



NFER

Classroom

maths

year
5

supplement to
teacher guide
autumn

5

maths • teacher guide • year 5 • supplement • autumn

Copyright details

First published 2017

by the National Foundation for Educational Research,
The Mere, Upton Park, Slough, Berkshire SL1 2DQ

www.nfer.ac.uk

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To access the score converter and the question grid spreadsheets you will need to go to our secure School Portal on the NFER’s website:

www.nfer.ac.uk/portal

and then enter your

NFER Number:

Project Number:

Unique Password:

(please write them in above for quick reference).

The letter and despatch notes that accompanied the test materials are pre-populated with the details of the numbers and password.

If you have lost the letter and despatch notes, the portal website has links where you can request your details again.

Using the outcomes of the test

This section provides teachers with information to convert pupils' test scores into more useful measures of their attainment.

If the Year 5 mathematics test is undertaken and marked in line with the guidance in the teacher guide, then both a standardised score and an age standardised score can be derived from a pupil's test score.

The starting point for both of these outcomes is to total a pupil's marks from the three mathematics booklets. This gives each pupil's total score or 'raw' score. A box is provided on the front cover of each test booklet to assist in this.

In order to obtain reliable outcomes, you should administer the test according to the guidance given in this booklet. It is particularly important that you observe the time limits given in the test instructions, and mark questions strictly according to the mark scheme. If not, the information derived from this section cannot be used reliably.

If you wish to record and explore patterns of performance on the test across your whole class, you may find it helpful to complete a question grid. For each question, the question grid shows the average mark of pupils in the standardisation sample. It also shows which questions address each of the elements of the Programme of Study. Completing pupils' scores in the question grid will enable you to compare performance on different areas of the Programme of Study with a nationally representative sample. This is available from the following website, which will require online registration for access:

www.nfer.ac.uk/portal

Standardised scores

Standardised scores enable a comparison to be made between the performance of a pupil and that of other pupils who have taken the same test. Such comparisons can be useful for grouping your class by ability and for identifying those pupils in need of targeted interventions. The average standardised score is set at 100, based on the performance of a nationally representative sample. About two-thirds of pupils will have standardised scores between 85 and 115 and scores within this range can be broadly described as 'average'.

For example, a teacher administered the test to her class. One pupil, Lucy, achieved a raw score of 42 on the test, giving her a standardised score of 103. The teacher could then say that Lucy achieved an average score on the test.

Almost all pupils fall within the range 70 to 140, so scores outside this range can be regarded as exceptional. These exceptional scores are marked with *** on the charts on page 5 as standardised scores cannot be calculated with the necessary statistical reliability. If an exact score is needed, for example to calculate an average score for the class, 69 or 141 should be used as appropriate for these pupils.

It is worth noting here that the scaled score of 100 defined by the Department for Education as the national expectation at the end of Key Stage 2 is **not the same as, nor equivalent to, a standardised score of 100 on these tests**. On these tests, a standardised score of 100 represents the average performance, based on a normal distribution, of the sample of pupils on which the tests were standardised. At the end of Key Stage 2, the DfE's scaled score of 100 represents the 'expected standard' and is not the average.

In order to save time and ensure accuracy, you can download a spreadsheet which will calculate each pupil's standardised score and age standardised score if you enter their date of birth and date of test. This spreadsheet is available from the following website:

www.nfer.ac.uk/portal

Raw score	Standardised score
0	***
1	***
2	***
3	***
4	***
5	71
6	73
7	74
8	76
9	77
10	78
11	79
12	81
13	82
14	83
15	84
16	85
17	86
18	87
19	88
20	89
21	90
22	90
23	91
24	92
25	92
26	93
27	94
28	94
29	95
30	96
31	96
32	97
33	98
34	98
35	99
36	99
37	100

Raw score	Standardised score
38	100
39	101
40	102
41	102
42	103
43	103
44	104
45	104
46	105
47	105
48	106
49	107
50	107
51	108
52	108
53	109
54	109
55	110
56	111
57	111
58	112
59	112
60	113
61	113
62	114
63	114
64	115
65	115
66	115
67	116
68	117
69	117
70	118
71	119
72	120
73	120
74	121
75	121

Raw score	Standardised score
76	122
77	123
78	123
79	124
80	124
81	125
82	126
83	126
84	127
85	128
86	128
87	129
88	130
89	131
90	132
91	132
92	133
93	134
94	135
95	136
96	137
97	138
98	140
99	***
100	***
101	***
102	***
103	***
104	***
105	***
106	***
107	***
108	***
109	***
110	***

Confidence bands

Confidence bands are used to show the extent of the margin of error in the standardised scores. In other words, they show how accurately the test measures pupils' ability in mathematics.

The margin of error is simply a statistical estimate, based on the fact that tests can only sample the particular area of learning which they assess and that therefore the score a pupil achieves may vary within a few points of their 'true score'. To indicate how wide this margin of error is likely to be, a '90 per cent confidence band' has been calculated. This means that you can have 90 per cent certainty that the true score lies within the confidence band.

The table below gives the numbers that should be subtracted from and added to pupils' standardised scores at different score points to form the 90 per cent confidence bands.

Standardised score range	To form 90% confidence band:	
	subtract	add
70, 73	4	6
76, 77	5	6
78, 79, 81–122	5	5
123–125	6	5
126–138, 140	6	4

Take three pupils, Rachel, Nathan and David, with standardised scores of 101, 99 and 124 respectively. For Rachel, with a standardised score of 101 on this test, the 90 per cent confidence band is plus or minus 5. Therefore, you can be 90 per cent certain (there is a nine-out-of-ten chance) that Rachel's true score is between 96 and 106.

Both Nathan, who has a standardised score of 99, and Rachel are working at about the average for their age. Nathan's true score is between 94 and 104.

However, David, with a standardised score of 124, achieved an above average score on the test and has a 90 per cent likelihood of having a true score between 118 and 129.

For high and low scores, the confidence bands are asymmetrical (they tend to be pulled towards the average test score).

Age standardised scores

Age standardised scores take into account a pupil's age in years and months at the time of sitting the test, in order that his or her performance can be compared with the performance of other pupils of the same age in a nationally representative sample. The age standardisation that has been undertaken means that these tests can be administered at different points in the school year and comparative information still be obtained. The age standardised scores in this booklet cover the age range 9 years 0 months to 10 years 7 months. If you have decided to give the test to pupils outside this range, you will not be able to use the table. You will still, however, be able to calculate standardised scores.

In order to save time and ensure accuracy, you can download a spreadsheet, which will calculate each pupil's standardised and age standardised score if you enter their date of birth and date of test, from:

www.nfer.ac.uk/portal

If you have not downloaded the spreadsheet, you should convert the total score into an age standardised score as follows:

- list the ages of all pupils in your class in years and completed months at the time of testing
- for each pupil, locate his or her age in years and months along the top of the table on pages 10–15
- locate the pupil's total score down the left side of the table
- read off the age standardised score from where the row and column meet.

The average age standardised score is set at 100, based on the performance of a nationally representative sample. About two-thirds of pupils will have age standardised scores between 85 and 115 and scores within this range can broadly be described as 'average'. Almost all pupils fall within the range 70 to 140, so scores outside this range can be regarded as exceptional. These exceptional scores are marked with *** on the table on pages 10–15 as age standardised scores cannot be calculated with the necessary statistical reliability. If an exact score is needed, for example to calculate an average for the class, 69 or 141 should be used as appropriate for these pupils.

As mentioned for standardised scores, the scaled score of 100 defined by the Department for Education as the national expectation at the end of Key Stage 2 is **not the same as, nor equivalent to, an age standardised score of 100 on these tests**. On these tests, an age standardised score of 100 represents the average performance, based on a normal distribution, of the sample of pupils of a specific age on which the tests were standardised. At the end of Key Stage 2, the DfE's scaled score of 100 represents the 'expected standard' and is not the average.

Confidence bands

Confidence bands are used to show the extent of the margin of error in the age standardised scores. In other words, how accurately the test measures the pupils' ability in mathematics.

The margin of error is simply a statistical estimate, based on the fact that tests can only sample the particular area of learning which they assess and therefore the score a pupil achieves may vary within a few points of their 'true score'. To indicate how wide this margin of error is likely to be, a '90 per cent confidence band' has been calculated. This means that you can have 90 per cent certainty that the true score lies within the confidence band.

The table below gives the numbers that should be added to and subtracted from pupils' age standardised scores in different score ranges to form the 90 per cent confidence bands.

Age standardised score range	To form 90% confidence band:	
	subtract	add
70–74	4	6
75–77	5	6
78–122	5	5
123–125	6	5
126–140	6	4

Take three pupils, Hannah, Ali and Stephen, with age standardised scores of 100, 103 and 124 respectively. For Hannah, with an age standardised score of 100 on this test, the 90 per cent confidence band is plus or minus 5. Therefore, you can be 90 per cent certain (there is a nine-out-of-ten chance) that Hannah's true score is between 95 and 105.

Both Ali, who has an age standardised score of 103, and Hannah are working at about the average for their age. Ali's true score is between 98 and 108.

However, Stephen, with an age standardised score of 124, achieved an above average score on the test and has a 90 per cent likelihood of having a true score between 118 and 129.

For high and low scores, the confidence bands are asymmetrical (they tend to be pulled towards the average test score).

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Age standardised scores

Total score	Age in years and completed months										Total score	
	9.00	9.01	9.02	9.03	9.04	9.05	9.06	9.07	9.08	9.09		
0	***	***	***	***	***	***	***	***	***	***	***	0
1	***	***	***	***	***	***	***	***	***	***	***	1
2	***	***	***	***	***	***	***	***	***	***	***	2
3	***	***	***	***	***	***	***	***	***	***	***	3
4	71	71	71	70	70	***	***	***	***	***	***	4
5	74	73	73	73	72	72	71	71	71	70	***	5
6	76	75	75	74	74	74	73	73	72	72	***	6
7	77	77	76	76	76	75	75	75	74	74	***	7
8	79	78	78	77	77	77	76	76	76	75	***	8
9	80	80	79	79	78	78	78	77	77	76	***	9
10	82	81	81	80	80	79	79	78	78	78	***	10
11	83	83	82	82	81	80	80	79	79	79	***	11
12	85	84	83	83	82	82	81	81	80	80	***	12
13	86	85	85	84	84	83	83	82	81	81	***	13
14	87	86	86	85	85	84	84	83	83	82	***	14
15	88	87	87	86	86	85	85	84	84	83	***	15
16	89	88	88	87	87	86	86	85	85	84	***	16
17	90	89	89	88	88	87	87	86	86	85	***	17
18	90	90	89	89	88	88	87	87	86	86	***	18
19	91	91	90	90	89	89	88	88	87	87	***	19
20	92	92	91	91	90	90	89	89	88	88	***	20
21	93	92	92	91	91	90	90	89	89	88	***	21
22	94	93	93	92	92	91	91	90	90	89	***	22
23	95	94	94	93	92	92	91	91	90	90	***	23
24	96	95	94	94	93	93	92	92	91	91	***	24
25	96	96	95	95	94	93	93	92	92	91	***	25
26	97	97	96	95	95	94	94	93	92	92	***	26
27	98	97	97	96	95	95	94	94	93	93	***	27
28	98	98	97	97	96	96	95	94	94	93	***	28
29	99	99	98	98	97	96	96	95	95	94	***	29
30	99	99	99	98	98	97	96	96	95	95	***	30
31	100	100	99	99	98	98	97	97	96	95	***	31
32	101	100	100	99	99	98	98	97	97	96	***	32
33	102	101	100	100	99	99	98	98	97	97	***	33
34	102	102	101	100	100	99	99	98	98	97	***	34
35	103	102	102	101	100	100	99	99	98	98	***	35
36	103	103	102	102	101	100	100	99	99	98	***	36
37	104	103	103	102	102	101	100	100	99	99	***	37
38	105	104	103	103	102	102	101	100	100	99	***	38
39	105	105	104	103	103	102	102	101	100	100	***	39
40	106	105	105	104	103	103	102	102	101	100	***	40

Age in years and completed months											
Total score	9.10	9.11	10.00	10.01	10.02	10.03	10.04	10.05	10.06	10.07	Total score
0	***	***	***	***	***	***	***	***	***	***	0
1	***	***	***	***	***	***	***	***	***	***	1
2	***	***	***	***	***	***	***	***	***	***	2
3	***	***	***	***	***	***	***	***	***	***	3
4	***	***	***	***	***	***	***	***	***	***	4
5	70	***	***	***	***	***	***	***	***	***	5
6	72	71	71	71	70	70	***	***	***	***	6
7	73	73	73	72	72	71	71	71	70	70	7
8	75	74	74	74	73	73	72	72	72	71	8
9	76	76	75	75	74	74	74	73	73	73	9
10	77	77	76	76	76	75	75	74	74	74	10
11	78	78	77	77	77	76	76	76	75	75	11
12	79	79	78	78	78	77	77	76	76	76	12
13	80	80	79	79	79	78	78	77	77	77	13
14	82	81	80	80	79	79	79	78	78	77	14
15	83	82	82	81	80	80	79	79	79	78	15
16	84	83	83	82	82	81	80	80	79	79	16
17	85	84	84	83	83	82	81	81	80	80	17
18	86	85	85	84	84	83	82	82	81	81	18
19	86	86	85	85	84	84	83	83	82	82	19
20	87	87	86	86	85	85	84	84	83	83	20
21	88	87	87	86	86	85	85	85	84	83	21
22	89	88	88	87	87	86	86	85	85	84	22
23	89	89	88	88	87	87	86	86	85	85	23
24	90	90	89	89	88	88	87	87	86	86	24
25	91	90	90	89	89	88	88	87	87	86	25
26	91	91	90	90	89	89	88	88	87	87	26
27	92	92	91	91	90	89	89	88	88	88	27
28	93	92	92	91	91	90	90	89	89	88	28
29	93	93	92	92	91	91	90	90	89	89	29
30	94	94	93	92	92	91	91	90	90	89	30
31	95	94	94	93	92	92	91	91	90	90	31
32	95	95	94	94	93	93	92	92	91	90	32
33	96	96	95	94	94	93	93	92	92	91	33
34	97	96	96	95	94	94	93	93	92	92	34
35	97	97	96	96	95	94	94	93	93	92	35
36	98	97	97	96	96	95	94	94	93	93	36
37	99	98	97	97	96	96	95	95	94	93	37
38	99	99	98	98	97	96	96	95	95	94	38
39	99	99	99	98	98	97	96	96	95	95	39
40	100	99	99	99	98	98	97	96	96	95	40

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Age standardised scores (continued)

Total score	Age in years and completed months									Total score	
	9.00	9.01	9.02	9.03	9.04	9.05	9.06	9.07	9.08		9.09
41	107	106	105	105	104	103	103	102	102	101	41
42	107	107	106	105	105	104	103	103	102	102	42
43	108	107	107	106	105	105	104	103	103	102	43
44	108	108	107	107	106	105	105	104	103	103	44
45	109	108	108	107	107	106	105	105	104	103	45
46	109	109	108	108	107	107	106	105	105	104	46
47	110	109	109	108	108	107	106	106	105	105	47
48	111	110	109	109	108	108	107	106	106	105	48
49	111	110	110	109	109	108	108	107	106	106	49
50	112	111	110	110	109	109	108	108	107	106	50
51	112	111	111	110	110	109	109	108	108	107	51
52	113	112	111	111	110	110	109	109	108	108	52
53	113	112	112	111	111	110	110	109	109	108	53
54	114	113	112	112	111	111	110	110	109	109	54
55	114	113	113	112	112	111	111	110	110	109	55
56	115	114	113	113	112	112	111	111	110	110	56
57	115	115	114	113	113	112	112	111	111	110	57
58	116	115	114	114	113	113	112	112	111	111	58
59	116	116	115	114	114	113	113	112	112	111	59
60	117	116	116	115	114	114	113	113	112	112	60
61	117	117	116	115	115	114	114	113	113	112	61
62	118	117	117	116	115	115	114	114	113	113	62
63	118	118	117	117	116	115	115	114	114	113	63
64	119	118	118	117	117	116	115	115	114	114	64
65	119	119	118	118	117	117	116	115	115	114	65
66	120	119	119	118	118	117	117	116	115	115	66
67	121	120	119	119	118	118	117	117	116	115	67
68	121	121	120	119	119	118	118	117	117	116	68
69	122	121	121	120	119	119	118	118	117	117	69
70	122	122	121	121	120	119	119	118	118	117	70
71	123	122	122	121	121	120	119	119	118	118	71
72	123	123	122	122	121	121	120	119	119	118	72
73	124	123	123	122	122	121	121	120	119	119	73
74	124	124	123	123	122	122	121	121	120	120	74
75	125	124	124	123	123	122	122	121	121	120	75
76	126	125	124	124	123	123	122	122	121	121	76
77	126	126	125	125	124	123	123	122	122	121	77
78	127	126	126	125	125	124	124	123	122	122	78
79	127	127	126	126	125	125	124	124	123	123	79
80	128	127	127	126	126	125	125	124	124	123	80

Age in years and completed months											
Total score	9.10	9.11	10.00	10.01	10.02	10.03	10.04	10.05	10.06	10.07	Total score
41	100	100	99	99	99	98	98	97	96	96	41
42	101	100	100	99	99	99	98	98	97	96	42
43	102	101	100	100	99	99	99	98	98	97	43
44	102	102	101	100	100	99	99	99	98	98	44
45	103	102	102	101	100	100	99	99	99	98	45
46	103	103	102	102	101	100	100	99	99	99	46
47	104	103	103	102	102	101	100	100	99	99	47
48	105	104	103	103	102	102	101	100	100	99	48
49	105	105	104	103	103	102	102	101	100	100	49
50	106	105	105	104	103	103	102	102	101	100	50
51	106	106	105	104	104	103	103	102	102	101	51
52	107	106	106	105	104	104	103	103	102	102	52
53	108	107	106	106	105	104	104	103	103	102	53
54	108	108	107	106	106	105	104	104	103	103	54
55	109	108	107	107	106	106	105	104	104	103	55
56	109	109	108	107	107	106	106	105	104	104	56
57	110	109	109	108	107	107	106	105	105	104	57
58	110	110	109	109	108	107	107	106	105	105	58
59	111	110	110	109	109	108	107	107	106	105	59
60	111	111	110	110	109	108	108	107	107	106	60
61	112	111	111	110	110	109	108	108	107	107	61
62	112	112	111	111	110	110	109	108	108	107	62
63	113	112	112	111	111	110	110	109	108	108	63
64	113	113	112	112	111	111	110	109	109	108	64
65	114	113	113	112	112	111	111	110	109	109	65
66	114	114	113	113	112	112	111	111	110	109	66
67	115	114	114	113	113	112	112	111	111	110	67
68	115	115	114	114	113	113	112	112	111	111	68
69	116	115	115	114	114	113	113	112	112	111	69
70	117	116	115	115	114	114	113	113	112	112	70
71	117	117	116	115	115	114	114	113	113	112	71
72	118	117	117	116	115	115	114	114	113	113	72
73	118	118	117	117	116	115	115	114	114	113	73
74	119	118	118	117	117	116	115	115	114	114	74
75	120	119	118	118	117	117	116	115	115	114	75
76	120	120	119	118	118	117	117	116	116	115	76
77	121	120	120	119	119	118	117	117	116	116	77
78	121	121	120	120	119	119	118	117	117	116	78
79	122	121	121	120	120	119	119	118	117	117	79
80	123	122	122	121	121	120	119	119	118	118	80

continued overleaf ...

Age standardised scores (continued)

Total score	Age in years and completed months										Total score
	9.00	9.01	9.02	9.03	9.04	9.05	9.06	9.07	9.08	9.09	
81	129	128	128	127	126	126	125	125	124	124	81
82	129	129	128	128	127	127	126	126	125	124	82
83	130	129	129	128	128	127	127	126	126	125	83
84	131	130	130	129	128	128	127	127	126	126	84
85	131	131	130	130	129	129	128	128	127	126	85
86	132	131	131	130	130	129	129	128	128	127	86
87	133	132	132	131	131	130	130	129	128	128	87
88	133	133	132	132	131	131	130	130	129	129	88
89	134	134	133	133	132	132	131	131	130	129	89
90	135	135	134	133	133	132	132	131	131	130	90
91	136	135	135	134	134	133	133	132	132	131	91
92	137	136	136	135	135	134	134	133	133	132	92
93	138	137	137	136	136	135	135	134	134	133	93
94	139	138	138	137	137	136	136	135	134	134	94
95	140	139	139	138	138	137	137	136	136	135	95
96	***	140	140	139	139	138	138	137	137	136	96
97	***	***	***	140	140	139	139	138	138	137	97
98	***	***	***	***	***	***	140	140	139	138	98
99	***	***	***	***	***	***	***	***	140	140	99
100	***	***	***	***	***	***	***	***	***	***	100
101	***	***	***	***	***	***	***	***	***	***	101
102	***	***	***	***	***	***	***	***	***	***	102
103	***	***	***	***	***	***	***	***	***	***	103
104	***	***	***	***	***	***	***	***	***	***	104
105	***	***	***	***	***	***	***	***	***	***	105
106	***	***	***	***	***	***	***	***	***	***	106
107	***	***	***	***	***	***	***	***	***	***	107
108	***	***	***	***	***	***	***	***	***	***	108
109	***	***	***	***	***	***	***	***	***	***	109
110	***	***	***	***	***	***	***	***	***	***	110

Age in years and completed months											
Total score	9.10	9.11	10.00	10.01	10.02	10.03	10.04	10.05	10.06	10.07	Total score
81	123	123	122	122	121	121	120	119	119	118	81
82	124	123	123	122	122	121	121	120	120	119	82
83	125	124	124	123	122	122	121	121	120	120	83
84	125	125	124	124	123	123	122	122	121	120	84
85	126	125	125	124	124	123	123	122	122	121	85
86	127	126	126	125	125	124	123	123	122	122	86
87	127	127	126	126	125	125	124	124	123	123	87
88	128	128	127	127	126	126	125	124	124	123	88
89	129	128	128	127	127	126	126	125	125	124	89
90	130	129	129	128	128	127	127	126	126	125	90
91	131	130	130	129	129	128	127	127	126	126	91
92	132	131	130	130	129	129	128	128	127	127	92
93	132	132	131	131	130	130	129	129	128	128	93
94	133	133	132	132	131	131	130	130	129	129	94
95	134	134	133	133	132	132	131	131	130	130	95
96	136	135	134	134	133	133	132	132	131	131	96
97	137	136	136	135	135	134	134	133	132	132	97
98	138	137	137	136	136	135	135	134	134	133	98
99	139	139	138	138	137	137	136	136	135	134	99
100	***	140	140	139	139	138	138	137	136	136	100
101	***	***	***	***	140	140	139	139	138	138	101
102	***	***	***	***	***	***	***	140	140	139	102
103	***	***	***	***	***	***	***	***	***	***	103
104	***	***	***	***	***	***	***	***	***	***	104
105	***	***	***	***	***	***	***	***	***	***	105
106	***	***	***	***	***	***	***	***	***	***	106
107	***	***	***	***	***	***	***	***	***	***	107
108	***	***	***	***	***	***	***	***	***	***	108
109	***	***	***	***	***	***	***	***	***	***	109
110	***	***	***	***	***	***	***	***	***	***	110



NFER

Classroom

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