

Trials

The questions for *Progress Test in English (PTE)* were developed by English subject experts at the National Foundation for Educational Research. For each test level of the paper version around 50% more questions were developed than required for the final version of the test booklet.

These questions were trialed in spring 2013 using three test paper booklets for each year group with common questions between booklets. Each question was taken by around 300 students.

The numbers of students taking part in the paper trials were as follows.

Test level	Number of students
PTE5	1016
PTE6	870
PTE7	1016
PTE8	875
PTE9	1171
PTE10	1119
PTE11	1228
PTE11T	1417
PTE12	1198
PTE13	881
PTE14	1032
Total	11823

The data from the paper trials were analysed to provide information on the difficulty level of each question, its ability to discriminate between high and low scorers, and the extent to which it proved equally difficult for both genders, once each sex's general level of performance was taken into account. This information was then used to select questions for the final standardisation version of the paper and digital versions.

Standardisation

Two separate standardisations were conducted: one for the United Kingdom and one for Northern Ireland. Sufficient numbers of students were required for each of these standardisations. The standardisation for all levels of *PTE* except *PTE11T* took place between February and June 2014. *PTE11T* was standardised in September and October 2014. A national database of schools was created and schools were grouped into categories by country (Wales, Scotland and Northern Ireland). In England, schools were further grouped into independent or grammar plus five categories of school intake based on overall school performance at end of primary schooling using Key Stage 2 outcomes, or for secondary schools using the GCSE outcomes. For the Northern Ireland standardisations, schools were categorised into independent or grammar plus five categories of school intake based on uptake of free school meals within the schools.

Schools were selected by stratified random sampling procedures within these groupings. As this was a national sample, many schools taking part in the standardisation had never used English assessments from GL Assessment before. For the standardisation, schools were asked to do one pre-selected *PTE* test level and were given an option to do other levels. Primary schools were asked to test all students in the year group but secondary schools had the option to either test two randomly selected teaching groups or the whole year group.

The numbers of students taking part in the two standardisations were as follows.

Test level	Number of students	
	United Kingdom	Northern Ireland
PTE5	2450	705
PTE6	2905	1005
PTE7	2453	1014
PTE8	3145	1099
PTE9	2926	1197
PTE10	3412	1350
PTE11	3020	1002
PTE11T	6319	1039
PTE12	3750	1427
PTE13	3705	1140
PTE14	3339	1095
Total	37424	12073
Total of which:		
Paper	27637	8163
Digital	9787	3910

Schools were free to choose between the paper and digital version the tests. Overall, around a quarter of the UK sample, and a third of the Northern Ireland sample, completed the digital version. The students in the Northern Ireland standardisations were included in the UK standardisations but are over-represented in the UK sample compared with the proportions nationally. The results were weighted to reflect the national distributions of students in the categories mentioned above separately for the paper version and the digital version.

Test reliability

The reliability of a test is a measure of the consistency of a student's test scores over repeated testing, assuming conditions remain the same – that is, there was no fatigue, learning effect or lack of motivation. Tests with poor reliability might result in very different scores for a student across two test administrations.

The reliability of the test was estimated using the Cronbach's Alpha formula which produces values ranging from 0 to 1. Values above 0.80 are considered to be very good. The reliability values for the levels of *PTE* are given in the table below, separately for the UK and the Northern Ireland standardisations, and all show that the tests are very reliable. There were no significant differences between the reliabilities between the two regions, and further analysis showed that the reliabilities for the paper and digital versions were very similar.

Test level	Reliability	
	UK	NI
PTE5	0.83	0.86
PTE6	0.91	0.91
PTE7	0.92	0.92
PTE8	0.93	0.94
PTE9	0.91	0.92
PTE10	0.92	0.92
PTE11	0.93	0.92
PTE11T	0.94	0.93
PTE12	0.92	0.92
PTE13	0.93	0.92
PTE14	0.93	0.92

For interpreting the score of an individual student, the standard error of measurement (SEM) is a more useful statistic than a reliability coefficient. It indicates how large, on average, the fluctuations in standard scores may be and indicates the 68% chance or confidence band. However, most tests show the 90% chance or confidence bands. The SEM for *PTE12* is 4.2 for the UK, and for an average-

performing student with a PTE12 Standard Age Score (SAS) of 100, there is a 90% chance that the student's true SAS will be in the range +/- 7.0, i.e. from 93 to 107.

Test level	SEM		90% SAS confidence band (+/-)	
	UK	NI	UK	NI
PTE5	6.1	5.6	10.1	9.3
PTE6	4.4	4.5	7.2	7.4
PTE7	4.3	4.2	7.0	6.8
PTE8	4.0	3.8	6.5	6.3
PTE9	4.4	4.2	7.2	7.0
PTE10	4.2	4.1	6.9	6.8
PTE11	4.1	4.2	6.7	6.8
PTE11T	3.7	4.0	6.1	6.6
PTE12	4.2	4.3	7.0	7.0
PTE13	3.9	4.3	6.4	7.0
PTE14	4.1	4.1	6.8	6.8

Gender differences

The tests have been age standardised to a national mean of 100 and standard deviation of 15. There were approximately similar numbers of males and females in the standardisations. The table below shows the mean SAS score differences between males and females for the UK and for Northern Ireland. Differences of more than 3 SAS points can be considered to be significant. Females in general tend, on average, to perform better than males in primary schools but differences are much smaller in secondary school.

Test level	Gender - mean SAS differences	
	UK standardisation	NI standardisation
PTE5	2.2	0.5
PTE6	4.4	5.4
PTE7	3.5	3.8
PTE8	4.1	2.6
PTE9	4.2	3.1
PTE10	3.1	3.3
PTE11	2.5	3.0
PTE11T	3.4	8.3
PTE12	1.3	-0.5
PTE13	1.6	-1.1
PTE14	3.1	-1.1

Note - positive scores: females higher than males; negative scores: females lower than males.

Northern Ireland compared with the UK

The large numbers of students taking part in the separate Northern Ireland standardisations enable us to compare students in Northern Ireland with students in the UK. The table below shows the average SAS differences based on the UK standardisations with a UK mean SAS of 100. UK scores are on average significantly higher than Northern Ireland for ages 5 and 6 but the differences are small for the other age groups.

Test level	Mean SAS difference
PTE5	3.7
PTE6	4.9
PTE7	2.1
PTE8	1.3
PTE9	0.3
PTE10	1.1
PTE11	0.1
PTE11T	-0.4
PTE12	-1.8
PTE13	-0.3
PTE14	-3.0

Note - positive scores: UK higher than Northern Ireland; negative scores: UK lower than Northern Ireland

Relationship between PTE and PIE outcomes

PTE has been designed to replace the well-established series, *Progress in English* (PIE). A comparative study, in which about 350 students per year from five different year groups took both the old and the new versions of the tests, was undertaken for the test series. A sample of students aged 7 to 11 years old had to take both the new and older version of the test. Each pair of tests was then statistically equated, so that each standardised score on the old test could be mapped onto an equivalent score on the new test. The resulting information on the relationship between PTE and PIE outcomes is available for test levels 7-11.

The strength of the relationship between two variables can be measured by a statistic called the correlation coefficient. A value of zero indicates no relationship between the two measures whereas a value of one indicates a perfect positive relationship. The table below shows the correlations for each level and that the correlations are all highly significant.

Test level	Correlation
PTE7	0.83
PTE8	0.84
PTE9	0.85
PTE10	0.84
PTE11	0.84

Schools that have data on students' standardised scores from *PIE* will clearly wish to convert these so that they can be compared directly to the students' results on the new tests. The conversion table on the next pages gives this information. Teachers should take the SAS from the old test series and convert this to the equivalent at the same level of *PTE*. So, for example, a standardised score of 95 on *Progress in English 10* is equivalent to a standardised score of 94 on the new *Progress Test in English 10*. This is the starting point for making a judgement by comparing this with the SAS from the next level of *PTE*.

Progress in English SAS	Equivalent Progress Test in English SAS				
	PTE7	PTE8	PTE9	PTE10	PTE11
69	69	69	69	69	71
70	69	69	69	69	72
71	69	69	69	70	73
72	70	69	69	71	74
73	71	69	70	72	75
74	72	70	71	73	76
75	73	71	72	74	77
76	74	72	73	75	78
77	75	73	74	76	79
78	76	74	75	77	80
79	77	75	76	78	81
80	79	76	77	79	82
81	80	77	78	80	83
82	81	79	79	81	84
83	82	80	80	82	85
84	83	81	81	83	86
85	84	82	82	84	87
86	85	83	83	85	88
87	86	84	84	86	88
88	87	85	85	87	89
89	88	86	86	88	90
90	90	87	87	89	91
91	91	88	88	90	92
92	92	89	89	91	93
93	93	90	90	92	94
94	94	91	91	93	95
95	95	92	92	94	96
96	96	93	93	95	97
97	97	94	94	96	98
98	98	95	95	97	99
99	100	96	96	98	100
100	101	97	97	99	101

Progress in English SAS	Equivalent Progress Test in English SAS				
	PTE7	PTE8	PTE9	PTE10	PTE11
101	102	98	98	100	102
102	103	99	99	101	103
103	104	100	100	102	104
104	105	101	101	103	105
105	106	102	102	104	106
106	107	103	103	105	107
107	108	104	104	106	108
108	109	105	105	107	109
109	111	106	106	108	110
110	112	107	107	109	111
111	113	108	108	110	112
112	114	109	109	111	113
113	115	110	110	112	114
114	116	111	111	114	114
115	117	112	112	115	115
116	118	113	113	116	116
117	119	114	114	117	117
118	121	115	115	118	118
119	122	116	116	119	119
120	123	117	117	120	120
121	124	118	118	121	121
122	125	119	119	122	122
123	126	120	120	123	123
124	127	122	121	124	124
125	128	123	122	125	125
126	129	124	123	126	126
127	130	125	124	127	127
128	132	126	125	128	128
129	133	127	126	129	129
130	134	128	127	130	130
131	135	129	128	131	131
132	136	130	129	132	132

Progress in English SAS	Equivalent Progress Test in English SAS				
	PTE7	PTE8	PTE9	PTE10	PTE11
133	137	131	130	133	133
134	138	132	131	134	134
135	139	133	132	135	135
136	140	134	133	136	136
137	141	135	134	137	137
138	141	136	135	138	138
139	141	137	136	139	139
140	141	138	136	140	139
141	141	139	137	141	140