CAMBRIDGE

Using the PIPS on-entry baseline assessment

Reception and Primary 1

2025-26

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Contents

Introduction

The PIPS On-entry Baseline is intended to provide immediate information to the classroom teacher as well as a baseline for measuring the progress of pupils up to the end of Reception/ P1. It was initially developed within the context of the English education system and was made available there in 1994. This led to the development of a fully independent version of the baseline assessment for Scotland, where it was made available in 2001.

This booklet describes the different types of feedback sent to schools and explains how it may be interpreted.

For those schools using PIPS On-entry Baseline in conjunction with the Follow-up assessment at the end of the Foundation Stage, we can compare a pupil's progress through the year with the progress made by pupils with similar starting points across the country.

Both the PIPS On-entry Baseline and PIPS On-entry Baseline Follow-up are computer based assessments which provide a total score as well as scores in Early Reading, Early Maths and Phonics.

The Early Reading score is derived from the sections on Handwriting, Picture Vocabulary, Ideas about Reading, Letter Identification, Word Recognition and Reading.

The Early Maths score is calculated from Ideas about Maths, Counting, Sums, Digit Identification, Shape Identification and Maths Problems.

The Phonics section gives an indication of phonological awareness. It is based on Repeating Words and Rhyming Words.

Some schools have chosen only to carry out the Follow-up assessment. In this case their feedback will contain the same selection of data and charts as the On-entry feedback.

Standardised scores

To be able to make comparisons between children and classes, the raw scores are standardised on a nationally representative sample of pupils doing the same assessment the same year. The average pupil will have a standardised score of 50. The standard deviation is 10, which means that approximately two thirds of children will have scores between 40 and 60. From this it is possible to see how the scores for children in any class compare with the average. If a child scores above 60, they lie in the top 16% of the sample. If their score is below 40, they lie in the bottom 16% of the sample. Scores above 70 or below 30 are exceptional, with around 2.5% in each group.

Standardised scores are worked out separately for Early Maths, Early Reading, Phonics and for the Total score. They are also calculated separately for both On-entry and Follow-up assessments. In particular, note that the standardised Total score is not an average of the standardised maths and reading scores. Pupils with exceptionally high standardised scores in both maths and reading tend to have an even higher standardised Total score. Similarly, pupils with exceptionally low standardised scores in both maths and reading tend to have an even lower standardised Total score. This is because, although an exceptional score is very rare in maths and in reading, it is even rarer to have an exceptional score in both and so this is a greater achievement.

It should not be expected that a pupil's standardised score will increase during the year. Most commonly the standardised scores remain roughly the same throughout the year. (Unusually high or low scores at the On-entry Baseline tend to be closer to 50 at the Follow-up assessment. The 'expected' scores at the Follow-up assessment can be seen on the scatterplots, which are explained later.)

On-entry Baseline Results

The feedback is produced separately for each class. Each class teacher will have a table containing raw and standardised scores for maths, reading and phonics. A different table is produced for each intake term. The table looks like this:

School: 42373
Class: Fruit 1

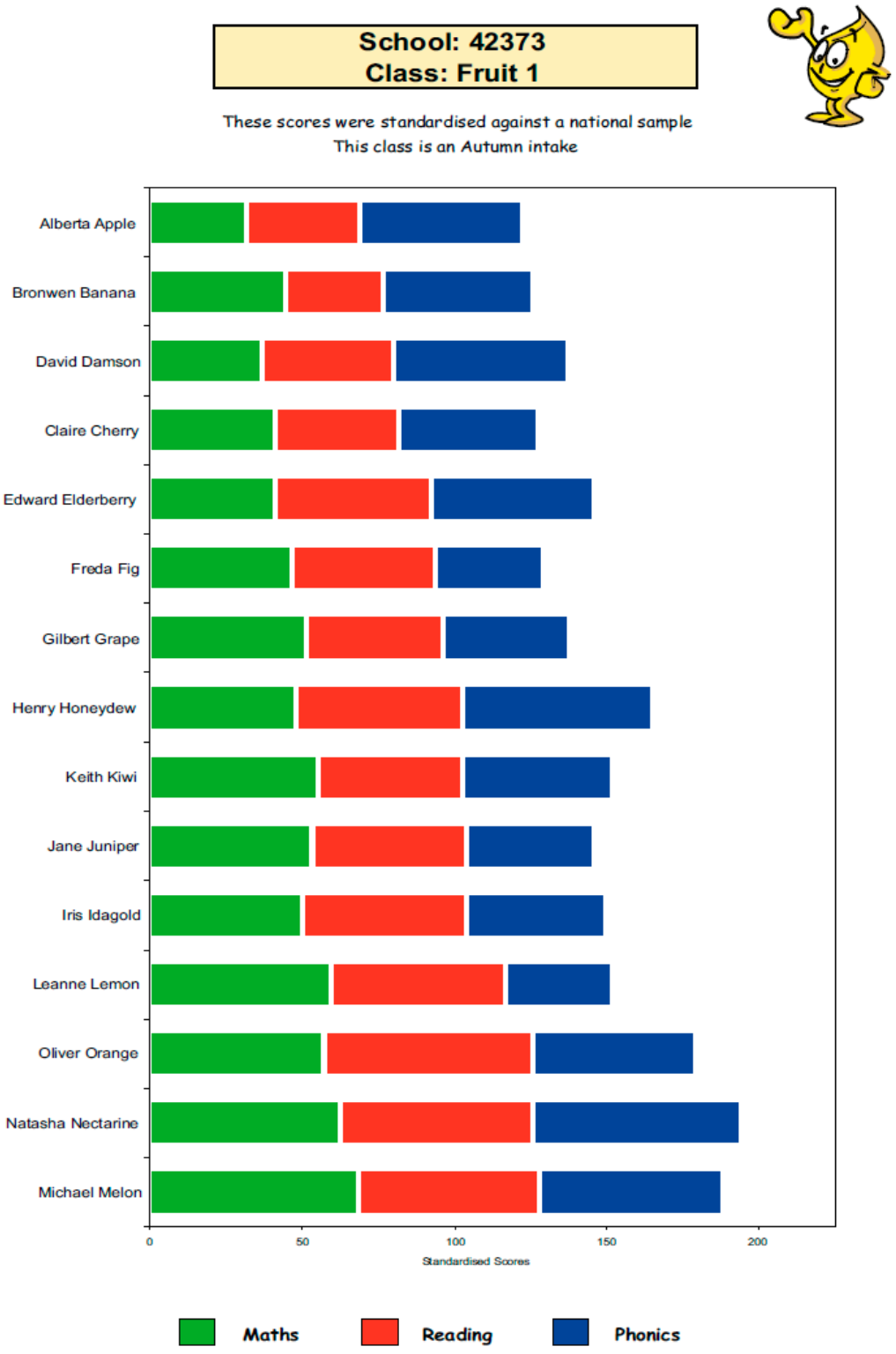
These scores were standardised against a national sample
This class is an Autumn intake

name		raw scores				standardised scores			
		maths	reading	phonics	total	maths	reading	phonics	total
Alberta	Apple	9	14	6	23	32	37	53	32
Bronwen	Banana	13	12	5	25	45	32	49	37
Claire	Cherry	12	16	4	28	42	40	46	42
David	Damson	10	18	7	28	37	43	57	42
Edward	Elderberry	12	26	6	38	42	51	53	45
Freda	Fig	20	25	2	45	47	47	below 40	47
Gilbert	Grape	24	24	3	48	52	45	42	48
Iris	Idagold	22	28	4	50	50	54	46	50
Jane	Juniper	25	26	3	51	53	51	42	52
Keith	Kiwi	27	25	5	52	55	47	49	53
Henry	Honeydew	21	28	14	55	48	54	above 60	55
Leanne	Lemon	30	38	2	68	60	57	below 40	57
Michael	Melon	32	41	9	76	68	60	60	60
Natasha	Nectarine	31	46	15	85	63	63	above 60	63
Oliver	Orange	28	58	6	87	57	68	53	68

Stacked graph

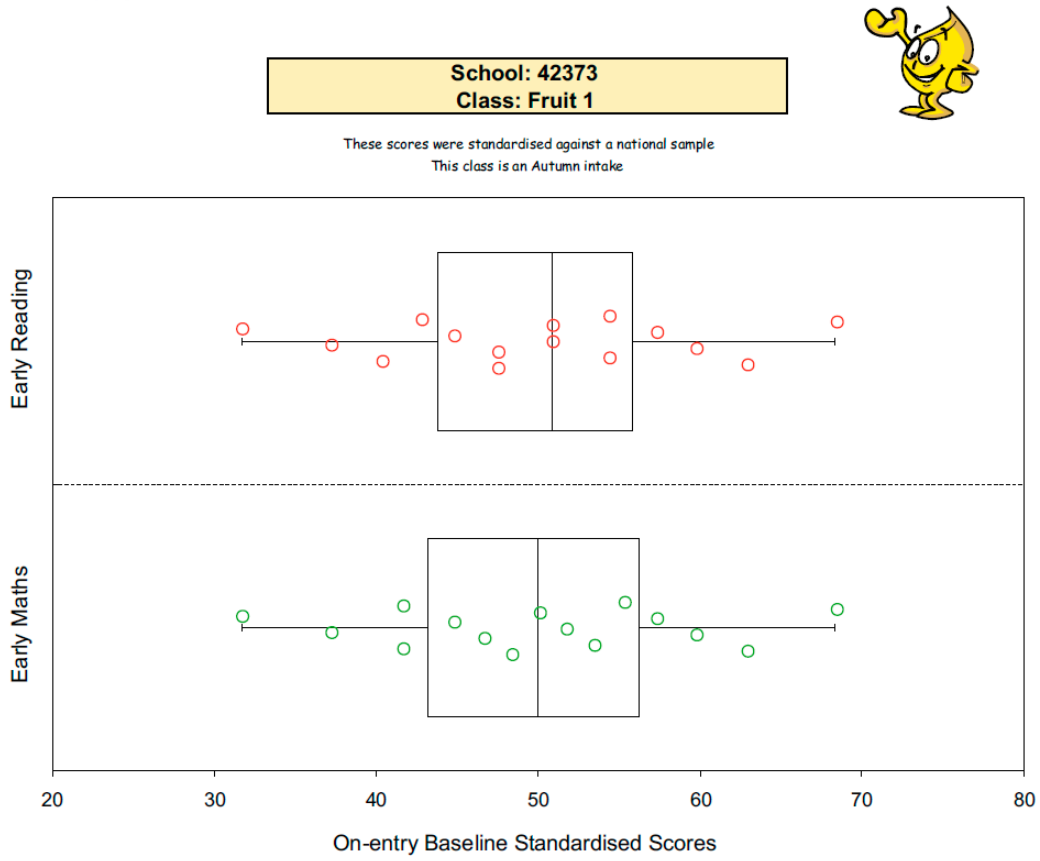
The stacked graph below displays the data contained in the table of standardised scores. Here those scores have been ordered so that the total of the maths and reading scores increases steadily down the page. By looking at the interface between maths and reading, one can readily see strengths and weaknesses.

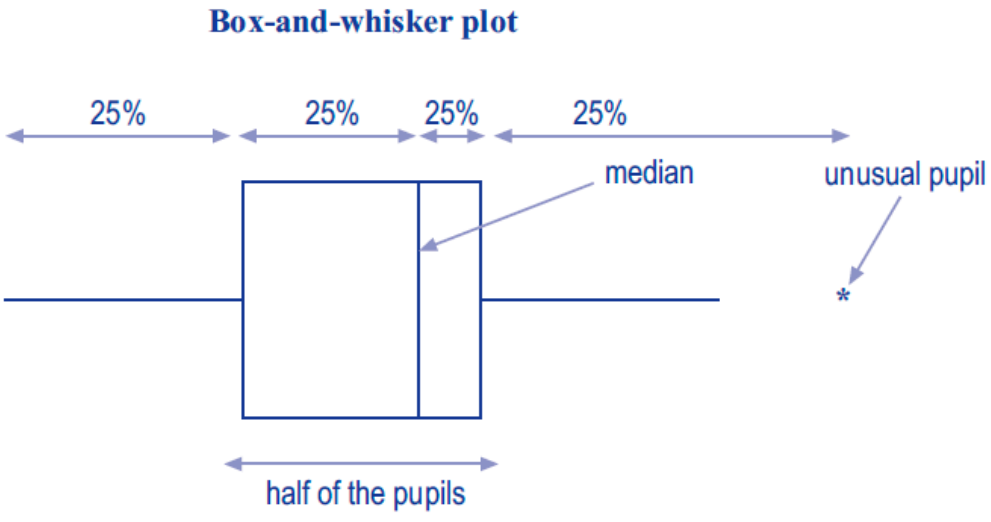
Most pupils will have reached fairly similar levels in both areas but some may show clear differences. You will be able to identify children who perhaps have high maths and reading scores but a low phonics score. This may be an indicator of later problems associated with dyslexia.



Box-and-whisker plot

This gives a picture of the range of scores achieved in each class. It is based on the standardised scores for maths and reading described earlier. Each circle represents one child and each set of scores is covered by a box-and-whisker plot. The circles representing each pupil have been given a small vertical scattering. This is not based upon their scores; it is just to let you see when more than one pupil has the same score. The left whisker of the chart holds 25% of the children in the class. The box holds the next 50% of the children in your class, and the right whisker holds the final 25%. The line in the middle of the box is called the median and represents the middle score, and the whiskers normally extend to the highest and lowest scores in the class. Sometimes there is an asterisk which indicates that a child has an extremely high or low score compared to others in the class.





Value-added

For those schools who complete both the PIPS On-entry Baseline and the On-entry Baseline Follow-up, we are able to provide additional feedback giving a measure of the pupils' progress (value-added) through the year. Each pupil is compared with pupils who had similar scores in the On-entry Baseline and started school at a similar time (in the same intake term). As explained earlier, since the standardised scores for the On-entry Baseline and the Follow-up are both calculated with a mean of 50 and a standard deviation of 10, pupils who make normal progress would not be expected to increase their standardised scores but rather stay much the same. In fact there is a tendency for pupils who scored highly at the start of the year to score less in the Follow-up assessment, and pupils with particularly low standardised scores at the start to score more at the end of the year. This is known as regression to the mean, and is taken into account when we work out the value-added.

For the maths value-added, we compare the Follow-up standardised maths score with the On-entry Baseline standardised total score; for the reading value-added, we compare the Follow-up standardised reading score with the On-entry Baseline standardised total score. It may seem odd to compare the end of year scores in maths and reading with the total score at the start, rather than comparing maths with maths and reading with reading, but the standardised total score is the best predictor of later performance in maths, and similarly in reading.

We report the pupils' value-added as one of 5 grades: --, -, "average", +, and ++. They are divided so that 10% of pupils get ++, 15% get +, 50% get "average", 15% get - and 10% get --. Thus the top quarter of pupils are recorded as making rapid progress and the bottom quarter as making rather slower progress.

The standardised scores are presented in the results table and scatterplots described more fully later.

On-entry Baseline Follow-up Results

The feedback is produced separately for each class. Each class teacher will have a table containing raw scores, standardised scores, value-added grades and pupil attitudes. All the pupils will appear on the same table regardless of intake term. The table looks like this:

School : 1234567
Class : Fruit 1

This class was standardised against a national sample.

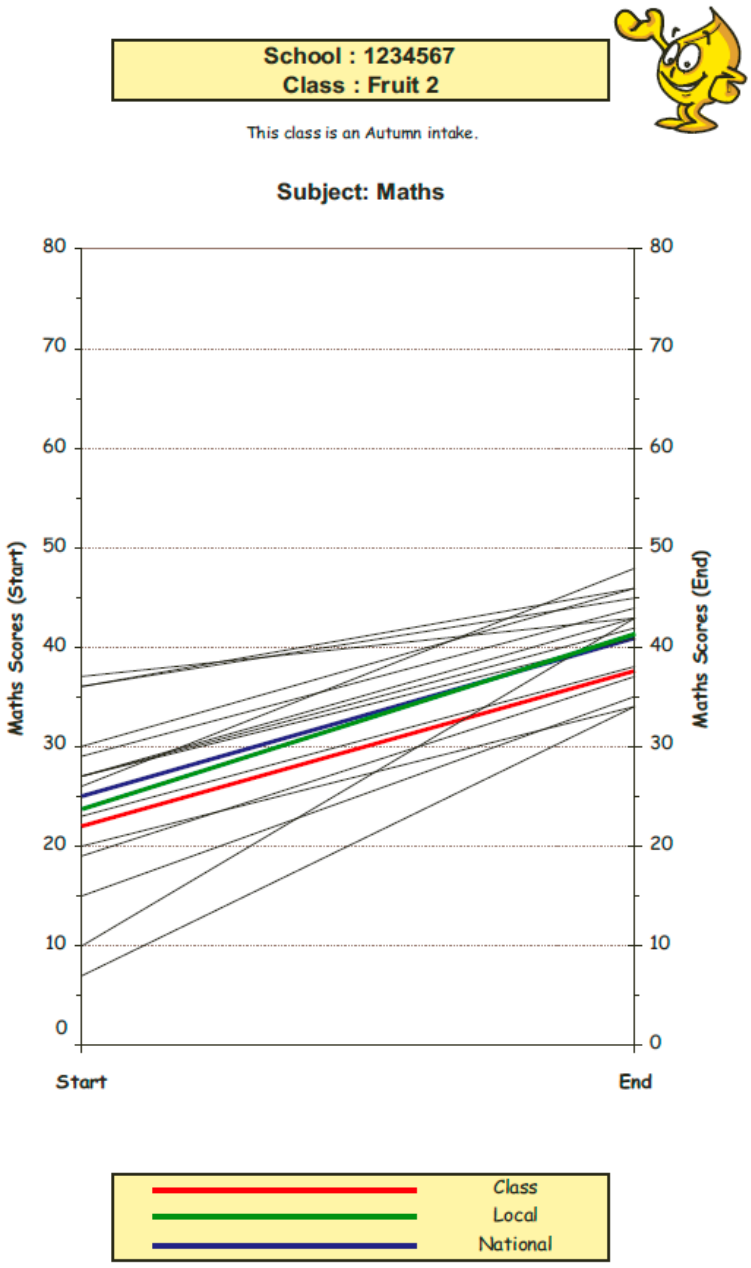
name		entry	maths scores			reading scores			total scores				value added		attitude
			start	end		start	end		start		end				
		term	raw	raw	std.	raw	raw	std.	raw	std.	raw	std.	maths	reading	
Kalvinder	Kiwi	Autumn	34	*	*	34	*	*	70	57	*	*	*	*	.
Brian	Banana	Autumn	15	35	42	25	43	40	40	44	84	40	average	–	..☺
John	Juniper	Autumn	7	34	41	10	46	41	17	31	87	41	average	+	..☺
Fred	Fig	Autumn	23	38	45	28	51	43	58	52	98	44	–	– –	..☺
Adam	Apple	Autumn	20	34	41	28	64	48	52	49	100	44	– –	average	..☺
Llewelyn	Lychee	Autumn	27	42	51	23	58	45	52	49	106	46	average	–	.😐.
Rita	Rhubarb	Autumn	19	37	44	24	66	49	50	49	112	48	–	average	..☺
Elisha	Elderberry	Autumn	*	42	51	*	66	49	*	*	115	49	*	*	.😐.
Guinevere	Guava	Autumn	*	40	48	*	66	49	*	*	115	49	*	*	..☺
Petra	Plum	Autumn	10	43	52	28	71	52	42	45	119	51	+	+	..☺
Henrietta	Honeydew	Autumn	30	46	57	31	72	53	67	55	127	54	average	average	..☺
Neil	Nectarine	Autumn	27	43	52	29	77	55	57	52	129	54	average	average	..☺
Ivan	Idagold	Autumn	29	44	54	31	78	55	68	56	131	55	average	average	..☺
Mel	Mandarin	Autumn	36	45	55	58	123	60	101	66	177	60	–	average	☹..
Qadir	Quince	Autumn	37	43	52	25	130	62	62	54	182	61	average	++	..☺
Omar	Orange	Autumn	36	46	57	46	129	62	91	63	184	61	average	average	..☺
Diana	Date	Autumn	27	41	49	43	140	66	75	58	185	61	–	++	.😐.
Christine	Clementine	Autumn	26	48	59	49	143	67	82	60	200	66	average	++	..☺

The raw scores in the table allow the teacher to check that the information sent to PIPS is correct. They also allow the progress of each child to be seen clearly. The standardised scores give a clear view of individual pupil's strengths and weaknesses in comparison with a nationally representative sample. The attitude score shows the average response of each pupil to questions about their experiences of school both in and out of the classroom. Note that the attitude scores are not standardised in any way. The faces represent three broad bands. The happy face represents a generally positive attitude, the neutral face a neutral attitude and the sad face a negative attitude.

The scores in the table are summarised in a further two graphs, each of which show a different aspect of the pupils' performance.

Line charts

Separate graphs are produced for maths and reading for each intake term. They show the progress made by individual pupils and by the whole class in comparison with the national average, and if you registered through your LEA or as a consortium, the LEA/consortium average. The chart looks like this:

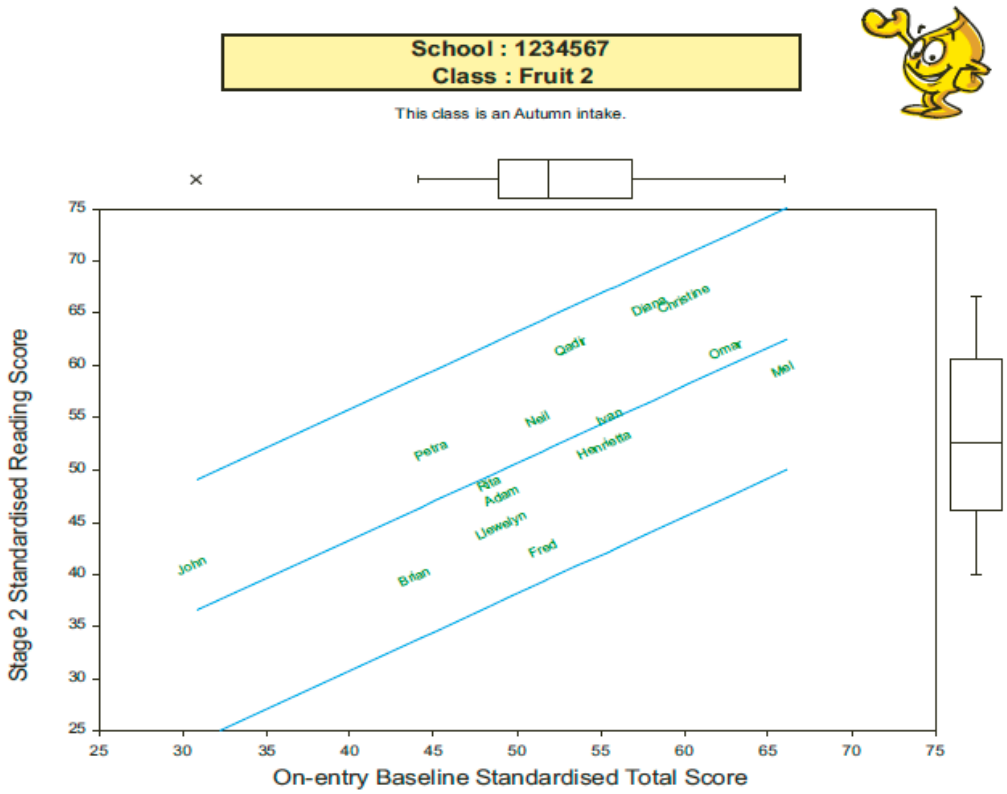


Each individual pupil is represented by a thin black line going from their On-entry Baseline raw score on the left to their Follow-up assessment raw score on the right. The class average is displayed as a red line. The chart also includes a blue line representing the national average and, in some cases, a green line representing the average for your LEA/consortium. The class mean and the individual progress can be checked against these blue and green lines.

Most pupils make considerable progress during their first year at school and this should be evident on the chart. Any pupil making little or no progress can be easily identified and the teacher might already know the reasons for this. In an unfair world, we generally see more progress for the more able, so seeing less steep lines in the bottom part of the chart is not uncommon.

Scatterplots

These graphs are produced separately for each intake term and each class. A separate graph is produced for maths and reading.



The scatterplot contains the pupils' On-entry Baseline standardised total scores plotted against their Follow-up assessment standardised scores for the appropriate subject. The pupils' first names are entered on the chart. For example, if a pupil called Fred has a standardised total score of 52 at the start of the year and a standardised reading score of 42 at the end of the year, you would find 'Fred' printed above the 52 on the bottom axis and alongside the 42 on the left-hand axis.

The middle blue line is the line of best fit. It is this line that is used to calculate value-added. Pupils falling on or close to this line are making progress as expected. Pupils above this line are making more progress than expected (positive value-added) while pupils below this line are making less progress than expected (negative value-added).

The two outer blue lines enclose 95% of all pupils. Pupils above the top line are performing well above expectations while pupils falling below the bottom line fall well below expectations. Teachers may understand the reasons behind such unusual scores or feel a need to investigate further.

There are additionally two box-and-whisker plots on the chart: one to the right and one at the top. The one at the top shows the distribution of the On-entry standardised total scores for the class; the one on the right shows the distribution of the Follow-up assessment standardised scores for maths or reading.

Identification of special educational needs

The identification of special educational needs should never be a snap decision and should always involve several people with more than one assessment being available to them. The information available from the PIPS On-entry Baseline is one piece of information which can be added to other sources from parents, pre-school, the classroom and elsewhere.

In most cases special educational needs are best identified by collecting information over time. PIPS, therefore, provides a follow up assessment at the end of Reception/P1 which, when linked to the PIPS On-entry Baseline, provides a powerful means of spotting pupils who may need help.

As has already been noted, PIPS gives standardised scores for a total score as well as Early Maths, Early Reading and Phonics. The mean for each is set at 50 and the standard deviation at 10. About two thirds of all pupils will have scores between 40 and 60. Pupils who score above 40 on the PIPS On-entry Baseline are unlikely to have special educational needs.

It is recommended that the school carefully considers the progress of all pupils who score below 40 and that it pays particular attention to those who score around or below 30. The important point is that the PIPS On-entry Baseline alerts the school to the possibility that some children have special educational needs.

Children with high scores (around 70 or above) are unusual. Typically, only 2.5% of children fall into this band. In some schools such high scores may not be so rare but in others such high scores may stand out and present more of a challenge in the classroom. Again the important point is that the assessment alerts the classroom teacher to this.

When interpreting the PIPS data, it is important to remember that the scores always have a degree of uncertainty. Any reassessment is likely to produce a slightly different score. PIPS is designed to minimise this and to produce reliable information. This means that, on reassessment, any pupil is likely to get a fairly similar score. But the uncertainty over scores is an important reason why decisions should not be made on the basis of a single judgement.

Different areas

Of the three areas assessed in PIPS - Early Reading, Early Maths and Phonics - the most reliable is the Early Reading. It is that which is the most powerful indicator of later achievement and is the one to look at first.

The Phonics section can also provide useful information. Pupils who gain a low score in this section, especially in comparison with their scores on the other two sections, may have a particular need. Pupils who have not caught on to sounds and rhymes during their first year at school may be dyslexic.

It is recommended that pupils whose standardised score on Phonics is below 40 are assessed again, perhaps using an alternative assessment of phonological awareness. In any case, work on rhymes, onset and other aspects of the sound structure of language is important at this stage.

Communicating information to parents

Parents have a right to know how their children are doing at school and all schools can communicate findings to parents during their child's first term at school. The PIPS On-entry Baseline can give them one of the first pieces of information, but schools will want to deal with this carefully.

One approach is detailed below:

Arrange a meeting with parents at the start of school before any assessment is carried out. Mention that all pupils will be assessed shortly. Show the PIPS assessment on a computer, pointing out that pupils are all different and that the idea is to help the teacher find out more about each pupil to help them plan what they need to do. It will also help to look at the progress made by each pupil.

Towards the end of the first term, arrange one-to-one sessions between parents and teacher. Amongst other things the teacher can go through a number of aspects on the PIPS assessment, picking out two or three things on which the teacher will be working during the year. For example, they may refer to the fact that the child knows quite a few letters already. They expect to be reading quite well by the end of the year. For another pupil the teacher might say that the child was not yet able to count and that this will be a priority during the year.

Under no circumstances should the scores of other pupils in the class be disclosed or even hinted at. The initial aim should be to communicate some information about what the pupil has shown that he or she can do. This should be accompanied by some indication of what the teacher hopes to achieve in the not too distant future. In other words indications of what a pupil cannot do are couched in terms of where progress is expected. If the pupil has very unusual scores in Early Reading and/or Early Maths then the parents should be told. Phrases such as 'John did exceptionally well on the Early Reading section' or 'We are going to have to work very hard with Adam this year' are appropriate.

Some parents will ask probing questions and the teacher must make a professional judgement about how to respond to this. There will be parents to whom it is perfectly proper to give all of the PIPS information available. If such information is given it is also right that they be given help to interpret the information. They should not leave with the impression that the child has been subjected to a once and for all accurate measurement. There is always uncertainty in assessment, more information will be collected later and there will be an opportunity for further discussion.

IDEAS+

IDEAS+ may be downloaded from the PIPS+ secure website and will contain all historic and current data for your school. This means that year on year comparisons by class or year group may be carried out, as well as analyses broken down by sex, class or any other group defined by the user.

All charts and tables produced as standard by the PIPS project may be recreated and printed, as well as any custom charts or tables created locally.

IDEAS+ is updated on the web site every time we receive new data from your school, so it is important to remember to download the latest version. The program includes a large amount of on-line help, and a separate document explaining in detail how to use the program is available to download.

To download IDEAS+ from the internet:

- Log into the **PIPS+** website
- Select the Results/Analysis option from the menu
- Select IDEAS+ software
- On the IDEAS+ software page, click the software icon to download the IDEAS+ software.

The help files and user manual can also be downloaded here.