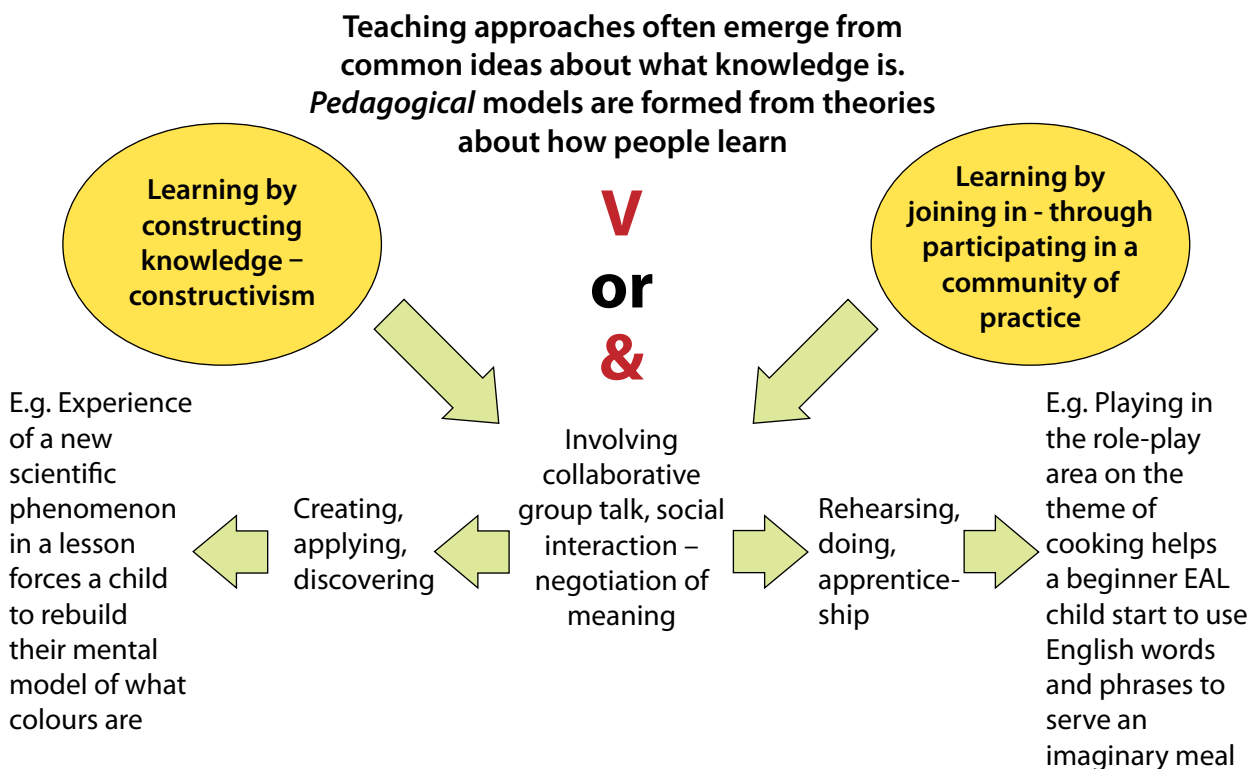
'Folk' pedagogy is based upon strong intuitive belief in the following:

- Knowledge is 'stuff'.
- We need to 'fill children with it'.

Nearly all teachers know this is not how it works but we still frequently fall into the trap of centuries of treating learning in this way. 'Folk' pedagogy is still pervasive practice. As well as being informed by good knowledge about how children learn, the teaching approaches we use are also considerably influenced by our experiences of being taught ourselves, and also by 'folk' theories of what knowledge

is. Despite being taught in initial teacher training and thus knowing rationally that knowledge is not something that can be transferred or used to fill empty minds, we often fall into the trap of talking about needing to 'know your stuff' and treating knowledge as if it were a commodity. Similarly, many people often espouse a set of pedagogic beliefs but in fact do not apply them to their teaching in more than a superficial way. Galton et al. discovered in the 1970s that principles stemming from Plowden, which led to children being organised into table groups in order to facilitate group work, were widely held by primary teachers who invariably organised their classes this way. However, in the vast majority of cases the children were in fact working alone and collaboration was not needed. When they repeated this research 20 years later they found things had changed very little.

Figure 1



Theories of learning

There are two dominant theories of learning that currently influence the way people design learning and influence pedagogy. Some see them as 'competing theories', in other words one has to be right and the other wrong. Increasingly, however, people are seeing them as complementary to each other and capable of coexisting.

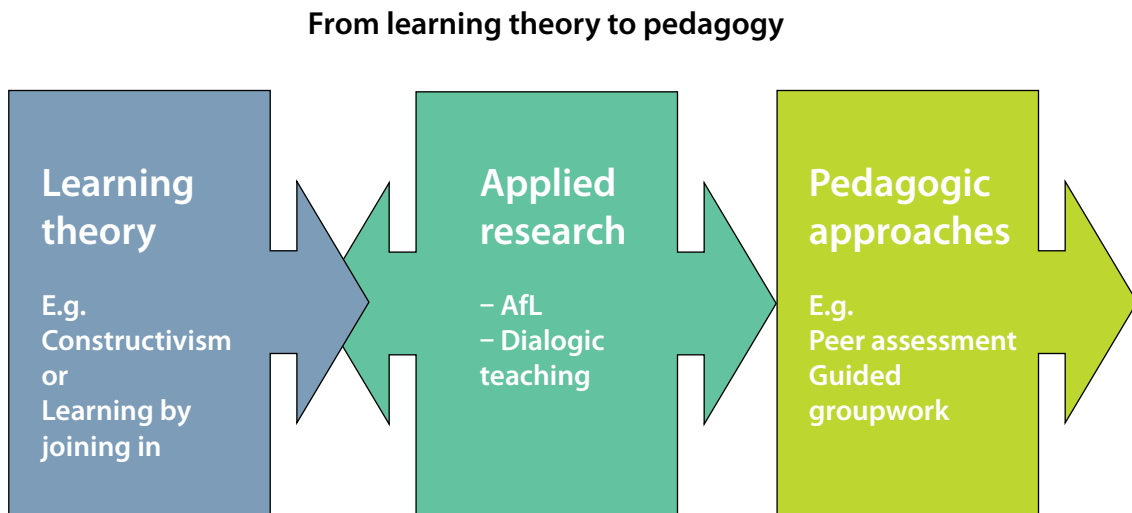
One of these theories is based on the idea that every time we encounter a new phenomenon we try to accommodate it within our mental model of how the world exists. If we can do this it will be added to that part of the model accordingly and retrieved as necessary. If we find the phenomenon cannot be allocated anywhere in our model we have to change the model in order to accommodate it. This means readjusting or even rebuilding our model of the world in order to accommodate the new knowledge (which may be a skill, a concept, a belief, etc.) because we may need to see everything else in the light of it. So, all knowledge is formed by constructing and reconstructing our mental model of how the world works. This theory is called 'constructivism'.

The second theory of learning takes as its starting point the work of Lev Vygotsky who set out the importance of language in thinking. He sees language as a mechanism for thinking and organising and communicating thought in our own heads as well as to others. Language came before and has enabled complex thought and knowledge.

Learning to talk is the most complicated learning feat we ever perform. We learn to talk by joining in: learning to talk creates the need for social interaction as a condition for learning and as the means by which we learn. This is called the 'participation' theory or 'communities of practice' theory.

In fact, both theories overlap considerably. The implications for classroom learning are: the need to use talk and peer talk as a key pedagogic device and to think carefully about how we manage teacher talk and engineer pupil talk. Vygotsky also saw that children made the effort to learn because the end justified the effort. Clarity about the object of learning is essential. The use of talk, peers and clarity about the object of learning and how to achieve it accord strongly with the pedagogy of Assessment for Learning.

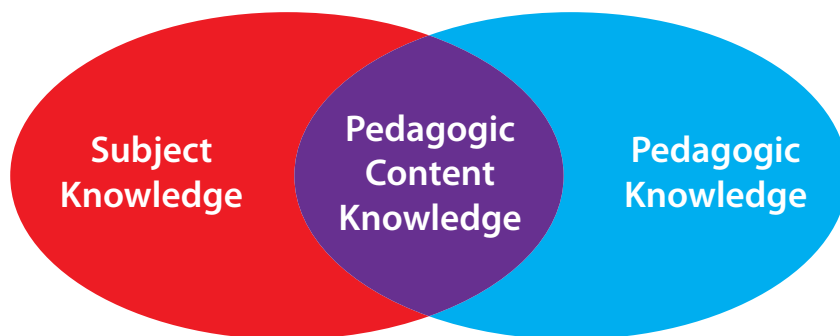
Figure 2



What pedagogical approach is best for teaching which aspects of subject knowledge?

Pedagogic content knowledge

Figure 3



From Shulman, L.S. (1986) *Those who Understand: Knowledge Growth in Teaching*. In: Educational Research Review. © Elsevier.

Teachers are familiar with the canon of **subject knowledge** they need to be able to deploy in their jobs, for example knowing what a digraph is, the food chain, decomposition of two-digit numbers. They will also – consciously or subconsciously – have mastered much of the **pedagogic knowledge** necessary for a successful classroom: knowing how to structure an investigation, what kinds of questions prompt the greatest reflection and learning, how kinaesthetic activity can anchor learning experiences in the memories of their pupils, how to share their thinking out loud as an expert writer or mathematical problem-solver to support children in acquiring these skills.

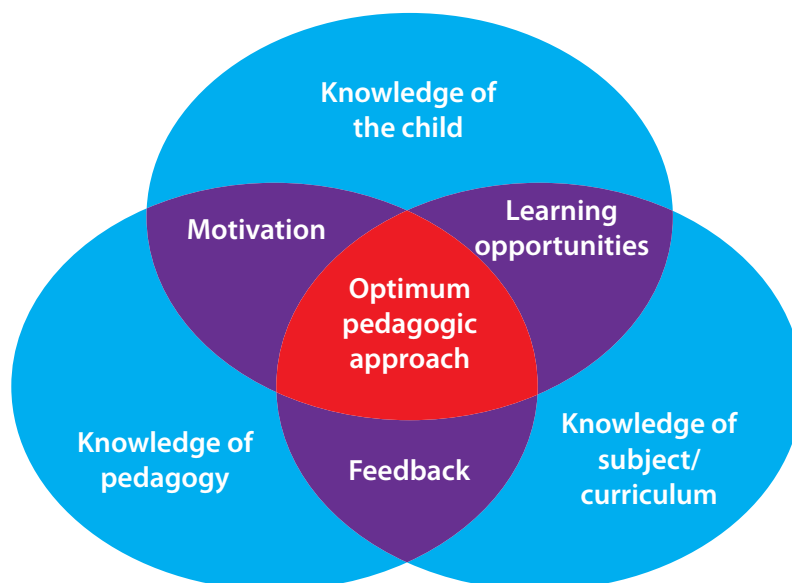
Successful learning occurs when a teacher is able to marry their **subject knowledge** with their **pedagogic knowledge** for **pedagogic content knowledge**. Managed group discussion will probably not be the best pedagogical technique for securing letter–sound correspondence, but it may well be highly effective for identifying the features of effective story openings. Self-directed learning will probably not be an efficient way for children to understand percentages, but it can be a powerful technique for children to investigate the properties of shapes. Pedagogic content knowledge also refers to the relationship within a body of subject knowledge – understanding which skills are more sophisticated and are developed only when previous skills, knowledge or understanding have been acquired. A child will not be able to understand complex sentences until they are secure in sentence demarcation; they will not be able to manipulate fractions until they are secure in multiplication facts.

Another conceptualisation of pedagogy would add to this diagram a representation of the conditions to create learning. If these are not established effectively then the subject knowledge, pedagogical knowledge and subject pedagogical knowledge are in vain. Social and emotional aspects of learning are part of the conditions for learning, as are elements of the physical environment, and at a macro-level, the deployment of staff and budget allocations.

It is not surprising that conceptualisations or diagrammatic representations of teaching are complicated and layered; teaching is a complex and multi-level skill.

Figure 4

Juggling what we know in order to choose the optimum pedagogic approach



From *Lesson Study* in England. Pete Dudley, 2008.

The following table names and explains some pedagogical approaches.

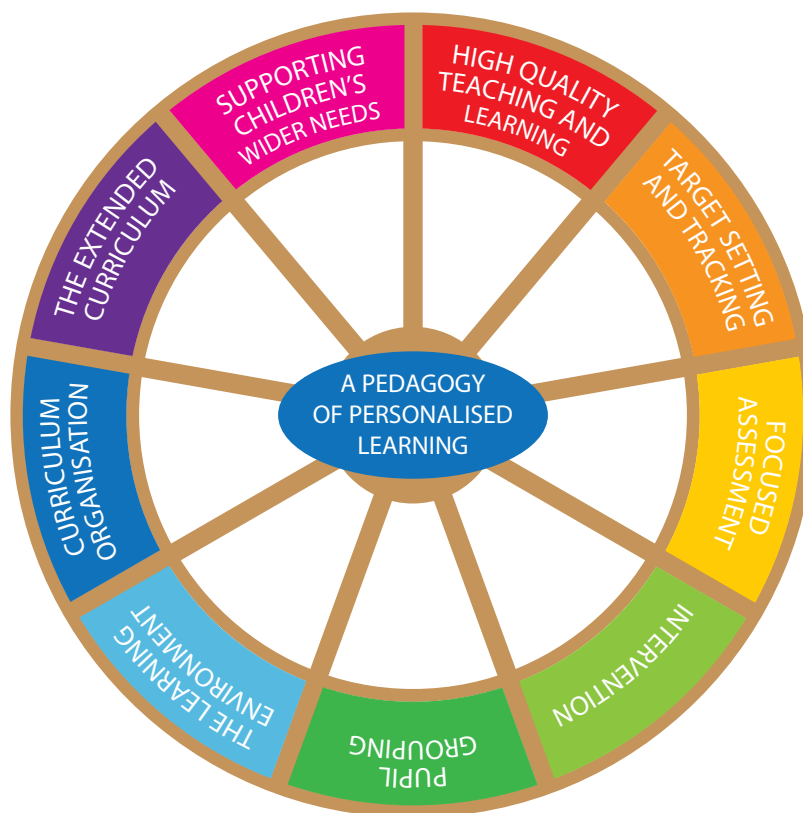
modelling	The teacher as expert demonstrates both the process and the internal dialogue that a learner might go through.
direct instruction	Explaining and demonstrating how something works or how to carry out a process; giving instructions to prompt or inform the next steps in children's learning.
dialogue and discussion	Using planned opportunities for focused talk, teachers develop an understanding of children's thought processes and ideas.
problem solving	Planned opportunities for children to apply their learning, pose further questions and develop and test hypotheses.
apprenticeship	Planned opportunities to learn alongside another more expert learner (adult or child).
practising and rehearsing	Repeating learned facts or skills to develop automatic recall or to internalise the process.
questioning	Using questions to identify prior learning, scaffold understanding and extend thinking for learning in order to create new meaning.
self-directed learning	Planned opportunities for children to decide what and/or how they learn.
use of symbols, images and models	Planned opportunities for visualisation and representation to secure and aid understanding.
inductive learning/enquiry	Planned opportunities for pupils to sort, classify and re-sort data to begin to make hypotheses that can be tested in future work.
tutoring	Addresses errors at the point of misconception. Supports the child in articulating their thoughts as they learn. Can occur in formal and separate tutoring sessions or as individual support to children in the course of independent work.
scaffolding	A Vygotskian term referring to all pedagogical techniques that consciously use the learner's existing knowledge, skills or understanding as a starting point, recognise what is within the Zone of Proximal Development for that learner (what they will be able to achieve with help), and move them towards that point.

Section two

This section moves from theory to practice, showing how these theories of pedagogy connect with familiar work in schools such as personalisation, the National Strategy and different modes of classroom learning, for example whole-class, independent work, one-to-one tuition and with a particular model of guided work.

Pedagogy and personalisation

Figure 5



The features in this diagram (taken from *Personalised Learning – A Practical Guide*, DCSF 00844-2008) naturally link and overlap. They provide a possible audit tool for pedagogy and personalisation in your school.

Pedagogic approaches in the National Strategies

There are some key pedagogical approaches that are fundamental to the National Strategies' ways of working, and exemplified in National Strategy guidance and programmes. The following pedagogical approaches can be planned for and used in a variety of school and classroom contexts. They are all consistently or frequently mentioned and/or exemplified in Strategy materials:

- Organising skills, knowledge and understanding to ensure continuity and progression – the Primary and Secondary Frameworks
- Identifying from the Frameworks and the use of Assessment for Learning (AfL) and Assessing Pupil Progress (APP) materials the priority skills, knowledge and understanding to focus on target groups at key developmental thresholds through intervention programmes

- The 'Waves' approach to teaching, incorporating wave one quality first teaching; wave two support for pupils in small groups; wave three provision, involving more specialised intervention programmes, often on a one-to-one basis
- The teaching sequence over a lesson, or a series of lessons
- Guided group work
- The teaching sequence/way of working with pupils in intervention groups and via one-to-one tuition
- The structure of a lesson – interactive starters, main teaching and plenaries
- Models of teaching, for example social models and investigation, and ways of organising teaching (whole class, group work, one-to-one work)
- AfL – day-to-day, moment by moment, lesson by lesson, unit by unit, pupil by pupil and class by class and periodic assessment using APP
- Whole class, group or individual target-setting, incorporating appropriate challenge. This requires a clear sense of the hierarchy of skills, knowledge and understanding, as represented in the Frameworks.

Two distinctive pedagogic approaches are now illustrated in the subject areas of mathematics and literacy.

Some pedagogic approaches in mathematics

This activity used on Day 4 is intended to address aspects of mental mathematics – an area which is key in supporting and developing mathematical thinking but is given too little attention in many classrooms. Below is a description of the underlying knowledge, skills and understanding that the particular activity addresses and in so doing raises some points too about the pedagogy involved in developing children's mental mathematics. The discussion questions might be used with staff to establish common approaches to the teaching of mental mathematics and give it more prominence in the daily mathematics lesson.

Mental mathematics – models, images and visualisation

When children and adults engage in mathematics, they often draw or sketch pictures or images to support their thinking processes. Sometimes this may not be necessary or may not be possible and we might choose to use, or have to rely upon, mental images that help us to 'see' the mathematics involved. Models and images play a significant role in mathematics. Helping children to develop a range of such images that they can draw upon when engaged in mathematical activity requires deliberate teaching. We cannot assume children will acquire the skills needed to carry out this kind of mental mathematics; the skills needed to manipulate pictures and symbols mentally need carefully planned and structured activities that provide practice in moving between what we might see and touch to what we can visualise and represent.

Of course, like everything else, not everyone will use the same approach and some will find the visualisation involved, challenging or sometimes even impossible. It may be that for particular activities we find it more helpful to think in symbols or words or find that we have to record or use practical objects as we just cannot keep all the information we need in our heads. It is not a case of saying to children they must select one approach over another. We should provide children with the opportunity to make choices and decisions about which methods they might select to solve a given problem.

The mathematics activity on this Day 4 programme seeks to integrate aspects of mental mathematics. Initially it involves the **visualisation** of a common object, a closed box like a cereal packet, naming its features to provide a **common language** with which to discuss the 3-D shape. It starts from the familiar to generate discussion and to facilitate visualization. The next element focuses on the 2-D **representation** of the shape. All this involves further discussion, interpretation and agreement across

the group, in order to build confidence in the use of **precise mathematical language** when talking about properties of the shape which has become more iconic in that it represents a family of 3-D shapes rather than a particular closed box.

At this stage an additional feature is introduced involving a flattened vertex to determine the **impact on the representation** and to introduce a discussion on the **change to the properties** of the 3-D shape. This is extended and leads to the **collection of information** recorded in a table to facilitate the identification of **patterns** in the increasing numbers of faces, vertices and edges. The approach generates new shapes that are likely to be unfamiliar 3-D shapes as they are not common shapes in the primary classroom. Finally from an analysis of the data set emerges a **relationship** linking the faces, vertices and edges of the shapes produced. This is stated in words and symbols in a short and succinct expression that uses the precise mathematical language developed through the activity.

At this stage we can only claim that the relationship applies to the 3-D shapes that have been generated from the initial rectangular prism. We do not have any further information to claim that it applies beyond these and we have not proved it is true for other shapes. If we were to claim that we believe that this relationship applies to all 3-D shapes then we have generated a conjecture or hypothesis only – something we would need to prove or to find a counter example to refute. We have induced the hypotheses from the evidence we have collected.

Inductive learning of this kind is an essential part of mathematics. The approaches used within this activity form some of the key elements in inductive learning within mathematics. Throughout this learning there was little direct teaching. There was the introduction of the vocabulary and language to aid discussion, the setting of the context for the activity and scaffolded analysis of the representations and data collected to find the relationship. Key to the activity was the interactivity to confirm, share and extend learning.

Below is a summary of the processes that were used in the activity.

- Visualisation of an object to set the context, to establish the use of a particular image and to share understanding through a common language
- Representation using alternative images to help interpretation and to extend thinking
- Refinement of vocabulary and use of more precise mathematical language to improve discussion and aid recording
- Introduce change to the features and properties of the initial shape to generate new images and representations
- Collect and record information
- Look for patterns within the data set to describe changes
- Identify, refine and express a relationship that applies to all cases in the set collected.

Discussion questions

- What mental mathematics takes place in the daily mathematics lesson in your school and how is this planned and progressed?
- Do children have sufficient opportunity to manipulate 3-D shapes, describe and visualise them and interpret 2-D representations of 3-D shapes?
- How does the teaching support children in developing their understanding and use of precise language in mathematics?

Ensuring children make two or more levels of progress in mathematics

A high proportion of those children who do not make two or more levels of progress in mathematics are girls. In addition, in many schools a disproportionately small group of girls attain level 5 when compared to boys. The progression agenda and new PSA targets focus attention on the need to close any gap in rates of progress, including the gender gap in mathematics. A recent review on underperformance in mathematics, with an analysis of why such a high number of children who attained level 2 in reading, writing and mathematics at KS1 go on to attain level 4+ in English but not in mathematics, revealed that over two-thirds of this group are girls. The report made a number of recommendations addressing the actions that schools can take to accelerate the progress and raise the attainment of girls in mathematics. These are included below. A theme in the recommendations relates to the type of activity undertaken as part of the above activity. They focus on the need to ensure girls engage in more inductive learning and build confidence in their mathematics.

Recommendations:

- Schools should analyse the attainment of each cohort in the school by gender in order to identify whether there are any imbalances in the attainment of boys and girls that need to be addressed over the course of the key stage.
- Teachers should engage girls in targeted assessment for learning activities, to help them to understand and recognise the progress they are making and the next steps in learning they need to take to continue to progress.
- Schools should review girls' confidence in their ability to do mathematics, and where appropriate promote a 'can do' approach to problem solving and enquiry within a self-supporting group who are expected to help one another and share their thinking; encourage these girls to discuss and share mathematical ideas, processes and strategies, and from time-to-time present to the rest of the class.
- Teachers should set high expectations for girls' learning and attainment, pitched at a level that ensures they are on track to meet age-related targets for mathematics as set out in the Primary Framework.
- Schools should make effective use of the prior learning sections, assessment questions and learning overviews in the Primary Framework to plan assessment opportunities for identified groups of girls making slow progress or those 'hidden' girls about whom there is little assessment evidence available.
- Teachers should engage girls who make slow progress or fall behind in their learning, in guided group work sessions that focus on mental mathematics, and in discussion with mathematical activity that involves girls in decision making, explaining and reasoning.
- Schools should monitor the balance and range of girls' learning experiences and where necessary provide supportive hands-on learning using practical resources and models and images in mathematics that include the visualising of models such as number lines that can provide support strategies for calculation.
- Teachers should encourage girls to take risks and move away from the safety of routines and engage girls in answering more open-ended questions, sustaining a line of enquiry and using ICT as a platform to explore and access information they can use to hypothesise, test and review ideas.
- In the daily mathematics lesson, teachers should give girls sufficient opportunity to answer questions during a class or group discussion, provide sufficient time for them to answer, and where necessary, give boys other tasks to complete to ensure they do not dominate these sessions.

- Teachers should provide girls with structured and scaffolded activities where they can use and apply their mathematics learning; over time remove the scaffolding so they come to rely less on the applications of routines and more on interpretation, pattern spotting, and the making and testing of conjectures and generalisations.
- Teachers should model for girls how to use personal jottings and make annotations in mathematics to demonstrate how these can help thinking, and promote their use alongside or in place of the neat presentations girls often see as the end product of a mathematical activity.
- Schools should make mathematics interesting to girls and help them become more aware of the importance of mathematical knowledge and skills in the workplace, drawing on the evidence that poor numeracy is a greater barrier to women finding work than it is for men.

The table below contains prompts to help judge the effectiveness of a guided writing session.

These are taken from *'Improving Writing with a focus on Guided Writing'* (DCSF 2007). The video clip which it refers to and which is used as part of the Day 4 Headteacher 'Leading Improvement' CPD is available from www.standards.dcsf.gov.uk/nationalstrategies (search for 'Senior leadership team CPD').

● Is the guided writing group well matched by need or ability?	
● Are the objectives appropriate and clear?	
● Do the children understand the purpose of the session?	
● Is there a clear structure to the session?	
● Does the teacher support the children, for example through key questions, constructive comments, teaching at the point of writing?	
● Are the children given opportunities to try composing themselves?	
● Are they focusing on aspects of the writing process?	
● Do they have opportunities to review their writing?	
● Does the session achieve the established purpose?	
● Are the children involved throughout?	

Background context to the video footage

School

The school is in a suburban area and draws from a mixed catchment area. There is a strong emphasis on literacy and the arts. The school is part of a primary network that is researching the impact of the arts on writing.

Class

The Year 3 class comprises 30 children: 17 girls and 13 boys. Of these, two children are awaiting statements for SEN and three children have been identified as being very able. The children are organised into four guided writing groups but there is some flexibility in the composition of the groups throughout the term. AfL is a strength in the school with a focus on ongoing assessment. In addition, the teacher assesses the children's independent writing every half-term and sets targets for each group based on these assessments. The children also have individual targets where necessary.

Writing targets

Group 1

- To use full stops, question marks and commas in lists accurately as well as using some other punctuation.
- To use tenses accurately and appropriately.
- To use interesting and adventurous vocabulary to explain my ideas.

Group 2

- To try out a wide range of punctuation.
- To begin my sentences in a range of interesting ways.
- To use adjectives and adverbs to make sentences more detailed and descriptive.

Group 3

- To use capital letters and full stops consistently.
- To use adjectives and descriptions to add detail.
- To write in a lively and interesting way to engage the reader.

Developing the teaching sequence – Year 3

The teacher has used the teaching sequence from the Primary Framework to plan this unit of work.

Writing outcome: an adventure story

- Read, discuss and compare a range of adventure stories.
- Explore characters' thoughts and feelings through hot-seating, improvisation, role on the wall and other strategies.
- Identify themes, typical characters and plots.
- Class discussion 'What makes an exciting adventure story?'

- Discuss the purpose and audience for a story set in Aztec times.
- Teacher provides opening that begins in their own classroom in the present day and John, the main character, travels back in time.
- Children explore ideas through drama.
- Teacher models planning.
- Children plan and discuss story with a response partner, some guided work.
- Teacher demonstrates how to continue the story.

- Children begin to write story over several days, teacher uses demonstration and scribing to illustrate aspects of narrative writing such as the conventions for dialogue.
- Drama lesson: dramatising strong verbs and adverbs in relation to character.
- Sentence level work whole-class: using strong verbs, adverbs and opening sentences with adverbial phrases.
- Guided work to support sentence level targets.

- The children edit and redraft their work with a response partner and with the teacher in guided time.
- Share and evaluate stories with the parallel class.
- Discuss possibility of changing events from the stories into a play script.

Context of the lesson

- The theme for the term is 'The Aztecs' and each unit of work from the Primary Framework is related to this theme, both fiction and non-fiction.
- Children have already been involved in note taking, report writing and writing letters to the authors of the information texts they have used.
- During this half-term the teacher has focused on Unit 3 – narrative, with the children writing adventure stories, using the Aztecs information to create the setting and characters.
- The final unit will involve the children changing their stories into play scripts. The role-play area this term is a theatre and the children will be involved in performances.
- The children have already looked at the features of adventure stories, discussed their ideas, improvised and planned their own stories.
- They have worked with a parallel class dramatising movements and using strong verbs and adverbs to describe the actions.
- The children are now in the process of writing their story from their plans.

The literacy session

Whole-class work

The teacher shares the objectives with the class:

- To use more powerful verbs and adverbs to entertain the reader
- To improve how we start our sentences to entertain the reader
- Children from the parallel class have been videoed reading various sentences from their Aztec stories
- The teacher recaps previous work on verbs, adverbs and adverbial phrase

- Using this information, the children try to improve the sentences, working in pairs on whiteboards
- The teacher instructs children who are working independently and prepares to work with the guided writing group.

Group organisation

Group 1

The children in this group have completed their story. They are working with response partners using the school drafting code and a checklist to redraft their own writing.

Checklist

1. Check that you have used powerful verbs and adverbs. Think back to yesterday and the words we generated in drama.
2. Check that you have begun sentences in a range of interesting ways, including at least one example of adverbials for when, where and how.
3. Check whether you have met any of your targets and underline examples that illustrate this.

Group 3

The children in this group are in the middle of their story. The focus of the previous day's drama lesson was to dramatise verbs and adverbs and to understand their role in describing character. Today, this group are to go back over their work, looking at their use of verbs and adding an adverb to support character description.

Checklist

1. Look at the verbs underlined in blue in your literacy books.
2. Using the words we generated in our drama lesson and a thesaurus, change these words to more powerful verbs.
3. Now try to add some adverbs to describe how the verb was done, for example 'he walked slowly'.
4. Check whether you have met any of your targets and underline examples that illustrate this.

Group 2

The guided writing session

This is the middle ability group in the class. Two children, who are normally in this group, have joined another group today because they do not need today's input. The children in this group are secure, independent writers but the sentences in the opening of their story are repetitive, beginning either with 'The' or 'John', the main character's name. They have previously worked with powerful verbs but they are not yet applying this knowledge in their independent writing.

- The teacher explains the purpose of the session; the children need to improve the structure of some of the sentences in the opening paragraph – particularly looking at sentence openings.
- The teacher uses a sentence from the children's work that needs to be improved.
- Children work in pairs to discuss the improvements.
- The teacher has identified sentences in the children's work, which they can change; children choose one and on whiteboards try to improve it.

- When they are satisfied that the changes are an improvement, they apply these to their draft and then look at the other two sentences.
- The teacher sums up the group's work and shares examples. Children will apply this learning to their stories in independent time during the next literacy session.

Whole-class plenary

- The teacher reviews the progress of the groups working independently.
- The teacher discusses the work of three children: girl B, girl C and boy B.
- The teacher revisits the objectives of the lesson.

Points to note from the DVD

- The learning environment.
- Clear sentence level focus to the session applied to the children's own work throughout the session.
- The teacher's emphasis on writing for a reader.
- The teacher's use of technical language.
- The structure and clear focus of the guided session.
- In the guided session the children are applying the learning to their own work.
- The effective work with boys in this group; they are clearly highly motivated and fully engaged.
- The use of a drafting book. This is used throughout the school; the left-hand page is left blank for redrafting.
- The teacher sets writing targets half-termly for the guided writing groups but there is flexibility across the groups reflecting need.

Suggested CPD activities

- When watching the DVD sequence, consider how the teacher uses a range of day-to-day assessment strategies in all parts of the session.
- Which strategy do you consider is most effective in the context of this lesson?
- Consider which of the assessment strategies are embedded in your own teaching and identify areas for individual development.
- How does the teacher link from the shared writing into the needs of the specific group for writing?
- What does she know about the writing of these children that will enable her to tailor the teaching session of guided writing to their needs?

Focus on guided group work

Primary teachers are very used to placing children into groups and working with them in a lesson. However, in many classrooms this is a way of organising children, often into ability or social groups, to help with the management of resources or to provide some form of differentiation through activities or a carousel.

The use of group work to spend time with children who have been identified as having a common learning need and who, with some focused teaching or guided support, might overcome any barriers to their learning, is less common practice. Guided group work is about using assessment information to target particular children who might be organised into a group for that particular lesson or a series of lessons but who could then move on and might not come together as a group again.

In schools where there has been a strong focus on implementing effective guided group work, leadership in the school has had a crucial role to play. They have acknowledged its importance as a key element in developing practice. In particular the school's senior leadership has:

- identified guided group work as a priority in the school's improvement plan aligned to the actions needed to improve teaching and learning
- provided staff with support through in-school CPD and peer coaching and structures to focus planning and teaching in the group context
- set clear expectations in terms of learning and highlighted the importance of good assessment for learning strategies that can be used to identify the children who would benefit from the guided support and to determine their common learning needs
- provided staff with a clear and shared vision of what guided group work looks like and the impact it can have on the learner along with an ethos that taking a risk is a legitimate and important part of learning and teaching
- established collaboration between staff to share and review practice as a way to build capacity in the school
- built in a means of ensuring everyone gets feedback with support and encouragement to sustain enthusiasm and to signal the message that this is a long-term objective and will take time to embed into everyday teaching and learning
- set in place an ongoing evaluation process to identify the impact in the classroom, which involves teachers and children so everyone recognises the progress that is being made.

Principles of guided group work for literacy and mathematics

Guided group work:

- is integral to quality first teaching
- is underpinned by effective assessment of children's learning with opportunities for further assessment
- involves groups sharing a common current learning need, whose progress is regularly assessed and group membership reviewed
- has a very clear teacher role in scaffolding and supporting learning
- involves the giving of clear feedback to children on the focus of learning and the progress made.

Guided work in mathematics provides focused opportunities to:

- develop targeted children's use of mathematical language to explain and reason
- engage selected children in sustained dialogue and mental mathematics
- use models and images that support aspects of learning and thinking these children find difficult
- promote a 'can do' approach to problem solving and enquiry within a self-supporting group
- review the presentation, accuracy and efficiency of methods avoiding any sense that one method is right or wrong.

Guided work in literacy provides focused opportunities to:

- focus on the very specific reading or writing development needs of a selected group of children through 'precision' intervention
- support the children concerned in taking the appropriate next steps in learning
- provide specific modelling to enhance this
- engage in direct dialogue/interaction with specific children
- evaluate response and adjust learning and teaching 'in the moment'.

We have looked at guided work in some detail; the following tables suggest the distinguishing features of other modes of learning (whole class, independent, one-to-one).

Whole-class teaching in mathematics provides focused opportunities to:

- ensure everyone sees, hears and discusses the mathematical methods, strategies, processes and models, so they understand and are clear about further steps in their learning and know what they are to do next
- use questioning to prompt, probe and promote ideas and thinking, secure the meaning of mathematical language and rehearse knowledge, skills and understanding for all
- provide structured support for the use and application of mathematics to practise and extend learning
- review progress during and following shared or independent activity, providing further practical, consolidation or extension activity to personalise learning for groups of children.

Whole-class teaching in literacy provides focused opportunities to:

- use whole-class interaction and dialogue to model and develop speaking and listening; use language games, role-play and drama involving multiple participants
- use shared and collaborative reading (including 'book-talk') to explore existing texts and demonstrate, model and develop reading skills
- use shared and collaborative writing (including 'writer-talk') to demonstrate, model and develop writing skills
- enrich literacy learning through the collective sharing of multi-modal texts, video, ICT, visitors to the classroom, and so on.

Independent work in mathematics, group and individual, provides focused opportunities to:

- engage in child-initiated enquiry, which the teacher reviews and helps scaffold to deepen learning
- explore a process in order to clarify how it works and when it can be applied
- use and apply mathematics that involves generalising, testing and reasoning
- make decisions by choosing the mathematics needed to solve a problem and refine methods and ways of recording
- carry out and sustain focused mathematical enquiry and prepare feedback to other children
- practise key skills and methods to improve speed, confidence and accuracy.

Independent work in literacy, group and individual, provides focused opportunities to:

- read and research independently, exploring and extending personal interests (individual)
- write independently using a range of media; write privately to record and develop thinking (individual)
- write collaboratively for real purposes and audiences (group)
- discuss and explore reading (group)
- explore through dialogue, debate, role-play and drama (group)
- develop presentation through a range of media and modalities.

Individual support and one-to-one tuition in mathematics provides focused opportunities to:

- model 'thinking aloud' to emphasise particular processes using precise mathematical vocabulary
- focus on methods rather than answers to help the child to compare, explain and refine methods and ways of recording
- use open-ended problems and questioning to engage the child in decision making, explaining and reasoning
- encourage self-assessment, share and discuss success criteria and help the child recognise and correct mistakes
- use practical resources and visual models that provide a different way to 'see' mathematics or to highlight misconceptions.

Individual support and one-to-one tuition in literacy provides focused opportunities to:

- focus on the very specific reading or writing development needs of an identified child
- provide specific texts, tasks, and stimulus to engage the individual based upon knowledge of the child and his/her identified next-step needs
- support the child to take the appropriate next steps in learning through tailored modelling and scaffolding
- demonstrate and support 'thinking aloud' to articulate the specific reading or writing processes to be mastered
- involve the child in evaluating their own reading and writing and setting appropriate goals.

Questions to reflect on when thinking about pedagogy in your own school

5. Is this range of pedagogies in place in your school?
6. Which of these pedagogies are well-established practices in your school?
7. What aspects of practice require further development?
8. How are these pedagogies used in your school to meet the children's needs as identified through AfL?

Pedagogical approaches in different modes of teaching – whole class, guided, independent and one-to-one learning

	Relationship to quality first teaching	Informed by what assessment?	Direct instruction?	Modelling?	Scaffolding?	Rehearsing?	Enquiry?	Dialogue and discussion?	Problem solving?		Questioning?	Self-directed learning?	Other
Whole-class teaching	An integral part	Through patterns of achievement across the class	Y	Y		Y	Y	Y			Y		Pupils learn from the teacher and each other
Guided group work	An integral part	Individual	Y	Y	Y		Y	Y			Y		Involves grouping children with a shared and current learning need. Pupils learn from the teacher and each other
Independent work	An integral part	Individual				Y	Y	Y if in groups; N if not	Y	Y if paired		Y	Opportunity for initiative and originality. Pupils learn from each other (if grouped)
Individual support/tuition	Integral support to QFT	Individual		Y	Y		Y	Y			Y		Addresses errors at the point of misconception. Is child focused

This is what the different pedagogical techniques might look like in different phases or modes of teaching (whole class, guided, independent or one-to-one learning) in literacy and mathematics:

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning
Key features:	Usually whole class involving explanation and/or demonstration of how something works or how to carry out a process for children to follow and then practise, or modelling by the teacher to show how something works or can be presented and developed; interspersed with questions and short focused discussions.	Usually whole-class or targeted group work involving approaches that will actively engage all children through open questions and structured discussions ; responses collected and refined using paired activities, talk partners or personal and immediate responses using resources such as individual whiteboards.	Focused whole-class discussion or quick-fire questions to get overview of learning, usually with more sustained follow-up assessments involving individuals and/or small groups of children who have been identified as sharing a common need and leading to targeted teaching and revised grouping.	Small groups or individuals engaged in application or extension of learning, may involve collaborative paired work; more child-initiated enquiry involving decision making, developed through well managed contexts, or carefully scaffolded consolidation to deepen learning.

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning
Examples – whole class	<p>Mathematics</p> <p>Demonstrating how to use a piece of mathematical equipment, such as an angle measurer or ruler.</p> <p>Modelling how a table or chart can be interpreted to answer a given question, then providing opportunities for children to decide how to answer questions from other data sets scaffolded through question openers, such as: How many more ...?, How many fewer ...? What is the difference between ...?</p>	<p>Mathematics</p> <p>Posing a series of questions about shapes that the children have access to, and showing different 2-D representations of these on an interactive whiteboard for children to talk about to decide which of the shapes is accurately represented.</p> <p>Demonstrating methods for working out the terms in a sequence or for subtraction using counting forwards and backwards strategies, involving the use of a counting stick and modelling the methods on an empty number line.</p>	<p>Mathematics</p> <p>Presenting division problems with incorrect solutions that include common mistakes. The children discuss in pairs where the errors lie and how these should be corrected and how they can use this approach to check their own working.</p> <p>Returning to some prerequisite skills prior to extending a topic, such as: supporting children with counting backwards before developing other methods of subtraction.</p>	<p>Mathematics</p> <p>Follow-up to reading scales and measures; children to design and produce chalk versions of hopscotch and related grids on the school playground, first planning the scale and size of designs before measuring them out accurately.</p>
	<p>Literacy</p> <p>Shared writing where the teacher is modelling some stage in the creation of a particular text-type and articulating the thinking processes behind this.</p>	<p>Literacy</p> <p>Shared reading where the teacher is in dialogue with the class and scribing/collating ideas generated by group.</p>	<p>Literacy</p> <p>Teacher orchestrating class response to one group's performance of a poem, collecting and evaluating suggestions as to how it can be improved.</p>	<p>Literacy</p> <p>Asking children to independently follow up on a piece of previously modelled writing by adding further sentences or paragraphs before feeding these back into a shared piece.</p>

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning
Examples – guided group	<p>Mathematics</p> <p>Explaining how to find the perimeter of rectangles on a square grid to strengthen children's use of associated language and helping secure methods of systematic calculation, that build on prior learning.</p>	<p>Mathematics</p> <p>Discussing the grouping of 24 objects into groups of 2, 3, 4, 5 and 6; deciding when there is and is not any remainder and recording the answer; giving children the opportunity to select and explore other starting numbers to identify and record their grouping properties.</p>	<p>Mathematics</p> <p>Asking the group to find pairs of numbers that have a given difference and product; checking their confidence to subtract and multiply two numbers mentally and providing variations to the problems to probe understanding and secure skills.</p>	<p>Mathematics</p> <p>Giving children different general statements to explore such as: 'The addition of four even numbers will always be a multiple of 4.' Or: 'The difference between a 2-digit number and its reverse is always a multiple of 9.' Discussing those examples that work and any that do not and looking at the implications as to the truth of the general statements.</p>
	<p>Literacy</p> <p>Modelling to a group of children a particular skill that they need to develop, for example reading between the lines in a story.</p>	<p>Literacy</p> <p>Organising and facilitating a group role-play activity to explore an incident in a story they are reading or writing.</p>	<p>Literacy</p> <p>Supporting group review of a piece of writing to see if it meets the success criteria agreed beforehand.</p>	<p>Literacy</p> <p>Having identified and discussed a particular text feature, asking children in the group to read independently to find and highlight other examples.</p>

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning
Examples – independent: group and individual	<p>Mathematics</p> <p>Describing which groups of numbers are to be summed on a number square and the exploration the children are to carry out, discussing how they are to present it to demonstrate their findings to the rest of the class.</p>	<p>Mathematics</p> <p>Giving children train and bus timetables to use to plan a series of journeys; asking children to work out how long a particular journey takes and inviting them to plan journeys of their own.</p>	<p>Mathematics</p> <p>Giving children a series of subtraction calculations to mark and then asking them to devise a set of feedback prompts to support other children in carrying out the calculations.</p>	<p>Mathematics</p> <p>Giving children a unit of measure, for example the litre, and challenging them to take photographs of things they can find around the school that they could measure using that unit and then to prepare an ICT-based presentation that is to go on the school's intranet.</p>
	<p>Literacy</p> <p>Setting the challenge, establishing parameters and defining success criteria for an independent group or individual activity, such as writing a news report for the school website.</p>	<p>Literacy</p> <p>Creating the environment and providing the resources for independent group interaction, such as a simulated courtroom to establish the 'guilt' or 'innocence' of a character from a book.</p>	<p>Literacy</p> <p>When children are discussing a book in groups, dropping in a key prompt or question that will take their thinking further or move it in a more productive direction.</p>	<p>Literacy</p> <p>Setting and facilitating an independent task, such as researching information on a particular subject from a given range of books and other resources.</p>

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning									
<p>Examples – one-to-one tuition</p>	<p>Mathematics</p> <p>Posing questions involving ways to draw a shape reflected in given lines presented on different grids, helping the child by talking aloud when doing one to model the thinking involved and to emphasise the need for accuracy.</p>	<p>Mathematics</p> <p>Challenging the child who has been working on grid multiplication to find out which numbers are being multiplied from the information given.</p> <table border="1" data-bbox="632 804 847 1021"> <tr> <td>x</td> <td>□</td> <td>□</td> </tr> <tr> <td>□</td> <td>200</td> <td>120</td> </tr> <tr> <td>□</td> <td>30</td> <td>18</td> </tr> </table> <p>Exploring possibilities and explaining decisions; completing the number sentences: _ x _ = 368 and _ = 368 ÷ _</p>	x	□	□	□	200	120	□	30	18	<p>Mathematics</p> <p>Exploring number patterns with a child who has difficulty recalling number bonds; splitting a set in different ways, for example, 13 beads on a bead string to generate addition and subtraction statements and to develop the patterns:</p> <p>12 + 1 = 13 11 + 2 = 13 ... 12 = 13 – 1 11 = 13 – 2</p> <p>Talking about the relationship between the two patterns to draw out the 'doing and undoing' involved.</p>	<p>Mathematics</p> <p>Helping the child to identify relationships and formulate rules, for example to find the sum of 3 consecutive whole numbers, applying this knowledge to other sets of 3 adjacent whole numbers on number grids; use this understanding to conjecture on the sum of 4 consecutive numbers and 5 consecutive numbers.</p>
x	□	□											
□	200	120											
□	30	18											

Teacher's role:	Providing direct and instructive teaching	Orchestrating interactive teaching	Reviewing learning, intervening and supporting learning	Structuring and steering independent learning
	<p>Literacy</p> <p>Modelling a particular skill such as locating information in a text, explaining your actions and thinking as you do so.</p> <p>Asking the child to repeat the process, verbalising what they are doing and why.</p>	<p>Literacy</p> <p>Writing a story collaboratively with the child where you take turns to write the next sentence, explaining to each other what you are trying to achieve in terms of the overall narrative.</p>	<p>Literacy</p> <p>Looking together at a sentence the child has written and discussing what could be improved and how.</p>	<p>Literacy</p> <p>Having modelled and discussed a particular key language feature, asking the child to read independently and highlight other examples.</p>

Section three

This section is a background to using Lesson Study as a technique for analysing the implementation of these pedagogies in schools.

Background information to accompany Lesson Study video footage

This film is intended to show how two schools are making use of Lesson Study as a means of developing and transferring effective classroom pedagogic practice. It contains ideas for in-school use of lesson study and some insights and views from headteachers, leading teachers, class teachers and pupils into how Lesson Study can work most effectively.

Lesson Study is widely used in East Asia where it was first developed in Japan in the 1870s. Researchers on the 1998 international comparative study of mathematics and science (TIMSS) attributed the use of Lesson Study to the high quality of subject knowledge and to the well developed pedagogic approaches to teaching that subject knowledge they found amongst Japanese teachers. A good working knowledge about which pedagogic approaches work best for teaching specific strands of curricular content has become known as 'pedagogic content knowledge'.

In 2007 McKinsey Consulting published an international research booklet compiled by Sir Michael Barber called 'How the world's best performing school systems come out on top'. One key finding was that these systems find ways of getting people most interested in teaching, learning and curriculum to become headteachers. A second finding was that they also discover systematic ways of helping teachers to learn from each other. He cites Lesson Study as a very good example of this.

During Lesson Study a group (or pair) of teachers work together to improve their teaching of a strand or aspect of the curriculum that their data and their experience suggests is in need of improvement. They collectively plan a 'study lesson' that incorporates some new pedagogic component which, strong research suggests, will improve learning and progress. They use the study lessons to try out, refine and tailor the component to the needs of their pupils.

In the film you will see a focus on writing and mathematics.

Typically a Lesson Study group plans the study lesson with three or four particular pupils in mind. These 'case' pupils should represent typical learner groups – often high, mid or lower attaining pupils in the subject in the class. The Lesson Study group teachers carefully analyse the needs of each pupil and set out optimally what each could be achieving at each stage of the lesson if the pedagogic technique and the lesson as a whole works well.

One person then teaches and others observe the study lesson. Observers focus regularly and frequently on the progress each of the 'case pupils' is making, compared with what had been predicted they would make in the plan. Observers also focus more widely – alternating between zooming in and zooming out. They record their observations on their copy of the study lesson plan they have constructed as a group.

Many Lesson Study groups also interview the focus pupils (either individually or as a group) to get their perspectives on what worked well for them and how the lesson could be improved if it were to be taught again to another class. Pupils are invariably insightful and provide a fresh perspective on the lesson.

Following the study lesson they discuss what worked for each pupil and more widely for the class using their notes from the lesson and interviews as the starting point.

Teachers involved in research into Lesson Study report that the focus on the pupils removed the spotlight from the teacher. This tends to enable greater risk taking and encourages teachers to work on aspects of their practice that they are less confident about. The fact that the study lesson is jointly planned and jointly owned means its successes and failures are shared by the group and not just the responsibility of whoever gets to teach that particular research lesson.

Over a series of study lessons the group refine, develop and tailor the key techniques. Once this has happened, the Lesson Study process dictates that they **share** what they have learned with colleagues. This may be in a staff meeting. In Japan, China and Singapore many schools will hold 'public research lessons' where the class and teachers stay behind after school and conduct the lesson with the refined technique in front of an invited audience from local schools and school district advisers. Audience, teachers/observers and pupils then discuss the lesson's pros and cons from their different perspectives. The outcomes are then written up and published. The shelves of Japanese bookshops are piled high with Lesson Study accounts.

There is an increasing body of evidence from England now linking the use of the Lesson Study cycle of joint planning, joint teaching and observation, case pupils and joint analysis with improved pupil progress. In one piece of work in 2008 with 14 LAs the use of this cycle led to a doubling of the improvement in mathematics and combined English and mathematics compared with national results and a four percentage point rise in writing against a standstill picture nationally.

Section four

This section looks at the role of the headteacher as lead learner and supports you in taking an overview of pedagogy in your school.

A lead learner:

- focuses clearly on learning
- talks about learning
- talks about pupil progress
- talks about teaching and the pedagogical toolkit
- initiates professional development
- builds on effective practice and strengthens the less-effective
- builds a strong and committed team
- builds a culture of professionalism:
 - by negotiating and agreeing changes to secure the improvements
 - by implementing changes and monitoring the impact
- continually improves learning and teaching through clear management structures and a programme of professional development that promotes powerful professional learning.

Having identified which pedagogical approaches are working well in your school and which need improving:

1. How do you improve pedagogy currently?
2. How do you share good practice?
3. How will you map teaching across the school to ensure consistently good provision for all pupils?
4. How will you monitor, evaluate and continually improve provision?
5. How will you ensure that all pedagogies in your school, including Early Years, are used appropriately and applied to:
 - whole-class teaching?
 - guided group work?
 - one-to-one tuition?
6. What will you now do to improve and develop provision:
 - over the next term?
 - over the next year?

Current strengths in pedagogy	Where found						
	FS	Y1	Y2	Y3	Y4	Y5	Y6
<ul style="list-style-type: none"> ● ● ● ● 							
Strategies for sharing effective practice:							
Areas for development or Improvement, e.g. one-to-one tuition	Strategy for improvements		Monitoring and evaluation processes			Lead person	
	Short term	Long term					

Acknowledgements

Extract from *Essays on Pedagogy* by Alexander, R.J. (2008) London, Routledge, p 47.
Used with kind permission.

Diagram taken from Lesson Study in England. Pete Dudley, 2008.

Pedagogic content knowledge diagram taken from Shulman, L.S. (1986) *Those who Understand: Knowledge Growth in Teaching*. In: *Educational Research Review*, Vol. 57, no. 1, pp. 4-14. Copyright Elsevier.
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