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Scottish Survey of Literacy and Numeracy 2011 (Numeracy) Highlights from Scotland's Results

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We would like to thank the 11,000 pupils and their teachers in the 2,250 schools who took part in SSLN 2011

Full results are available from www.scotland.gov.uk/ssln

About 76 per cent of P4 pupils were performing well or very well in numeracy at first level¹, at P7 about 72 per cent of pupils were performing well or very well at second level and at S2 about 42 per cent of pupils were performing well or very well at third level.

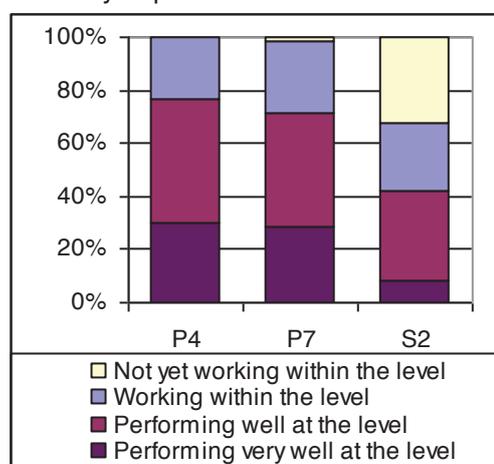
The percentage of pupils not yet working within their respective levels in numeracy was less than one per cent in P4, about two per cent in P7 and about 32 per cent in S2.

Boys tended to outperform girls in numeracy at P4 and P7, with the difference negligible in S2.

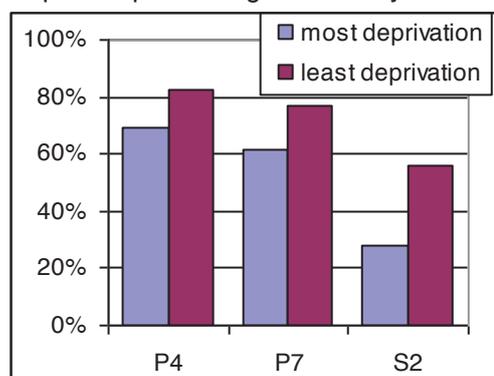
Deprivation appeared to affect performance most in S2. S2 pupils living in areas with lower levels of deprivation were twice as likely to be performing well or very well as pupils living in areas with higher levels of deprivation.

¹ For definitions of curriculum levels, see the Education Scotland [website](#)

Summary of performance



Proportion performing well or very well.



Pupils were generally more successful with tasks assessing *data & analysis* and *time*. Tasks assessing *measurement* and *fractions, decimal fractions & percentages* were found to be more challenging for learners.

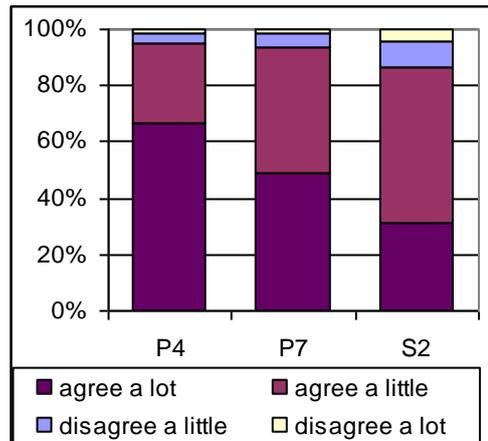
The vast majority of pupils said they enjoyed learning, though the strength of agreement reduced among older pupils. Over 90 per cent of pupils agreed that what they were learning would be useful to them outside school.

Pupils were less likely to receive feedback on performance and improvement in S2 than in P4 and P7.

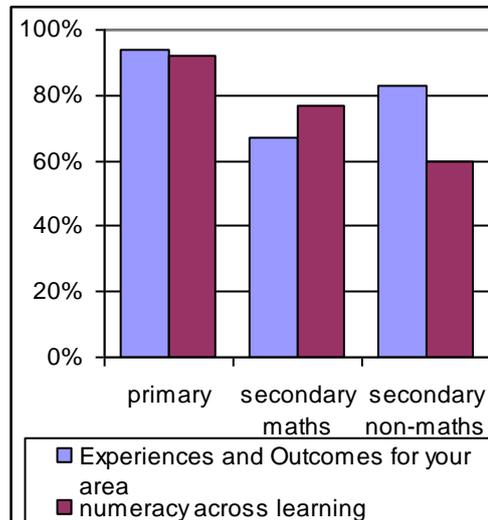
Teachers reported high levels of confidence in delivering the Curriculum for Excellence (CfE) numeracy experiences and outcomes, with generally over 95 per cent of primary and secondary maths teachers very or fairly confident. The one exception was the area of *ideas of chance & uncertainty*, where primary school teachers reported the least confidence. This was also the area of least confidence amongst secondary non-maths teachers.

Over 90 per cent of primary school teachers and over 80 per cent of secondary school teachers reported they were very or fairly confident that they can improve learning using the CfE experiences and outcomes for their area.

Pupils: proportion who agree with the statement "I enjoy learning"



Teachers: proportion confident they can improve learning using...



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Chapter 1: Introduction

1.1: What is the SSLN?

The Scottish Survey of Literacy and Numeracy (SSLN) is an annual sample survey which monitors national performance in literacy and numeracy in alternate years, for school children at P4, P7 and S2. It will also provide information which will inform improvements in learning, teaching and assessment at classroom level.

Approximately 11,000 pupils participated in the survey, which took place in May 2011. The survey consisted of a set of written and practical assessments and a pupil questionnaire, with a further questionnaire completed by about 5,200 teachers. The assessments used in the survey were designed to assess the wide range of knowledge, skills, capabilities and attitudes across learning identified in the Curriculum for Excellence (CfE) [experiences and outcomes](#). They were designed to reflect the CfE requirements that pupils have achieved breadth, challenge and application of learning. The pupil questionnaire collected information on factors that are likely to affect learning, such as pupil attitudes and experience in class. The teacher questionnaire collected information on teachers' experience of delivering numeracy across the curriculum.

Following publication of the Experiences and Outcomes on 2 April 2009, Curriculum for Excellence was increasingly adopted in primary schools from August 2009 and formally rolled out in all secondaries from August 2010. This initially covered S1 only for the 2010/11 year, continuing upwards as the initial cohort progresses through secondary school years. The S2 cohort assessed in the 2011 survey (which was carried out in May 2011) was therefore not following Curriculum for Excellence. However, the survey provides a national performance benchmark on numeracy skills, and assesses skills which pupils should be experiencing as part of good learning and teaching practice.

The SSLN replaces the Scottish Survey of Achievement (SSA) which ran from 2004 to 2009. The SSLN has been developed to support assessment approaches for Curriculum for Excellence, and so results are not comparable with the SSA. The guidance for assessment for CfE is set out in [Assessment for Curriculum for Excellence: Strategic vision and key principles](#), published in September 2009 and in [Building the Curriculum 5: A Framework for Assessment](#) and its supporting suite of publications, first published in January 2010. The SSLN has been under development since 2009, with new assessment materials being trialled in schools throughout this period.

The SSLN is undertaken as part of a partnership between the Scottish Government, Education Scotland, the Scottish Qualifications Authority and local authorities.

1.2: How was the survey carried out?

Unlike many previous assessment surveys, all schools were asked to participate in the survey, ensuring that the demand on each school was minimised. The required sample size of about 4,000 pupils per stage, selected at random, was achievable with two pupils per stage (P4 and P7) in primary and twelve pupils per stage (S2) in

secondary. Weighting was then applied to the data to account for the fact that the sampled pupils were representing different numbers of pupils in different schools.

Both publicly funded and independent schools were included. Special schools and schools with fewer than two or five pupils (at primary and secondary respectively) per stage were excluded, and resulting school participation rates for returning pupil assessments were over 90 per cent among publicly funded schools and just under 50 per cent among the independent sector. Weighting was also applied to adjust for non-response.

Pupils completed two booklets, each lasting about an hour, as well as taking part in a pupil teacher interactive assessment covering three tasks involving mental maths, estimation and measurement.

Tasks were either specifically developed for the SSLN by practising teachers and assessment experts, or, where previous SSA tasks were used or revised, these were re-assessed against CfE levels and experiences and outcomes. The assessments were constructed to include tasks with different degrees of challenge and across the range of [topics within numeracy](#) set out by the curriculum at each level.

Pupils were assessed at the following Curriculum for Excellence levels:

- P4 First level
- P7 Second level
- S2 Third level

In contrast to the Scottish Survey of Achievement, the SSLN did not assess pupils against other levels. So, for example, although pupils in P4 may be reported as “performing very well at the first level”, it is possible that some may be achieving many of the second level tasks as well; however, the SSLN does not capture this information. The principles of Curriculum for Excellence are clear, however, that the curriculum levels are not a barrier to pupils' progress in learning. In progressing through a level, though, pupils must demonstrate breadth and depth of learning and be able to apply their learning in different and unfamiliar contexts.

1.3: Interpretation of SSLN results

As in all sample surveys, since the SSLN is based on a sample of pupils rather than on the whole population, the results shown are estimates. That is to say there is an element of uncertainty within the results because the pupils sampled may not reflect the population exactly. To give a scale to this uncertainty, confidence intervals are produced to show the range of values within which one can be reasonably confident that the actual value would lie if all pupils were assessed. Ninety-five per cent confidence intervals for the main national estimates were calculated and were a maximum of \pm two percentage points. This means that the true value of each estimate is likely to lie within two percentage points either side of the given estimate. Margins of error for subsets of the data (by gender, deprivation) are slightly larger. Where appropriate, confidence intervals are represented on charts by short lines to help demonstrate this level of uncertainty. Standard error data for the results, used to calculate these confidence intervals, are provided in the data tables.

The marks of participating pupils have been grouped into categories for ease of reporting. These categories refer to performance in the survey and are not meant to be used for general classroom reporting of performance. The following table gives the summary categories used for each performance level in the SSLN. For example, pupils correctly answering 75 per cent of tasks are described as “performing very well at the level”. The assessments are designed to cover the full range of the curriculum at a given level, and so such a pupil might be expected in general to achieve at least 75 per cent of all tasks at their level. Pupils described as working within a level can achieve some of the outcomes expected for their age-group, but they are still working on achieving the others.

Percentage of tasks successfully completed in the SSLN	SSLN reporting category
75 per cent or more	Performing very well at the level
50 per cent or more, but less than 75 per cent	Performing well at the level
P4: less than 50 per cent, but more than 9 per cent P7: less than 50 per cent, but more than 19 per cent S2: less than 50 per cent, but more than 34 per cent	Working within the level
P4: 9 per cent or less P7: 19 per cent or less S2: 34 per cent or less	Not yet working within the level

These levels were set in consultation with Education Scotland, SQA and teachers, based on an analysis of the tasks involved in the assessment. The differing cut-off scores between “working within the level” and “not yet working within the level” were determined by estimating the number of marks that could potentially be obtained in the assessment using only skills acquired at the previous level. There were more tasks in S2 which used second level skills, and relatively few P4 tasks which used early level skills.

1.4: How will the findings be used?

The results of the 2011 SSLN will be used in line with the survey’s three main objectives. These are:

- To monitor and report nationally on achievement in numeracy at the P4, P7 and S2 stages. The 2011 results will establish a baseline for future monitoring of numeracy achievement over time.
- To identify areas of numeracy strengths and weaknesses among pupils in Scotland to help inform policy initiatives and learning and teaching practices.
- To gather information and report nationally on pupils’ and teachers’ experience of learning and teaching numeracy, along with their views about this experience.

Learning and teaching resources have been developed by Education Scotland from the SSLN survey findings. This information is made available to teachers, schools and authorities to support and inform learning and teaching practice in the classroom. The resources are available on the following Education Scotland website www.educationscotland.gov.uk/sslresource, with further materials becoming available over the next months.

The survey contains a huge amount of data which cannot be summarised in this publication. Further analysis of the performance data, as well as the full set of pupil and teacher questionnaire results, are published in data tables alongside this publication. You are encouraged to look through these tables to obtain a full picture of the findings. The data will be further analysed over the coming months. The analysis contained in this report seeks to highlight the key messages and give a flavour of the range of analysis possible.

1.5: Further information

Further information on the SSLN, including more complete data tables and technical information about the survey, is available from www.scotland.gov.uk/ssl

There is a range of other reliable information on the performance of Scotland's school pupils.

Scotland participates in the OECD's triennial Programme for International Student Assessment (PISA) survey. This assessment is carried out by 15 year-olds in over sixty countries, including all OECD countries, and as such is a key international benchmark of performance. The results of previous PISA surveys are available at www.scotland.gov.uk/pisa

The Scottish Government also publishes analysis of SQA exam results and leaver destinations. The latest post-appeal data are available at www.scotland.gov.uk/stats/bulletins/00821

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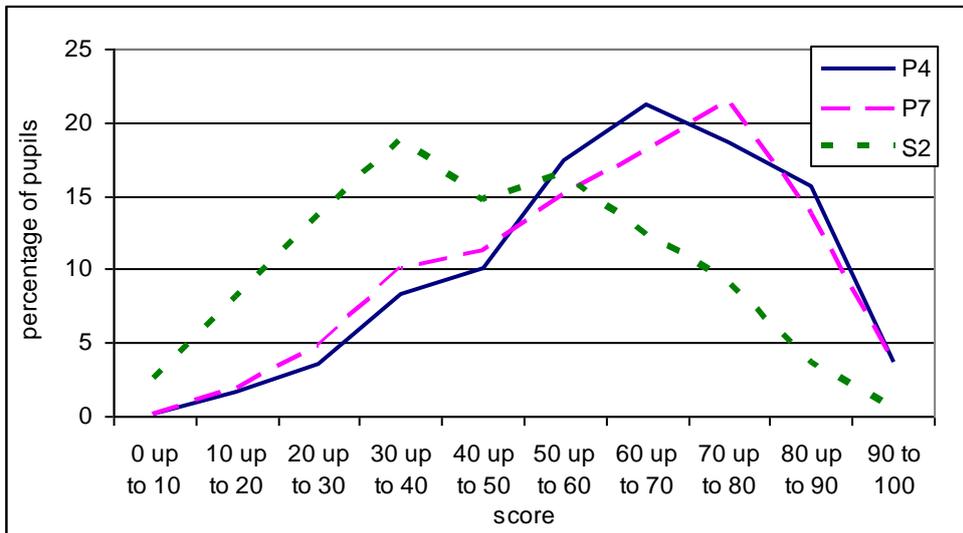
Chapter 2: Assessment of numeracy

The following analysis is taken from the results of pupils completing all three elements of the assessment (two written booklets and the pupil teacher interaction). Effective sample sizes on this basis were 3,679 in P4, 3,682 in P7 and 3,877 in S2. Results were weighted to account for different school sizes, the small number of non-participating schools and gender and deprivation differences between the sample and the population.

2.1 Overall distribution

Chart 2.1 shows the distribution of marks for each of the three levels assessed. The chart shows that at each level there was a broad range of marks. There were similar levels of performance in P4 and P7, with lower levels in S2. Half of pupils in P4 scored over 64 per cent, half of pupils in P7 scored over 63 per cent, and half of pupils in S2 scored over 44 per cent.

Chart 2.1: Distribution of scores in each stage



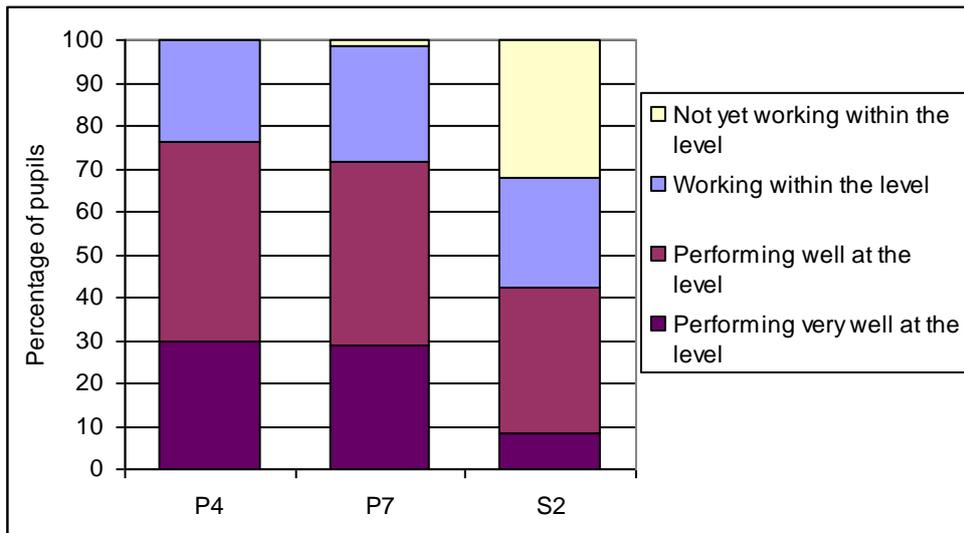
“0 up to 10” includes 0 and all values up to but not including 10, etc.

Chart 2.2 shows the estimated percentages of pupils in each of P4, P7 and S2 grouped into the four reporting categories defined in the introduction to this report.

At P4, an estimated 76 per cent of pupils performed “well” or “very well” i.e. they achieved at least 50 per cent when assessed against the experiences and outcomes of the relevant CfE level for their stage. At P7, about 72 per cent of pupils performed “well” or “very well” when assessed against the relevant CfE level for their stage. At S2, about 42 per cent of pupils performed “well” or “very well” when assessed against the appropriate CfE level for their stage.

The percentage of pupils who performed “very well”, i.e. who got at least 75 per cent, is fairly constant between P4 and P7 at just under 30 per cent, but falls to about eight per cent at S2. Likewise, the percentage of pupils “not yet working within the level” appropriate for their stage is less than two per cent at P4 and P7, but rises to 32 per cent at S2.

Chart 2.2: Percentage of pupils in each of the reporting categories, by stage

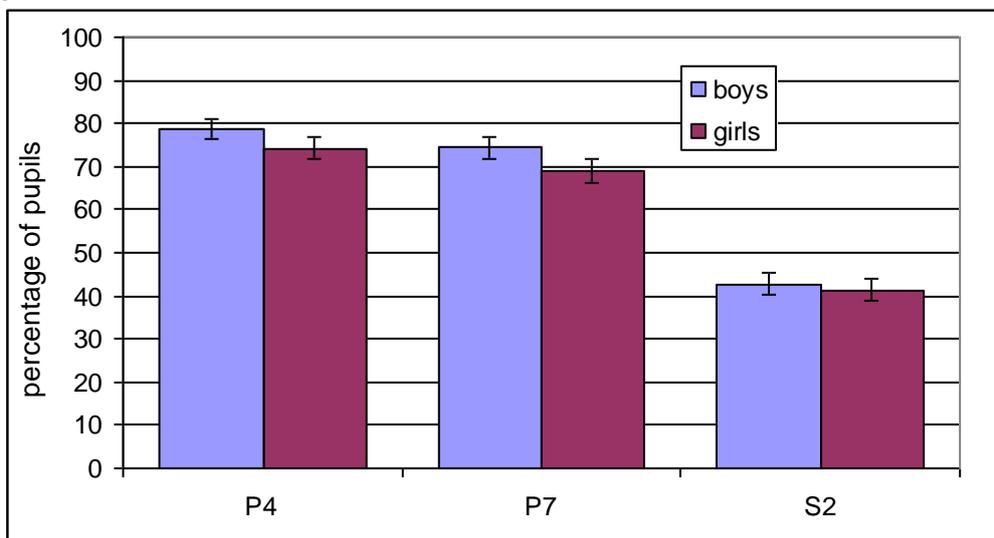


2.2 Attainment by Gender

In P4 and P7 boys outperformed girls, with about a five percentage point difference in the proportion of pupils performing “well” or “very well”. There was insufficient evidence of a difference in S2.

For both boys and girls, there was an underlying pattern of decreasing attainment relevant to the appropriate level for the three survey stages, with the largest drop evident between P7 and S2.

Chart 2.3: Percentage of pupils performing “well” or “very well” at the relevant level, by gender



2.3 Attainment by Deprivation

Pupils from areas of least deprivation¹ continue to have significantly higher attainment than pupils from the most deprived areas, at all stages. All differences are statistically significant except between areas of “middle” and “least deprivation” in P7. The largest differences between pupils of different deprivation categories are at S2, where 44 per cent of pupils from the more deprived areas were “not yet working within the third level”.

Chart 2.4 Percentage of pupils performing “well” or “very well” at the relevant level, by deprivation

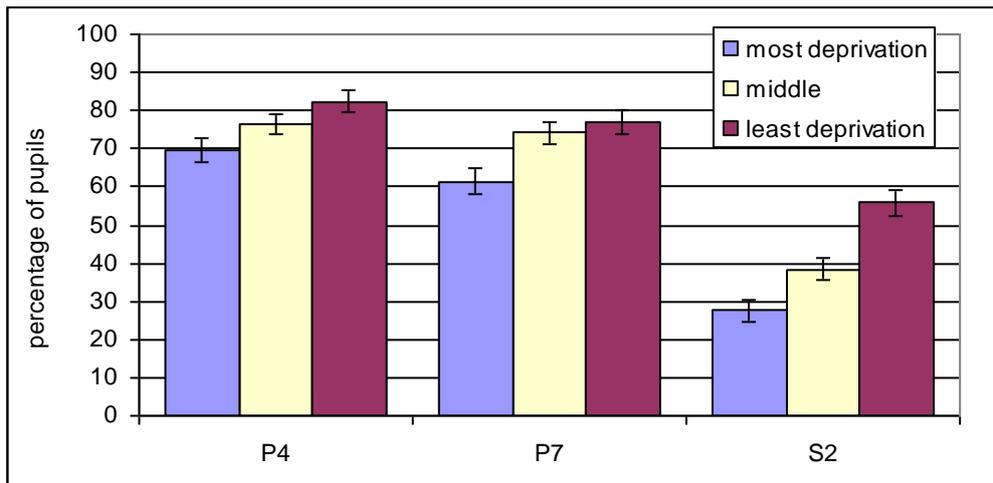
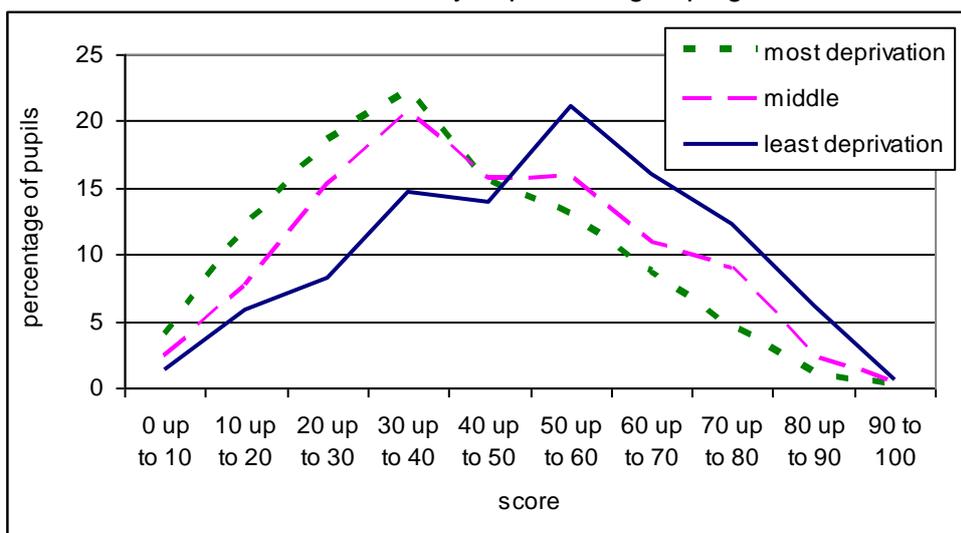


Chart 2.5 shows the profile of performance of S2 pupils from the three deprivation groupings. The charts for the other two stages are available in the data tables. The charts show that the “middle” group’s performance profile appears more similar to the areas of high deprivation.

Chart 2.5 - Distribution of scores, by deprivation grouping, S2



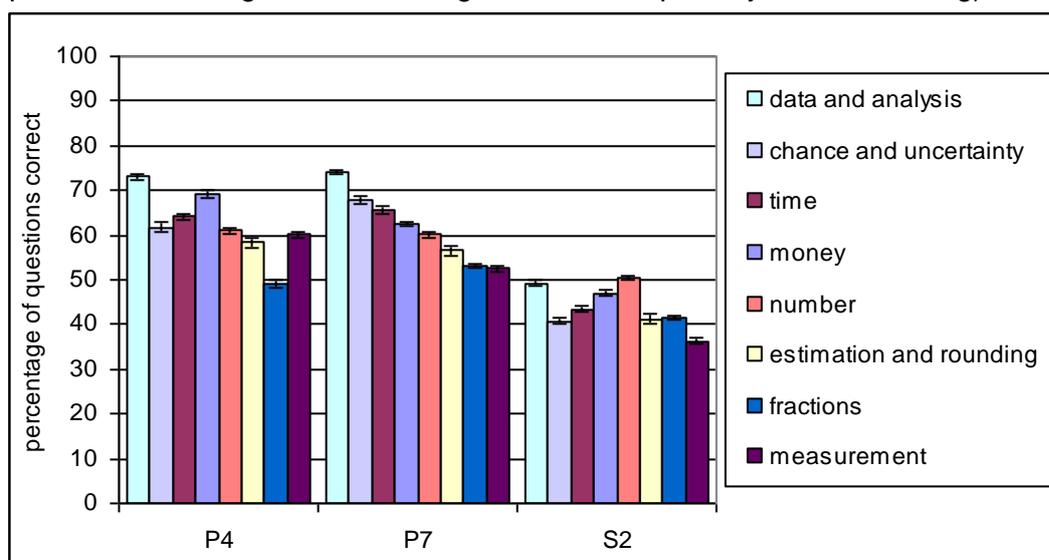
“0 up to 10” includes 0 and all values up to but not including 10, etc.

¹ Defined by the [Scottish Index of Multiple Deprivation 2009](#), based on where pupils live, not where they go to school. Data split into three groups, bottom 30 per cent, middle 40 per cent and top 30 per cent of datazones.

2.4 Attainment by type of task

Pupils at all stages gave the highest percentage of correct answers to questions where *data & analysis* was the main topic being assessed, together with *money* in P4 and *number & number processes* in S2. Items assessing *fractions, decimal fractions & percentages* and *measurement* appeared to be the most difficult. Learning and teaching resources aimed at the areas that pupils found the most challenging are being made available on the Education Scotland [website](#).

Chart 2.6: Percentage of correctly answered questions, by subject, sorted at P7 (whilst individual questions may have assessed pupils against multiple areas of numeracy, questions are categorised according to the *main* topic they were assessing)



Pupils attempted assessment booklets in three different formats. About 60 per cent of marks were from short individual questions, usually set within a specific context. About a quarter of marks were from a series of questions linked to stimulus datasheets, and the remaining marks were from pupil teacher interactions covering mental maths, estimation and one of money, measurement or chance and uncertainty.

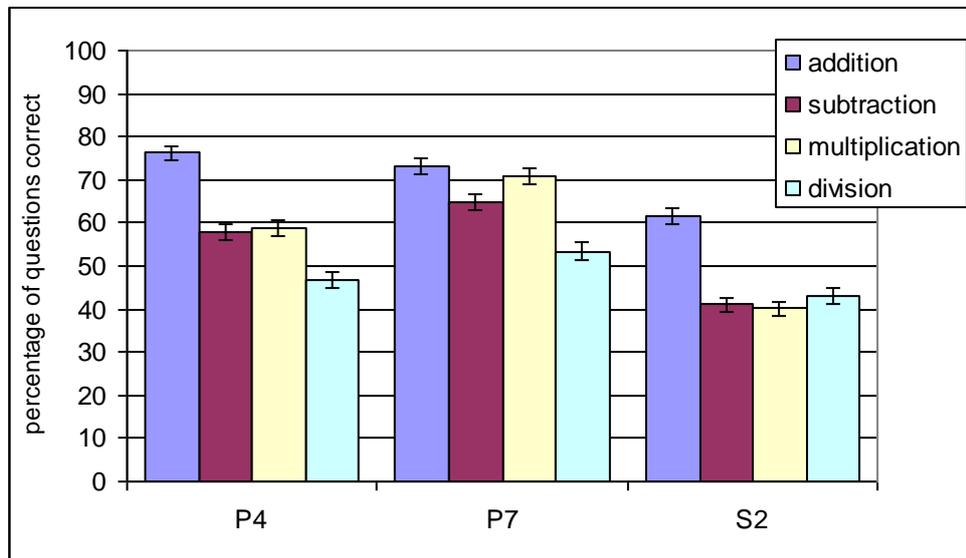
In all three stages pupils generally found the short questions the most challenging, with 60, 58 and 44 per cent of tasks successfully completed in P4, P7 and S2 respectively. In P4, pupils were most successful in the linked stimulus tasks, with a 68 per cent success rate, in P7 there was little difference between the stimulus tasks and the interactions, while in S2 pupils were most successful with the interactions, achieving 49 per cent of tasks.

2.5 Mental Maths

As part of the pupil teacher interaction element of the survey, each pupil attempted four questions in mental maths, one for each of addition, subtraction, multiplication and division. Two questions were asked using prompt cards so that pupils could see the figures written down while not writing anything down themselves, and two were asked without the pupil being able to see the numbers. There was also a mixture of questions set in context and not set in context.

Overall pupils successfully completed 60 per cent of mental maths tasks in P4, 65 per cent in P7 and 46 per cent in S2. This was fairly similar to the success rate of tasks in the rest of the survey. The following chart shows the success rate for each operator.

Chart 2.7 Percentage of correctly answered questions in mental maths, by operator and stage



Although higher performance may have been expected where pupils could see mental maths questions written down (compared to when they were not able to see the numbers), no clear pattern of this was shown in the results. This may have been due to more challenging questions being selected for having written prompts. Further analysis of this issue will be carried out in due course.

Chapter 3: Pupil questionnaire

All pupils participating in the SSLN were asked to complete a questionnaire. The questionnaire focused on factors that are likely to affect learning, such as pupil attitudes and experiences in class.

As with all sample surveys, there are margins of error around the results. The size of these vary but, for example, the first statistic mentioned below (62 per cent in P4 for “listen to the teacher talk to the class...”) has a 95 per cent confidence interval of ± 2.1 per cent. Standard error data for these calculations are provided in the data tables. Results are weighted to account for different school sizes, the small number of non-participating schools and gender and deprivation differences between the sample and the population. “Don’t know” responses were generally excluded.

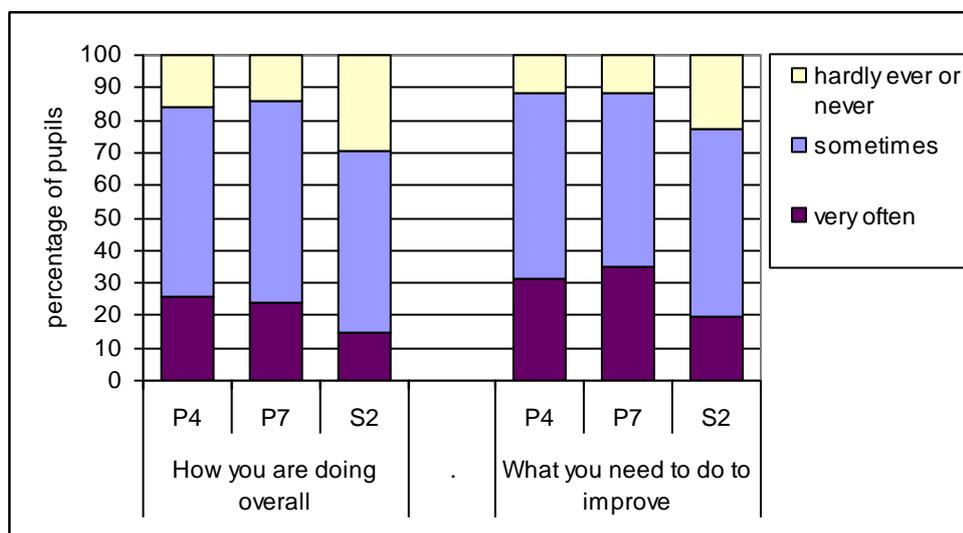
3.1 Activities in school

Pupils were asked how often they participate in a range of activities in their class. Full results are available in the data tables. The activities in which the highest percentage of pupils reported they participated “very often” were “listen to the teacher talk to the class about a topic” (62 per cent in P4 and 64 per cent in both P7 and S2) and “work on your own” (between 55 and 61 per cent).

Pupils were also asked about their teachers’ practices. The most commonly reported teaching practices being undertaken “very often” were “tell you what you are going to learn before you start” (89 per cent in P7) and “encourage you to work hard” (84 per cent in P7). Fairly similar proportions of pupils reported that teachers go too slowly as too fast – about ten per cent reporting that teachers did this “very often” in each case.

Pupils were also asked how often someone in school talked with them about their learning. The chart below illustrates the results. Over a quarter of pupils in primary stages reported that they received feedback on performance and improvement “very often”, but this reduced in secondary.

Chart 3.1: How often does someone in school (e.g. class teacher/head teacher) talk with you about...?

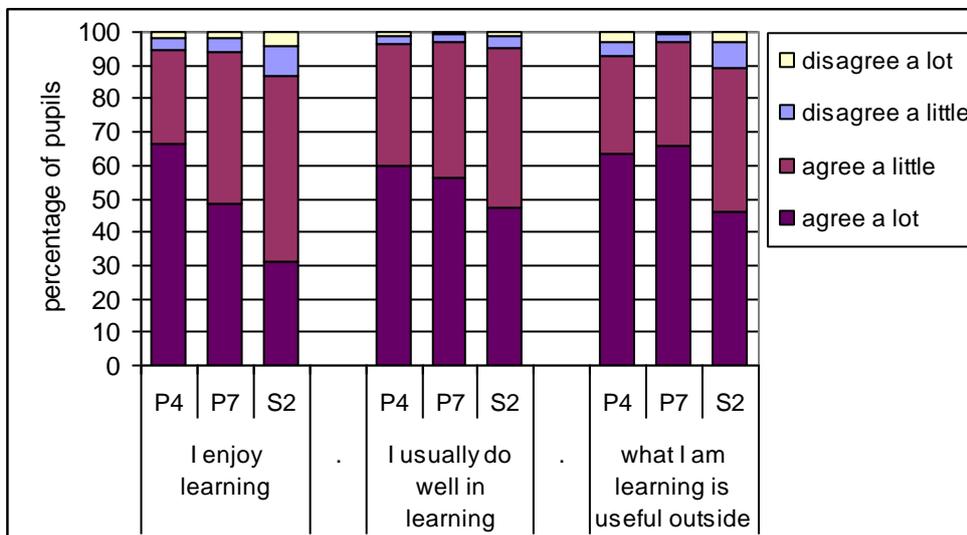


3.2 Attitudes to learning

Pupils were asked a series of questions about their attitude towards learning in general, including how much they enjoy it, what use they think it is, and whether they think they are good at learning.

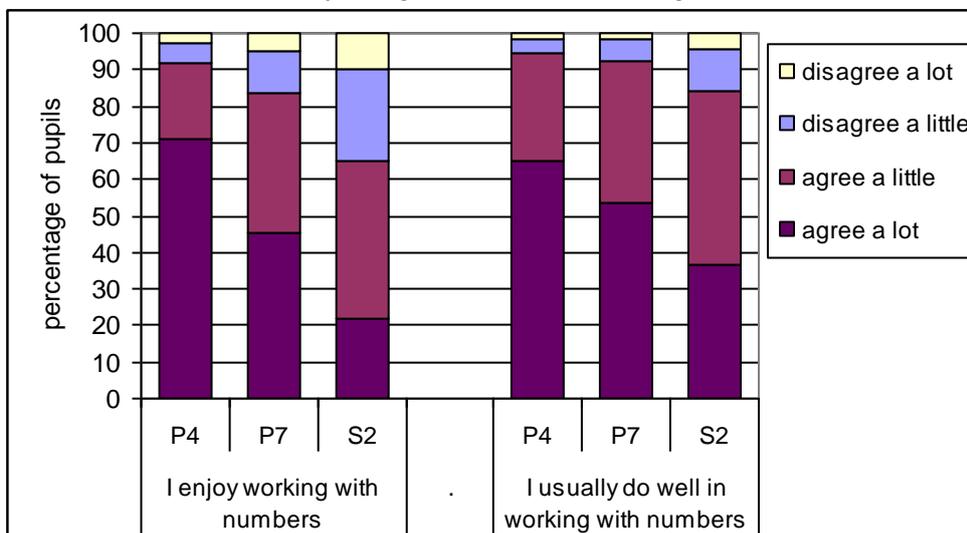
Full results are provided in the data tables, but chart 3.2 illustrates the answers to three of the questions. Enjoyment of learning remained very high throughout the survey stages, though the strength of this agreement reduced in P7 and further in S2. The proportion of pupils reporting that they usually did well remained steady, with just over a half agreeing “a lot” and most others agreeing “a little”. Over 60 per cent of P4 and P7 pupils and over 45 per cent of S2 agreed “a lot” that what they were learning would be useful to them outside school. This rises to around 90 per cent if pupils agreeing “a little” are also included.

Chart 3.2: How much do you agree with the following...?



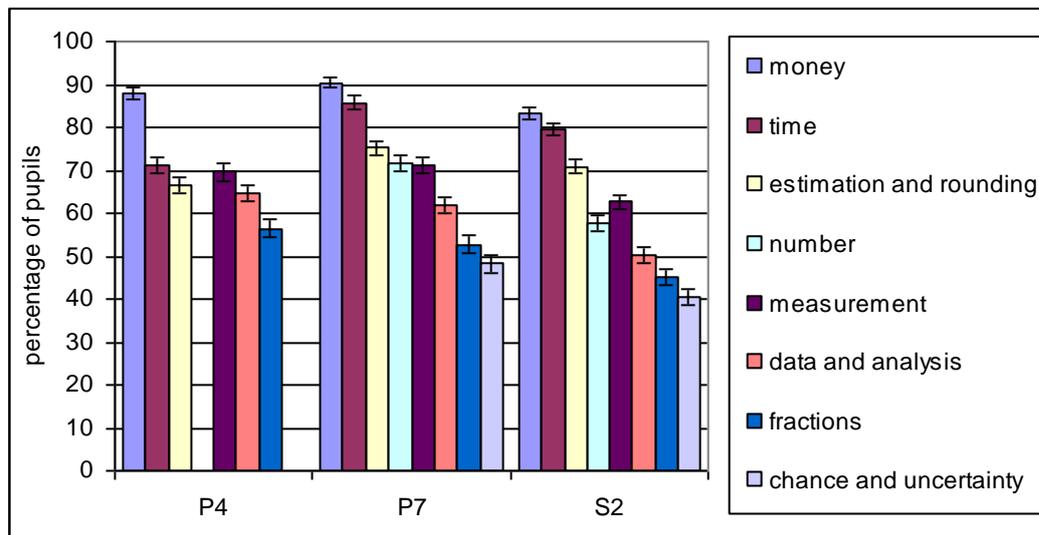
Pupils were also asked about their attitude towards working with numbers. Again full results are available in the data tables, but chart 3.3 illustrates similar patterns to learning in general, but with slightly lower levels of enjoyment and confidence.

Chart 3.3: How much do you agree with the following...?



Pupils were also asked about how good they thought they were in each of the different areas within numeracy. The following chart shows the proportion answering “very good” or “good”. The subjects are ordered according to performance at P7. *Ideas of chance & uncertainty* and *fractions, decimal fractions & percentages* were consistently reported as the areas where fewest pupils thought they were good, while *time* and *money* were generally the most favoured.

Chart 3.4: How good do you think you are at the following...? Percentage saying “good” or “very good”, sorted by P7.



P4 pupils were not asked about *ideas of chance & uncertainty* and were asked about the four *number* operators (addition, subtraction, multiplication and division) separately.

3.3 Activities outwith school

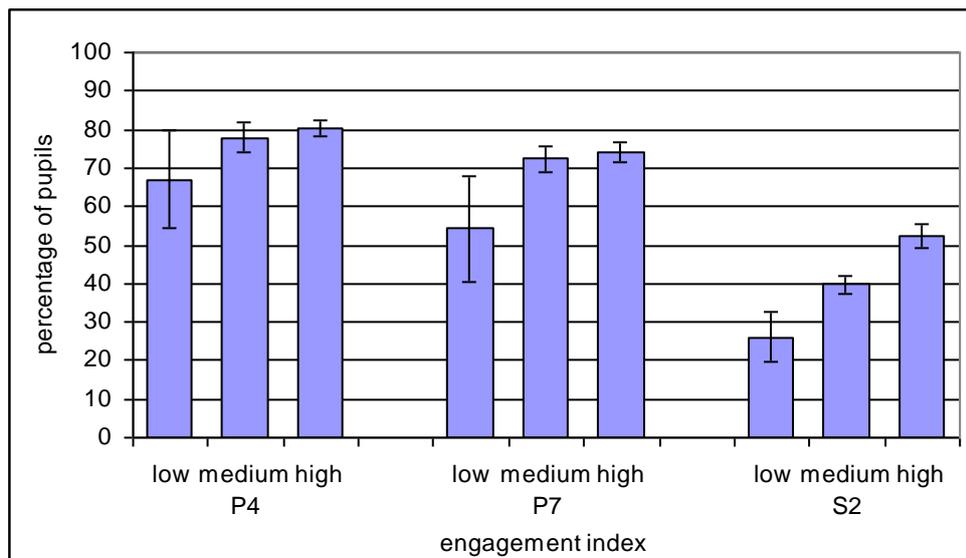
Pupils also reported on their activities outwith school. Around 30 per cent of pupils at each stage were involved in a group or club in the area where they live. Between 49 per cent (P4) and 78 per cent (S2) use the internet “very often”, while between 40 and 50 per cent of pupils play a musical instrument at least sometimes. Homework was reported as being done “very often” by higher proportions of P4s than S2s, though this may be due to different expectations of what is considered “very often” by pupils in each of these stages.

3.4 Links between attitudes and attainment

As in many other surveys, the SSLN results showed evidence of a strong linkage between attitudes to learning and performance. When pupils enjoy work they tend to work better, which then makes work more enjoyable – a virtuous circle.

To show these links, indices can be created from the three different groups of attitudinal questions. The indices created cover engagement, confidence, and views on usefulness. These indices take the form of a combined score for each group of attitudinal questions, with pupil scores for each reflecting their attitude across the range of questions included within each index. Chart 3.5 illustrates the link between the engagement index (covering five questions on attitude to learning in general) and performance. The biggest drop in pupil performance as engagement level decreased was in S2.

Chart 3.5: Percentage performing “well” or “very well”, by index of engagement and stage.



Please see data tables for further details on the calculation of the engagement index.

Overall the drop in performance in S2 is reflected in pupils’ views of how good they are (see Chart 3.3). The results showed some evidence of a difference between pupils’ views of their performance in the different areas of numeracy and their actual performance. To illustrate this, the following chart shows the difference, in order of decreasing size, between the proportion of correct answers in each area and the proportion of pupils saying they thought they were “good” or “very good” in that area. We would not expect these values to be equal, but the relative differences may be of interest. For example, in each stage pupils performed considerably better in *data & analysis* than they thought. Primary school pupils also generally performed better in *chance and uncertainty* than their levels of confidence, or those of their teachers (see Chart 4.1), might predict.

Chart 3.6: Difference in order of scale between percentage of correct answers and percentage of pupils saying they thought they were “good” or “very good”, by topic.

P4		P7		S2	
view	performance	view	performance	view	performance
money	data and analysis	money	data and analysis	money	number
number	money	time	chance and uncertainty	time	data and analysis
time	time	estimation and rounding	time	estimation and rounding	money
measurement	number	number	money	measurement	time
estimation and rounding	measurement	measurement	number	number	fractions
data and analysis	estimation and rounding	data and analysis	estimation and rounding	data and analysis	estimation and rounding
fractions	fractions	fractions	fractions	fractions	chance and uncertainty
		chance and uncertainty	measurement	chance and uncertainty	measurement

Chapter 4: Teacher questionnaire

The teacher questionnaire was distributed to all P4 class teachers in half of primary schools, and all P7 teachers in the other half of primary schools. In secondary schools questionnaires were given to two S2 maths teachers and two S2 teachers in each of four other broad curriculum groupings (“science & technology”, “social studies, religious and moral education (RME) & health & wellbeing”, “expressive arts & languages” and “additional support needs (ASN)”). There were three versions of the questionnaire (primary, secondary maths, secondary non-maths) though many of the questions were consistent across the three versions.

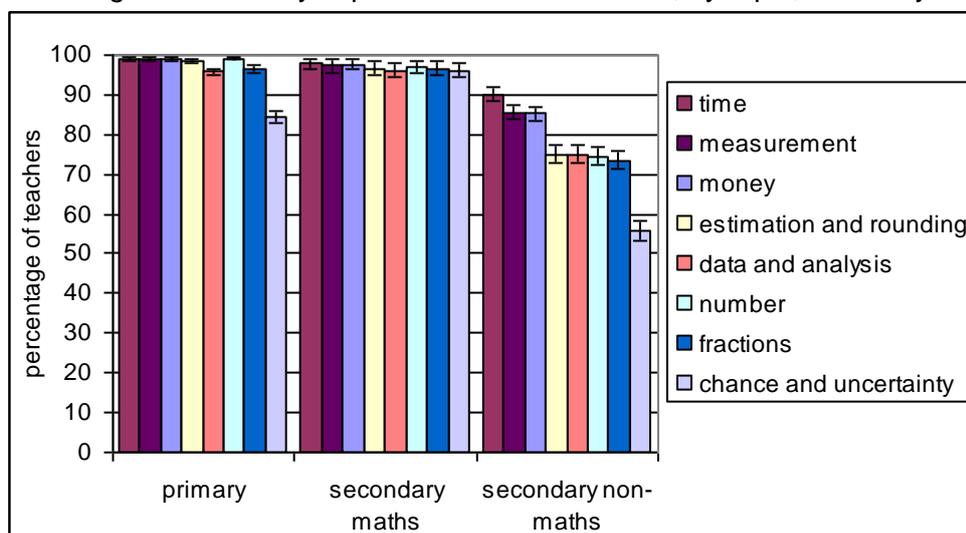
It should be noted that introduction of the Curriculum for Excellence in secondary schools started with S1 in 2010/11 and this will continue upwards as that cohort progresses through the stages. The secondary school teachers answering the 2011 questionnaires were therefore yet not following the Curriculum for Excellence with their S2 classes. However the survey still acts as a benchmark of their views and experiences.

As with all sample surveys, there are margins of error around the results. The size of these vary but, as a rule of thumb, for primary and secondary non-maths teachers they are generally about \pm one to two percentage points. For secondary maths teachers and three of the four secondary non-maths teacher groups, they are about \pm two to four percentage points, with about five percentage points for additional support teachers. Standard error data for these calculations are provided in the data tables. The data were weighted to account for school size and non-response.

4.1 Teaching numeracy across the Curriculum

In terms of the different topics within numeracy, primary school and secondary maths teachers reported very high levels of confidence in delivering the numeracy curriculum. Levels were lower among secondary non-maths teachers, though amongst these the results varied between teachers of “science and technology” and “expressive arts and languages”.

Chart 4.1: Percentage of teachers reporting they were “very confident” or fairly confident” in delivering the numeracy experiences and outcomes, by topic, sorted by non-maths.



Amongst non-maths teachers, *ideas of chance & uncertainty*, and to a lesser extent *fractions, number processes, data & analysis*, and *estimation & rounding* were the areas about which they felt least confident, with *ideas of chance & uncertainty* also scoring lower amongst primary school teachers.

Primary and secondary non-maths teachers were asked how well they could integrate the numeracy experiences and outcomes into different areas of the curriculum. The following graphics summarise the responses. Amongst both groups of teachers, sciences and technologies were the areas where teachers saw most scope for inclusion of numeracy teaching, with expressive arts, languages and religious and moral education the most difficult.

Chart 4.2: How well can the following skills be integrated into teaching the various curriculum areas? Primary teachers, average response.

	express. arts	health & wellbeing	language	RME	sciences	social studies	technol.
estimation and rounding	light grey	light grey	light grey	white	dark grey	light grey	dark grey
number and number processes	light grey	light grey	light grey	light grey	dark grey	dark grey	dark grey
fractions, decimal fractions and percentages	light grey	light grey	light grey	white	dark grey	light grey	dark grey
money	light grey	dark grey	light grey	light grey	light grey	dark grey	dark grey
time	light grey	dark grey	dark grey	light grey	dark grey	dark grey	dark grey
measurement	dark grey	dark grey	light grey	light grey	dark grey	dark grey	dark grey
data and analysis	light grey	dark grey	light grey	light grey	black	dark grey	dark grey
ideas of chance and uncertainty	light grey	light grey	light grey	light grey	dark grey	light grey	dark grey

Chart 4.3: How well can the following skills be integrated into your curriculum area? Secondary non-maths teachers, average response.

	arts	ASN	humanities	science
estimation and rounding	light grey	dark grey	light grey	dark grey
number and number processes	light grey	dark grey	light grey	dark grey
fractions, decimal fractions and percentages	light grey	light grey	light grey	dark grey
money	light grey	dark grey	light grey	light grey
time	dark grey	dark grey	light grey	dark grey
measurement	light grey	dark grey	dark grey	black
data and analysis	light grey	dark grey	dark grey	dark grey
ideas of chance and uncertainty	light grey	light grey	light grey	light grey

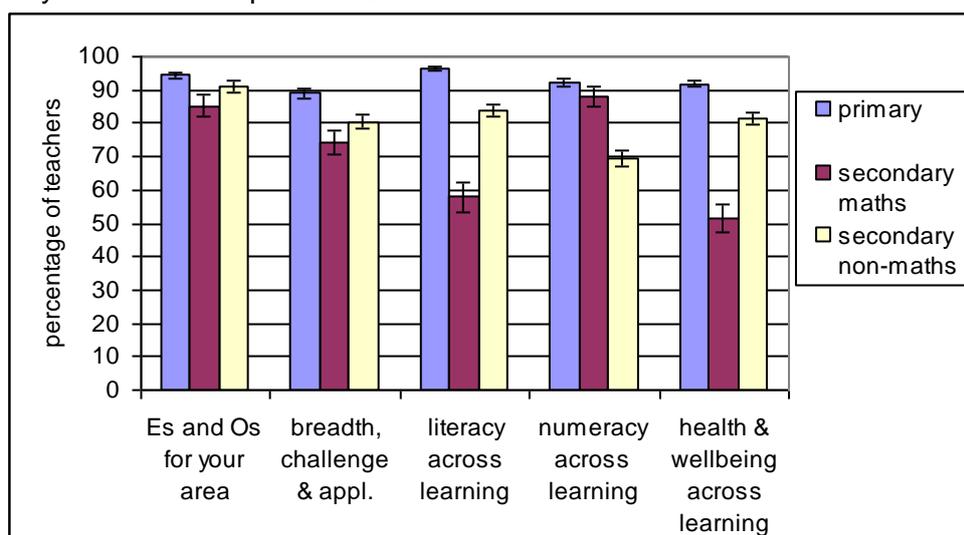
	already fits well as vital to area
	fits in easily
	fits in but a bit forced
	difficult to fit, no relevance

Secondary non-maths teachers were also asked how often they found opportunities to reinforce pupils' numeracy skills. Their responses reflected the above graphics, with 84 per cent of additional support teachers and 82 per cent of science and technology teachers reporting they could do so at least most weeks, compared with 35 per cent of expressive arts and language teachers.

4.2 Aspects of Curriculum for Excellence

Teachers were asked about their levels of confidence with understanding various aspects of Curriculum for Excellence. The highest rates were in primary schools. Between 85 and 95 per cent of teachers were confident they understood the experiences and outcomes for their area, but about 20 per cent of secondary school teachers said they were not confident they understood the concepts of breadth, depth and challenge. Primary school teachers were more confident about literacy, numeracy and health & wellbeing across learning, with maths teachers reporting lower levels of confidence about literacy and health & wellbeing across learning.

Chart 4.4: Proportion of teachers reporting they were “very confident” or “fairly confident” that they understood aspects of Curriculum for Excellence.



Teachers were also asked how confident they were that they could improve learning using each of these aspects. The results showed similar patterns to the above, with about 94 per cent of primary teachers and about 81 per cent of secondary teachers reporting they were “very confident” or “fairly confident” that they can improve learning using the CfE experiences and outcomes for their area. About 60 per cent of secondary non-maths teachers were confident that they could improve learning using the experiences and outcomes for numeracy across learning.

4.3 Classroom activities and resources

Teachers were asked how often pupils in their classes spend time doing a range of activities. Full results are available in the data tables but the activities which the highest percentages of teachers reported pupils undertook on “most days” were “being taught with the whole class together”, “working quietly on their own” and “talking about what they are learning in pairs or in groups”. Over a half of primary

teachers also reported “discussing everyday uses of what they are learning” with pupils most days, with 85 per cent “finding out by exploring or investigating” and 36 per cent “working outside the classroom” at least most weeks.

Primary and secondary maths teachers were asked about the numeracy resources which they make use of. The most commonly used resources were commercially produced materials (e.g. textbooks/software packages), Curriculum for Excellence experiences and outcomes, and interactive whiteboards.

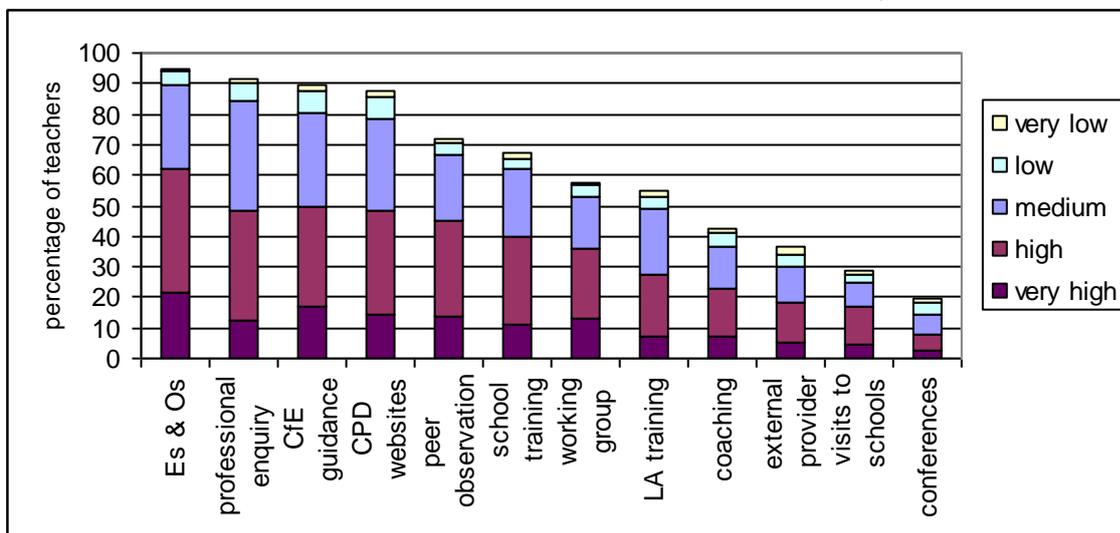
4.4 Professional Development

Teachers were asked how often they had taken part in various forms of continuing professional development (CPD) in the last twelve months and, if they had, how useful they had found it. The CPD related to CfE numeracy experiences and outcomes only, which explains why secondary non-maths teachers returned lower participation rates than others.

Amongst primary school teachers and secondary maths teachers the most frequently used forms of CPD were reading and discussing the numeracy experiences and outcomes with colleagues, professional enquiry through reading/personal study and reading and discussing the CfE guidance/exemplifications with colleagues. About 40 per cent had taken part in coaching/mentoring, and 28 per cent of primary and 12 per cent of secondary maths teachers had taken part in visits to other schools to observe good practice.

Chart 4.5: CPD activity in numeracy in last twelve months, with level of impact. Primary school teachers.

(see data tables for full descriptions and for responses for secondary school teachers)



The activities with the highest rating for level of impact were reading and discussing the numeracy experiences and outcomes with colleagues, peer observations and membership of working groups, with over 60 per cent of those participating rating their impact as “high” or “very high” amongst primary school teachers and over 50 per cent amongst secondary maths teachers.

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