

# Appendix A Progress in International Reading Literacy Study (PIRLS) 2011: Overview

## A.1 PIRLS 2011: Introduction

The PIRLS 2011 survey is the third in the IEA's<sup>1</sup> series of comparative international surveys of reading achievement. PIRLS is administered on a five-yearly cycle, so the 2011 survey updates the picture of performance from 2006. PIRLS was first run in 2001 and the next survey is planned for 2016.

## A.2 PIRLS 2011 participants

PIRLS 2011 involved 57 participants: 45 countries testing at 'fourth grade'; 3 countries tested at 'sixth grade'<sup>2</sup>; one country tested at fourth and sixth grade, and there were 9 benchmarking participants, one of which tested at fifth grade<sup>3</sup>. Fourth grade is ages 9–10 and so Year 5 in England.

Table A.1 below gives the list of participants, and Exhibit A.1 in the international report indicates the previous cycles in which each participant was involved.

The PIRLS 2011 participants are varied, ranging from highly developed countries or regions through to developing ones. Their education systems also vary, differing for example in the age at which children start school<sup>4</sup>. More information about the educational system in each participating country and region can be found in the PIRLS encyclopaedia.<sup>5</sup>

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<sup>1</sup> International Association for the Evaluation of Educational Achievement (IEA): <http://www.iea.nl>

<sup>2</sup> Honduras, Kuwait and Botswana tested at sixth grade only. Morocco tested at fourth and sixth grade.

<sup>3</sup> Countries participating in PIRLS follow guidelines and strict sampling targets to provide samples that are nationally representative. 'Benchmarking participants' are regional entities which follow the same guidelines and targets to provide samples that are representative at regional level. One participant (Malta) entered the main survey as a country testing in English, and as a benchmarking participant testing in Maltese. The Republic of South Africa entered as a benchmarking participant, testing grade 5 pupils in English or Afrikaans only.

<sup>4</sup> See Appendix C.1 in the international report for a summary of school starting ages in the participating countries/regions. Mullis, I.V.S., Martin, M.O., Foy, P., and Drucker, K.T. (2012). *PIRLS 2011 international results in reading*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College. Available: <http://timssandpirls.bc.edu/pirls2011/reports/international-results-pirls.html>

<sup>5</sup> Mullis, I.V.S., Martin, M.O. and Minnich, C. (2012). *PIRLS 2011 Encyclopaedia: Education Policy and Curriculum in Reading (Volumes 1 and 2)*. Boston: TIMSS and PIRLS International Study Center, Lynch School of Education, Boston College. Available: <http://timssandpirls.bc.edu/pirls2011/encyclopedia-pirls.html>

**Table A.1 PIRLS 2011 participants****Participants at 4<sup>th</sup> grade**

Australia	Lithuania
Austria	Malta
Azerbaijan	Morocco
Belgium (French)	Netherlands
Bulgaria	New Zealand
Canada	Northern Ireland
Chinese Taipei	Norway
Colombia	Oman
Croatia	Poland
Czech Republic	Portugal
Denmark	Qatar
England	Romania
Finland	Russian Federation
France	Saudi Arabia
Georgia	Singapore
Germany	Slovak Republic
Hong Kong SAR	Slovenia
Hungary	Spain
Indonesia	Sweden
Iran, Islamic Rep. of	Trinidad and Tobago
Ireland, Rep. of	United Arab Emirates
Israel	United States
Italy	

**Participants at 6<sup>th</sup> grade**

Botswana	Kuwait
Honduras	Morocco

**Benchmarking participants**

Abu Dhabi, UAE	Malta (Maltese)
Alberta, Canada	Ontario, Canada
Andalusia, Spain	Quebec, Canada
Dubai, UAE	South Africa (Eng/Afr)
Florida, US	

### A.3 PIRLS 2011 in the UK

The countries which comprise the United Kingdom are regarded separately by the IEA, and, of the four, England and Northern Ireland chose to participate in the 2011 survey. England has participated in all PIRLS cycles, so comparisons can be made with all earlier cycles where appropriate. The 2011 cycle represented Northern Ireland's first PIRLS participation. Scotland has also participated in previous cycles.

In all three participating UK nations, the PIRLS surveys were administered by NFER. Outcomes from previous cycles of PIRLS internationally and in the UK are available through the NFER website: [www.nfer.ac.uk/pirls](http://www.nfer.ac.uk/pirls)

## A.4 PIRLS 2011 sampling strategy

PIRLS samples are drawn based on internationally specified criteria, and are designed to be representative of the national population of pupils in the target age group (or regional population, for benchmarking participants). Each participant is therefore expected to provide a sampling pool that covers all or almost all of the target national population. Where exclusions are considered necessary, these must be within set limits. Exclusions may be for a variety of reasons, including:

- geographical (e.g. remote and/or very small schools may be excluded at sampling stage);
- linguistic (e.g. participants may exclude some language groups at sampling stage, if they opt to translate the assessment into majority languages only, not all languages spoken within the country/region); or
- special educational needs (e.g. special schools teaching pupils who cannot access the assessment may be excluded at sampling stage, or individual pupils who cannot access the assessment may be excluded at the administration stage).

PIRLS guidance stipulates that no more than five per cent of the population in total should be excluded across all stages of the survey. See the technical report and Appendix C of the international report for more information.<sup>6</sup>

In PIRLS, each participating country has a 'main sample' and two matched 'replacement samples' which are used if the main sample schools decline to participate. The main sample is designed to be nationally representative of pupils in the target age group and so the sampling criteria for each country are designed to address key characteristics of the nation's school system. Schools are sampled using systematic, random sampling with probability proportional to their measures of size. Each main sample school is then assigned a 'first replacement' school and a 'second replacement' school, both of which share the same key sampling characteristics as the main sample school. This ensures that, if the main sample school declines to participate, its first replacement school can be used instead and the sample will still be nationally representative. If the first replacement school also declines to participate, the second replacement school will be invited to participate and, again, the sample will remain nationally representative. If the second replacement school declines to participate, then the country cannot include any other school, to avoid skewing the sample.

Classes of pupils of the target age are then randomly sampled within the participating schools and 95 per cent of these classes are expected to take part. Within each sampled class, at least 85 per cent of pupils are expected to take part. Samples are inspected and, if they meet the sampling criteria, accepted by the IEA's sampling referee.

In order to meet the stringent PIRLS participation targets, countries are expected to achieve participation of:

- at least 85 per cent of their main sample schools; OR
- at least 85 per cent of sampled schools of which at least 50 per cent must be from the main sample and the remainder matched replacement schools; OR
- a combined pupil/school rate of at least 75 per cent.

<sup>6</sup> Mullis, I.V.S., Martin, M.O., Foy, P., and Drucker, K.T. (2012). *PIRLS 2011 international results in reading*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College. Available: <http://timssandpirls.bc.edu/pirls2011/reports/international-results-pirls.html>

Participants achieving at least 85 per cent of the main sample schools or a combined pupil/school figure of at least 75 per cent are deemed to have met the sampling requirements fully. Those achieving at least 85 per cent with the use of replacement schools are deemed to have achieved a sample that is suitably representative at national level, but are 'annotated' in the report, to indicate that replacement schools were used.

## **A.5 England's PIRLS 2011 samples**

### **England's sampling strategy**

Samples for England were drawn by Statistics Canada, assisted by the NFER Research and Statistics teams. The sample was stratified by attainment band and school type. Schools were recruited by the NFER Research Operations team. Once a school had agreed to participate, one or more classes from the target year group were randomly sampled, using the IEA's within-school sampling software. This selected classes with equal probability.

### **England's sample**

The PIRLS sample in England met the sampling standards described above with the inclusion of replacement schools. Out of 150 schools in the original sample, a total of 129 primary schools took part (109 main sample schools and 20 replacement schools). Class participation was 100 per cent and pupil participation 94 per cent (see Table A.2). England's sample was annotated in the report to indicate that, with the inclusion of replacement schools, over 85% of sampled schools participated, and that over 50% of these were from the main sample. Total exclusions for England were just 2.4 per cent.

Internationally, participation rates (weighted, after replacement) ranged from 71 per cent in Norway to 100 per cent in Azerbaijan. The highest exclusion rate was 24.6% in Israel (this included 18.5% at school level), followed by Hong Kong (11.8%) and Canada (9.9%). The lowest exclusion rate was in Trinidad and Tobago (0.9%).

The average age of participating pupils in England was 10.3. The range internationally for those in the target grade was from 9.7 (in Italy and Norway) to 10.9 (in Denmark and Romania).

**Table A.2 Sample information for England**

The information in this table is taken from the international report<sup>7</sup>. The source of each element within the reports is indicated.

Country	Number of schools in original sample	Number of eligible schools in original sample	Number of schools in original sample that participated	Number of replacement schools that participated	Total number of schools that participated
England	150	148	109	20	129

Source: Exhibit C.3, international report

Country	Within-school pupil participation (weighted percentage)	Number of sampled pupils in participating schools	Number of pupils withdrawn from class/school	Number of pupils excluded	Number of eligible pupils	Number of pupils absent	Number of pupils assessed
England	94%	4,243	52	27	4,164	237	3,927

Source: Exhibit C.4, international report

Country	School participation		Class participation	Pupil participation	Overall participation	
	Before replacement	After replacement			Before replacement	After replacement
† England	73%	87%	100%	94%	69%	82%

PIRLS guidelines for sampling participation: The minimum acceptable participation rates were 85 per cent of both schools and pupils, or a combined rate (the product of school and pupil participation) of 75 per cent. Participants not meeting these guidelines were annotated as follows:

† Met guidelines for sample participation rates only after replacement schools were included.

For further information, see Appendix C.5 in the international report.

Source: Exhibit C.5, international report

Country	International target population		Exclusions from national target population		
	Coverage	Notes on coverage	School-level exclusions	Within-sample exclusions	Overall exclusions
England	100%		1.7%	0.8%	2.4%

Source: Exhibit C.2, international report

<sup>7</sup> Mullis, I.V.S., Martin, M.O., Foy, P., and Drucker, K.T. (2012). *PIRLS 2011 international results in reading*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College. Available: <http://timssandpirls.bc.edu/pirls2011/reports/international-results-pirls.html>

## Appendix B Trend performance of England and selected countries

The table below shows the trends in performance over the course of the three PIRLS surveys for countries which have performed higher than or not significantly different from England in any of the surveys. Countries are ordered according to performance in 2011.<sup>8</sup>

Country	PIRLS 2001		PIRLS 2006		PIRLS 2011		Change 2001–2006		Change 2006–2011	
	Average achievement	Rank <sup>9</sup>	Average achievement	Rank	Average achievement	Rank	Average achievement	Rank	Average achievement	Rank
Hong Kong, SAR	528	13	564	2	571	1	+36	+11	+7	+1
Russian Fed.	528	13	565	1	568	2	+37	+12	+4	-1
Singapore	528	13	558	3	567	4	+30	+10	+9	-1
United States	542	9	540	14	556	6	-2	-5	+16	+8
Denmark	–	–	546	12	554	7	n/a	n/a	+8	+5
Chinese Taipei	–	–	535	18	553	9	n/a	n/a	+18	+9
<b>England</b>	<b>553</b>	<b>3</b>	<b>539</b>	<b>15</b>	<b>552</b>	<b>10</b>	<b>-13</b>	<b>-12</b>	<b>+12</b>	<b>+5</b>
Netherlands	554	2	547	9	546	13	-7	-7	-1	-4
Czech Republic	537	11	–	–	545	14	n/a	n/a	n/a	n/a
Sweden	561	1	549	7	542	15	-12	-6	-8	-8
Italy	541	9	551	5	541	16	+11	+4	-10	-11
Germany	539	10	548	8	541	16	+9	+2	-7	-8
Hungary	543	6	551	5	539	20	+8	+1	-12	-15
Bulgaria	550	4	547	9	532	22	-3	-5	-15	-13
Austria	–	–	538	16	529	25	n/a	n/a	-9	-9
Lithuania	543	6	537	17	528	26	-6	-11	-9	-9

– indicates country did not participate

<sup>8</sup> Canada was only included in 2011 as a participating country; prior to that population coverage was incomplete. Rankings in 2001 and 2006 have therefore excluded Canada and/or participating Canadian provinces.

<sup>9</sup> Rank is affected by the number and combination of countries participating: in PIRLS 2001, 34 countries participated; in 2006, 40 countries; in 2011, 45 countries.

## Appendix C PIRLS and the National Curriculum

Pupils participating in PIRLS 2011 in England will have been taught reading literacy in accordance with the programmes of study of the National Curriculum. It can also be expected that, at least in the early stages of learning to read, they have experienced teaching in line with the framework for teaching of the Primary National Strategy. For a detailed comparison of the PIRLS reading framework and the National Curriculum, see the national report for England for PIRLS 2001<sup>10</sup>. In this, it was concluded that the range of texts in the PIRLS assessments was narrower than that outlined in the National Curriculum: primarily due to the requirements of translation, PIRLS does not include poetry and none of the three PIRLS assessments have included a playscript for example.

The PIRLS reading processes have been described in chapter 5. Table C.1 shows the PIRLS reading processes mapped against the assessment focuses for reading, the means of describing the reading skills being assessed in specific questions in National Curriculum tests in England.

**Table C.1 PIRLS processes and National Curriculum assessment focuses**

PIRLS processes of comprehension	National Curriculum assessment focuses
Focus on and retrieve explicitly stated information and ideas	Assessment focus 2: understand, describe, select or retrieve information, events or ideas from texts and use quotation and reference to text
Make straightforward inferences	Assessment focus 3: deduce, infer or interpret information, events or ideas from texts
Interpret and integrate ideas and information	Assessment focus 3: deduce, infer or interpret information, events or ideas from texts
Examine and evaluate content, language	Assessment focus 4: identify and comment on the textual elements structure and organisation of texts, including grammatical and presentational features at text level Assessment focus 5: explain and comment on writers' use of language, including grammatical and literary features at word and sentence level Assessment focus 6: identify and comment on writers' purposes and viewpoints and the effect of the text on the reader Assessment focus 7: relate texts to their social, cultural and historical contexts and literary traditions

<sup>10</sup> Twist, L., Sainsbury, M., Woodthorpe, A. and Whetton, C. (2003). *Reading All Over the World: Progress in International Reading Literacy Study (PIRLS). National Report for England*. Slough: NFER.