INFORMATION PAPER

ASCL Association of School and College Leaders

Using Key Stage 2 data as an input measure for secondary schools, 2016-2018

The purpose of this paper is to give the cumulative percentage of pupils achieving different Key Stage 2 (KS2) scaled scores, how this has changed between 2016, 2017 and 2018, and how this can be compared with the percentage of children achieving different Levels at KS2 previously (using 2011 and 2012 to enable a direct comparison between KS2 input and KS4 output).
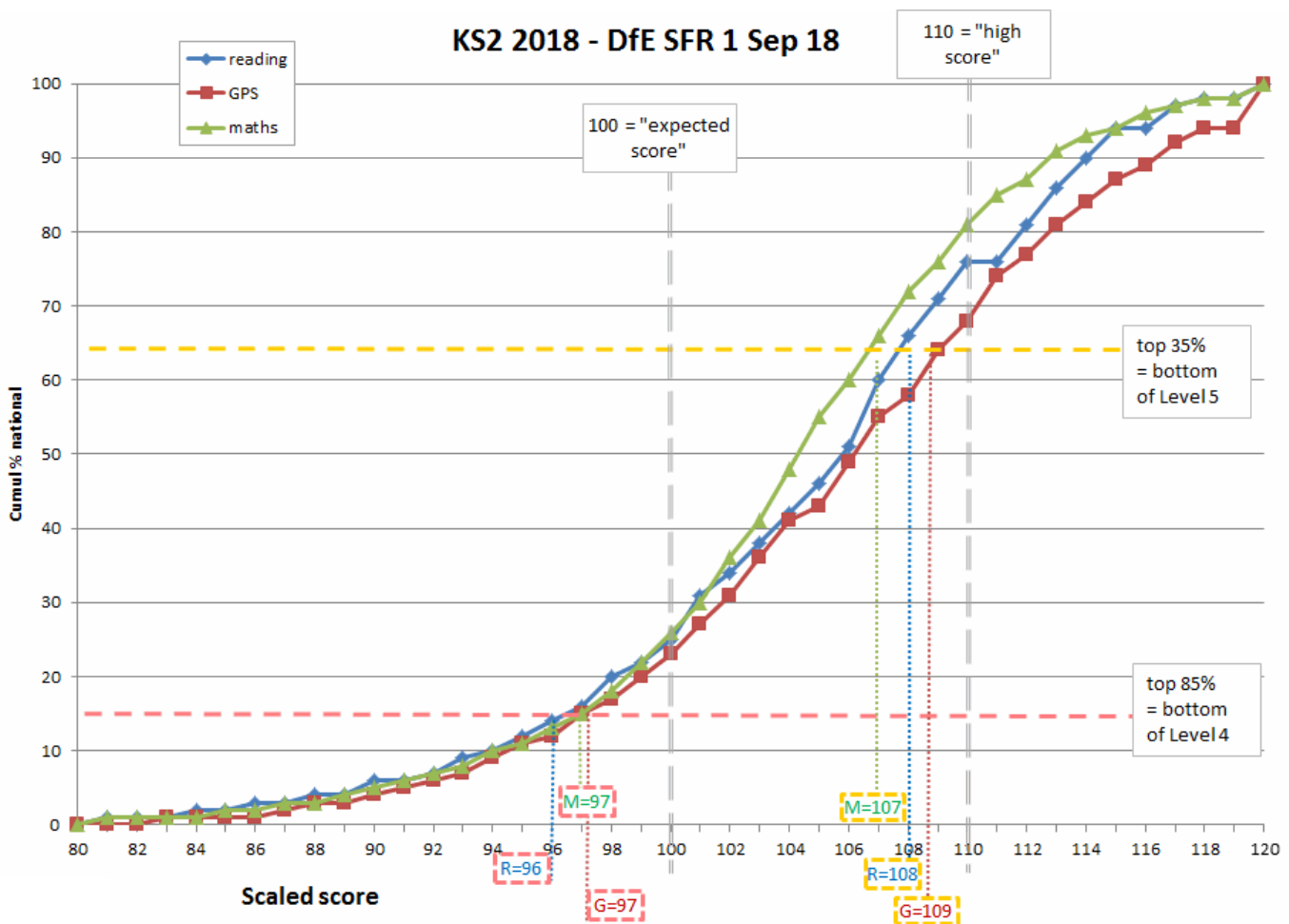

Figure 1

Informally, secondary schools may wish to think of:

- the lowest 15% (ie similar to KS2 Level 3 and below) as '**low**' prior attainment
- middle 50% (ie similar to KS2 Level 4) as '**middle**' prior attainment
- the top 35% (ie similar to KS2 Level 5 and above) as '**high**' prior attainment

In Figure 1, the horizontal dotted lines in the charts indicate the divides so **pink** line at Level 3 / 4 divide is at 15% and **yellow** line at Level 4/5 divide is at 65% = 50% + 15%).

Applying the percentile lines to the 2018 results, we can see that in order to fall into the bottom 15% bracket, children would need to have scaled scores below 96 in reading, 97 in GPS and 97 in maths. In order to fall into the top 35% bracket, they would need scores of at least 108 in reading, 109 in GPS and 107 in maths.

	Reading	Reading	Reading	GPS	GPS	GPS	Maths	Maths	Maths
	2016	2017	2018	2016	2017	2018	2016	2017	2018
15%	93	95	96	96	97	97	96	96	97
65%	105	107	108	106	108	109	105	106	107

Figure 2

	% reaching the expected standard				% achieving a high score				average scaled scores		
	reading	GPS	writing	maths	reading	GPS	writing	maths	reading	GPS	maths
2016	66	73	74	70	19	23	15	17	103	104	103
2017	71	77	76	75	25	31	18	23	104	106	104
2018	75	78	78	76	28	34	20	24	105	106	104

Figure 3

Direct comparisons between 2016-18 and previous years should be resisted because of the significant changes to both the primary curriculum and the way in which children were assessed from 2016 onwards. However, the charts in Figures 2-3 give a useful indication of the results pupils needed to achieve in order to fall into different percentiles in different years.

The complete cumulative percentage and scaled scores charts are shown in Figure 5.

For average and higher scaled scores (ie 'old level 4 and 5'), maths is more severely graded. For higher scores (ie 'old level 5'), GPS is more leniently graded.

Average: we can look at this in two different ways:

1 For a given scaled score, eg 104: 47% of pupils are below this score for maths, but only 40% for GPS and reading.

2 For a given percentile, eg 40th percentile: this equates to a score of 103 in maths, and 104 in GPS and reading, ie the reading score for pupils at a given point is lower.

Higher: we can look at this in two different ways:

1 For a given scaled score, eg 110: 20% of pupils achieve more than this score for maths, but 25% for reading and 33% for GPS (ie GPS is leniently graded).

2 For a given percentile eg 75th percentile: this equates to a score of 109 in maths and 110 in reading and 111 in GPS, ie the maths score for pupils at a given point is lower and the GPS is higher.
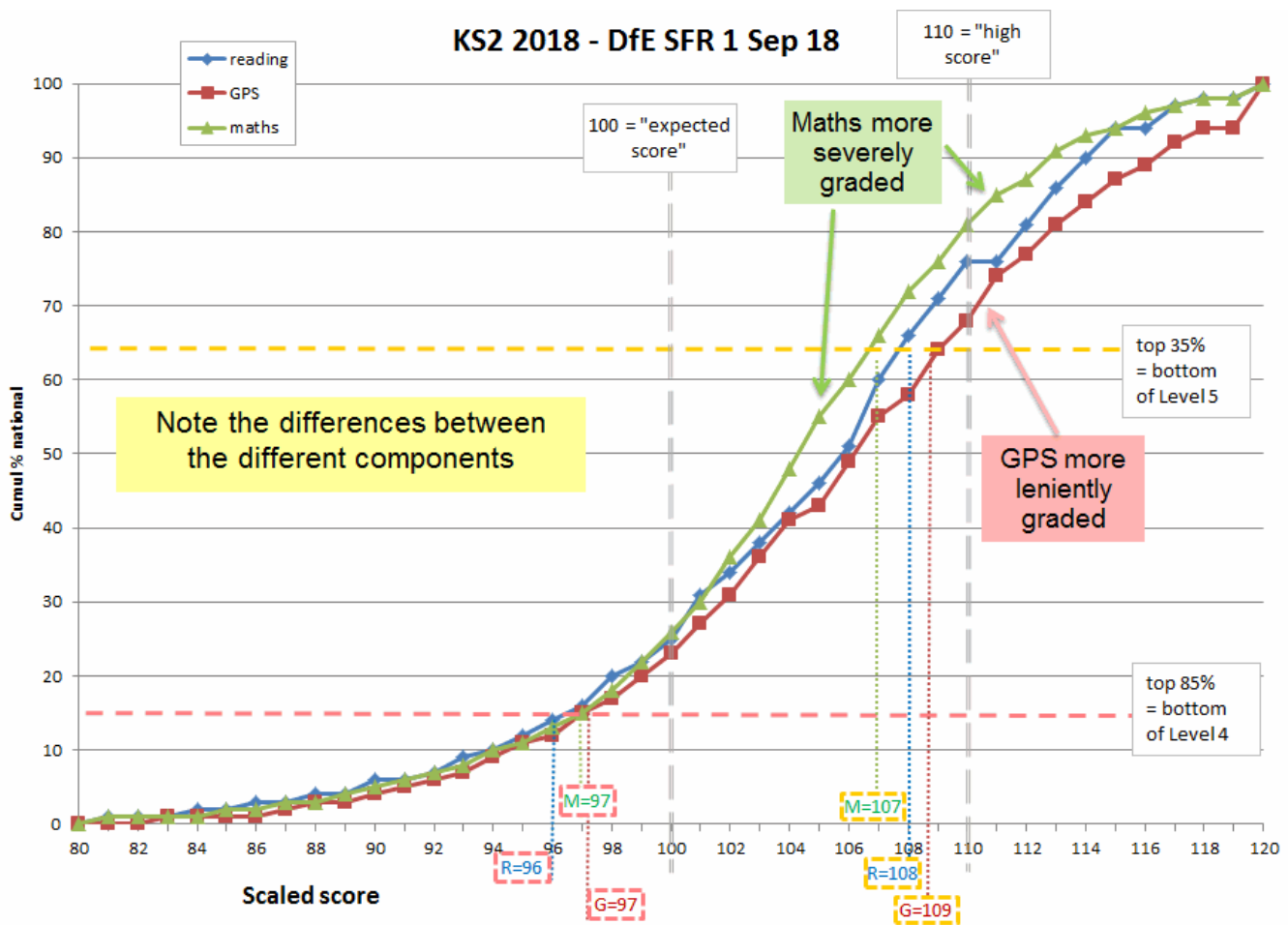
2018 – all tested subjects

Figure 4 (Figure 1 with annotations for severe and lenient grading)

Cumulative percentages for KS2 (Figure 5)

|	2016 reading	2016 GPS	2016 maths	2017 reading	2017 GPS	2017 maths	2018 reading	2018 GPS	2018 maths	
80	0	0	0	1	0	0	0	0	0	80
81	0	0	0	1	0	1	1	0	1	81
82	1	0	1	1	0	1	1	0	1	82
83	2	1	1	1	0	1	1	1	1	83
84	2	1	1	2	0	1	2	1	1	84
85	3	1	1	3	1	2	2	1	2	85
86	4	2	2	3	1	2	3	1	2	86
87	5	2	2	4	1	3	3	2	3	87
88	6	3	3	5	2	3	4	3	3	88
89	7	3	4	6	3	4	4	3	4	89
90	9	4	5	6	3	5	6	4	5	90
91	11	5	6	8	4	6	6	5	6	91
92	12	7	7	10	5	7	7	6	7	92
93	15	9	9	11	6	9	9	7	8	93
94	17	10	11	14	8	11	10	9	10	94
95	19	12	13	15	10	12	12	11	11	95
96	22	16	16	17	12	14	14	12	13	96
97	25	19	20	21	14	17	16	15	15	97
98	28	22	24	23	16	19	20	17	18	98
99	32	25	28	26	20	23	22	20	22	99
100	39	31	33	31	24	27	25	23	26	100
101	43	36	39	35	27	32	31	27	30	101
102	47	41	45	38	31	37	34	31	36	102
103	51	46	50	45	35	42	38	36	41	103
104	59	52	56	49	40	48	42	41	48	104
105	63	56	63	53	45	55	46	43	55	105
106	67	62	69	57	50	62	51	49	60	106
107	70	66	74	62	56	67	60	55	66	107
108	74	73	78	70	62	72	66	58	72	108
109	80	77	83	74	68	77	71	64	76	109
110	83	80	86	79	71	81	76	68	81	110
111	86	84	90	79	74	85	76	74	85	111
112	89	87	91	83	80	88	81	77	87	112
113	91	91	94	86	83	90	86	81	91	113
114	93	93	96	90	86	93	90	84	93	114
115	94	93	97	92	88	94	94	87	94	115
116	96	96	98	95	91	96	94	89	96	116
117	97	98	99	95	93	97	97	92	97	117
118	98	98	99	97	95	98	98	94	98	118
119	99	99	100	98	97	98	98	94	98	119
120	100	100	100	100	100	100	100	100	100	120

2017 – all tested subjects
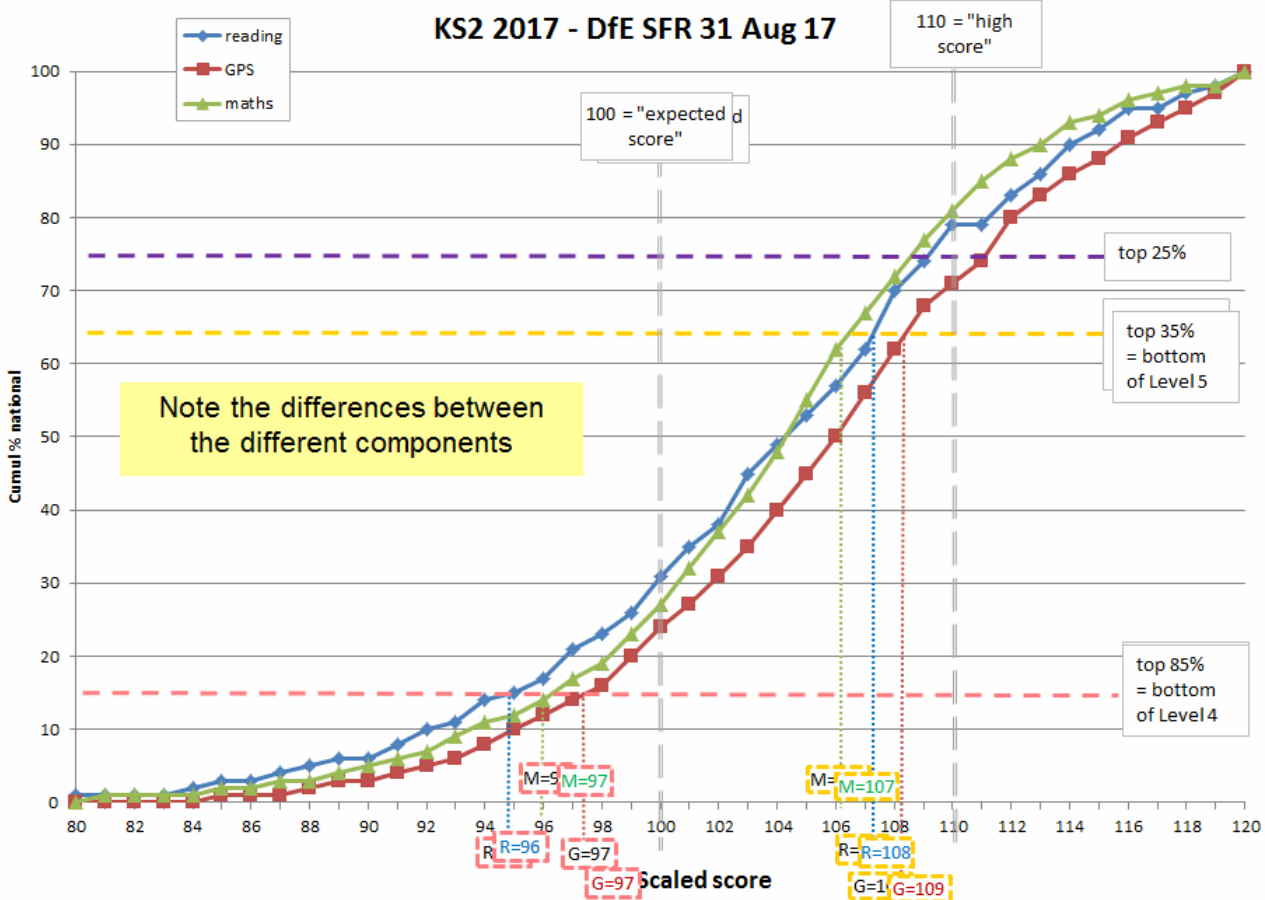
Figure 6

Figure 6 applies the same principles to the 2017 results. The bottom 15% (equivalent to children achieving level 3 or below under the previous system), now consists of pupils scoring below 95 in reading (compared to 93 in 2016), 97 in GPS (compared to 96), and 96 in maths (the same as year).

The top 35% (equivalent to children achieving level 5 or above) now consists of pupils scoring at least 107 in reading (compared to 105 in 2016), 108 in GPS (compared to 106), and 106 in maths (compared with 105).

Note that, using the informal definitions of 'low', 'middle' and 'high' at the top of page 2, the scaled scores corresponding to these categories have changed noticeably between 2016 and 2017.

	reading	GPS	mathematics
	2017	2017	2017
15%	95	97	96
65%	107	108	106

Figure 7

2016 – all tested subjects
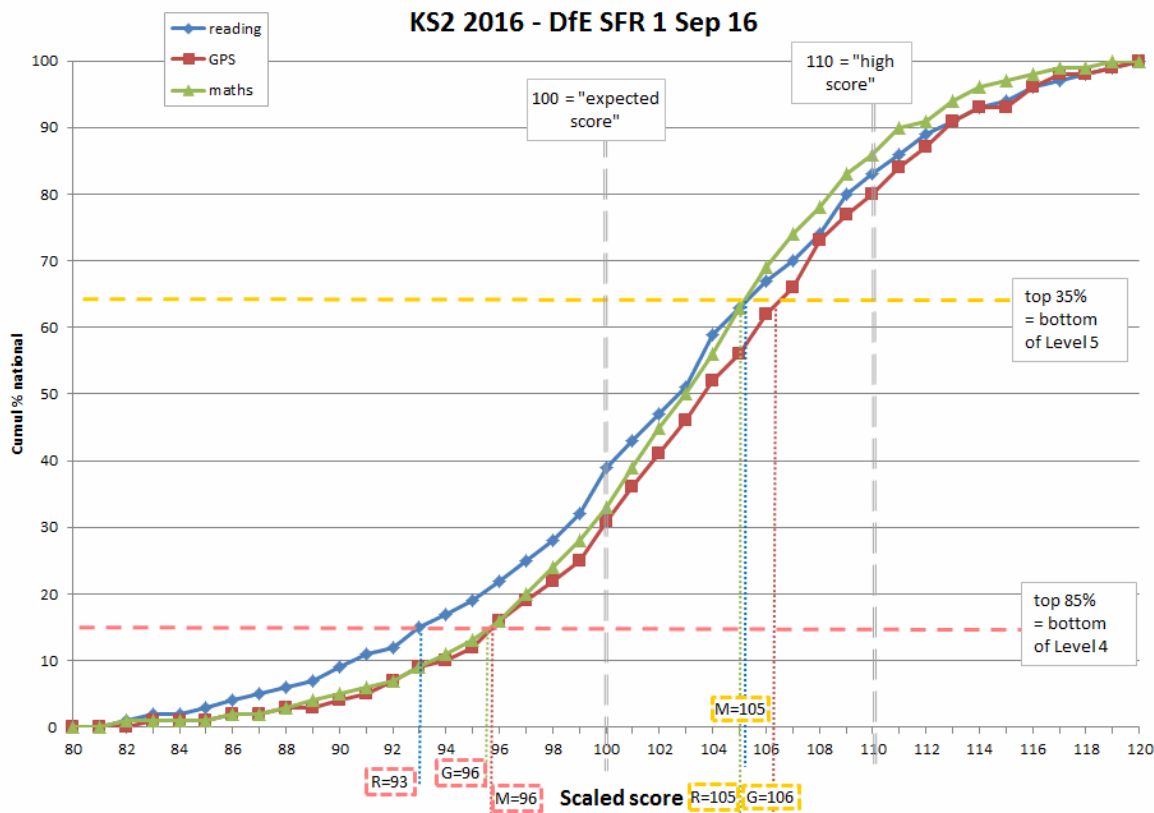
Figure 8

The horizontal dotted lines in the chart above indicate that, in 2009, 15% of pupils achieved a level 3 or below (averaged across all subjects), 50% achieved a level 4, and 35% achieved a level 5 or above. Applying the same percentile lines to the 2016 results, we can see that, in order to fall into the 'bottom 15%' bracket, children would need to have scaled scores below 93 in reading, 96 in GPS and 96 maths. In order to fall into the 'top 35%' bracket, they would need scores of at least 105 in reading, 106 in GPS and 105 in maths.

Informally, secondary schools may wish to think of:

- the lowest 15% (ie similar to KS2 level 3 and below) as 'low' prior attainment
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	reading	GPS	mathematics
	2016	2016	2016
15%	93	96	96
65%	105	106	105

Figure 9

2018 and 2017 – individual subjects

Figure 10

Figure 11

Maths KS2 2017 v 2018 - DfE SFR
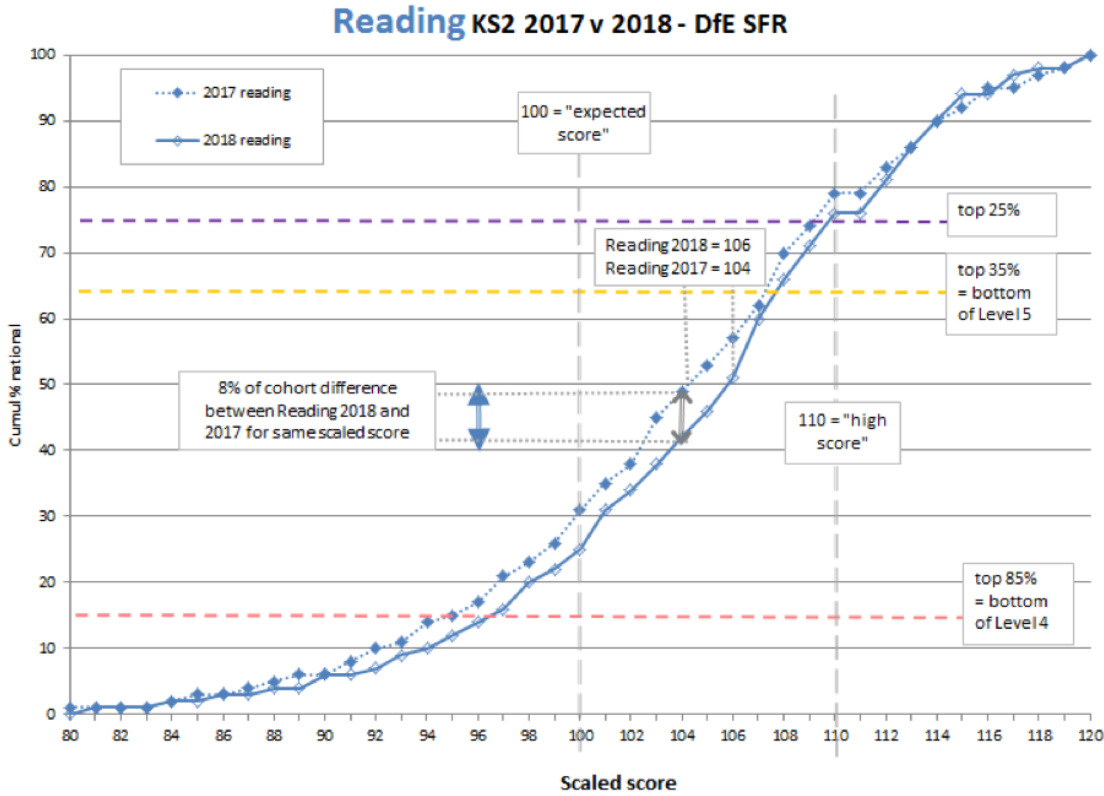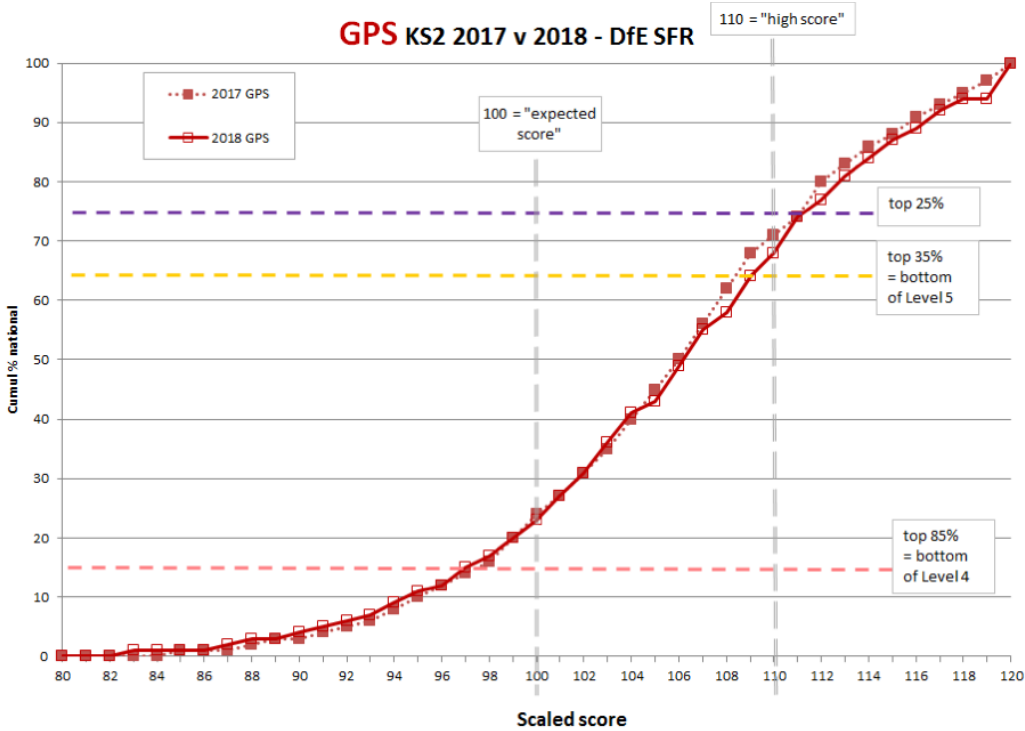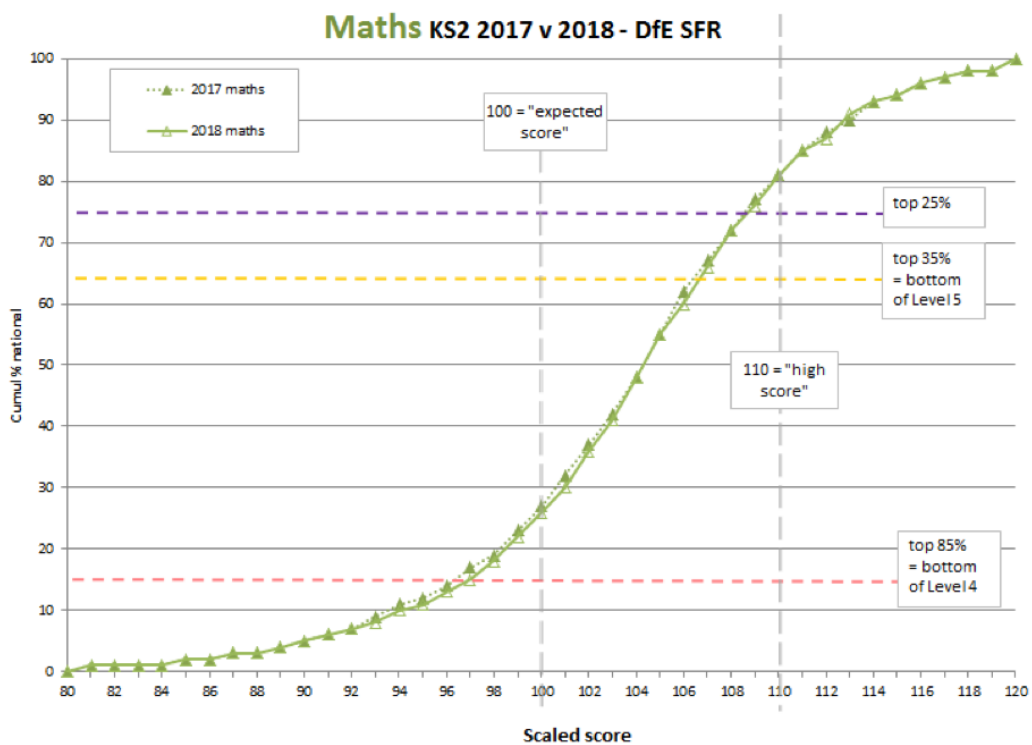
Figure 12

2016 and 2017 – individual subjects
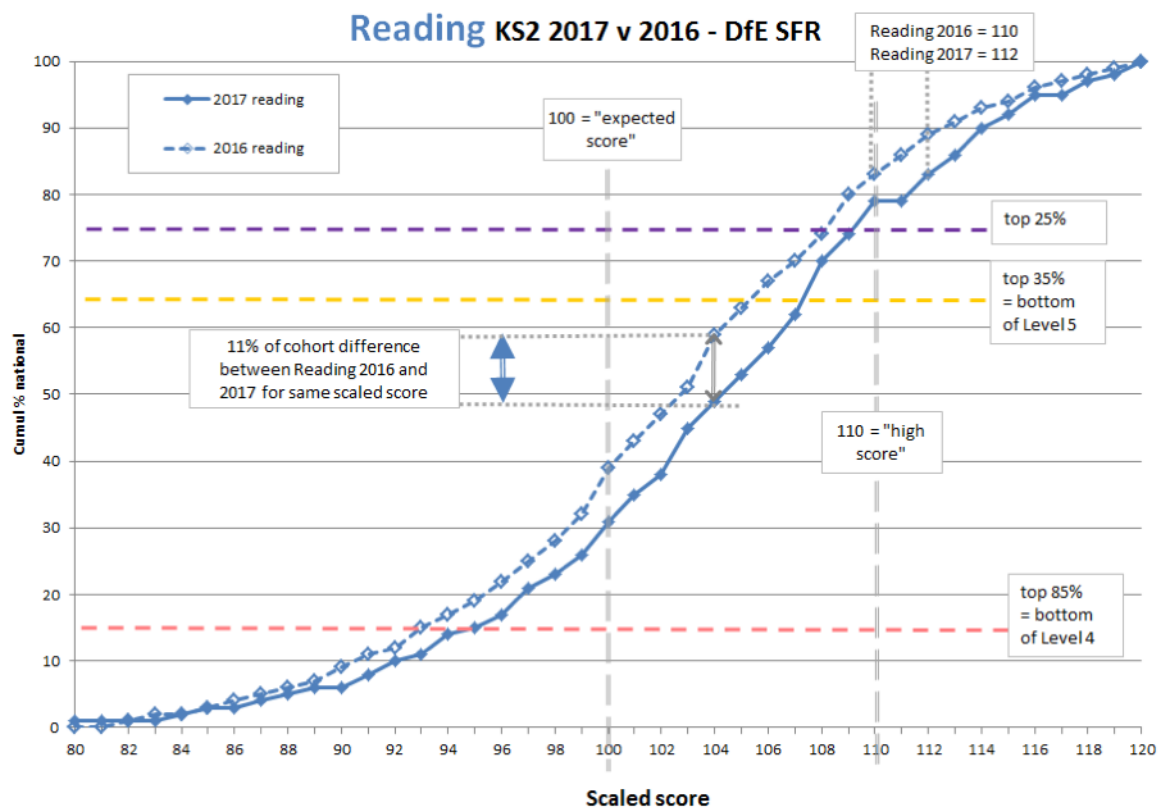

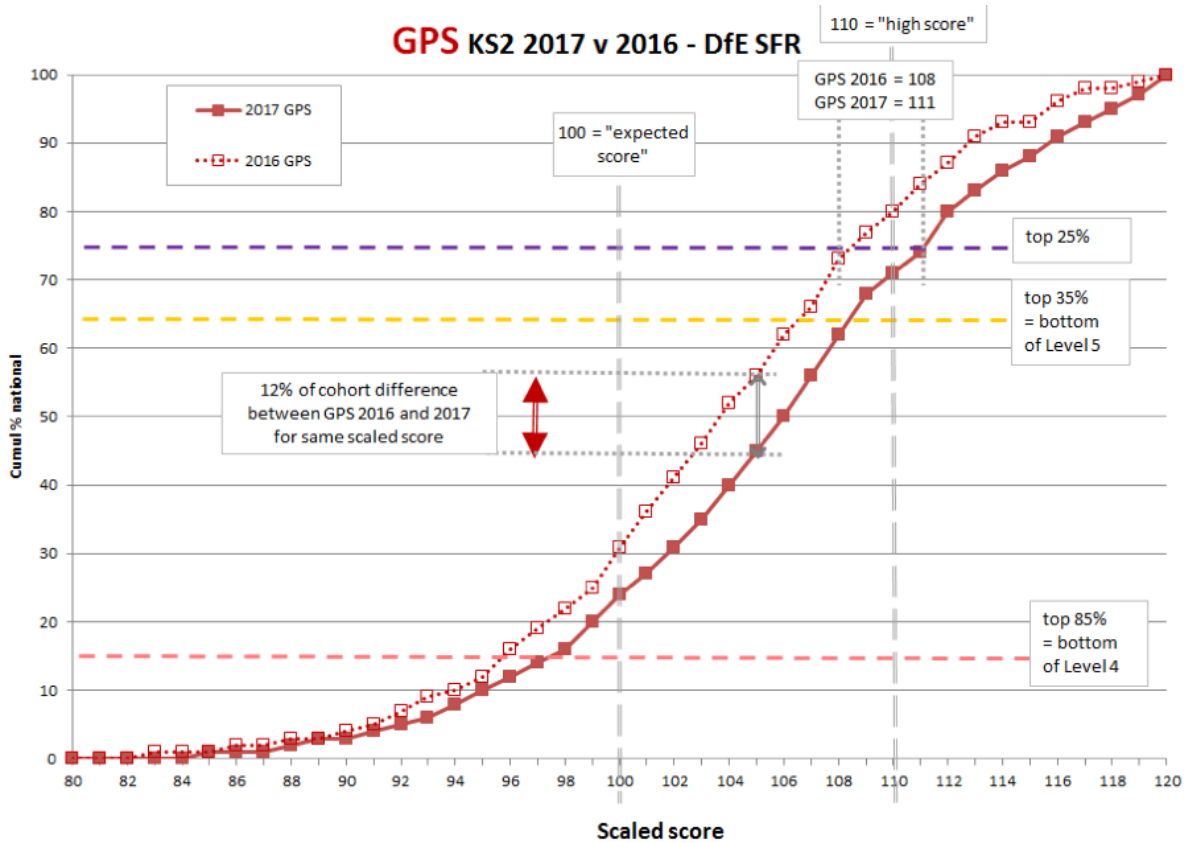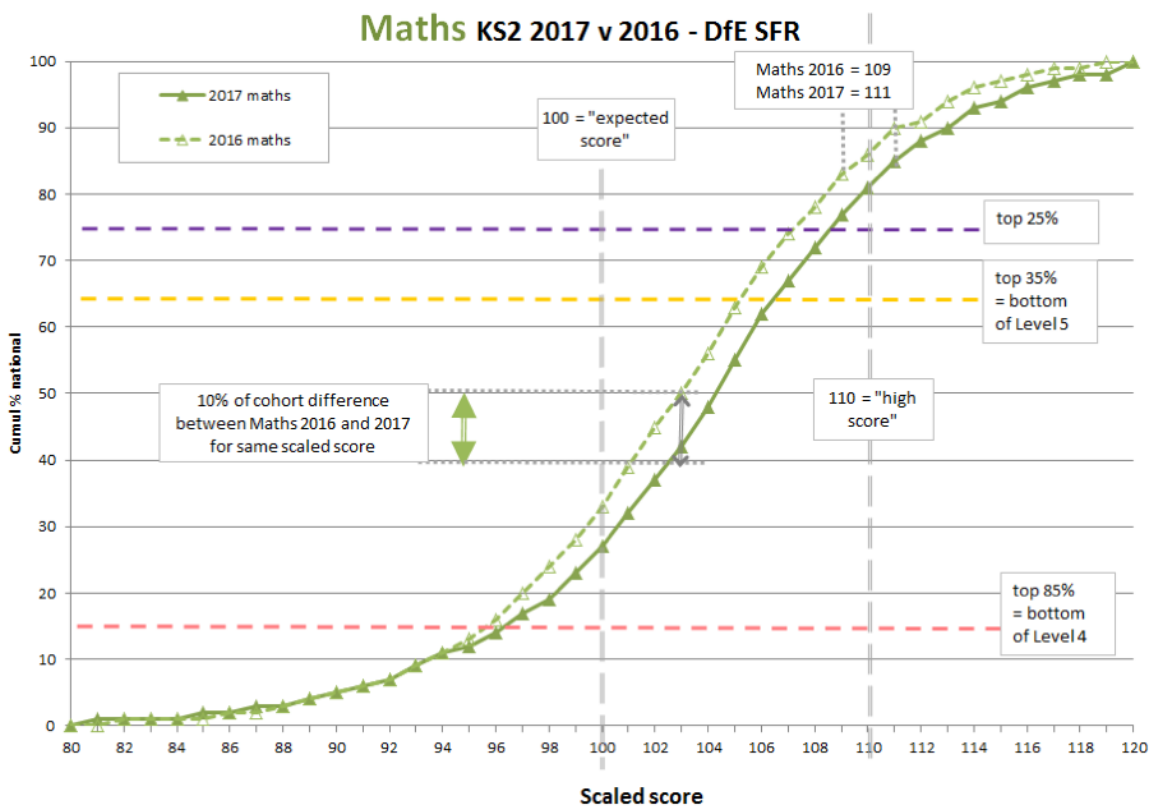**Reading** KS2 2017 v 2016 - DfE SFR

Figure 13

Figure 14

Figure 15

Figures 13, 14 and 15 demonstrate how great the difference between the percentage of pupils achieving particular scores in 2016 and 2017 can be. In reading, for example, 11% more children achieved a score of 104 or above in 2017 than did in 2016. In GPS, 12% more children achieved a score of 105 or above than they did in 2016. In maths, 10% more children achieved a score of 103 than did in 2016.

How ASCL can help

ASCL Professional Development programmes events to assist with the dissemination and application of data at your school or college, with conferences, courses and our bespoke consultancy service.

Contact **ASCL Professional Development** on 0116 299 1122 or email **pd@ascl.org.uk**

David Blow, ASCL member and Headteacher, The Ashcombe School, Surrey

Duncan Baldwin, ASCL Deputy Director of Policy