

## CHAPTER 8

# Sample Implementation in PIRLS 2021

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### Overview

To report results that are generalizable to populations of fourth grade students, rigorous sampling of schools and students was a key component of PIRLS 2021. While developing a national sampling plan for each participating country involved a collaborative effort, implementing the sampling plan was the responsibility of the National Research Coordinator (NRC). NRCs were supported in this endeavor by the PIRLS 2021 sampling consultants, Statistics Canada, and the Sampling Unit at IEA Hamburg. Sampling consultants conducted the school sampling for most countries. They trained NRCs in using the Windows® Within-School Sampling Software (WinW3S) provided by IEA Hamburg to manage and implement all within-school sampling activities.

As an essential part of their sampling activities, NRCs were responsible for providing detailed documentation describing their national sampling plans (sampling data, school sampling frames, and school sample selections). The documentation for each PIRLS 2021 participant was reviewed and completed by the sampling consultants and included detailed information on coverage and exclusion levels, stratification variables, sample selection, participation rates, and variance estimates. For PIRLS 2021, NRCs additionally provided information about how the COVID-19 pandemic affected the organization of students in schools and classes for sampling and test administration. The TIMSS & PIRLS International Study Center, Statistics Canada, and the PIRLS 2021 Sampling Referee, Dr. Keith Rust of Westat, Inc., used this information to evaluate the quality of the samples. This process of sampling adjudication was carried out in three successive meetings in 2022—March, May, and December—to accommodate the extended PIRLS 2021 data collection period arising from the pandemic.

This chapter summarizes the major characteristics of the national samples for PIRLS 2021, followed by a summary of the major characteristics of the “bridge” samples for trend countries that participated in digitalPIRLS. More detailed descriptions of the sample design for each country,

including details of population coverage and exclusions, stratification variables, and schools' sampling allocations, are provided in Appendix 8A.

## Target Population

As described in [Chapter 3](#) (Sample Design), the international target population for the PIRLS 2021 assessment is the grade representing four years of formal schooling, counting from the first year of primary or elementary schooling. Exhibit 8.1 presents the grade identified as the target grade for sampling by each country and includes the number of years of formal schooling that the grades represent and the average age of students in the target grade at the time of testing. It also provides information on the PIRLS 2021 data collection periods, highlighting countries that delayed their data collection by a full year (⊗), as well as Northern Hemisphere countries that administered the 2021 assessment at the beginning of the fifth grade (highlighted in pink).

**Exhibit 8.1: PIRLS 2021 National Grade Definition and Data Collection Periods**

Country	Country's Name for Fourth Year of Schooling	Year of Formal Schooling	Data Collection Period	Average Age at Time of Testing
Albania	Grade 4	4	March–April 2021	10.0
Australia ⊗	Year 4	4	September–December 2021	10.0
Austria	Grade 4	4	April–May 2021	10.3
Azerbaijan	Grade 4	4	April–June 2021	10.1
Bahrain	Grade 4 or Year 5	4	May–June 2021 (4%) September–October 2021 (96%)	10.0 10.4
Belgium (Flemish)	Grade 4	4	April–June 2021	10.0
Belgium (French)	Grade 4	4	April–May 2021	10.0
Brazil ⊗	Grade 4	4	November–December 2021	10.2
Bulgaria	Grade 4	4	March–April 2021	10.7
Chinese Taipei	Grade 4	4	March–May 2021	10.1
Croatia	Grade 4	4	October–November 2021	11.2
Cyprus	Grade 4	4	March–June 2021	9.8
Czech Republic	Grade 4	4	May–June 2021	10.4
Denmark	Grade 4	4	March–June 2021	10.9
Egypt	Grade 4	4	April 2021	10.0
England ⊗	Year 5	5	May–July 2022	10.3
Finland	Grade 4	4	March–June 2021	10.8

**Exhibit 8.1: PIRLS 2021 National Grade Definition and Data Collection Periods (Continued)**

Country	Country's Name for Fourth Year of Schooling	Year of Formal Schooling	Data Collection Period	Average Age at Time of Testing
France	Third Cycle Year 1 (CM1)	4	May–June 2021	9.9
Georgia	Grade 4	4	October–December 2021	10.6
Germany	Grade 4	4	April–July 2021	10.4
Hong Kong SAR	Primary 4	4	April–July 2021	10.1
Hungary	Grade 4	4	October–November 2021	11.2
Iran, Islamic Rep. of ☒	Grade 4	4	April–May 2022	10.2
Ireland	Fourth Class	4	September–October 2021	11.0
Israel ☒	Grade 4	4	May–June 2022	10.0
Italy	Primary Grade 4	4	March–May 2021	9.8
Jordan	Grade 4	4	May 2021	10.0
Kazakhstan	Grade 4	4	September–October 2021	10.8
Kosovo	Grade 4	4	June 2021	10.1
Latvia	Grade 4	4	September–November 2021	11.3
Lithuania	Grade 4	4	September–November 2021	11.3
Macao SAR	Primary 4	4	March–May 2021	9.9
Malta	Year 5	4	April–May 2021	9.9
Montenegro	Grade 4	4	April–May 2021	9.9
Morocco	Grade 4	4	October 2021	10.5
Netherlands	Group 6	4	March–June 2021 (87%)	10.1
			October–November 2021 (13%)	10.6
New Zealand	Year 5	4.5 - 5.5	October–December 2020	10.0
North Macedonia	Grade 4	4	May 2021	9.9
Northern Ireland	Year 6	4	September–October 2021	10.8
Norway (5)	Grade 5	5	April–June 2021	10.8
Oman	Grade 4	4	February–May 2021	9.8
Poland	Grade 4	4	May–June 2021	10.9
Portugal	Grade 4	4	April–July 2021	10.1
Qatar	Grade 4	4	March–April 2021 (65%)	9.9
			September 2021 (35%)	10.4
Russian Federation	Grade 4	4	April 2021	10.8
Saudi Arabia	Grade 4	4	November 2021	10.4

**Exhibit 8.1: PIRLS 2021 National Grade Definition and Data Collection Periods (Continued)**

Country	Country's Name for Fourth Year of Schooling	Year of Formal Schooling	Data Collection Period	Average Age at Time of Testing
Serbia	Grade 4	4	March–April 2021	10.6
Singapore	Primary 4	4	October–November 2020	10.4
Slovak Republic	Grade 4	4	May–June 2021	10.5
Slovenia	Grade 4	4	March–June 2021	10.0
South Africa ☒	Grade 4	4	August–November 2021	10.2
Spain	Grade 4	4	April–June 2021	9.9
Sweden	Grade 4	4	March–April 2021	10.7
Turkiye	Grade 4	4	June 2021	9.9
United Arab Emirates	Grade 4	4	February–March 2021 (12%)	9.9
			October–November 2021 (88%)	10.4
United States	Grade 4	4	October–November 2021	10.7
Uzbekistan	Grade 4	4	April 2021	10.6
<b>Benchmarking Participants</b>				
Alberta, Canada	Grade 4	4	April–June 2021	9.9
British Columbia, Canada	Grade 4	4	April–May 2021	9.8
Newfoundland & Labrador, Can.	Grade 4	4	May–June 2021	9.9
Quebec, Canada	Grade 4	4	October–December 2021	10.7
Moscow City, Russian Fed.	Grade 4	4	April–May 2021	10.7
South Africa (6) ☒	Grade 6	6	August–October 2021	12.3
Abu Dhabi, UAE	Grade 4	4	October–November 2021	10.4
Dubai, UAE	Grade 4 or Year 5	4	February–March 2021 (46%)	9.9
			October–November 2021 (54%)	10.5

☐ Delayed assessment of fourth grade cohort at the beginning of fifth grade  
 ☒ Assessed one year later than originally scheduled – six year trend from PIRLS 2016.

For most countries, the target grade turned out to be the grade with four years of formal schooling, i.e., the fourth grade. However, in England, Malta, and New Zealand, children begin primary school at an early age.<sup>1</sup> Therefore, these countries administered the PIRLS assessment in the fifth year of schooling. Norway assessed its fifth grade to obtain better comparisons with

<sup>1</sup> Given the cognitive demands of the assessment, PIRLS wants to avoid assessing very young students. Thus, PIRLS recommends assessing the next higher grade (i.e., fifth grade) if the average age at the time of testing would be less than 9.5 years.

other northern European countries. South Africa administered paperPIRLS at both the fourth grade and the sixth grade.

For most countries, the mean age of students at the time of testing was in the 9.8 to 10.9 range, which was expected from fourth grade students who were typically 10 or 11 years old by the end of the school year. The mean age of students in Northern Hemisphere countries that tested the fourth grade cohort at the beginning of the following school year is generally about half a year older, as discussed in the first section of the PIRLS 2021 international report, [PIRLS 2021 International Results in Reading](#). This age difference also is apparent in the few countries whose data collection period was split between the end of the fourth grade and the beginning of the fifth grade, including Bahrain, the Netherlands, Qatar, and the United Arab Emirates. For these mixed collection countries, Exhibit 8.1 shows the weighted proportion of students in each data collection period. For example, in the Netherlands, 87 percent of students were tested at the end of the fourth grade and 13 percent were tested at the beginning of the fifth grade.

## Coverage and Exclusions of the PIRLS 2021 National Samples

Exhibit 8.2 summarizes population coverage and exclusions for the PIRLS 2021 target population.

**Exhibit 8.2: Coverage of PIRLS 2021 Target Population**

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
<sup>2</sup> Albania	100%		2.6%	6.7%	9.2%
Australia	100%		1.6%	2.8%	4.4%
Austria	100%		1.2%	3.6%	4.8%
Azerbaijan	100%		1.8%	0.7%	2.5%
Bahrain	100%		0.6%	0.4%	1.0%
Belgium (Flemish)	100%		0.5%	2.4%	2.9%
<sup>2</sup> Belgium (French)	100%		5.4%	2.0%	7.4%
<sup>2</sup> Brazil	100%		3.8%	2.5%	6.3%
Bulgaria	100%		0.6%	2.8%	3.4%
Chinese Taipei	100%		0.0%	1.1%	1.1%
Croatia	100%		1.3%	3.1%	4.4%

**Exhibit 8.2: Coverage of PIRLS 2021 Target Population (Continued)**

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Cyprus	100%		1.2%	4.3%	5.5%
Czech Republic	100%		2.6%	2.9%	5.5%
<sup>2</sup> Denmark	100%		2.1%	7.0%	9.1%
<sup>2</sup> Egypt	100%		8.0%	0.0%	8.0%
England	100%		2.1%	3.3%	5.4%
Finland	100%		1.0%	1.3%	2.3%
France	100%		2.7%	2.4%	5.0%
<sup>1</sup> Georgia	92%	Students taught in Georgian	1.2%	1.5%	2.7%
Germany	100%		1.9%	2.0%	4.0%
<sup>2</sup> Hong Kong SAR	100%		6.9%	0.8%	7.7%
Hungary	100%		2.8%	2.1%	4.9%
Iran, Islamic Rep. of	100%		1.7%	0.1%	1.8%
Ireland	100%		1.9%	1.7%	3.6%
<sup>3</sup> Israel	100%		22.5%	3.2%	25.7%
<sup>2</sup> Italy	100%		0.8%	4.9%	5.7%
Jordan	100%		0.0%	1.9%	1.9%
Kazakhstan	100%		1.0%	2.8%	3.9%
<sup>2</sup> Kosovo	100%		5.5%	4.1%	9.5%
Latvia	100%		4.3%	0.5%	4.8%
Lithuania	100%		1.9%	2.6%	4.5%
Macao SAR	100%		1.0%	2.5%	3.5%
Malta	100%		0.3%	2.2%	2.5%
<sup>3</sup> Montenegro	100%		1.4%	12.0%	13.5%
Morocco	100%		1.6%	0.0%	1.6%
Netherlands	100%		4.1%	1.1%	5.1%
New Zealand	100%		1.1%	2.4%	3.5%
North Macedonia	100%		1.6%	3.7%	5.3%
<sup>2</sup> Northern Ireland	100%		2.2%	3.4%	5.5%

**Exhibit 8.2: Coverage of PIRLS 2021 Target Population (Continued)**

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Norway (5)	100%		2.2%	2.1%	4.2%
Oman	100%		2.2%	1.4%	3.6%
Poland	100%		1.9%	2.9%	4.8%
<sup>2</sup> Portugal	100%		1.3%	5.1%	6.4%
Qatar	100%		1.9%	1.2%	3.1%
Russian Federation	100%		1.7%	3.7%	5.4%
<sup>3</sup> Saudi Arabia	100%		10.4%	0.4%	10.8%
<sup>3</sup> Serbia	100%		4.6%	7.4%	12.0%
<sup>3</sup> Singapore	100%		14.1%	0.4%	14.5%
Slovak Republic	100%		1.5%	0.9%	2.4%
Slovenia	100%		1.8%	1.0%	2.8%
South Africa	100%		1.6%	0.1%	1.7%
Spain	100%		1.8%	2.8%	4.6%
<sup>2</sup> Sweden	100%		1.2%	4.3%	5.5%
<sup>2</sup> Türkiye	100%		2.3%	6.7%	8.9%
United Arab Emirates	100%		1.1%	3.0%	4.1%
Uzbekistan	100%		1.8%	1.1%	2.9%
<b>Benchmarking Participants</b>					
<sup>3</sup> Alberta, Canada	100%		5.7%	4.9%	10.6%
<sup>2</sup> British Columbia, Canada	100%		0.9%	5.9%	6.7%
<sup>2</sup> Newfoundland & Labrador, Can.	100%		4.2%	5.6%	9.8%
Quebec, Canada	100%		3.1%	1.6%	4.7%
Moscow City, Russian Fed.	100%		0.5%	3.3%	3.9%
South Africa (6)	100%		1.2%	0.0%	1.2%
Abu Dhabi, UAE	100%		0.8%	1.8%	2.7%
<sup>2</sup> Dubai, UAE	100%		2.5%	7.4%	10.0%

1 National Target Population does not include all of the International Target Population.

2 National Defined Population covers 90% to 95% of National Target Population.

3 National Defined Population covers less than 90% of National Target Population (but at least 77%).

## Coverage

National coverage of the international target population was generally comprehensive, except for Georgia, which assessed only students taught in the Georgian language. As a result, Georgia was annotated with a “1” footnote in the PIRLS 2021 international report.

## School-Level and Student-Level Exclusions

Within the national target population, it was possible to exclude certain types of schools and students. For the most part, school-level exclusions comprised schools for students with disabilities and very small or remote schools. Occasionally, schools were excluded for other reasons, as documented in Appendix 8A: Characteristics of National Samples.

Student-level, or within-school, exclusions generally consisted of students with disabilities or students who could not be assessed in the language of the test. Most PIRLS participants’ overall percentage of excluded students (combining school and within-school levels) was 5 percent or less after rounding. The results of participants with an overall exclusion rate of more than 5 percent were annotated in the international report. Albania, Belgium (French), Brazil, Denmark, Egypt, Hong Kong SAR, Italy, Kosovo, Northern Ireland, Portugal, Sweden, Turkiye, the United States,<sup>2</sup> as well as benchmarking participants British Columbia, Newfoundland and Labrador, and Dubai, had exclusions accounting for between 5 and 10 percent of the desired population and were annotated with a “2” in the international report. Israel, Montenegro, Saudi Arabia, Serbia, Singapore, and the benchmarking participant Alberta, had exclusions exceeding 10 percent and were annotated with a “3.”

## Target Population Size of the PIRLS 2021 National Samples

Exhibit 8.3 shows the number of schools and students in each participant’s target population (after school-level exclusions) and in their sample, as well as an estimate of the student population size based on the sample data. The target population figures were derived from the sampling frame used to select the PIRLS 2021 samples and did not account for the portion of the population excluded within sampled schools, nor did it account for changes in the population between the date when the information in the sampling frame was collected and the date of the PIRLS 2021 data collection—usually a two-year interval. The sample figures were based on the number of sampled schools and students participating in the assessments. The student population size estimated from the sample was computed using sampling weights (explained in more detail in [Chapter 3](#)). A comparison between the two estimates of population size can be seen as a validity check on

<sup>2</sup> See coverage and exclusions in Exhibit 8.12.



the sampling procedure. In most cases, the population size estimated from the sample closely matched the population size from the sampling frame.

**Exhibit 8.3: PIRLS 2021 Target Population and Sample Sizes**

Country	Target Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Albania	1,381	31,278	177	4,213	31,152
Australia	6,683	310,076	281	5,487	304,896
Austria	3,014	83,644	160	4,806	82,752
Azerbaijan	3,600	157,527	184	5,209	152,682
Bahrain	186	17,870	186	5,208	17,304
Belgium (Flemish)	2,445	78,220	141	5,114	75,847
Belgium (French)	1,742	54,234	158	4,279	52,376
Brazil	75,766	2,911,920	187	4,941	2,944,016
Bulgaria	1,667	61,708	151	4,043	60,968
Chinese Taipei	2,648	182,378	184	5,555	180,908
Croatia	1,664	40,901	154	3,937	36,650
Cyprus	294	9,716	160	4,589	9,250
Czech Republic	3,642	110,011	196	6,621	108,222
Denmark	1,628	64,335	197	4,821	63,398
Egypt	17,839	2,147,423	192	7,979	2,096,598
England	15,611	649,246	162	4,150	667,861
Finland	1,926	62,051	219	7,018	62,593
France	31,460	827,176	184	5,339	831,159
Georgia	1,697	52,048	190	5,241	51,237
Germany	17,102	724,145	252	4,611	722,069
Hong Kong SAR	498	58,561	144	3,830	56,941
Hungary	2,723	89,112	157	5,312	82,244
Iran, Islamic Rep. of	43,697	1,348,842	218	5,962	1,342,998
Ireland	2,830	70,975	148	4,663	69,808
Israel	1,892	123,950	194	4,890	124,162
Italy	6,711	540,546	164	5,440	512,984
Jordan	3,910	190,307	216	6,150	176,828

**Exhibit 8.3: PIRLS 2021 Target Population and Sample Sizes (Continued)**

Country	Target Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Kazakhstan	6,046	361,664	267	7,023	331,184
Kosovo	616	25,188	150	4,557	24,774
Latvia	581	19,346	156	4,369	17,758
Lithuania	663	29,470	190	4,623	28,527
Macao SAR	064	5,634	63	5,093	5,770
Malta	100	4,650	78	3,030	4,492
Montenegro	140	7,527	140	4,489	7,561
Morocco	19,956	725,816	266	7,017	705,932
Netherlands	6,194	183,158	131	4,313	170,384
New Zealand	1,839	65,131	184	5,557	64,517
North Macedonia	329	20,190	148	2,929	18,797
Northern Ireland	759	24,867	143	4,050	25,236
Norway (5)	1,893	62,444	158	5,382	62,977
Oman	766	66,513	215	5,321	65,815
Poland	11,692	347,415	150	4,179	341,927
Portugal	1,235	99,986	196	6,111	96,969
Qatar	267	25,836	259	5,258	24,053
Russian Federation	32,202	1,760,780	204	5,217	1,761,155
Saudi Arabia	11,143	475,822	142	4,778	301,389
Serbia	2,387	63,156	169	4,037	62,118
Singapore	183	36,972	183	6,719	37,157
Slovak Republic	2,191	54,263	169	4,841	53,053
Slovenia	721	21,877	160	5,110	21,606
South Africa	15,640	1,092,149	321	12,426	1,120,378
Spain	12,820	473,970	452	8,551	470,317
Sweden	3,251	119,433	146	5,175	128,809
Turkiye	17,562	1,269,211	192	6,032	1,227,228
United Arab Emirates	826	86,373	663	27,448	86,297
Uzbekistan	9,353	627,558	180	5,846	595,044

**Exhibit 8.3: PIRLS 2021 Target Population and Sample Sizes (Continued)**

Country	Target Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
<b>Benchmarking Participants</b>					
Alberta, Canada	1,256	53,722	116	3,020	47,719
British Columbia, Canada	1,256	48,565	179	4,675	46,804
Newfoundland & Labrador, Can.	142	5,067	133	2,445	4,410
Quebec, Canada	1,913	91,116	112	3,739	82,427
Moscow City, Russian Fed.	615	114,885	174	5,745	115,872
South Africa (6)	14,727	918,594	253	9,317	997,116
Abu Dhabi, UAE	314	32,071	262	10,381	31,300
Dubai, UAE	205	22,900	190	7,711	23,034

## Stratification

PIRLS 2021 National Research Coordinators consulted with Statistics Canada and IEA Hamburg to identify the stratification variables to be included in their sampling plans. Exhibit 8.4 lists the explicit and implicit stratification variables implemented by the participating countries. The numbers in parentheses represent the number of available levels for each stratification variable.

**Exhibit 8.4: PIRLS 2021 Stratification Variables**

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Albania	School Type (2) Urbanization (2)	3	Urbanization (2)
Australia	State or territory (8)	8	School type (4) Geographic location (3) Socioeconomic status (2)
Austria	Urbanization (3) Achievement (4)	12	Region (9)
Azerbaijan	Language (2) Urbanization (2) City (2)	4	None
Bahrain	Governorate (5) Gender (2)	9	None

**Exhibit 8.4: PIRLS 2021 Stratification Variables (Continued)**

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Belgium (Flemish)	School type (3) School Composition (3)	7	Provinces and Brussels Capital region (6)
Belgium (French)	School type (3) Socioeconomic index (4)	10	Region (6)
Brazil	School type (4) Region (5)	16	State (27) Socioeconomic status level (4)
Bulgaria	School type (3) Location (4)	8	National test score (3)
Chinese Taipei	Region (4) School size (2)	7	None
Croatia	School type (3) Region (6)	7	Urbanization (2)
Cyprus	School type (2) Curriculum (2) District (4)	5	Urbanization (2) Language (2)
Czech Republic	Region (14)	15	None
Denmark	School type (2) School size (2)	3	None
Egypt	School sponsor (5) Geographical Sector (4) Urbanization (2)	11	School shift (4)
England	School type (3) Attainment level (5)	11	None
Finland	Major region (4) Urbanization (2)	10	Regional state administrative agency (6)
France	School type (3)	3	None
Georgia	School location (2) Legal status (2) School region (2)	5	Legal status (2)
Germany	School type (2) Percentage of foreign students (4) School size (2)	6	State (16) Urbanization (3)
Hong Kong SAR	School type (4)	4	Gender (3)
Hungary	Type of community (3) National assessment score (4)	11	Region (7)
Iran, Islamic Rep. of	School type (2) Gender (3) Province (7)	16	None

**Exhibit 8.4: PIRLS 2021 Stratification Variables (Continued)**

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Ireland	Language of instruction (3) DEIS (4) Gender (3)	8	None
Israel	School sector (3) Socioeconomic status (3) Subgroups within Arab sector (3) School size (2)	11	Gender (3) Region (3)
Italy	School type (2) Region (5)	6	National test results (3)
Jordan	School type (5) Achievement (4)	17	School gender (3)
Kazakhstan	Region (17) Urbanization (2)	31	Language (4)
Kosovo	School type (3) Shifts (2)	5	None
Latvia	Urbanization (3) Language (2) School type (2)	9	None
Lithuania	Language (4) Urbanization (4)	7	Private or public (2) School type (4)
Macao SAR	Education association (4)	4	None
Malta	School type (3)	3	None
Montenegro	Region (3)	3	Urbanization (3)
Morocco	School type (2) Region (12)	14	Urbanization (2)
Netherlands	Socioeconomic status (3) Urbanization density (5)	15	None
New Zealand	Language (4) Socioeconomic status level (5) Urbanization (2)	11	None
North Macedonia	Urbanization (3) Language (3)	8	None
Northern Ireland	Region (5) Deprivation (5)	14	Deprivation (5)
Norway (5)	Written language (2) Size of municipality (3)	4	Reading level (4)
Oman	Governorate (11) School type (2)	13	None

**Exhibit 8.4: PIRLS 2021 Stratification Variables (Continued)**

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Poland	Urbanization (4)	4	Region (7)
Portugal	School type (2) Region within public schools (8) School size (2)	10	None
Qatar	Gender (3)	3	School Type (4)
Russian Federation	Region (43)	43	None
Saudi Arabia	Gender (2) School type (3) School size (2)	9	Region (11)
Serbia	Region (3) Urbanization (2) School hierarchy (2)	7	None
Singapore	None	1	None
Slovak Republic	School type (3) Grade 5 national Slovak language test score (3) School size (2)	8	None
Slovenia	School organization (1) School size (2)	3	None
South Africa	Language (11)	11	Province (9)
Spain	Grouped regions (12) School size (2)	22	Region (11) School Type (2)
Sweden	School type (2) Percentage of students with parents that have tertiary education (3)	6	Grade 9 points mean (4)
Turkiye	School type (2) Region (13)	14	None
United Arab Emirates	Emirate (3) School type (3) Main curriculum (2)	11	Test language (2) School type (2) Curriculum (10) Region (8)
United States	Poverty level (2) School type (2) Census region (4) School funding (2)	10	State (52)
Uzbekistan	Language (4) Urbanization (2)	7	School shift in Uzbek and mixed schools (2)

**Exhibit 8.4: PIRLS 2021 Stratification Variables (Continued)**

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
<b>Benchmarking Participants</b>			
Alberta, Canada	School language (2) School type (2)	3	None
British Columbia, Canada	School language (2) School type (3)	4	None
Newfoundland & Labrador, Can.	None	1	None
Quebec, Canada	School language (2) School type (2)	4	None
Moscow City, Russian Fed.	School size (2)	2	None
South Africa (6)	Language (3) Language track (4) Province size (2)	9	Province (9) Quintile (5)
Abu Dhabi, UAE	School type (3) Main curriculum (3)	5	Region (3)
Dubai, UAE	School type (2)	2	Language of instruction (2) Main curriculum (12)

## Meeting PIRLS 2021 Standards for Sampling Participation

PIRLS 2021 participants understood that the goal for sampling participation was 100 percent for all sampled schools, classrooms, and students. Guidelines for reporting achievement data for participants that secured less than full participation were modeled after IEA’s previous PIRLS assessment cycles. As summarized below in Exhibit 8.5, countries were assigned to one of three categories based on their sampling participation. One of the main goals for quality data in PIRLS 2021 was to have as many countries achieve Category 1 status as possible. Countries in Category 1 were considered to have met all PIRLS 2021 sampling requirements and to have acceptable participation rates. Countries in Category 2 met the participation requirements only after including replacement schools. Countries that failed to meet the participation requirements even with the use of replacement schools were assigned to Category 3.

**Exhibit 8.5: Categories of Sampling Participation**

<b>Category 1</b>	<p><b>Acceptable sampling participation rates <u>without</u> the use of replacement schools.</b></p> <p>In order to be placed in this category, a country had to have:</p> <ul style="list-style-type: none"> <li>• An <b>unweighted</b> school response rate <b>without</b> replacement of at least 85% (after rounding to the nearest whole percent) AND an <b>unweighted</b> class response rate of at least 95% (after rounding) AND an <b>unweighted</b> student response rate of at least 85% (after rounding)</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• A <b>weighted</b> school response rate <b>without</b> replacement of at least 85% (after rounding to the nearest whole percent) AND a <b>weighted</b> class response rate of at least 95% (after rounding) AND a <b>weighted</b> student response of at least 85% (after rounding)</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• The product of the <b>weighted</b> school response rate <b>without</b> replacement, the <b>weighted</b> class response rate, and the <b>weighted</b> student response rate of at least 75% (after rounding to the nearest whole percent)</li> </ul> <p>Countries in this category appear in the international report without annotation.</p>
<b>Category 2</b>	<p><b>Acceptable sampling participation rates only <u>with</u> the use of replacement schools.</b></p> <p>A country was placed in this category 2 if:</p> <ul style="list-style-type: none"> <li>• It failed to meet the requirements for Category 1 but had a <b>weighted</b> school response rate <b>without</b> replacement of at least 50% (after rounding to the nearest whole percent)</li> </ul> <p>AND HAD EITHER</p> <ul style="list-style-type: none"> <li>• A <b>weighted</b> school response rate <b>with</b> replacement of at least 85% (after rounding to the nearest whole percent) AND a <b>weighted</b> class response rate of at least 95% (after rounding) AND a <b>weighted</b> student response rate of at least 85% (after rounding)</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• The product of the <b>weighted</b> school response rate <b>with</b> replacement, the <b>weighted</b> class response rate, and the <b>weighted</b> student response rate of at least 75% (after rounding to the nearest whole percent)</li> </ul> <p>Countries in this category are annotated with † in the international report.</p>
<b>Category 3</b>	<p><b>Unacceptable sampling participation rates even when replacement schools are included.</b></p> <p>Countries that provided documentation to show that they complied with all other PIRLS sampling requirements, but did not meet the requirements for Category 1 or Category 2, were placed in Category 3.</p> <p>Countries in this category with a school participation rate <b>without</b> replacement of at least 50% are annotated with ‡ if they nearly met the requirements for Category 2, or with ≡ if they failed to meet the requirements for Category 2.</p> <p>Finally, if none of these conditions were met, countries would appear in a separate panel of the achievement exhibits in the international report, in a separate section of the report, or excluded from the report, depending on the severity.</p>



## Participation Rates for the PIRLS 2021 National Samples

The school, classroom, student, and overall participation rates in the PIRLS 2021 assessment are presented in Exhibit 8.6 (weighted) and Exhibit 8.7 (unweighted). Almost all PIRLS participants met the participation requirements and were classified as Category 1. Brazil, Croatia, Denmark, Hong Kong SAR, New Zealand, Northern Ireland, and the Slovak Republic achieved the minimum acceptable participation rates only after including replacement schools. Therefore, their results were classified as Category 2 and annotated with the dagger symbol (†) in the achievement exhibits of the PIRLS international results report. Despite their efforts to secure full participation, the Netherlands, the United States,<sup>3</sup> and the benchmarking participants Alberta and Quebec (Canada) did not meet the required sampling participation rates even with the use of replacement schools and were annotated with the triple-dagger symbol (≡) in the achievement exhibits of the international report (Category 3).

Based on National Research Coordinators' reports, there is anecdotal evidence the pandemic impacted participation rates. Relative to PIRLS 2016, school participation rates decreased in about half of the participating countries but increased in the remaining half. The impact was bigger on the student participation rates. Compared to PIRLS 2016, student participation rates decreased in about 80 percent of countries. Whereas in PIRLS 2016, student participation rates were at or above 95 percent for about 90 percent of countries, in PIRLS 2021 only about 35 percent achieved a student participation rate of at least 95 percent.

**Exhibit 8.6: PIRLS 2021 Participation Rates (Weighted)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Albania	99%	99%	100%	95%	94%	94%
Australia	98%	98%	100%	92%	90%	90%
Austria	98%	100%	100%	96%	95%	96%
Azerbaijan	92%	92%	100%	92%	84%	84%
Bahrain	100%	100%	100%	91%	91%	91%
Belgium (Flemish)	80%	84%	100%	96%	77%	81%
Belgium (French)	92%	100%	100%	95%	87%	95%
† Brazil	67%	85%	100%	86%	58%	73%
Bulgaria	100%	100%	100%	92%	92%	92%
Chinese Taipei	99%	100%	100%	98%	97%	98%

<sup>3</sup> See participation rates in Exhibit 8.14 (weighted) and Exhibit 8.15 (unweighted).

**Exhibit 8.6: PIRLS 2021 Participation Rates (Weighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
† Croatia	92%	95%	97%	84%	74%	77%
Cyprus	99%	99%	100%	95%	94%	94%
Czech Republic	99%	99%	100%	91%	91%	91%
† Denmark	76%	90%	100%	94%	72%	85%
Egypt	100%	100%	100%	94%	94%	94%
England	88%	96%	100%	92%	81%	88%
Finland	100%	100%	100%	97%	97%	97%
France	97%	97%	99%	94%	91%	91%
Georgia	97%	98%	99%	94%	91%	91%
Germany	95%	97%	100%	88%	84%	85%
† Hong Kong SAR	79%	96%	100%	91%	72%	87%
Hungary	90%	96%	100%	95%	86%	91%
Iran, Islamic Rep. of	100%	100%	100%	97%	97%	97%
Ireland	100%	100%	100%	94%	94%	94%
Israel	99%	99%	100%	89%	88%	88%
Italy	93%	99%	99%	94%	87%	92%
Jordan	99%	99%	100%	96%	96%	96%
Kazakhstan	100%	100%	100%	97%	97%	97%
Kosovo	100%	100%	100%	97%	97%	97%
Latvia	97%	99%	100%	91%	88%	90%
Lithuania	95%	95%	99%	87%	82%	82%
Macao SAR	98%	98%	100%	92%	91%	91%
Malta	100%	100%	100%	90%	89%	89%
Montenegro	100%	100%	99%	95%	94%	94%
Morocco	100%	100%	100%	96%	96%	96%
≡ Netherlands	44%	79%	100%	95%	41%	75%
† New Zealand	78%	92%	100%	91%	71%	83%
North Macedonia	98%	99%	96%	89%	84%	85%
† Northern Ireland	74%	90%	100%	90%	67%	81%
Norway (5)	98%	99%	100%	95%	93%	94%
Oman	97%	97%	100%	89%	86%	86%
Poland	93%	100%	99%	87%	81%	87%

**Exhibit 8.6: PIRLS 2021 Participation Rates (Weighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Portugal	82%	100%	100%	96%	78%	96%
Qatar	99%	99%	100%	89%	88%	88%
Russian Federation	99%	100%	100%	97%	96%	97%
Saudi Arabia	95%	100%	100%	93%	89%	93%
Serbia	100%	100%	99%	87%	86%	86%
Singapore	100%	100%	100%	97%	97%	97%
† Slovak Republic	80%	94%	100%	92%	73%	87%
Slovenia	95%	97%	100%	95%	90%	92%
South Africa	97%	98%	98%	87%	83%	84%
Spain	100%	100%	100%	92%	92%	92%
Sweden	95%	97%	100%	93%	88%	90%
Turkiye	100%	100%	100%	90%	90%	90%
United Arab Emirates	100%	100%	100%	91%	90%	90%
Uzbekistan	99%	100%	100%	99%	97%	99%
<b>Benchmarking Participants</b>						
≡ Alberta, Canada	55%	68%	91%	91%	46%	57%
British Columbia, Canada	97%	99%	97%	91%	86%	88%
Newfoundland & Labrador, Can.	99%	99%	100%	93%	92%	92%
≡ Quebec, Canada	62%	69%	99%	95%	57%	64%
Moscow City, Russian Fed.	100%	100%	100%	98%	97%	98%
South Africa (6)	98%	99%	99%	90%	88%	89%
Abu Dhabi, UAE	100%	100%	99%	89%	88%	88%
Dubai, UAE	99%	99%	100%	92%	92%	92%

Categories for sample participation † and ≡ are described in Exhibit 8.5.

**Exhibit 8.7: PIRLS 2021 Participation Rates (Unweighted)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Albania	99%	99%	100%	95%	93%	93%
Australia	97%	98%	100%	92%	89%	90%
Austria	98%	100%	100%	96%	94%	96%
Azerbaijan	92%	92%	100%	92%	84%	84%
Bahrain	100%	100%	100%	93%	92%	92%
Belgium (Flemish)	80%	84%	100%	96%	77%	81%
Belgium (French)	92%	100%	100%	95%	88%	95%
† Brazil	65%	78%	100%	85%	55%	66%
Bulgaria	100%	100%	100%	91%	91%	91%
Chinese Taipei	99%	100%	100%	98%	97%	98%
† Croatia	93%	95%	96%	83%	74%	76%
Cyprus	99%	99%	100%	95%	94%	94%
Czech Republic	99%	99%	100%	92%	91%	91%
† Denmark	76%	91%	100%	94%	72%	85%
Egypt	100%	100%	100%	93%	93%	93%
England	88%	96%	100%	92%	80%	88%
Finland	100%	100%	100%	97%	97%	97%
France	97%	97%	99%	94%	90%	90%
Georgia	96%	98%	99%	93%	89%	90%
Germany	95%	97%	100%	88%	84%	85%
† Hong Kong SAR	79%	95%	100%	90%	72%	86%
Hungary	90%	96%	100%	95%	85%	91%
Iran, Islamic Rep. of	100%	100%	100%	97%	97%	97%
Ireland	100%	100%	100%	94%	94%	94%
Israel	99%	99%	100%	88%	88%	88%
Italy	94%	99%	99%	94%	87%	92%
Jordan	100%	100%	100%	96%	96%	96%
Kazakhstan	100%	100%	100%	97%	97%	97%
Kosovo	100%	100%	100%	96%	96%	96%
Latvia	97%	99%	100%	90%	87%	89%
Lithuania	95%	95%	99%	87%	82%	82%

**Exhibit 8.7: PIRLS 2021 Participation Rates (Unweighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Macao SAR	98%	98%	100%	92%	91%	91%
Malta	100%	100%	100%	90%	89%	89%
Montenegro	100%	100%	99%	95%	94%	94%
Morocco	100%	100%	100%	95%	95%	95%
≡ Netherlands	44%	81%	100%	95%	42%	76%
† New Zealand	76%	90%	100%	90%	68%	81%
North Macedonia	98%	99%	96%	89%	84%	85%
† Northern Ireland	75%	89%	100%	90%	67%	80%
Norway (5)	98%	99%	100%	95%	93%	94%
Oman	96%	97%	100%	89%	85%	86%
Poland	93%	100%	99%	86%	79%	85%
Portugal	83%	100%	100%	96%	79%	95%
Qatar	99%	99%	100%	90%	89%	89%
Russian Federation	99%	100%	100%	97%	96%	97%
Saudi Arabia	85%	99%	100%	93%	79%	93%
Serbia	100%	100%	98%	86%	84%	84%
Singapore	100%	100%	100%	97%	97%	97%
† Slovak Republic	75%	91%	100%	92%	69%	83%
Slovenia	95%	96%	100%	95%	89%	91%
South Africa	98%	98%	98%	85%	82%	82%
Spain	99%	100%	100%	93%	92%	93%
Sweden	95%	97%	100%	93%	88%	90%
Turkiye	100%	100%	100%	89%	89%	89%
United Arab Emirates	100%	100%	100%	91%	91%	91%
Uzbekistan	99%	100%	100%	99%	97%	99%
<b>Benchmarking Participants</b>						
≡ Alberta, Canada	54%	65%	88%	91%	44%	53%
British Columbia, Canada	98%	99%	97%	91%	86%	87%
Newfoundland & Labrador, Can.	99%	99%	100%	93%	92%	92%
≡ Quebec, Canada	58%	65%	98%	95%	54%	61%
Moscow City, Russian Fed.	99%	100%	100%	97%	97%	97%

**Exhibit 8.7: PIRLS 2021 Participation Rates (Unweighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
South Africa (6)	98%	99%	99%	88%	85%	87%
Abu Dhabi, UAE	100%	100%	99%	90%	89%	89%
Dubai, UAE	99%	99%	100%	91%	91%	91%

Categories for sample participation † and ≡ are described in Exhibit 8.5.

## Achieved Sample Sizes for the PIRLS 2021 National Samples

Exhibits 8.8 and 8.9 show the achieved sample sizes in terms of schools and students for each of the PIRLS 2021 participants. Countries were expected to achieve minimum sample sizes of 150 schools and 4,000 participating students. digitalPIRLS countries were required to achieve student sample sizes of 5,000 participating students to accommodate the additional administration of ePIRLS. Most countries met these targets.

**Exhibit 8.8: PIRLS 2021 School Sample Sizes**

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
Albania	180	179	177	0	177
Australia	290	288	278	3	281
Austria	160	160	156	4	160
Azerbaijan	200	200	184	0	184
Bahrain	186	186	186	0	186
Belgium (Flemish)	168	167	134	7	141
Belgium (French)	158	158	146	12	158
Brazil	244	240	156	31	187
Bulgaria	151	151	151	0	151
Chinese Taipei	184	184	182	2	184
Croatia	166	162	150	4	154
Cyprus	162	162	160	0	160
Czech Republic	197	197	196	0	196
Denmark	218	217	166	31	197

**Exhibit 8.8: PIRLS 2021 School Sample Sizes (Continued)**

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
Egypt	192	192	192	0	192
England	170	169	148	14	162
Finland	221	219	219	0	219
France	190	190	184	0	184
Georgia	194	194	187	3	190
Germany	261	261	248	4	252
Hong Kong SAR	152	151	120	24	144
Hungary	165	164	147	10	157
Iran, Islamic Rep. of	220	218	218	0	218
Ireland	151	148	148	0	148
Israel	196	195	193	1	194
Italy	169	165	155	9	164
Jordan	221	217	216	0	216
Kazakhstan	268	267	267	0	267
Kosovo	150	150	150	0	150
Latvia	160	158	153	3	156
Lithuania	204	199	190	0	190
Macao SAR	64	64	63	0	63
Malta	78	78	78	0	78
Montenegro	140	140	140	0	140
Morocco	266	266	266	0	266
Netherlands	164	162	72	59	131
New Zealand	205	205	155	29	184
North Macedonia	150	150	147	1	148
Northern Ireland	160	160	120	23	143
Norway (5)	161	160	157	1	158
Oman	224	222	214	1	215
Poland	150	150	140	10	150
Portugal	198	196	162	34	196
Qatar	263	262	259	0	259
Russian Federation	204	204	202	2	204

**Exhibit 8.8: PIRLS 2021 School Sample Sizes (Continued)**

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
Saudi Arabia	190	143	122	20	142
Serbia	170	169	169	0	169
Singapore	183	183	183	0	183
Slovak Republic	186	186	140	29	169
Slovenia	166	166	157	3	160
South Africa	330	327	319	2	321
Spain	452	452	449	3	452
Sweden	156	151	144	2	146
Turkiye	192	192	192	0	192
United Arab Emirates	684	664	663	0	663
Uzbekistan	182	180	178	2	180
<b>Benchmarking Participants</b>					
Alberta, Canada	179	178	96	20	116
British Columbia, Canada	181	180	176	3	179
Newfoundland & Labrador, Can.	136	134	133	0	133
Quebec, Canada	172	171	100	12	112
Moscow City, Russian Fed.	174	174	173	1	174
South Africa (6)	255	255	249	4	253
Abu Dhabi, UAE	267	262	262	0	262
Dubai, UAE	204	191	190	0	190



**Exhibit 8.9: PIRLS 2021 Student Sample Sizes**

Country	Within-School Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Albania	95%	4,539	26	55	4,458	245	4,213
Australia	92%	6,333	196	177	5,960	473	5,487
Austria	96%	5,201	28	192	4,981	175	4,806
Azerbaijan	92%	5,753	41	23	5,689	480	5,209
Bahrain	91%	5,786	136	22	5,628	420	5,208
Belgium (Flemish)	96%	5,479	42	104	5,333	219	5,114
Belgium (French)	95%	4,595	12	80	4,503	224	4,279
Brazil	86%	6,314	330	158	5,826	885	4,941
Bulgaria	92%	4,584	59	105	4,420	377	4,043
Chinese Taipei	98%	5,737	39	55	5,643	88	5,555
Croatia	84%	5,020	137	134	4,749	812	3,937
Cyprus	95%	5,044	9	213	4,822	233	4,589
Czech Republic	91%	7,353	41	93	7,219	598	6,621
Denmark	94%	5,466	53	289	5,124	303	4,821
Egypt	94%	8,681	142	0	8,539	560	7,979
England	92%	4,682	5	156	4,521	371	4,150
Finland	97%	7,368	33	67	7,268	250	7,018
France	94%	5,879	65	155	5,659	320	5,339
Georgia	94%	5,808	92	79	5,637	396	5,241
Germany	88%	5,296	12	71	5,213	602	4,611
Hong Kong SAR	91%	4,518	238	33	4,247	417	3,830
Hungary	95%	5,813	97	102	5,614	302	5,312
Iran, Islamic Rep. of	97%	6,262	79	6	6,177	215	5,962
Ireland	94%	5,160	130	53	4,977	314	4,663
Israel	89%	5,591	26	37	5,528	638	4,890
Italy	94%	6,149	25	313	5,811	371	5,440
Jordan	96%	6,776	290	98	6,388	238	6,150
Kazakhstan	97%	7,666	299	121	7,246	223	7,023
Kosovo	97%	4,874	38	113	4,723	166	4,557
Latvia	91%	4,903	38	13	4,852	483	4,369

**Exhibit 8.9: PIRLS 2021 Student Sample Sizes (Continued)**

Country	Within-School Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Lithuania	87%	5,451	7	131	5,313	690	4,623
Macao SAR	92%	5,685	19	144	5,522	429	5,093
Malta	90%	3,475	15	79	3,381	351	3,030
Montenegro	95%	4,972	22	202	4,748	259	4,489
Morocco	96%	8,121	749	0	7,372	355	7,017
Netherlands	95%	4,604	23	42	4,539	226	4,313
New Zealand	91%	6,392	82	150	6,160	603	5,557
North Macedonia	89%	3,323	8	31	3,284	355	2,929
Northern Ireland	90%	4,698	42	150	4,506	456	4,050
Norway (5)	95%	5,819	58	113	5,648	266	5,382
Oman	89%	6,183	123	59	6,001	680	5,321
Poland	87%	5,086	51	159	4,876	697	4,179
Portugal	96%	6,791	75	324	6,392	281	6,111
Qatar	89%	6,161	228	77	5,856	598	5,258
Russian Federation	97%	5,585	13	168	5,404	187	5,217
Saudi Arabia	93%	5,293	136	28	5,129	351	4,778
Serbia	87%	4,870	25	146	4,699	662	4,037
Singapore	97%	6,921	21	0	6,900	181	6,719
Slovak Republic	92%	5,303	27	23	5,253	412	4,841
Slovenia	95%	5,456	6	67	5,383	273	5,110
South Africa	87%	14,833	210	47	14,576	2,150	12,426
Spain	92%	9,539	20	277	9,242	691	8,551
Sweden	93%	5,822	48	207	5,567	392	5,175
Turkiye	90%	7,621	361	466	6,794	762	6,032
United Arab Emirates	91%	31,032	436	575	30,021	2,573	27,448
Uzbekistan	99%	5,986	33	22	5,931	85	5,846
<b>Benchmarking Participants</b>							
Alberta, Canada	91%	3,492	41	146	3,305	285	3,020
British Columbia, Canada	91%	5,546	91	304	5,151	476	4,675
Newfoundland & Labrador, Can.	93%	2,806	25	153	2,628	183	2,445

**Exhibit 8.9: PIRLS 2021 Student Sample Sizes (Continued)**

Country	Within-School Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Quebec, Canada	95%	4,015	12	51	3,952	213	3,739
Moscow City, Russian Fed.	98%	6,048	25	127	5,896	151	5,745
South Africa (6)	90%	10,776	199	0	10,577	1,260	9,317
Abu Dhabi, UAE	89%	11,864	74	224	11,566	1,185	10,381
Dubai, UAE	92%	8,978	329	211	8,438	727	7,711

## PIRLS 2021 Trends in Student Populations

Because a primary goal of PIRLS is to measure changes in students' reading achievement across assessment cycles, it is important to track any changes over time in population composition and coverage that might be related to student achievement. Exhibit 8.10 presents, for each country, trends across PIRLS cycles (2021, 2016, 2011, 2006, and 2001) in four characteristics of the PIRLS assessment populations: number of years of formal schooling, average student age, percent of students in the national target population excluded from the assessment, and overall weighted participation rates after using replacements. Most countries and benchmarking participants were very similar concerning these characteristics across the five assessment cycles. However, there have been changes in some countries in the age and grade structure of the assessed populations, in target population coverage, or in the exclusion rate.

Countries that had to delay assessing the fourth grade cohort until the beginning of the fifth grade due to COVID-19 disruptions to schooling had relatively older students in PIRLS 2021. Also, some countries had to delay test administration by a full year, so their trend between 2016 and 2021 is six years instead of five.

**Exhibit 8.10: Trends in Student Populations**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Australia</b>				
✕ 2021	4	10.0	4.4%	90%
2016	4	10.0	4.8%	94%
2011	4	10.0	4.4%	93%
<b>Austria</b>				
2021	4	10.3	4.8%	96%
<sup>2</sup> 2016	4	10.3	5.6%	98%
2011	4	10.3	5.1%	98%
2006	4	10.3	5.1%	97%
<b>Azerbaijan</b>				
2021	4	10.1	2.5%	84%
2016	4	10.1	2.1%	96%
<sup>2</sup> 2011	4	10.2	7.2%	100%
<b>Bahrain</b>				
2021	4	10.3	1.0%	91%
2016	4	9.9	2.7%	98%
<b>Belgium (Flemish)</b>				
2021	4	10.0	2.9%	81%
2016	4	10.1	1.6%	92%
<sup>2</sup> † 2006	4	10.0	7.1%	91%
<b>Belgium (French)</b>				
<sup>2</sup> 2021	4	10.0	7.4%	95%
<sup>2</sup> 2016	4	10.0	6.0%	97%
<sup>2</sup> † 2011	4	10.1	5.6%	82%
2006	4	9.9	3.9%	95%
<b>Bulgaria</b>				
2021	4	10.7	3.4%	92%
2016	4	10.8	4.3%	95%
2011	4	10.7	2.5%	95%
<sup>2</sup> 2006	4	10.9	6.4%	94%
2001	4	10.9	2.7%	93%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Chinese Taipei</b>				
2021	4	10.1	1.1%	98%
2016	4	10.1	0.9%	98%
2011	4	10.2	1.4%	99%
2006	4	10.1	2.9%	99%
<b>Croatia</b>				
<sup>†</sup> 2021	4	11.2	4.4%	77%
<sup>2</sup> 2011	4	10.7	7.9%	95%
<b>Cyprus</b>				
2021	4	9.8	5.5%	94%
2001	4	9.7	2.0%	97%
<b>Czech Republic</b>				
2021	4	10.4	5.5%	91%
2016	4	10.3	3.4%	95%
2011	4	10.4	5.1%	94%
2001	4	10.5	5.0%	90%
<b>Denmark</b>				
<sup>2†</sup> 2021	4	10.9	9.1%	85%
<sup>2</sup> 2016	4	10.8	9.8%	90%
<sup>2</sup> 2011	4	10.9	7.3%	95%
<sup>2</sup> 2006	4	10.9	6.2%	96%
<b>Egypt</b>				
<sup>2</sup> 2021	4	10.0	8.0%	94%
<sup>+</sup> 2016	4	10.0	1.2%	97%
<b>England</b>				
<sup>∞</sup> 2021	5	10.3	5.4%	88%
2016	5	10.3	3.7%	96%
<sup>†</sup> 2011	5	10.3	2.4%	82%
2006	5	10.3	2.4%	92%
<sup>2†</sup> 2001	5	10.2	5.7%	82%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Finland</b>				
2021	4	10.8	2.3%	97%
2016	4	10.8	2.4%	96%
2011	4	10.8	3.1%	95%
<b>France</b>				
2021	4	9.9	5.0%	91%
2016	4	9.8	5.4%	96%
2011	4	10.0	5.2%	97%
2006	4	10.0	3.8%	95%
2001	4	10.1	5.3%	94%
<b>Georgia</b>				
<sup>1</sup> 2021	4	10.6	2.7%	91%
<sup>1</sup> 2016	4	9.7	3.8%	96%
<sup>1</sup> 2011	4	10.0	4.9%	96%
<sup>1 2</sup> 2006	4	10.1	7.3%	98%
<b>Germany</b>				
2021	4	10.4	4.0%	85%
2016	4	10.3	4.2%	95%
2011	4	10.4	1.9%	95%
2006	4	10.5	0.7%	92%
2001	4	10.5	1.8%	86%
<b>Hong Kong SAR</b>				
<sup>2 †</sup> 2021	4	10.1	7.7%	87%
<sup>2 †</sup> 2016	4	9.9	10.1%	79%
<sup>3</sup> 2011	4	10.1	11.8%	83%
2006	4	10.0	3.9%	97%
2001	4	10.2	2.8%	97%
<b>Hungary</b>				
2021	4	11.2	4.9%	91%
2016	4	10.6	4.5%	97%
2011	4	10.7	4.2%	96%
2006	4	10.7	3.7%	97%
2001	4	10.7	2.1%	95%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Iran, Islamic Rep. of</b>				
✕ 2021	4	10.2	1.8%	97%
± 2016	4	10.2	4.1%	99%
2011	4	10.2	4.5%	99%
2006	4	10.2	3.8%	99%
2001	4	10.4	0.5%	98%
<b>Ireland</b>				
2021	4	11.0	3.6%	94%
2016	4	10.5	3.1%	96%
2011	4	10.3	2.5%	95%
<b>Israel</b>				
✕ <sup>3</sup> 2021	4	10.0	25.7%	88%
<sup>3</sup> 2016	4	10.0	24.9%	94%
<sup>3</sup> 2011	4	10.1	24.6%	93%
<b>Italy</b>				
<sup>2</sup> 2021	4	9.8	5.7%	92%
2016	4	9.7	4.9%	95%
2011	4	9.7	3.7%	95%
2006	4	9.7	5.3%	97%
2001	4	9.8	2.9%	98%
<b>Kazakhstan</b>				
2021	4	10.8	3.9%	97%
2016	4	10.3	4.9%	99%
<b>Latvia</b>				
2021	4	11.3	4.8%	90%
<sup>2</sup> 2016	4	10.9	7.8%	91%
2006	4	11.0	4.7%	92%
2001	4	11.0	4.6%	89%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Lithuania</b>				
2021	4	11.3	4.5%	82%
2016	4	10.8	4.2%	95%
<sup>1 2</sup> 2011	4	10.7	5.6%	94%
<sup>1</sup> 2006	4	10.7	5.1%	92%
<sup>1</sup> 2001	4	10.9	3.8%	83%
<b>Macao SAR</b>				
2021	4	9.9	3.5%	91%
2016	4	10.0	3.6%	98%
<b>Morocco</b>				
2021	4	10.5	1.6%	96%
± 2016	4	10.2	1.7%	99%
2011	4	10.5	2.0%	95%
<b>Netherlands</b>				
≡ 2021	4	10.1	5.1%	75%
† 2016	4	10.1	3.1%	86%
† 2011	4	10.2	3.7%	89%
† 2006	4	10.3	3.6%	90%
† 2001	4	10.3	3.7%	87%
<b>New Zealand</b>				
† 2021	4.5 - 5.5	10.0	3.5%	83%
2016	4.5 - 5.5	10.1	3.7%	92%
2011	4.5 - 5.5	10.1	3.3%	93%
2006	4.5 - 5.5	10.0	5.3%	95%
2001	4.5 - 5.5	10.1	3.2%	96%
<b>North Macedonia</b>				
2021	4	9.9	5.3%	85%
2006	4	10.6	4.9%	96%
2001	4	10.7	4.2%	94%
<b>Northern Ireland</b>				
<sup>2 †</sup> 2021	4	10.8	5.5%	81%
2016	4	10.4	3.0%	84%
† 2011	4	10.4	3.5%	79%



**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Norway (5)</b>				
2021	5	10.8	4.2%	94%
2016	5	10.8	5.3%	95%
<b>Oman</b>				
2021	4	9.8	3.6%	86%
2016	4	9.7	0.6%	98%
2011	4	9.9	1.5%	96%
<b>Poland</b>				
2021	4	10.9	4.8%	87%
2016	4	10.7	3.9%	90%
<b>Portugal</b>				
<sup>2</sup> 2021	4	10.1	6.4%	96%
<sup>2</sup> 2016	4	9.8	7.5%	93%
2011	4	10.0	2.5%	93%
<b>Qatar</b>				
2021	4	10.1	3.1%	88%
2016	4	10.0	3.9%	97%
<sup>2</sup> 2011	4	10.0	6.2%	99%
<b>Russian Federation</b>				
2021	4	10.8	5.4%	97%
2016	4	10.8	4.1%	98%
2011	4	10.8	5.3%	98%
<sup>2</sup> 2006	4	10.8	5.9%	97%
<sup>2</sup> 2001	3 or 4	10.3	6.6%	97%
<b>Saudi Arabia</b>				
<sup>3</sup> 2021	4	10.4	10.8%	93%
2016	4	9.9	2.3%	96%
2011	4	10.0	1.6%	98%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Singapore</b>				
<sup>3</sup> 2021	4	10.4	14.5%	97%
<sup>3</sup> 2016	4	10.4	11.1%	97%
<sup>2</sup> 2011	4	10.4	6.3%	96%
2006	4	10.4	0.9%	95%
2001	4	10.1	0.1%	98%
<b>Slovak Republic</b>				
<sup>†</sup> 2021	4	10.5	2.4%	87%
2016	4	10.4	4.8%	97%
2011	4	10.4	4.6%	96%
2006	4	10.4	3.6%	94%
2001	4	10.3	2.0%	96%
<b>Slovenia</b>				
2021	4	10.0	2.8%	92%
2016	4	9.9	2.4%	90%
2011	4	9.9	2.6%	94%
2006	3 or 4	9.9	0.8%	93%
2001	3	9.8	0.3%	94%
<b>South Africa</b>				
<sup>⊠</sup> 2021	4	10.2	1.7%	84%
<sup>+</sup> 2016	4	10.6	2.5%	94%
<b>Spain</b>				
2021	4	9.9	4.6%	92%
2016	4	9.9	4.8%	97%
2011	4	9.8	5.4%	96%
2006	4	9.9	5.3%	97%
<b>Sweden</b>				
<sup>2</sup> 2021	4	10.7	5.5%	90%
2016	4	10.7	5.2%	95%
2011	4	10.7	4.1%	91%
2006	4	10.9	3.9%	96%
2001	4	10.8	5.0%	92%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Turkiye</b>				
<sup>2</sup> 2021	4	9.9	8.9%	90%
2001	4	10.2	3.9%	97%
<b>United Arab Emirates</b>				
2021	4	10.4	4.1%	90%
2016	4	9.8	3.3%	95%
2011	4	9.8	3.3%	97%
<b>United States</b>				
<sup>2</sup> ≡ 2021	4	10.7	5.8%	64%
† 2016	4	10.1	4.8%	86%
<sup>2</sup> 2011	4	10.2	7.2%	81%
<sup>2</sup> † 2006	4	10.1	5.9%	82%
† 2001	4	10.2	5.3%	83%
<b>Benchmarking Participants</b>				
<b>Alberta, Canada</b>				
<sup>3</sup> ≡ 2021	4	9.9	10.6%	57%
<sup>2</sup> 2011	4	9.9	6.8%	94%
<sup>2</sup> 2006	4	9.9	7.1%	96%
<b>British Columbia, Canada</b>				
<sup>2</sup> 2021	4	9.8	6.7%	88%
<sup>2</sup> 2006	4	9.8	7.6%	94%
<b>Quebec, Canada</b>				
≡ 2021	4	10.7	4.7%	64%
≡ 2016	4	10.1	5.1%	64%
2011	4	10.1	3.7%	92%
2006	4	10.1	3.6%	81%
2001	4	10.2	3.3%	89%
<b>Moscow City, Russian Federation</b>				
2021	4	10.7	3.9%	98%
2016	4	10.8	3.3%	97%

**Exhibit 8.10: Trends in Student Populations (Continued)**

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
<b>Abu Dhabi, UAE</b>				
2021	4	10.4	2.7%	88%
2016	4	9.7	3.9%	96%
2011	4	9.7	2.7%	96%
<b>Dubai, UAE</b>				
<sup>2</sup> 2021	4	10.2	10.0%	92%
2016	4	9.9	3.2%	95%
2011	4	9.8	5.1%	94%

■ Delayed assessment of fourth grade cohort at the beginning of fifth grade

\* Represents years of schooling counting from the first year of ISCED Level 1.

Trend data are included only for assessment years reported in PIRLS 2021.

⊗ Assessed one year later than originally scheduled – six year trend from PIRLS 2016.

See Exhibit 8.2 for population coverage notes 1, 2, and 3. See Exhibit 8.5 for sampling guidelines and sampling participation notes †, ‡, and ≡.

+ Participated in Literacy version of PIRLS 2016.

± Participated in both regular and Literacy versions of PIRLS 2016.

Georgia assessed students taught in Georgian and in Azerbaijani in PIRLS 2016.

Singapore's increased exclusions in 2016 resulted from increased enrollment in private schools, which predominantly serve international students and are different from public schools in many respects (e.g., different language of instruction and calendar year).

The Russian Federation and Slovenia underwent structural changes in the age at which children enter schools that are reflected in their samples. In 2001, the Russian sample contained third grade students from some regions and fourth grade students from others, whereas all students were in the fourth grade by 2006. By 2011, Slovenia had completed the transition toward having all children begin school at an earlier age so that they all would have four years of primary schooling at the fourth grade instead of three years, as was the case in 2001.

National coverage of the international target population was generally comprehensive for most countries and has not changed across PIRLS assessments, with some exceptions worth noting for interpreting trend results. In 2011, Azerbaijan tested only students taught in Azerbaijani, and in 2016 and 2021, Azerbaijan also tested students taught in Russian. Similarly, in PIRLS 2001 through PIRLS 2011, Lithuania assessed only students receiving instruction in Lithuanian, but in 2016 and 2021, Lithuania also assessed students receiving instruction in Russian and Polish.

## Characteristics of the Bridge Samples

Countries that participated in digitalPIRLS also provided paper-based “bridge” data to link the two versions of the assessment to the PIRLS achievement scales and to safeguard the measurement of trends from previous assessments. The bridge data resulted from administering the paper version of the trend items (8 passages and item sets that were also administered in 2016) to a separate but equivalent sample of students during the main data collection. The following sections of this chapter summarize the major characteristics of the bridge samples for trend countries that participated in digitalPIRLS. Exhibit 12.11 in [Chapter 12](#) compares key sampling outcomes between the digital and bridge samples of the digitalPIRLS countries.

### Overlap between the PIRLS 2021 Bridge and digitalPIRLS Samples

As discussed in [Chapter 3](#), the digitalPIRLS countries’ bridge samples needed to mirror their main digitalPIRLS samples as closely as possible. For operational reasons, it was not possible to administer both the digitalPIRLS assessment and bridge assessment to the same students or in the same classes. Consequently, bridge samples were obtained by a) selecting an additional class from a subset of the sampled schools, b) selecting a separate sample of schools, or c) a combination of the two approaches. The sampling experts from Statistics Canada worked with each digitalPIRLS country during the sampling development stage to develop an optimal strategy for selecting the bridge sample.

Exhibit 8.11 presents the bridge sample sizes and the percentage of students from the digitalPIRLS schools.

**Exhibit 8.11: Percentage of Bridge Samples in Schools Overlapping with Digital Samples**

Country	Number of Schools	Number of Students	Percentage of Bridge Students in digitalPIRLS Schools (Weighted)
Belgium (Flemish)	48	1,623	0.0%
Chinese Taipei	68	1,669	73.4%
Croatia	48	1,226	0.0%
Czech Republic	58	1,906	0.0%
Denmark	60	1,403	34.3%
Finland	62	2,069	0.0%
Germany	74	1,343	72.9%
Hungary	52	1,697	0.0%
Israel	77	1,780	94.6%
Italy	58	1,979	0.0%

**Exhibit 8.11: Percentage of Bridge Samples in Schools Overlapping with Digital Samples (Continued)**

Country	Number of Schools	Number of Students	Percentage of Bridge Students in digitalPIRLS Schools (Weighted)
Kazakhstan	122	3,207	0.0%
Lithuania	68	1,519	0.0%
Malta	22	835	0.0%
New Zealand	65	2,221	0.0%
Norway	55	1,673	0.0%
Portugal	88	2,098	88.2%
Qatar	66	1,343	98.6%
Russian Federation	92	2,187	0.0%
Saudi Arabia	51	1,872	31.8%
Singapore	60	1,988	100.0%
Slovak Republic	73	1,640	35.4%
Slovenia	51	1,414	34.3%
Spain	74	1,572	53.1%
Sweden	49	1,863	0.0%
United Arab Emirates	92	1,990	98.9%
United States	78	1,657	92.9%
<b>Benchmarking Participant</b>			
Moscow City, Russian Fed.	66	1,695	97.0%

### National Coverage and Exclusions of the PIRLS 2021 Bridge Samples

The coverage and school exclusions before school sampling are the same for the bridge and digitalPIRLS samples as they took place before the drawing of the samples from the same sampling frames. Although the within-school exclusion estimates for the bridge and digitalPIRLS samples could be different because the students in the two samples were not the same, in general, the within-school exclusion rates estimated from the bridge samples were similar to those estimated from the digitalPIRLS samples. However, because of the smaller sample sizes for the bridge, the within-school exclusion rate estimates from the digitalPIRLS samples are more precise than those estimated from the bridge samples. Exhibit 8.12 summarizes population coverage and exclusions resulting from the bridge samples.

**Exhibit 8.12: Bridge - Coverage of PIRLS 2021 Target Population**

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Belgium (Flemish)	100%		0.5%	3.0%	3.6%
Chinese Taipei	100%		0.0%	1.0%	1.1%
Croatia	100%		1.3%	2.4%	3.7%
Czech Republic	100%		2.6%	1.4%	4.0%
<sup>2</sup> Denmark	100%		2.1%	6.7%	8.8%
Finland	100%		1.0%	1.4%	2.5%
<sup>2</sup> Germany	100%		1.9%	3.9%	5.8%
Hungary	100%		2.8%	2.5%	5.3%
<sup>3</sup> Israel	100%		22.5%	2.1%	24.6%
<sup>2</sup> Italy	100%		0.8%	5.4%	6.2%
<sup>2</sup> Kazakhstan	100%		1.0%	7.4%	8.5%
Lithuania	100%		1.9%	1.9%	3.8%
Malta	100%		0.3%	1.0%	1.3%
New Zealand	100%		1.1%	2.0%	3.1%
Norway (5)	100%		2.2%	2.8%	5.0%
<sup>2</sup> Portugal	100%		1.3%	4.6%	5.9%
Qatar	100%		1.9%	1.1%	3.0%
<sup>2</sup> Russian Federation	100%		1.7%	5.1%	6.7%
<sup>3</sup> Saudi Arabia	100%		10.4%	0.9%	11.3%
<sup>3</sup> Singapore	100%		14.1%	0.4%	14.5%
Slovak Republic	100%		1.5%	0.6%	2.2%
Slovenia	100%		1.8%	0.9%	2.8%
Spain	100%		1.8%	2.6%	4.4%
Sweden	100%		1.2%	2.5%	3.7%
United Arab Emirates	100%		1.1%	3.8%	4.8%
<sup>2</sup> United States	100%		0.0%	5.8%	5.8%
<b>Benchmarking Participant</b>					
Moscow City, Russian Fed.	100%		0.5%	4.7%	5.3%

1 National Target Population does not include all of the International Target Population.

2 National Defined Population covers 90% to 95% of National Target Population.

3 National Defined Population covers less than 90% of National Target Population (but at least 77%).

## Target Population Size of the PIRLS 2021 Bridge Samples

Exhibits 8.13 shows the number of schools and students in each country’s target population (after school-level exclusions) and bridge sample, as well as an estimate of the student population size based on the bridge sample data. The target population figures are derived from the sampling frame used to select the PIRLS 2021 samples. The sample figures are based on the number of sampled schools and students that participated in the bridge assessment. The student population size estimated from the sample was computed using sampling weights, which are explained in more detail in [Chapter 3](#).

**Exhibit 8.13: Bridge - Population and Sample Sizes**

Country	Target Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Belgium (Flemish)	2,445	78,220	48	1,623	76,621
Chinese Taipei	2,648	182,378	68	1,669	186,991
Croatia	1,664	40,901	48	1,226	43,523
Czech Republic	3,642	110,011	58	1,906	111,454
Denmark	1,628	64,335	60	1,403	63,718
Finland	1,926	62,051	62	2,069	62,993
Germany	17,102	724,145	74	1,343	756,436
Hungary	2,723	89,112	52	1,697	80,116
Israel	1,892	123,950	77	1,780	123,697
Italy	6,711	540,546	58	1,979	532,335
Kazakhstan	6,046	361,664	122	3,207	339,725
Lithuania	663	29,470	68	1,519	29,719
Malta	100	4,650	22	835	4,229
New Zealand	1,839	65,131	65	2,221	67,999
Norway (5)	1,893	62,444	55	1,673	61,535
Portugal	1,235	99,986	88	2,098	96,233
Qatar	267	25,836	66	1,343	25,472
Russian Federation	32,202	1,760,780	92	2,187	1,881,787
Saudi Arabia	11,143	475,822	51	1,872	346,378
Singapore	183	36,972	60	1,988	37,169
Slovak Republic	2,191	54,263	73	1,640	54,337
Slovenia	721	21,877	51	1,414	21,454



**Exhibit 8.13: Bridge - Population and Sample Sizes (Continued)**

Country	Target Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Spain	12,820	473,970	74	1,572	465,894
Sweden	3,251	119,433	49	1,863	118,529
United Arab Emirates	826	86,373	92	1,990	84,091
United States	70,361	4,110,886	78	1,657	3,628,037
<b>Benchmarking Participant</b>					
Moscow City, Russian Fed.	615	114,885	66	1,695	115,101

### Participation Rates for the PIRLS 2021 Bridge Samples

The PIRLS 2021 bridge samples were subject to the same quality requirements as the PIRLS 2021 samples, as summarized in Exhibit 8.5. The following exhibits present the school, classroom, student, and overall weighted (Exhibit 8.14) and unweighted (Exhibit 8.15) participation rates for each bridge sample. All countries achieved the same levels of participation and annotations between their bridge and digital samples.

Exhibits 8.16 and 8.17 show the achieved bridge sample sizes for schools and students, respectively.

**Exhibit 8.14: Bridge - Participation Rates (Weighted)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Belgium (Flemish)	93%	93%	100%	96%	90%	90%
Chinese Taipei	100%	100%	100%	99%	99%	99%
Croatia	92%	93%	97%	86%	77%	78%
Czech Republic	100%	100%	98%	91%	89%	89%
† Denmark	73%	91%	100%	96%	69%	87%
Finland	100%	100%	100%	96%	96%	96%
Germany	98%	98%	100%	88%	86%	86%
Hungary	97%	98%	99%	94%	90%	91%
Israel	100%	100%	100%	86%	86%	86%
Italy	93%	100%	99%	95%	88%	94%
Kazakhstan	100%	100%	100%	98%	98%	98%

**Exhibit 8.14: Bridge - Participation Rates (Weighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Lithuania	100%	100%	100%	87%	87%	87%
Malta	100%	100%	100%	88%	88%	88%
New Zealand	82%	96%	100%	92%	75%	87%
Norway (5)	98%	98%	100%	96%	94%	94%
Portugal	80%	99%	100%	96%	77%	96%
Qatar	96%	96%	100%	89%	85%	85%
Russian Federation	100%	100%	100%	97%	97%	97%
Saudi Arabia	96%	100%	100%	95%	91%	95%
Singapore	100%	100%	98%	98%	97%	97%
Slovak Republic	82%	96%	99%	94%	76%	90%
Slovenia	85%	91%	100%	96%	81%	87%
Spain	100%	100%	100%	96%	96%	96%
Sweden	98%	98%	100%	91%	89%	89%
United Arab Emirates	99%	99%	100%	91%	90%	90%
≡ United States	54%	67%	100%	95%	51%	64%

**Benchmarking Participant**

Moscow City, Russian Fed.	100%	100%	100%	97%	97%	97%
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Categories for sample participation † and ≡ are described in Exhibit 8.5.

**Exhibit 8.15: Bridge - Participation Rates (Unweighted)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Belgium (Flemish)	92%	92%	100%	96%	88%	88%
Chinese Taipei	100%	100%	100%	99%	99%	99%
Croatia	90%	92%	96%	84%	73%	75%
Czech Republic	100%	100%	99%	91%	91%	91%
† Denmark	71%	91%	100%	95%	68%	87%
Finland	100%	100%	100%	96%	96%	96%
Germany	97%	97%	100%	87%	85%	85%
Hungary	96%	98%	99%	93%	89%	91%
Israel	100%	100%	100%	87%	87%	87%

**Exhibit 8.15: Bridge - Participation Rates (Unweighted) (Continued)**

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Italy	93%	100%	99%	95%	88%	94%
Kazakhstan	100%	100%	100%	97%	97%	97%
Lithuania	100%	100%	100%	86%	86%	86%
Malta	100%	100%	100%	88%	88%	88%
New Zealand	79%	93%	99%	91%	71%	84%
Norway (5)	98%	98%	100%	96%	94%	94%
Portugal	80%	99%	100%	97%	77%	95%
Qatar	96%	96%	100%	90%	86%	86%
Russian Federation	99%	100%	100%	97%	96%	97%
Saudi Arabia	88%	100%	100%	94%	83%	94%
Singapore	100%	100%	98%	98%	97%	97%
Slovak Republic	79%	96%	99%	93%	73%	89%
Slovenia	86%	91%	100%	96%	82%	87%
Spain	100%	100%	100%	95%	95%	95%
Sweden	98%	98%	100%	91%	89%	89%
United Arab Emirates	99%	99%	100%	90%	89%	89%
≡ United States	52%	66%	100%	95%	49%	63%
<b>Benchmarking Participant</b>						
Moscow City, Russian Fed.	98%	100%	100%	97%	96%	97%

Categories for sample participation † and ≡ are described in Exhibit 8.5.

**Exhibit 8.16: Bridge - School Sample Sizes**

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
Belgium (Flemish)	52	52	48	0	48
Chinese Taipei	68	68	68	0	68
Croatia	52	52	47	1	48
Czech Republic	58	58	58	0	58
Denmark	66	66	47	13	60
Finland	62	62	62	0	62
Germany	77	76	74	0	74
Hungary	54	53	51	1	52
Israel	77	77	77	0	77
Italy	58	58	54	4	58
Kazakhstan	124	122	122	0	122
Lithuania	68	68	68	0	68
Malta	22	22	22	0	22
New Zealand	70	70	55	10	65
Norway (5)	56	56	55	0	55
Portugal	89	89	71	17	88
Qatar	69	69	66	0	66
Russian Federation	92	92	91	1	92
Saudi Arabia	64	51	45	6	51
Singapore	60	60	60	0	60
Slovak Republic	76	76	60	13	73
Slovenia	56	56	48	3	51
Spain	74	74	74	0	74
Sweden	52	50	49	0	49
United Arab Emirates	93	93	92	0	92
United States	122	118	61	17	78
<b>Benchmarking Participant</b>					
Moscow City, Russian Fed.	66	66	65	1	66

**Exhibit 8.17: Bridge - Student Sample Sizes**

Country	Within-School Student Participation (Weighted Percentage)	Number of Sampled Students in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Belgium (Flemish)	96%	1,746	8	45	1,693	70	1,623
Chinese Taipei	99%	1,708	5	18	1,685	16	1,669
Croatia	86%	1,525	32	39	1,454	228	1,226
Czech Republic	91%	2,116	10	22	2,084	178	1,906
Denmark	96%	1,577	15	90	1,472	69	1,403
Finland	96%	2,177	16	16	2,145	76	2,069
Germany	88%	1,559	2	20	1,537	194	1,343
Hungary	94%	1,875	30	28	1,817	120	1,697
Israel	86%	2,063	5	13	2,045	265	1,780
Italy	95%	2,210	8	118	2,084	105	1,979
Kazakhstan	98%	3,453	112	48	3,293	86	3,207
Lithuania	87%	1,812	2	41	1,769	250	1,519
Malta	88%	969	6	11	952	117	835
New Zealand	92%	2,500	28	42	2,430	209	2,221
Norway (5)	96%	1,813	14	49	1,750	77	1,673
Portugal	96%	2,296	26	96	2,174	76	2,098
Qatar	89%	1,597	80	22	1,495	152	1,343
Russian Federation	97%	2,345	3	88	2,254	67	2,187
Saudi Arabia	95%	2,041	38	18	1,985	113	1,872
Singapore	98%	2,029	4	0	2,025	37	1,988
Slovak Republic	94%	1,780	13	7	1,760	120	1,640
Slovenia	96%	1,491	0	16	1,475	61	1,414
Spain	96%	1,706	1	50	1,655	83	1,572
Sweden	91%	2,107	27	40	2,040	177	1,863
United Arab Emirates	91%	2,274	39	29	2,206	216	1,990
United States	95%	1,826	22	64	1,740	83	1,657
<b>Benchmarking Participant</b>							
Moscow City, Russian Fed.	97%	1,817	11	63	1,743	48	1,695

## Appendix 8A: Characteristics of National Samples

### Albania

#### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, schools with language of instruction other than Albanian, and special curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

#### Sample Design

- Explicit stratification by school type (public, private) and urbanization (urban, rural) for public schools stratum only
- Implicit stratification by urbanization (urban, rural) for private schools stratum
- Sampled two classes in large schools (measure of size > 99)
- Private schools stratum was oversampled

#### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Urban	83	0	81	0	0	2	1
Public - Rural	66	0	66	0	0	0	0
Private	30	0	30	0	0	0	0
<b>Total</b>	<b>179</b>	<b>0</b>	<b>177</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>

## Australia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), very remote schools, and special and non-mainstream schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by state or territory (8)
- Implicit stratification by school type (catholic, government, independent, all), geographic location (metropolitan, provincial, remote), and socioeconomic index (low socioeconomic status, high socioeconomic status)
- Sampled one classroom in most cases but more where pseudo-classes are required (e.g., composite classes)
- Schools were oversampled at the state/territory level

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Australian Capital Territory	30	0	29	0	0	1	0
New South Wales	45	0	45	0	0	0	0
Northern Territory	13	0	8	1	1	3	2
Queensland	45	0	45	0	0	0	0
South Australia	40	0	39	1	0	0	0
Tasmania	30	0	30	0	0	0	0
Victoria	45	0	42	0	0	3	0
Western Australia	40	0	40	0	0	0	0
<b>Total</b>	<b>288</b>	<b>0</b>	<b>278</b>	<b>2</b>	<b>1</b>	<b>7</b>	<b>2</b>

## Austria

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, and schools with foreign curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by urbanization (densely-populated area, intermediate area, thinly-populated area) and achievement level (4)
- Implicit stratification by region (9)
- Sampled two classrooms per school whenever possible

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Densely-populated area - Level 1	14	0	14	0	0	0	0
Densely-populated area - Level 2	14	0	14	0	0	0	0
Densely-populated area - Level 3	12	0	12	0	0	0	0
Densely-populated area - Level 4	8	0	8	0	0	0	0
Intermediate area - Level 1	8	0	8	0	0	0	0
Intermediate area - Level 2	20	0	19	1	0	0	0
Intermediate area - Level 3	16	0	16	0	0	0	0
Intermediate area - Level 4	8	0	7	1	0	0	0
Thinly-populated area - Level 1	8	0	8	0	0	0	0
Thinly-populated area - Level 2	22	0	22	0	0	0	0
Thinly-populated area - Level 3	22	0	21	1	0	0	0
Thinly-populated area - Level 4	8	0	7	1	0	0	0
<b>Total</b>	<b>160</b>	<b>0</b>	<b>156</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>



## Azerbaijan

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language instruction other than Azerbaijani or Russian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction (Azerbaijani, Russian or bilingual), urbanization (urban, rural) within Azerbaijani stratum, and city (Baku, other) within urban stratum
- No implicit stratification
- Sampled two classrooms in schools with five or more classrooms and in bilingual schools
- Class group option was used in bilingual schools

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Azerbaijani - Urban - Baku	30	0	28	0	0	2	0
Azerbaijani - Urban - Other cities	44	0	40	0	0	4	0
Azerbaijani - Rural	72	0	66	0	0	6	0
Russian or Bilingual	54	0	50	0	0	4	0
<b>Total</b>	<b>200</b>	<b>0</b>	<b>184</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>

## Bahrain

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, students taught in French, and students taught in Japanese
- Within-school exclusions consisted of students with intellectual disabilities and non-native language speakers

### Sample Design

- Explicit stratification by governorate (Public Muharraq, Public Capital, Public Northern, Public Southern, Private) and gender (boys, girls) within public schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 149)
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates, when all classes within a school were sampled

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public Muharraq - Boys	10	0	10	0	0	0	0
Public Muharraq - Girls	9	0	9	0	0	0	0
Public Capital - Boys	19	0	19	0	0	0	0
Public Capital - Girls	19	0	19	0	0	0	0
Public Northern - Boys	17	0	17	0	0	0	0
Public Northern - Girls	22	0	22	0	0	0	0
Public Southern - Boys	12	0	12	0	0	0	0
Public Southern - Girls	11	0	11	0	0	0	0
Private	67	0	67	0	0	0	0
<b>Total</b>	<b>186</b>	<b>0</b>	<b>186</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Belgium (Flemish)

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language of instruction other than Dutch
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (special, official, private) and school composition (low, medium and high) within official and private schools
- Implicit stratification by five provinces and Brussels Capital Region
- Sampled two classrooms whenever possible
- The school composition variable has a continuous value ranging from 0 to 1, 1 being the most challenging population
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Special - All	8	1	4	1	0	2	0
Private - Low Composition	38	0	27	3	0	8	0
Private - Medium Composition	32	0	24	1	0	7	0
Private - High Composition	28	0	26	0	0	2	0
Official - Low Composition	14	0	13	0	0	1	0
Official - Medium Composition	24	0	20	2	0	2	0
Official - High Composition	24	0	20	0	0	4	0
<b>Total</b>	<b>168</b>	<b>1</b>	<b>134</b>	<b>7</b>	<b>0</b>	<b>26</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Special - All	4	0	3	0	0	1	0
Private - Low Composition	12	0	11	0	0	1	0
Private - Medium Composition	10	0	10	0	0	0	0
Private - High Composition	8	0	7	0	0	1	0
Official - Low Composition	4	0	3	0	0	1	0
Official - Medium Composition	6	0	6	0	0	0	0
Official - High Composition	8	0	8	0	0	0	0
<b>Total</b>	<b>52</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>

## Belgium (French)

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (public at state level, public at local level, private sectarian) and socio-economic index (very disadvantaged SES, disadvantaged SES, advantaged SES, very advantaged SES)
- Implicit stratification by region (6)
- Sampled two classrooms in large schools (measure of size > 45)
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public at state level - Very disadvantaged and disadvantaged SES	10	0	9	1	0	0	0
Public at state level - Advantaged and very advantaged SES	8	0	7	1	0	0	0
Public at local level - Very disadvantaged SES	22	0	22	0	0	0	0
Public at local level - Disadvantaged SES	18	0	17	1	0	0	0
Public at local level - Advantaged SES	20	0	20	0	0	0	0
Public at local level - Very advantaged SES	16	0	16	0	0	0	0
Private sectarian - Very disadvantaged SES	12	0	9	3	0	0	0
Private sectarian - Disadvantaged SES	16	0	14	2	0	0	0
Private sectarian - Advantaged SES	16	0	15	1	0	0	0
Private sectarian - Very advantaged SES	20	0	17	2	1	0	0
<b>Total</b>	<b>158</b>	<b>0</b>	<b>146</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>0</b>

## Brazil

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), indigenous schools, and schools in geographically inaccessible areas
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

### Sample Design

- Explicit stratification by school type (4) and region (5)
- Implicit stratification by state (27) and SES level (4)
- Sampled two classrooms in large schools (measure of size > 159)
- All Public Federal schools were selected
- In the census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public Federal	24	0	2	0	0	22	0
North - Public State	14	1	10	1	0	2	0
North - Public Municipal	12	0	10	1	0	1	0
North - Private	12	0	9	2	1	0	0
Northeast - Public State	12	1	6	1	0	4	0
Northeast - Public Municipal	32	0	19	9	0	4	0
Northeast - Private	10	0	5	3	1	1	0
Southeast - Public State	10	1	9	0	0	0	0
Southeast - Public Municipal	36	0	24	2	2	8	0
Southeast - Private	12	0	6	2	0	4	0
South - Public State	11	0	10	1	0	0	1
South - Public Municipal	14	0	9	2	0	3	0
South - Private	10	0	7	2	0	1	0
Midwest - Public State	12	0	12	0	0	0	0
Midwest - Public Municipal	12	0	10	0	0	2	0
Midwest - Private	10	0	8	0	1	1	0
<b>Total</b>	<b>243</b>	<b>3</b>	<b>156</b>	<b>26</b>	<b>5</b>	<b>53</b>	<b>1</b>



## Bulgaria

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4) and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (elementary, basic, general) and location (capital, regional city, city, village)
- Implicit stratification by national test score (low, medium, high)
- Sampled two classrooms in large schools (measure of size > 75)
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Elementary School - Capital and Large Cities	8	0	8	0	0	0	0
Elementary School - Other	8	0	8	0	0	0	0
Basic School - Capital	12	0	12	0	0	0	0
Basic School - Large Cities	30	0	30	0	0	0	0
Basic School - Other	34	0	34	0	0	0	0
General School - Capital	16	0	16	0	0	0	0
General School - Large Cities	18	0	18	0	0	0	0
General School - Other	25	0	25	0	0	0	0
<b>Total</b>	<b>151</b>	<b>0</b>	<b>151</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Chinese Taipei

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (north, middle, south, east/isolated Islands) and school size (large, small) within north, middle and south regions
- Large schools are schools with more than 3 fourth grade classrooms and at least 55 students
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 209)
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 73.4%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
East and Island	8	0	8	0	0	0	0
North - Large	74	0	73	1	0	0	0
North - Small	12	0	12	0	0	0	0
Middle - Large	32	0	32	0	0	0	0
Middle - Small	14	0	13	1	0	0	0
South - Large	30	0	30	0	0	0	0
South - Small	14	0	14	0	0	0	0
<b>Total</b>	<b>184</b>	<b>0</b>	<b>182</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
East and Island	4	0	4	0	0	0	0
North - Large	28	0	28	0	0	0	0
North - Small	4	0	4	0	0	0	0
Middle - Large	12	0	12	0	0	0	0
Middle - Small	4	0	4	0	0	0	0
South - Large	12	0	12	0	0	0	0
South - Small	4	0	4	0	0	0	0
<b>Total</b>	<b>68</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Croatia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3) and private schools
- Within-school exclusions consisted of students with intellectual disabilities and non-native language speakers

### Sample Design

- Explicit stratification by school type (mother/single building, satellite) and by region (6)
- Implicit stratification by urbanization (urban, rural)
- Sampled two classrooms whenever possible
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
All Regions - Satellite School	8	0	8	0	0	0	0
Central Croatia - Mother/Single Building School	8	0	8	0	0	0	0
Eastern Croatia - Mother/Single Building School	6	0	6	0	0	0	0
Northern Croatia - Mother/Single Building School	4	0	3	0	0	1	0
Western Croatia - Mother/Single Building School	6	0	6	0	0	0	0
Southern Croatia - Mother/Single Building School	10	0	7	0	0	3	0
City of Zagreb - Mother/Single Building School	10	0	9	1	0	0	0
<b>Total</b>	<b>52</b>	<b>0</b>	<b>47</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>

### School Participation Status - Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
All Regions - Satellite School	8	0	8	0	0	0	0
Central Croatia - Mother/Single Building School	8	0	8	0	0	0	0
Eastern Croatia - Mother/Single Building School	6	0	6	0	0	0	0
Northern Croatia - Mother/Single Building School	4	0	3	0	0	1	0
Western Croatia - Mother/Single Building School	6	0	6	0	0	0	0
Southern Croatia - Mother/Single Building School	10	0	7	0	0	3	0
City of Zagreb - Mother/Single Building School	10	0	9	1	0	0	0
<b>Total</b>	<b>52</b>	<b>0</b>	<b>47</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>

## Cyprus

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language of instruction other than Greek or English
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (public, private), curriculum (national curriculum, other), and district (4)
- Implicit stratification by urbanization (urban, rural) and language of instruction (English, Greek)
- Sampled all classrooms
- The Main Data Collection sample was selected using the Chowdhury approach to maximize the sample overlap with TIMSS 2019

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public and Private with national curriculum - Nicosia	55	0	55	0	0	0	0
Public and Private with national curriculum - Limassol	40	0	40	0	0	0	0
Public and Private with national curriculum) - Famagusta-Larnaca	36	0	36	0	0	0	0
Public and Private with national curriculum - Paphos	19	0	18	0	0	1	0
Private with other curriculum	12	0	11	0	0	1	0
<b>Total</b>	<b>162</b>	<b>0</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>

## Czech Republic

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, schools with polish as language of instruction
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (14), plus one additional stratum created for schools with no fourth grade students on the frame but expected to have some during the Main Data Collection
- No implicit stratification
- Sampled two classrooms whenever possible
- Schools were oversampled in Karlovarský, Ústecký, Liberecký, Jihomoravský, Olomoucký, Zlínský and Moravskoslezský
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Praha	19	0	19	0	0	0	0
Stredočeský	21	0	21	0	0	0	0
Jihočeský	8	0	8	0	0	0	0
Plzeňský	8	0	8	0	0	0	0
Karlovarský	14	0	14	0	0	0	0
Ústecký	23	0	23	0	0	0	0
Liberecký	10	0	10	0	0	0	0
Královéhradecký	8	0	8	0	0	0	0
Pardubický	8	0	8	0	0	0	0
Vysocina	8	0	8	0	0	0	0
Jihomoravský	20	0	19	0	0	1	0
Olomoucký	11	0	11	0	0	0	0
Zlínský	10	0	10	0	0	0	0
Moravskoslezský	29	0	29	0	0	0	0
<b>Total</b>	<b>197</b>	<b>0</b>	<b>196</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Praha	4	0	4	0	0	0	0
Stredočeský	6	0	6	0	0	0	0
Jihočeský	4	0	4	0	0	0	0
Plzeňský	4	0	4	0	0	0	0
Karlovarský	4	0	4	0	0	0	0
Ústecký	4	0	4	0	0	0	0
Liberecký	4	0	4	0	0	0	0
Královéhradecký	4	0	4	0	0	0	0
Pardubický	4	0	4	0	0	0	0
Vysocina	4	0	4	0	0	0	0
Jihomoravský	4	0	4	0	0	0	0
Olomoucký	4	0	4	0	0	0	0
Zlínský	4	0	4	0	0	0	0
Moravskoslezský	4	0	4	0	0	0	0
<b>Total</b>	<b>58</b>	<b>0</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



## Denmark

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, treatment schools/therapeutic boarding schools, and schools with non-native language of instruction
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (public, private) and school size (large, small) within public schools
- Large schools are schools with at least 3 fourth grade classrooms and at least 65 students
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 69); in schools sampled for digitalPIRLS and Bridge, one classroom sampled for either digitalPIRLS or Bridge; in schools selected for Bridge only, two classrooms sampled in large schools (measure of size > 50)
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from DigitalPIRLS schools is 34.3%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Small	102	0	84	10	3	5	0
Public - Large	78	0	63	11	0	4	0
Private	37	0	19	5	2	11	1
<b>Total</b>	<b>217</b>	<b>0</b>	<b>166</b>	<b>26</b>	<b>5</b>	<b>20</b>	<b>1</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Small	30	0	24	6	0	0	0
Public - Large	24	0	19	2	0	3	0
Private	12	0	4	5	0	3	0
<b>Total</b>	<b>66</b>	<b>0</b>	<b>47</b>	<b>13</b>	<b>0</b>	<b>6</b>	<b>0</b>

## Egypt

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 20), special needs schools, schools in North Sinai Governorate, schools in South Sinai Governorate, international schools, and al-Azhar schools
- No within-school exclusions

### Sample Design

- Explicit stratification by school sponsor (5), geographical sector (Capital, North, South, Canal) within governmental schools, urbanization (urban, rural) within Governmental Schools - Capital, Governmental Schools – North, and Governmental Schools - South strata
- Implicit stratification by school shift (full day, morning, afternoon, double)
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Governmental Schools - Capital - Urban	22	0	22	0	0	0	0
Governmental Schools - Capital - Rural	10	0	10	0	0	0	0
Governmental Schools - North - Urban	16	0	16	0	0	0	0
Governmental Schools - North - Rural	46	0	46	0	0	0	0
Governmental Schools - South - Urban	12	0	12	0	0	0	0
Governmental Schools - South - Rural	34	0	34	0	0	0	0
Governmental Schools - Canal	10	0	10	0	0	0	0
Governmental Language Schools	10	0	10	0	0	0	0
Private Funded Schools (without fees)	10	0	10	0	0	0	0
Private Schools (with fees)	12	0	12	0	0	0	0
Private Language Schools	10	0	10	0	0	0	0
<b>Total</b>	<b>192</b>	<b>0</b>	<b>192</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## England

### Coverage and Exclusions

- Target population is the fifth grade
- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 8), special needs schools, and pupil referral units
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (academy, all other state funded, independent) and attainment level (5)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 91)
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
All Other State Funded - Low	12	0	11	1	0	0	0
All Other State Funded - Low to Medium	20	0	19	0	0	1	0
All Other State Funded - Medium and N/A	22	0	17	1	2	2	0
All Other State Funded - Medium to High	20	0	19	1	0	0	0
All Other State Funded - High	17	0	14	2	0	1	1
Academy - Low	12	0	12	0	0	0	0
Academy - Low to Medium	14	0	12	2	0	0	0
Academy - Medium and N/A	16	0	13	1	0	2	0
Academy - Medium to High	14	0	12	2	0	0	0
Academy - High	12	0	11	0	1	0	0
Independent - N/A	10	0	8	1	0	1	0
<b>Total</b>	<b>169</b>	<b>0</b>	<b>148</b>	<b>11</b>	<b>3</b>	<b>7</b>	<b>1</b>

## Finland

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools with language of instruction other than Finnish or Swedish
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by major region (Helsinki and Uusimaa, southern, western, northern and eastern, Swedish speaking) and urbanization (urban and semi-urban, rural)
- Implicit stratification by regional state administrative agency (6)
- Sampled two classrooms whenever possible
- Schools were oversampled in Swedish speaking region
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Helsinki / Uusimaa - Urban and Semi-Urban	42	0	42	0	0	0	0
Helsinki / Uusimaa - Rural	8	0	8	0	0	0	0
Southern - Urban and Semi-Urban	26	0	26	0	0	0	0
Southern - Rural	8	1	7	0	0	0	0
Western - Urban and Semi-Urban	32	0	32	0	0	0	0
Western - Rural	8	0	8	0	0	0	0
Northern & Eastern - Urban and Semi-Urban	29	0	29	0	0	0	0
Northern & Eastern - Rural	8	0	8	0	0	0	0
Swedish Speaking - Urban and Semi-Urban	44	0	44	0	0	0	0
Swedish Speaking Region - Rural	16	1	15	0	0	0	0
<b>Total</b>	<b>221</b>	<b>2</b>	<b>219</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Helsinki / Uusimaa - Urban and Semi-Urban	12	0	12	0	0	0	0
Helsinki / Uusimaa - Rural	4	0	4	0	0	0	0
Southern - Urban and Semi-Urban	8	0	8	0	0	0	0
Southern - Rural	4	0	4	0	0	0	0
Western - Urban and Semi-Urban	10	0	10	0	0	0	0
Western - Rural	4	0	4	0	0	0	0
Northern & Eastern - Urban and Semi-Urban	8	0	8	0	0	0	0
Northern & Eastern - Rural	4	0	4	0	0	0	0
Swedish Speaking - Urban and Semi-Urban	4	0	4	0	0	0	0
Swedish Speaking Region - Rural	4	0	4	0	0	0	0
<b>Total</b>	<b>62</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



## France

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, overseas territories, Mayotte, and private schools without a contract
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by (public – other, public – priority education zone, private)
- No implicit stratification
- Sampled two classrooms whenever possible
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Other	132	0	130	0	0	2	0
Public - Priority Education Zone	30	0	28	0	0	2	0
Private	28	0	26	0	0	2	0
<b>Total</b>	<b>190</b>	<b>0</b>	<b>184</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>

## Georgia

### Coverage and Exclusions

- Coverage is 92.5%; restricted to students taught in Georgian
- School-level exclusions consisted of very small schools (measure of size < 4)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school location (urban, rural), legal status (public, private) and school region (Tbilisi, Other) for the urban stratum
- Implicit stratification by legal status (public private) for the rural stratum
- Sampled two classes in large schools (measure of size > 99)
- Urban-Private stratum was oversampled

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Rural	50	0	50	0	0	0	0
Urban - Public - Tbilisi	56	0	56	0	0	0	0
Urban - Public - Other	58	0	55	0	0	3	0
Urban - Private - Tbilisi	20	0	16	2	1	1	0
Urban - Private - Other	10	0	10	0	0	0	0
<b>Total</b>	<b>194</b>	<b>0</b>	<b>187</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>0</b>

## Germany

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (regular, special needs), by the percentage of foreign students (very low, low, medium, high) within regular schools, and school size (small, large) within regular schools
- Implicit stratification by state (16 federal states) and urbanization (urban, medium, rural)
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 72.9%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Regular school - High percentage of foreign students - Large	45	0	42	1	0	2	0
Regular school - Low percentage of foreign students - Small	32	0	28	2	0	2	0
Regular school - Low percentage of foreign students - Large	78	0	78	0	0	0	0
Regular school - Medium percentage of foreign students - Large	80	0	78	0	0	2	0
Regular school - Very low percentage of foreign students - Small	20	0	17	1	0	2	0
Special Needs Schools	6	0	5	0	0	1	0
<b>Total</b>	<b>261</b>	<b>0</b>	<b>248</b>	<b>4</b>	<b>0</b>	<b>9</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Regular school - High percentage of foreign students - Large	14	0	12	0	0	2	0
Regular school - Low percentage of foreign students - Small	6	0	6	0	0	0	0
Regular school - Low percentage of foreign students - Large	24	0	24	0	0	0	0
Regular school - Medium percentage of foreign students - Large	25	0	25	0	0	0	0
Regular school - Very low percentage of foreign students - Small	4	0	4	0	0	0	0
Special Needs Schools	3	0	3	0	0	0	1
<b>Total</b>	<b>76</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>

## Hong Kong SAR

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (government, aided, direct-subsidy and Private, single gender)
- Implicit stratification by gender (co-educational, boys, girls)
- Sampled two classrooms in large schools (measure of size > 209)

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Single Gender	10	0	7	2	0	1	0
Aided	118	1	92	18	4	3	0
Direct Subsidy or Private	14	0	11	0	0	3	0
Government	10	0	10	0	0	0	0
<b>Total</b>	<b>152</b>	<b>1</b>	<b>120</b>	<b>20</b>	<b>4</b>	<b>7</b>	<b>0</b>

## Hungary

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language of instruction other than Hungarian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by type of community (capital and county town, town, rural) and national assessment score (low, medium, high, missing)
- Implicit stratification by geographical region (7)
- Sampled two classrooms whenever possible
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Capital and Country Town - Low or Medium score	18	0	17	1	0	0	0
Capital and Country Town - High Score	34	0	31	1	0	2	0
Capital and Country Town - Missing Score	8	0	5	3	0	0	0
Town - Low Score	8	0	8	0	0	0	0
Town - Medium Score	28	0	27	1	0	0	0
Town - High Score	16	0	16	0	0	0	0
Town - Missing Score	10	0	8	0	0	2	0
Rural - Low Score	8	0	7	0	0	1	0
Rural - Medium Score	18	0	17	1	0	0	0
Rural - High Score	9	0	8	1	0	0	0
Rural - Missing Score	8	1	3	2	0	2	0
<b>Total</b>	<b>165</b>	<b>1</b>	<b>147</b>	<b>10</b>	<b>0</b>	<b>7</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Capital and Country Town - Low or Medium score	4	0	4	0	0	0	0
Capital and Country Town - High Score	8	0	8	0	0	0	0
Capital and Country Town - Missing Score	4	0	4	0	0	0	0
Town - Low Score	4	0	4	0	0	0	0
Town - Medium Score	8	0	8	0	0	0	0
Town - High Score	6	0	6	0	0	0	0
Town - Missing Score	4	0	3	0	0	1	0
Rural - Low Score	4	0	4	0	0	0	0
Rural - Medium Score	4	0	4	0	0	0	0
Rural - High Score	4	0	4	0	0	0	0
Rural - Missing Score	4	1	2	1	0	0	0
<b>Total</b>	<b>54</b>	<b>1</b>	<b>51</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>

## Iran, Islamic Rep. of

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4)
- Within-school exclusions consisted of students with functional disabilities

### Sample Design

- Explicit stratification by school type (public, private), gender (boys, girls, mixed) within public schools, and province or grouped provinces (7) within public schools
- No implicit stratification
- Sampled one classroom per school
- Schools were oversampled in Esfehan, Khorasan Razavi, Khozestan, Tehran City and Tehran province



### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - All - All	18	0	18	0	0	0	0
Public - Boys - Esfahan	10	0	10	0	0	0	0
Public - Boys - Fars	10	0	10	0	0	0	0
Public - Boys - Khorasan Razavi	10	0	10	0	0	0	0
Public - Boys - Khozestan	10	0	10	0	0	0	0
Public - Boys - Other Provinces	30	0	30	0	0	0	0
Public - Boys - Tehran City	10	0	10	0	0	0	0
Public - Boys - Tehran Province	10	0	10	0	0	0	0
Public - Girls - Esfahan	10	0	10	0	0	0	0
Public - Girls - Fars	10	0	10	0	0	0	0
Public - Girls - Khorasan Razavi	10	0	10	0	0	0	0
Public - Girls - Khozestan	10	0	10	0	0	0	0
Public - Girls - Other Provinces	30	0	30	0	0	0	0
Public - Girls - Tehran City	10	0	10	0	0	0	0
Public - Girls - Tehran Province	10	0	10	0	0	0	0
Public - Mixed - All	22	2	20	0	0	0	0
<b>Total</b>	<b>220</b>	<b>2</b>	<b>218</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Ireland

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, and non-aided (private) schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction (ordinary, all Irish, Gaeltacht), DEIS (DEIS 1, DEIS 2, DEIS R, non-DEIS) within ordinary schools, and gender (boys/girls/mixed) within non-DEIS schools
- No implicit stratification
- Sampled two classrooms whenever possible
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
All Irish School	10	0	10	0	0	0	0
Gaeltacht School	8	1	7	0	0	0	0
DEIS 1 - Ordinary School	11	0	11	0	0	0	0
DEIS 2 - Ordinary School	8	0	8	0	0	0	0
DEIS R - Ordinary School	8	0	8	0	0	0	0
Non-DEIS - Ordinary School - Boys	8	0	8	0	0	0	0
Non-DEIS - Ordinary School - Girls	10	0	10	0	0	0	0
Non-DEIS - Ordinary School - Mixed	88	2	86	0	0	0	0
<b>Total</b>	<b>151</b>	<b>3</b>	<b>148</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Israel

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, ultra-Orthodox schools, and schools with language instruction other than Hebrew or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school sector (Hebrew-Secular, Hebrew-Religious, Arabic), socioeconomic status (high, medium, low), subgroups within Arab sector (Arab, Druze, Bedouin), and school size (small, large)
- Implicit stratification by gender (male, female, mixed) and region (north, south, all)
- Sampled two classrooms in large schools (measure of size > 119); in schools that are selected to do both digitalPIRLS and Bridge, one class is selected for each assessment
- Only the Main Data Collection sample was selected as Israel did not conduct the Field Test
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 94.6%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Arabic-Arabs - Low - Large	17	0	17	0	0	0	0
Arabic-Arabs - Medium - Large	9	0	9	0	0	0	0
Arabic-Bedouin - ALL - Large	14	0	14	0	0	0	0
Arabic-Druze - ALL - Large	8	0	8	0	0	0	0
Hebrew-Religious - High - Large	10	0	10	0	0	0	0
Hebrew-Religious - Low - Large	4	0	4	0	0	0	0
Hebrew-Religious - Low - Small	4	0	4	0	0	0	0
Hebrew-Religious - Medium - Large	25	0	24	0	0	1	0
Hebrew-Secular - High - Large	54	0	54	0	0	0	1
Hebrew-Secular - Low - Large	14	0	13	1	0	0	0
Hebrew-Secular - Medium - Large	36	0	36	0	0	0	0
<b>Total</b>	<b>195</b>	<b>0</b>	<b>193</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Arabic-Arabs - Low - Large	12	0	12	0	0	0	0
Arabic-Arabs - Medium - Large	6	0	6	0	0	0	0
Arabic-Bedouin - ALL - Large	7	0	7	0	0	0	0
Arabic-Druze - ALL - Large	4	0	4	0	0	0	0
Hebrew-Religious - High - Large	4	0	4	0	0	0	0
Hebrew-Religious - Low - Large	2	0	2	0	0	0	0
Hebrew-Religious - Low - Small	2	0	2	0	0	0	0
Hebrew-Religious - Medium - Large	7	0	7	0	0	0	0
Hebrew-Secular - High - Large	18	0	18	0	0	0	0
Hebrew-Secular - Low - Large	4	0	4	0	0	0	0
Hebrew-Secular - Medium - Large	11	0	11	0	0	0	0
<b>Total</b>	<b>77</b>	<b>0</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Italy

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, and schools with Slovenian, Ladin, or German as language of instruction
- Within-school exclusions consisted of students with functional disabilities

### Sample Design

- Explicit stratification by school type (private, public) and region (north west, north east, center, south, south islands)
- Implicit stratification by national test results (low, medium, high)
- Sampled two classrooms whenever possible
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private	10	0	7	3	0	0	0
Public - Center	30	0	29	1	0	0	0
Public - North East	30	0	29	1	0	0	0
Public - North West	42	3	35	4	0	0	0
Public - South	32	1	30	0	0	1	0
Public - South Islands	25	0	25	0	0	0	0
<b>Total</b>	<b>169</b>	<b>4</b>	<b>155</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private	4	0	3	1	0	0	0
Public - Center	10	0	10	0	0	0	0
Public - North East	10	0	9	1	0	0	0
Public - North West	14	0	13	1	0	0	0
Public - South	12	0	12	0	0	0	0
Public - South Islands	8	0	7	1	0	0	0
<b>Total</b>	<b>58</b>	<b>0</b>	<b>54</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Jordan

### Coverage and Exclusions

- Coverage is 100 percent
- No school level exclusions
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (5) and achievement (4) for all school types except for Ministry of Defence schools
- Implicit stratification by school gender (female, male, mixed)
- Sampled one classroom per school
- All Ministry of Defense schools were selected
- In the census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - Low	10	0	10	0	0	0	0
Private - Medium	8	0	8	0	0	0	0
Private - High	12	1	11	0	0	0	0
Private - Very High	10	1	9	0	0	0	0
UNRWA - Low	8	0	8	0	0	0	0
UNRWA - Medium	8	0	8	0	0	0	0
UNRWA - High	8	0	8	0	0	0	0
UNRWA - Very High	8	0	8	0	0	0	0
Ministry of Defense - All Achievement Scores	25	0	25	0	0	0	0
Syrian - Low	8	0	8	0	0	0	0
Syrian - Medium	8	0	8	0	0	0	0
Syrian - High	8	0	8	0	0	0	0
Syrian - Very High	8	0	8	0	0	0	0
Ministry of Education - Low Achievement Score	22	1	21	0	0	0	0
Ministry of Education - Medium Achievement Score	24	0	24	0	0	0	0
Ministry of Education - High Achievement Score	22	1	21	0	0	0	0
Ministry of Education - Very High Achievement Score	24	0	23	0	0	1	0
<b>Total</b>	<b>221</b>	<b>4</b>	<b>216</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>



## Kazakhstan

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and schools with Uighur, Uzbek, Tadjik, or English as language of instruction
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (17) and urbanization (urban, rural)
- Implicit stratification by language (4)
- Sampled one classroom per school
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
AKMOLA - Urban	8	0	8	0	0	0	0
AKMOLA - Rural	8	0	8	0	0	0	0
AKTOBE - Urban	8	0	8	0	0	0	0
AKTOBE - Rural	8	1	7	0	0	0	0
ALMATY - Urban	8	0	8	0	0	0	0
ALMATY - Rural	14	0	14	0	0	0	0
ALMATY CITY - Urban	12	0	12	0	0	0	0
ATYRAU - Urban	8	0	8	0	0	0	0
ATYRAU - Rural	8	0	8	0	0	0	0
EAST - Urban	8	0	8	0	0	0	0
EAST - Rural	8	0	8	0	0	0	0
KARAGANDA - Urban	8	0	8	0	0	0	0
KARAGANDA - Rural	8	0	8	0	0	0	0
KOSTANAY - Urban	8	0	8	0	0	0	0
KOSTANAY - Rural	8	0	8	0	0	0	0
KYZYLORDA - Urban	8	0	8	0	0	0	0
KYZYLORDA - Rural	8	0	8	0	0	0	0
MANGYSTAU - Urban	8	0	8	0	0	0	0
MANGYSTAU - Rural	8	0	8	0	0	0	0
NORTH - Urban	8	0	8	0	0	0	0
NORTH - Rural	8	0	8	0	0	0	0
NUR-SULTAN CITY - Urban	8	0	8	0	0	0	0
PAVLODAR - Urban	8	0	8	0	0	0	0
PAVLODAR - Rural	8	0	8	0	0	0	0
SHYMKENT CITY - Urban	10	0	10	0	0	0	0
TURKISTAN - Urban	8	0	8	0	0	0	0
TURKISTAN - Rural	16	0	16	0	0	0	0
WEST - Urban	8	0	8	0	0	0	0
WEST - Rural	8	0	8	0	0	0	0
ZHAMBYL - Urban	8	0	8	0	0	0	0
ZHAMBYL - Rural	8	0	8	0	0	0	0
<b>Total</b>	<b>268</b>	<b>1</b>	<b>267</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
AKMOLA - Urban	4	0	4	0	0	0	0
AKMOLA - Rural	4	0	4	0	0	0	0
AKTOBE - Urban	4	0	4	0	0	0	0
AKTOBE - Rural	4	0	4	0	0	0	0
ALMATY - Urban	4	0	4	0	0	0	0
ALMATY - Rural	4	0	4	0	0	0	0
ALMATY CITY - Urban	4	0	4	0	0	0	0
ATYRAU - Urban	4	0	4	0	0	0	0
ATYRAU - Rural	4	0	4	0	0	0	0
EAST - Urban	4	0	4	0	0	0	0
EAST - Rural	4	0	4	0	0	0	0
KARAGANDA - Urban	4	0	4	0	0	0	0
KARAGANDA - Rural	4	0	4	0	0	0	0
KOSTANAY - Urban	4	0	4	0	0	0	0
KOSTANAY - Rural	4	0	4	0	0	0	0
KYZYLORDA - Urban	4	0	4	0	0	0	0
KYZYLORDA - Rural	4	0	4	0	0	0	0
MANGYSTAU - Urban	4	0	4	0	0	0	0
MANGYSTAU - Rural	4	0	4	0	0	0	0
NORTH - Urban	4	0	4	0	0	0	0
NORTH - Rural	4	0	4	0	0	0	0
NUR-SULTAN CITY - Urban	4	0	4	0	0	0	0
PAVLODAR - Urban	4	0	4	0	0	0	0
PAVLODAR - Rural	4	0	4	0	0	0	0
SHYMKENT CITY - Urban	3	0	3	0	0	0	1
TURKISTAN - Urban	4	0	4	0	0	0	0
TURKISTAN - Rural	3	0	3	0	0	0	1
WEST - Urban	4	0	4	0	0	0	0
WEST - Rural	4	0	4	0	0	0	0
ZHAMBYL - Urban	4	0	4	0	0	0	0
ZHAMBYL - Rural	4	0	4	0	0	0	0
<b>Total</b>	<b>122</b>	<b>0</b>	<b>122</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>

## Kosovo

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of Bosnian schools and Serbian schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (urban, rural, Serbian) and shifts (one, two or more)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 69)

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Rural - One	14	0	14	0	0	0	0
Rural - Two or more	56	0	56	0	0	0	0
Urban - One	10	0	10	0	0	0	0
Urban - Two or more	70	0	70	0	0	0	0
<b>Total</b>	<b>150</b>	<b>0</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Latvia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools with language of instruction other than Latvian or Russian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by urbanization (Riga, city, town-rural), language (Latvian, Russian), and school type (basic-beginners, secondary) within Latvian schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 84) and in bilingual schools
- Class group option was used in bilingual schools
- The Field Test and Main Data Collection PIRLS samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Riga - Latvian - Basic/Beginners	8	0	8	0	0	0	0
Riga - Latvian - Secondary	22	1	21	0	0	0	0
Riga - Russian - None	22	0	21	1	0	0	0
City - Latvian - Basic/Beginners	10	1	8	0	0	1	0
City - Latvian - Secondary	10	0	10	0	0	0	0
City - Russian - None	12	0	10	2	0	0	0
Town-Rural - Latvian - Basic/Beginners	28	0	27	0	0	1	0
Town-Rural - Latvian - Secondary	40	0	40	0	0	0	0
Town-Rural - Russian - None	8	0	8	0	0	0	0
<b>Total</b>	<b>160</b>	<b>2</b>	<b>153</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>

# Lithuania

## Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, schools with language of instruction other than Lithuanian, Russian, or Polish, and schools providing remote learning
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

## Sample Design

- Explicit stratification by language (Lithuanian, Russian, Polish, mixed) and urbanization (capital, cities, other major cities, small cities or village) within Lithuanian schools
- Implicit stratification by type (private, public) and school level (primary, basic, progymnasium, gymnasium).
- Sampled two classrooms in large schools (measure of size > 74)
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

## School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Lithuanian - Capital	36	1	34	0	0	1	0
Lithuanian - Other Major City	48	0	45	0	0	3	0
Lithuanian - Cities	58	1	55	0	0	2	0
Lithuanian - Small City or Village	38	3	35	0	0	0	0
Russian	8	0	8	0	0	0	0
Polish	8	0	6	0	0	2	0
Mixed	8	0	7	0	0	1	0
<b>Total</b>	<b>204</b>	<b>5</b>	<b>190</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Lithuanian - Capital	12	0	12	0	0	0	0
Lithuanian - Other Major City	14	0	14	0	0	0	0
Lithuanian - Cities	18	0	18	0	0	0	0
Lithuanian - Small Coty or Village	12	0	12	0	0	0	0
Russian	4	0	4	0	0	0	0
Polish	4	0	4	0	0	0	0
Mixed	4	0	4	0	0	0	0
<b>Total</b>	<b>68</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Macao SAR

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by education association (Chinese Educators Association, Catholic Schools Association, public schools, others)
- No implicit stratification
- Sampled all classrooms
- All schools were selected
- Classes were used as variance estimation strata and half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Chinese Educators Association	30	0	30	0	0	0	0
Catholic Schools Association	22	0	21	0	0	1	0
Public Schools	6	0	6	0	0	0	0
Other	6	0	6	0	0	0	0
<b>Total</b>	<b>64</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>



## Malta

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (church, independent, state)
- No implicit stratification
- Sampled all classrooms
- Classes were used as variance estimation strata and half classes were used to build Jackknife replicates
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Church	19	0	19	0	0	0	0
Independent	7	0	7	0	0	0	0
State	52	0	52	0	0	0	0
<b>Total</b>	<b>78</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Church	6	0	6	0	0	0	0
Independent	4	0	4	0	0	0	0
State	12	0	12	0	0	0	0
<b>Total</b>	<b>22</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Montenegro

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 2) and schools with language of instruction other than Montenegrin
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (north, central, south)
- Implicit stratification by urbanization (urban, suburban, rural)
- Sampled three classrooms in large schools (measure of size > 39) and two classrooms elsewhere
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
North	67	0	67	0	0	0	0
Central	47	0	47	0	0	0	0
South	26	0	26	0	0	0	0
<b>Total</b>	<b>140</b>	<b>0</b>	<b>140</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Morocco

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6)
- No within-school exclusions

### Sample Design

- Explicit stratification by school type (public, private) and regions (12); private schools from Grand Casablanca area were set aside to form two strata in the private sector
- Implicit stratification by urbanization (urban, rural)
- Sampled two classrooms in schools with at least 2 classrooms
- Oversampling of private schools and public schools within each region
- All public schools were selected in the region of Eddakhla-Oued Eddahab; two classrooms were selected per school, and schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private Schools - All other regions	16	0	16	0	0	0	0
Private Schools - Casablanca-Settat	8	0	8	0	0	0	0
Public Schools - Tanger-Tetouan-Al Hoceima	20	0	20	0	0	0	0
Public Schools - Oriental	20	0	20	0	0	0	0
Public Schools - Fès-Meknès	20	0	20	0	0	0	0
Public Schools - Rabat-Salé-Kénitra	20	0	20	0	0	0	0
Public Schools - Béni Mellal-Khénifra	20	0	20	0	0	0	0
Public Schools - Casablanca-Settat	20	0	20	0	0	0	0
Public Schools - Marrakech-Safi	20	0	20	0	0	0	0
Public Schools - Drâa-Tafilalet	20	0	20	0	0	0	0
Public Schools - Souss-Massa	20	0	20	0	0	0	0
Public Schools - Guelmim-Oued Noun	20	0	20	0	0	0	0
Public Schools - Laayoune-Sakia El Hamra	20	0	20	0	0	0	0
Public Schools - Eddakhla-Oued Eddahab	22	0	22	0	0	0	0
<b>Total</b>	<b>266</b>	<b>0</b>	<b>266</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## The Netherlands

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5) and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by socioeconomic status (low, medium, high) and urbanization density (5)
- No implicit stratification
- Sampled all classrooms

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
High SES - Very high population density	12	0	6	1	1	4	0
High SES - High population density	14	0	5	4	3	2	0
High SES - Moderate population density	10	0	6	1	2	1	0
High SES - Low population density	8	0	4	2	0	2	0
High SES - Very low population density	8	0	5	2	1	0	0
Medium SES - Very high population density	8	0	4	1	1	2	0
Medium SES - High population density	16	0	7	4	2	3	0
Medium SES - Moderate population density	14	0	5	4	2	3	0
Medium SES - Low population density	14	0	5	3	1	5	0
Medium SES - Very low population density	14	0	7	3	2	2	0
Low SES - Very high population density	12	0	4	6	0	2	0
Low SES - High population density	10	1	3	2	1	3	0
Low SES - Moderate population density	8	0	3	3	1	1	0
Low SES - Low population density	8	1	4	3	0	0	0
Low SES - Very low population density	8	0	4	3	0	1	0
<b>Total</b>	<b>164</b>	<b>2</b>	<b>72</b>	<b>42</b>	<b>17</b>	<b>31</b>	<b>0</b>

## New Zealand

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, Westmount closed Brethren, and correspondence schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language (Maori, English high immersion, bilingual, English-other), socioeconomic status level (5), and urbanization (major, small)
- No implicit stratification
- Sampled two classrooms per school
- The Main Data Collection sample was selected using the Chowdhury approach to control the overlap with the NMSSA schools sampled to participate in August 2020
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Maori-medium schools	11	0	2	2	1	6	0
English-medium schools (High immersion)	8	0	3	2	2	1	0
Bilingual schools	8	0	5	2	0	1	0
English-medium(other) - Independent schools	8	0	7	0	0	1	0
English-medium(other) - Low SES schools	25	0	18	2	1	4	0
English-medium(other) - Moderately low SES schools - from major urban centers	27	0	21	4	0	2	0
English-medium(other) - Moderately low SES schools - from smaller centers	14	0	10	3	0	1	0
English-medium(other) - Moderately high SES schools - from major urban centers	34	0	30	3	0	1	0
English-medium(other) - Moderately high SES schools - from smaller centers	15	0	10	4	0	1	0
English-medium(other) - High SES schools - from major urban centers	44	0	40	2	0	2	0
English-medium(other) - High SES schools - from smaller centers	11	0	9	1	0	1	0
<b>Total</b>	<b>205</b>	<b>0</b>	<b>155</b>	<b>25</b>	<b>4</b>	<b>21</b>	<b>0</b>



### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Maori-medium schools	4	0	0	0	0	4	0
English-medium schools (High immersion)	4	0	4	0	0	0	0
Bilingual schools	4	0	4	0	0	0	0
English-medium(other) - Independent schools	4	0	3	1	0	0	0
English-medium(other) - Low SES schools	8	0	4	3	0	1	0
English-medium(other) - Moderately low SES schools - from major urban centers	10	0	9	1	0	0	0
English-medium(other) - Moderately low SES schools - from smaller centers	4	0	3	0	1	0	0
English-medium(other) - Moderately high SES schools - from major urban centers	12	0	9	3	0	0	0
English-medium(other) - Moderately high SES schools - from smaller centers	4	0	3	1	0	0	0
English-medium(other) - High SES schools - from major urban centers	12	0	12	0	0	0	0
English-medium(other) - High SES schools - from smaller centers	4	0	4	0	0	0	0
<b>Total</b>	<b>70</b>	<b>0</b>	<b>55</b>	<b>9</b>	<b>1</b>	<b>5</b>	<b>0</b>

## North Macedonia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools with Turkish as language of instruction
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by urbanization (urban, rural, mixed) and language (Macedonian, Albanian, mixed)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 70)

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Urban - Macedonian	42	0	41	0	0	1	0
Urban - Albanian	8	0	8	0	0	0	0
Urban - Albanian and Macedonian	10	0	10	0	0	0	0
Rural - Macedonian	14	0	14	0	0	0	0
Rural - Albania	24	0	23	0	1	0	0
Rural -Albanian and Macedonian	10	0	10	0	0	0	0
Urban and Rural - Macedonian	30	0	29	0	0	1	0
Urban and Rural - Albanian, Albanian and Macedonian	12	0	12	0	0	0	0
<b>Total</b>	<b>150</b>	<b>0</b>	<b>147</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>

## Northern Ireland

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6) and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (Belfast, western, north eastern, south eastern, southern) and combinations of deprivation levels (5)
- Implicit stratification by deprivation (5)
- Sampled two classrooms in large schools (measure of size > 61) and in schools with both non-composite classes and large composite classes; all classrooms were sampled in schools with composite classes only

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Belfast - 1st to 4th quintiles of deprivation	8	0	6	2	0	0	0
Belfast - 5th quintile of deprivation	16	0	12	2	0	2	0
Western - 1st to 3rd quintiles of deprivation	10	0	7	0	1	2	0
Western - 4th quintile of deprivation	10	0	8	0	0	2	0
Western - 5th quintile of deprivation	8	0	8	0	0	0	0
North Eastern - 1st quintile of deprivation	10	0	7	2	0	1	0
North Eastern - 2nd quintile of deprivation	10	0	9	1	0	0	0
North Eastern - 3rd to 5th quintiles of deprivation	16	0	11	1	1	3	0
South Eastern - 1st quintile of deprivation	10	0	8	2	0	0	0
South Eastern - 2nd and 3rd quintiles of deprivation	12	0	10	1	0	1	0
South Eastern - 4th and 5th quintiles of deprivation	12	0	8	2	1	1	0
Southern - 1st and 2nd quintiles of deprivation	14	0	11	2	0	1	0
Southern - 3rd quintile of deprivation	10	0	5	4	0	1	0
Southern - 4th and 5th quintiles of deprivation	14	0	10	1	0	3	0
<b>Total</b>	<b>160</b>	<b>0</b>	<b>120</b>	<b>20</b>	<b>3</b>	<b>17</b>	<b>0</b>

## Norway (5)

### Coverage and Exclusions

- Target population is the fifth grade
- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, schools with Sami as language of instruction, pure introductory schools for minority students, and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by written language (Bokmål, Nynorsk) and size of municipality (small, middle, large) within Bokmål schools
- Implicit stratification by reading level (low, medium, high, missing)
- Sampled two classrooms whenever possible; in schools selected for the Bridge assessment, sampled only one classroom in small schools (measure of size < 50)
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Bokmål - Small municipalities	8	0	8	0	0	0	0
Bokmål - Medium municipalities	31	0	31	0	0	0	0
Bokmål - Large municipalities	92	0	90	1	0	1	0
Nynorsk - All municipalities	30	1	28	0	0	1	0
<b>Total</b>	<b>161</b>	<b>1</b>	<b>157</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Bokmål - Small municipalities	4	0	4	0	0	0	0
Bokmål - Medium municipalities	12	0	11	0	0	1	0
Bokmål - Large municipalities	32	0	32	0	0	0	0
Nynorsk - All municipalities	8	0	8	0	0	0	0
<b>Total</b>	<b>56</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>

## Oman

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 7), special needs schools, and evening shift schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by governorate (11) and school type (private, international)
- No implicit stratification
- Sampled one classroom per school
- All schools in Musadam Governorate were selected
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- In the census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Muscat Governorate	28	0	28	0	0	0	0
Ash Sharqiyah North Governorate	14	0	14	0	0	0	0
Ash Sharqiyah South Governorate	16	0	15	0	0	1	0
Ad Dakhliyah Governorate	24	0	24	0	0	0	0
Ad Dhahirah Governorate	10	0	10	0	0	0	0
Al Batinah North Governorate	36	0	36	0	0	0	0
Al Batinah South Governorate	22	0	22	0	0	0	0
Al Buraimi Governorate	10	0	10	0	0	0	0
Musandam Governorate	8	0	8	0	0	0	0
Dhofar Governorate	13	0	12	0	0	1	1
Al wusta Governorate	8	0	7	0	0	1	0
Private schools	18	1	16	1	0	0	0
International Schools	16	0	12	0	0	4	0
<b>Total</b>	<b>223</b>	<b>1</b>	<b>214</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>



## Poland

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language of instruction other than Polish
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by urbanization (4)
- Implicit stratification by aggregated regions (7)
- Sampled two classrooms per school
- No overlap control was done with the Field Test sample when selecting the Main Data Collection sample

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Village	54	0	53	1	0	0	0
Town (Up to 20 Thousand Inhabitants)	26	0	26	0	0	0	0
City (20 to 100 Thousand Inhabitants)	32	0	31	1	0	0	0
City (Over 100 Thousand Inhabitants)	38	0	30	6	2	0	0
<b>Total</b>	<b>150</b>	<b>0</b>	<b>140</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>0</b>

## Portugal

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5) and schools with language of instruction other than Portuguese
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (public, private), aggregated regions within public schools (8), and school size (2) within private schools
- No implicit stratification
- Sampled two classrooms whenever possible
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 88.2%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - All Regions - Small	16	1	9	6	0	0	0
Private - All Regions - Large	8	0	6	2	0	0	0
Public - Alentejo - Large	12	0	11	1	0	0	0
Public - Algarve - Large	8	0	8	0	0	0	0
Public - Centro - Large	34	0	31	3	0	0	0
Public - Lisboa - Large	46	0	38	8	0	0	0
Public - Norte - Other - Large	30	0	24	5	1	0	0
Public - Norte - Porto - Large	28	0	23	4	1	0	0
Public - R. A. Açores - Large	8	0	8	0	0	0	0
Public - R. A. Madeira - Small	8	1	4	3	0	0	0
<b>Total</b>	<b>198</b>	<b>2</b>	<b>162</b>	<b>32</b>	<b>2</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - All Regions - Small	8	0	6	2	0	0	0
Private - All Regions - Large	4	0	3	1	0	0	0
Public - Alentejo - Large	6	0	5	1	0	0	0
Public - Algarve - Large	4	0	4	0	0	0	0
Public - Centro - Large	14	0	12	2	0	0	0
Public - Lisboa - Large	20	0	17	3	0	0	0
Public - Norte - Other - Large	13	0	9	4	0	0	0
Public - Norte - Porto - Large	12	0	9	2	1	0	0
Public - R. A. Açores - Large	4	0	3	0	0	1	0
Public - R. A. Madeira - Small	4	0	3	1	0	0	0
<b>Total</b>	<b>89</b>	<b>0</b>	<b>71</b>	<b>16</b>	<b>1</b>	<b>1</b>	<b>0</b>

## Qatar

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools with language of instruction other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by gender (boys, girls, mixed)
- Implicit stratification by school type (community, private, international, government)
- Sampled one classroom per school
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates
- The Bridge sample was obtained using a combination of strategies. In the large school stratum, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. In the small school stratum, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 98.6%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Boys	46	0	45	0	0	1	0
Girls	58	0	58	0	0	0	0
Mixed	159	1	156	0	0	2	0
<b>Total</b>	<b>263</b>	<b>1</b>	<b>259</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Boys	13	0	12	0	0	1	0
Girls	15	0	15	0	0	0	0
Mixed	41	0	39	0	0	2	0
<b>Total</b>	<b>69</b>	<b>0</b>	<b>66</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>

## Russian Federation

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4) and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (43)
- No implicit stratification
- Sampled two classrooms in large schools in Moscow City (measure of size > 249)
- An extra sampling stage (regions) was required prior to sampling schools. 43 regions out of 85 were selected with probability proportional to the region size. The 17 bigger regions were selected with certainty. Each certainty region made up an explicit stratum. The other sampled regions made up one other large explicit stratum for variance purposes. In this latter stratum of sampled regions, a sample of schools was selected within each region.
- Within regions, schools were selected with probability proportional to school size systematic sampling; schools were sorted by location (up to 7 levels) before being sorted by school size
- Special treatment is required for variance calculation due to the first sampling stage by region; within each explicit stratum made up from a certainty region, schools were paired together as in the standard procedure; in the larger explicit stratum composed of sampled regions, regions were paired for variance calculation purposes
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
78.The City of Sankt-Petersburg	6	0	6	0	0	0	0
77.The City of Moscow	12	0	12	0	0	0	0
50.Moscow region	10	0	10	0	0	0	0
52.Nizhni Novgorod region	4	0	4	0	0	0	0
59.Perm territory	4	0	4	0	0	0	0
63.Samara region	4	0	4	0	0	0	0
16.Republic of Tatarstan	6	0	6	0	0	0	0
02.Republic of Bashkortostan	6	0	6	0	0	0	0
23.Krasnodar territory	8	0	8	0	0	0	0
61.Rostov region	6	0	6	0	0	0	0
74.Chelyabinsk region	6	0	6	0	0	0	0
66.Sverdlovsk region	6	0	6	0	0	0	0
24.Krasnoyarsk territory	4	0	4	0	0	0	0
54.Novosibirsk region	4	0	4	0	0	0	0
38.Irkutsk region	4	0	4	0	0	0	0
42.Kemerovo region	4	0	4	0	0	0	0
05.Republic of Dagestan	6	0	6	0	0	0	0
51.Murmansk region	4	0	4	0	0	0	0
29.Arkhangelsk region	4	0	4	0	0	0	0
47.Leningrad region	4	0	4	0	0	0	0
31.Belgorod region	4	0	4	0	0	0	0
71.Tula region	4	0	4	0	0	0	0
69.Tver region	4	0	4	0	0	0	0
46.Kursk region	4	0	4	0	0	0	0
37.Ivanovo region	4	0	4	0	0	0	0
44.Kostroma region	4	0	4	0	0	0	0
73.Ulyanovsk region	4	0	4	0	0	0	0
21.Chuvashi Republic	4	0	4	0	0	0	0
64.Saratov region	4	0	4	0	0	0	0
56.Orenburg region	4	0	4	0	0	0	0
34.Volgograd region	4	0	4	0	0	0	0
30.Astrakhan region	4	0	4	0	0	0	0

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
45.Kurgan region	4	0	4	0	0	0	0
86.Khanty-Mansijsk autonomous district - Yugra	4	0	4	0	0	0	0
22.Altai territory	4	0	4	0	0	0	0
55.Omsk region	4	0	4	0	0	0	0
17.Republic of Tuva	4	0	4	0	0	0	0
14.Republic of Sakha (Yakutia)	4	0	3	1	0	0	0
27.Khabarovsk territory	4	0	4	0	0	0	0
25.Primorsky territory	4	0	4	0	0	0	0
20.Chechen Republic	4	0	4	0	0	0	0
26.Stavropol territory	4	0	4	0	0	0	0
06.Republic of Ingushetia	4	0	3	1	0	0	0
<b>Total</b>	<b>204</b>	<b>0</b>	<b>202</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Certainty Regions



### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
78.The City of Sankt-Petersburg	2	0	2	0	0	0	0
77.The City of Moscow	4	0	4	0	0	0	0
50.Moscow region	4	0	4	0	0	0	0
52.Nizhni Novgorod region	2	0	2	0	0	0	0
59.Perm territory	2	0	2	0	0	0	0
63.Samara region	2	0	2	0	0	0	0
16.Republic of Tatarstan	2	0	2	0	0	0	0
02.Republic of Bashkortostan	2	0	2	0	0	0	0
23.Krasnodar territory	4	0	4	0	0	0	0
61.Rostov region	2	0	2	0	0	0	0
74.Chelyabinsk region	2	0	2	0	0	0	0
66.Sverdlovsk region	2	0	2	0	0	0	0
24.Krasnoyarsk territory	2	0	2	0	0	0	0
54.Novosibirsk region	2	0	2	0	0	0	0
38.Irkutsk region	2	0	2	0	0	0	0
42.Kemerovo region	2	0	2	0	0	0	0
05.Republic of Dagestan	2	0	2	0	0	0	0
51.Murmansk region	2	0	2	0	0	0	0
29.Arkhangelsk region	2	0	2	0	0	0	0
47.Leningrad region	2	0	2	0	0	0	0
31.Belgorod region	2	0	2	0	0	0	0
71.Tula region	2	0	2	0	0	0	0
69.Tver region	2	0	2	0	0	0	0
46.Kursk region	2	0	2	0	0	0	0
37.Ivanovo region	2	0	2	0	0	0	0
44.Kostroma region	2	0	2	0	0	0	0
73.Ulyanovsk region	2	0	2	0	0	0	0
21.Chuvashi Republic	2	0	2	0	0	0	0
64.Saratov region	2	0	2	0	0	0	0
56.Orenburg region	2	0	2	0	0	0	0
34.Volgograd region	2	0	2	0	0	0	0
30.Astrakhan region	2	0	2	0	0	0	0

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
45.Kurgan region	2	0	2	0	0	0	0
86.Khanty-Mansijsk autonomous district - Yugra	2	0	2	0	0	0	0
22.Altai territory	2	0	2	0	0	0	0
55.Omsk region	2	0	2	0	0	0	0
17.Republic of Tuva	2	0	2	0	0	0	0
14.Republic of Sakha (Yakutia)	2	0	2	0	0	0	0
27.Khabarovsk territory	2	0	1	1	0	0	0
25.Primorsky territory	2	0	2	0	0	0	0
20.Chechen Republic	2	0	2	0	0	0	0
26.Stavropol territory	2	0	2	0	0	0	0
06.Republic of Ingushetia	2	0	2	0	0	0	0
<b>Total</b>	<b>92</b>	<b>0</b>	<b>91</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Certainty Regions

## Saudi Arabia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), special needs schools, schools with language of instruction other than Arabic or English, and schools in the war zone
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

### Sample Design

- Explicit stratification by gender (boys, girls), school type (public, private, international) and school size (large, small) within boys' public, boys private and girls public schools
- Large schools are schools with at least 70 students and more than 2 classrooms
- Implicit stratification by region (11)
- Sampled one classroom per school
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 31.8%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Boys - Public - Large	22	11	11	0	0	0	0
Boys - Public - Small	42	18	24	0	0	0	0
Boys - Private - Large	8	0	8	0	0	0	0
Boys - Private - Small	12	0	9	2	1	0	0
Boys - International/Foreign - Small	14	0	6	5	2	1	0
Girls - Public - Large	24	0	24	0	0	0	0
Girls - Public - Small	44	14	30	0	0	0	0
Girls - Private - Small	10	2	5	2	1	0	0
Girls - International/Foreign - Small	14	2	5	3	4	0	0
<b>Total</b>	<b>190</b>	<b>47</b>	<b>122</b>	<b>12</b>	<b>8</b>	<b>1</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Boys - Public - Large	8	4	4	0	0	0	0
Boys - Public - Small	14	4	10	0	0	0	0
Boys - Private - Large	4	0	4	0	0	0	0
Boys - Private - Small	4	1	3	0	0	0	0
Boys - International/Foreign - Small	4	0	2	0	2	0	0
Girls - Public - Large	8	0	8	0	0	0	0
Girls - Public - Small	14	3	11	0	0	0	0
Girls - Private - Small	4	1	1	2	0	0	0
Girls - International/Foreign - Small	4	0	2	0	2	0	0
<b>Total</b>	<b>64</b>	<b>13</b>	<b>45</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>

## Serbia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 2), special needs schools, and schools with language of instruction other than Serbian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by region (Belgrade, Vojvodina, Central Serbia), urbanization (city, other), and school hierarchy (main school, branch department) within the Central Serbia - Other stratum
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 99)
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Belgrade - City - All schools	36	0	36	0	0	0	0
Belgrade - Other - All schools	8	0	8	0	0	0	0
Vojvodina - City - All schools	28	0	28	0	0	0	0
Vojvodina - Other - All schools	16	0	16	0	0	0	0
Central Serbia - City - All schools	52	0	52	0	0	0	0
Central Serbia - Other - Main School	14	0	14	0	0	0	0
Central Serbia - Other - Branch Department	16	1	15	0	0	0	0
<b>Total</b>	<b>170</b>	<b>1</b>	<b>169</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Singapore

## Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and private schools
- Singapore took a census of all public schools with fourth grade students. The sampling frame excluded private schools, which are largely foreign-system schools operating in Singapore and which serve predominantly international students. These foreign-system schools are fundamentally different from the public schools in many respects (e.g., language of instruction; school-calendar year).
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

## Sample Design

- No explicit stratification
- No implicit stratification
- Sampled two classrooms per school
- Census of all schools and within schools, two half classrooms were sampled with probability proportional to the size of the classroom
- Within selected classrooms, 19 students were randomly sampled for digitalPIRLS; the remaining students were selected for the Bridge sample
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates
- The Bridge sample was selected using the Chowdhury approach to minimize the overlap with the Field Test sample
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 100%

## School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Singapore	183	0	183	0	0	0	0
<b>Total</b>	<b>183</b>	<b>0</b>	<b>183</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Singapore	60	0	60	0	0	0	0
<b>Total</b>	<b>60</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Slovak Republic

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, special education schools for students with physical disabilities, and schools with language of instruction other than Slovak or Hungarian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (Slovak, Hungarian, special), fifth grade national Slovak language assessment (low, medium, high) within Slovak schools, and school size (large, small) within Slovak schools
- Large schools are schools with at least 3 fourth grade classes or more than 50 students
- No implicit stratification
- Sampled two classrooms whenever possible
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 35.4%



### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Slovak - Low - Small	28	0	18	1	0	9	0
Slovak - Low - Large	12	0	4	5	0	3	0
Slovak - Medium - Small	41	0	35	5	1	0	0
Slovak - Medium - Large	14	0	12	2	0	0	0
Slovak - High - Small	40	0	31	8	0	1	0
Slovak - High - Large	37	0	32	2	1	2	0
Special Schools	4	0	2	0	0	2	0
Hungarian	10	0	6	2	2	0	0
<b>Total</b>	<b>186</b>	<b>0</b>	<b>140</b>	<b>25</b>	<b>4</b>	<b>17</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Slovak - Low - Small	10	0	7	3	0	0	0
Slovak - Low - Large	4	0	1	2	0	1	0
Slovak - Medium - Small	18	0	15	2	1	0	0
Slovak - Medium - Large	6	0	5	1	0	0	0
Slovak - High - Small	16	0	15	0	0	1	0
Slovak - High - Large	16	0	13	1	1	1	0
Special Schools	2	0	1	1	0	0	0
Hungarian	4	0	3	0	1	0	0
<b>Total</b>	<b>76</b>	<b>0</b>	<b>60</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>0</b>

## Slovenia

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of schools with Italian as language of instruction and private schools with different pedagogy
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school organization (main school, dislocated unit) and school size (large, small)
- Within the main schools, large schools are schools with more than 2 fourth grade classrooms and at least 55 students
- No implicit stratification
- Sampled two classrooms whenever possible
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 34.3%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Main schools - Large	58	0	53	0	0	5	0
Main schools - Small	84	0	83	1	0	0	0
Dislocated schools	24	0	21	1	1	1	0
<b>Total</b>	<b>166</b>	<b>0</b>	<b>157</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Main schools - Large	20	0	17	0	0	3	0
Main schools - Small	28	0	25	1	0	2	0
Dislocated schools	8	0	6	2	0	0	0
<b>Total</b>	<b>56</b>	<b>0</b>	<b>48</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>

## South Africa

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special needs schools, foreign language schools, and schools with language of instruction unknown
- Within-school exclusions consisted of students with intellectual disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction in the third grade (11)
- Implicit stratification by province (9)
- Sampled one classroom per school; in schools with more than one language of instruction, classrooms were grouped by language of instruction prior to sampling and one classroom was sampled per class group
- Oversampling in some language strata to have a minimum of 26 schools sampled by language

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Afrikaans	28	0	28	0	0	0	0
English	44	0	40	2	0	2	0
isiNdebele	26	0	26	0	0	0	0
isiXhosa	34	1	31	0	0	2	0
isiZulu	42	0	42	0	0	0	0
Sepedi	26	0	26	0	0	0	0
Sesotho	26	0	26	0	0	0	0
Setswana	26	0	26	0	0	0	0
siSwati	26	0	26	0	0	0	0
Tshivenda	26	2	24	0	0	0	0
Xitsonga	26	0	24	0	0	2	0
<b>Total</b>	<b>330</b>	<b>3</b>	<b>319</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>

## Spain

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by aggregated regions (12) and school size (2)
- Implicit stratification by region within the aggregate regions (11) and school type (public, private)
- Sampled one classroom per school; in schools sampled for digitalPIRLS and Bridge, one classroom sampled per assessment; in schools selected for the Bridge only, two classrooms sampled in large schools (measure of size > 48)
- Schools were oversampled in Andalusia, Asturias, Canary Island, Castile/Leon, Catalonia, Madrid, Navarre, Ceuta and Melilla
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 53.1%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Andalusia - Small < 3 classes	24	0	24	0	0	0	0
Andalusia - Large > 2 classes	26	0	26	0	0	0	0
Asturias - Small < 3 classes	28	0	28	0	0	0	0
Asturias - Large > 2 classes	22	0	22	0	0	0	0
Basque country - Small < 3 classes	2	0	2	0	0	0	0
Basque country - Large > 2 classes	4	0	4	0	0	0	0
Canary Islands - Small < 3 classes	30	0	30	0	0	0	0
Canary Islands - Large > 2 classes	20	0	20	0	0	0	0
Castile and Leon - Small < 3 classes	30	0	28	2	0	0	0
Castile and Leon - Large > 2 classes	20	0	20	0	0	0	0
Catalonia - Small < 3 classes	24	0	24	0	0	0	0
Catalonia - Large > 2 classes	26	0	26	0	0	0	0
Madrid - Small < 3 classes	14	0	14	0	0	0	0
Madrid - Large > 2 classes	36	0	36	0	0	0	0
Navarre - Small < 3 classes	24	0	24	0	0	0	0
Navarre - Large > 2 classes	26	0	25	1	0	0	0
Ceuta	23	0	23	0	0	0	0
Melilla	17	0	17	0	0	0	0
Other larger regions - Small < 3 classes	20	0	20	0	0	0	0
Other larger regions - Large > 2 classes	18	0	18	0	0	0	0
Other smaller regions - Small < 3 classes	8	0	8	0	0	0	0

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Other smaller regions - Large > 2 classes	10	0	10	0	0	0	0
<b>Total</b>	<b>452</b>	<b>0</b>	<b>449</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Andalusia - Small < 3 classes	4	0	4	0	0	0	0
Andalusia - Large > 2 classes	6	0	6	0	0	0	0
Asturias - Small < 3 classes	2	0	2	0	0	0	0
Asturias - Large > 2 classes	2	0	2	0	0	0	0
Basque country - Small < 3 classes	2	0	2	0	0	0	0
Basque country - Large > 2 classes	2	0	2	0	0	0	0
Canary Islands - Small < 3 classes	2	0	2	0	0	0	0
Canary Islands - Large > 2 classes	2	0	2	0	0	0	0
Castile and Leon - Small < 3 classes	2	0	2	0	0	0	0
Castile and Leon - Large > 2 classes	2	0	2	0	0	0	0
Catalonia - Small < 3 classes	4	0	4	0	0	0	0
Catalonia - Large > 2 classes	4	0	4	0	0	0	0
Madrid - Small < 3 classes	2	0	2	0	0	0	0
Madrid - Large > 2 classes	6	0	6	0	0	0	0
Navarre - Small < 3 classes	2	0	2	0	0	0	0
Navarre - Large > 2 classes	2	0	2	0	0	0	0

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Ceuta	4	0	4	0	0	0	0
Melilla	4	0	4	0	0	0	0
Other larger regions - Small < 3 classes	6	0	6	0	0	0	0
Other larger regions - Large > 2 classes	6	0	6	0	0	0	0
Other smaller regions - Small < 3 classes	4	0	4	0	0	0	0
Other smaller regions - Large > 2 classes	4	0	4	0	0	0	0
<b>Total</b>	<b>74</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



## Sweden

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, schools for students with learning disabilities, Saami schools, and international schools
- Within-school exclusions consisted of students with functional disabilities

### Sample Design

- Explicit stratification by school type (public, private) and percentage of students with parents that have tertiary education (low, medium, high, missing)
- Implicit stratification by ninth grade achievement (low, medium, high, missing)
- Sampled two classrooms whenever possible
- Separate samples of schools for digitalPIRLS and Bridge were selected so there was no overlap between the samples

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Low	31	1	27	0	0	3	1
Public - Medium	50	1	48	1	0	0	0
Public - High	44	1	41	0	0	2	0
Private - Low	8	1	7	0	0	0	0
Private - Medium	8	0	7	1	0	0	0
Private - High	14	0	14	0	0	0	0
<b>Total</b>	<b>155</b>	<b>4</b>	<b>144</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>1</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Public - Low	10	0	10	0	0	0	0
Public - Medium	16	1	15	0	0	0	0
Public - High	14	0	13	0	0	1	0
Private - Low	3	0	3	0	0	0	1
Private - Medium	4	0	4	0	0	0	0
Private - High	4	0	4	0	0	0	0
<b>Total</b>	<b>51</b>	<b>1</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

## Turkiye

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, schools with a different structure or curriculum, and very small schools (measure of size < 9)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (public, private) and region (13) within the public stratum
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 179)

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - All Regions	20	0	20	0	0	0	0
Public - Rural Regions	8	0	8	0	0	0	0
Public - TR1: Istanbul	26	0	26	0	0	0	0
Public - TR2: West Marmara	8	0	8	0	0	0	0
Public - TR3: Aegean	16	0	16	0	0	0	0
Public - TR4: East Marmara	14	0	14	0	0	0	0
Public - TR5: West Anatolia	14	0	14	0	0	0	0
Public - TR6: Mediterranean	22	0	22	0	0	0	0
Public - TR7: Central Anatolia	8	0	8	0	0	0	0
Public - TR8: West Black Sea	8	0	8	0	0	0	0
Public - TR9: East Black Sea	8	0	8	0	0	0	0
Public - TRA: Northeast Anatolia	8	0	8	0	0	0	0
Public - TRB: Centraleast Anatolia	8	0	8	0	0	0	0
Public - TRC: Southeast Anatolia	24	0	24	0	0	0	0
<b>Total</b>	<b>192</b>	<b>0</b>	<b>192</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## United Arab Emirates

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of schools with language of instruction other than English or Arabic, and very small schools (measure of size < 7 in all emirates except Dubai)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by emirate (Dubai, Abu Dhabi, all other emirates), school type (public, private, charter), and by the main curriculum taught (UK/US/CAD/AUS/International, other) within private schools in all emirates, with the exception of Dubai
- Implicit stratification by test language (Arabic, English) and school type (private, public) within Arabic schools; curriculum (10) within English schools in Dubai; region (8) within the rest of the emirates
- Sampled two classrooms whenever possible
- The United Arab Emirates was divided into three areas: Abu Dhabi, Dubai, and the rest of the emirates; all schools were selected in Dubai; all public schools as well as all private schools with UK/US/CAD/AUS/International/SABIS curriculum and charter schools were selected in the other emirates
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 98.9%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
ADU - Private	179	8	170	0	0	1	0
ADU - Public	25	5	20	0	0	0	0
AAD - Private - Ministry of Education	12	0	12	0	0	0	0
AAD - Private - UK/US/CAD/IB/SABIS	130	0	130	0	0	0	0
AAD - Private - Others	20	0	20	0	0	0	0
AAD - Public - Ministry of Education	92	4	88	0	0	0	1
AAD - Charter - American	12	0	12	0	0	0	0
Other - Private - Ministry of Education	9	0	9	0	0	0	0
Other - Private - UK/US/AUS/Int.	82	2	80	0	0	0	0
Other - Private - Others	16	0	16	0	0	0	0
Other - Public - Ministry of Education	106	0	106	0	0	0	0
<b>Total</b>	<b>683</b>	<b>19</b>	<b>663</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
ADU - Private	19	0	18	0	0	1	0
ADU - Public	4	0	4	0	0	0	0
AAD - Private - Ministry of Education	4	0	4	0	0	0	0
AAD - Private - UK/US/CAD/IB/SABIS	14	0	14	0	0	0	0
AAD - Private - Others	4	0	4	0	0	0	0
AAD - Public - Ministry of Education	9	0	9	0	0	0	0
AAD - Charter - American	4	0	4	0	0	0	0
Other - Private - Ministry of Education	6	0	6	0	0	0	0
Other - Private - UK/US/AUS/Int.	10	0	10	0	0	0	0
Other - Private - Others	10	0	10	0	0	0	0
Other - Public - Ministry of Education	9	0	9	0	0	0	0
<b>Total</b>	<b>93</b>	<b>0</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>

## United States

### Coverage and Exclusions

- Coverage is 100 percent
- No school level exclusions
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by poverty level (high, low), school type (private, public), census region of the country (Northeast, Midwest, South, West) within public schools, and school funding (Catholic, other) within private schools
- Implicit stratification by state (52)
- Sampled two classrooms whenever possible
- The Field Test and Main Data Collection samples were selected sequentially using the Chowdhury approach to minimize sample overlap
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- The weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 92.9%

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
High poverty level - Public - Northeast	8	0	1	1	0	6	0
High poverty level - Public - Midwest	7	1	3	1	0	2	0
High poverty level - Public - South	24	0	20	1	1	2	0
High poverty level - Public - West	14	1	6	0	1	6	0
Low poverty level - Private - Other	6	2	1	0	0	3	0
Low poverty level - Private - Catholic	6	0	2	2	2	0	0
Low poverty level - Public - Northeast	12	0	1	1	1	9	0
Low poverty level - Public - Midwest	14	0	8	0	0	6	0
Low poverty level - Public - South	19	0	12	3	1	3	0
Low poverty level - Public - West	12	0	7	0	2	3	0
<b>Total</b>	<b>122</b>	<b>4</b>	<b>61</b>	<b>9</b>	<b>8</b>	<b>40</b>	<b>0</b>



## Uzbekistan

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, private schools, and schools with language of instruction other than Uzbek, Russian, or Karakalpak
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction (Uzbek, Karakalpak, Russian, mixed) and urbanization (urban, rural)
- Implicit stratification by school shift (multiple, single) in Uzbek and mixed schools strata
- Sampled two classrooms in large schools (measure of size > 249) and two or three classrooms in multilingual schools
- Class group option was used in multilingual schools

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Uzbek - Urban	32	0	31	0	1	0	0
Uzbek - Rural	84	0	83	1	0	0	0
Mixed - Urban	26	0	26	0	0	0	0
Mixed - Rural	9	0	9	0	0	0	1
Karakalpak - Urban	10	0	10	0	0	0	0
Karakalpak - Rural	10	0	10	0	0	0	0
Russian	10	1	9	0	0	0	0
<b>Total</b>	<b>181</b>	<b>1</b>	<b>178</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>

## British Columbia, Canada

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school-level language of instruction (English, French) and school type within English schools (English only, immersion, dual track)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 59)
- All French schools were selected
- In the census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
English - English	120	1	115	2	1	1	0
English - Immersion	8	0	8	0	0	0	0
English - Dual Track	26	0	26	0	0	0	0
French	27	0	27	0	0	0	0
<b>Total</b>	<b>181</b>	<b>1</b>	<b>176</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>

## Alberta, Canada

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, First Nation schools/federal schools, special schools (e.g., institutional), heritage schools, and special program schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction (English, French) and school type (private, public)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 59)
- All French schools were selected
- In the census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
English - Public	140	1	77	14	5	43	0
English - Private	8	0	3	1	0	4	0
French	31	0	16	0	0	15	0
<b>Total</b>	<b>179</b>	<b>1</b>	<b>96</b>	<b>15</b>	<b>5</b>	<b>62</b>	<b>0</b>

## Newfoundland & Labrador, Canada

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), remote or difficult to access schools, First Nation schools/federal schools, and schools with French as language of instruction
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- No explicit stratification
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 59)
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Newfoundland	136	2	133	0	0	1	0
<b>Total</b>	<b>136</b>	<b>2</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>

## Quebec, Canada

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), First Nation schools/federal schools, international schools, school boards with special status, and special schools (e.g., institutional)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by language of instruction (French, English) and school type (public, private)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 59)

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
English - Public	28	0	11	0	0	17	0
English - Private	8	0	3	2	0	3	0
French - Public	128	0	83	8	0	37	0
French - Private	8	1	3	2	0	2	0
<b>Total</b>	<b>172</b>	<b>1</b>	<b>100</b>	<b>12</b>	<b>0</b>	<b>59</b>	<b>0</b>

## Moscow City, Russian Federation

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5) and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school size (large, small)
- Large schools are schools with at least 3 fourth grade classes or more than 60 students
- No implicit stratification
- The Bridge sample was obtained using a combination of strategies. Among the larger schools, the Bridge sample was selected as a subset of the digitalPIRLS school sample and classes were randomly assigned to either the digitalPIRLS or Bridge samples. Among the smaller schools, a distinct sample of schools was selected for the Bridge sample. During data collection, schools with only one class selected for both the digitalPIRLS and Bridge samples were randomly assigned to administer either the digitalPIRLS or Bridge assessment, and school weights were adjusted accordingly during the weighting process.
- the weighted percentage of students from the Bridge sample that come from digitalPIRLS schools is 97%

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Large	166	0	166	0	0	0	0
Small	8	0	7	1	0	0	0
<b>Total</b>	<b>174</b>	<b>0</b>	<b>173</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

### School Participation Status – Bridge

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Large	62	0	62	0	0	0	0
Small	4	0	3	0	1	0	0
<b>Total</b>	<b>66</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

## South Africa (6)

### Coverage and Exclusions

- Target population is the sixth grade
- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special needs schools, and foreign language schools
- No within-school exclusions

### Sample Design

- Explicit stratification by language of instruction (Afrikaans, English, Bilingual), language track (4), and province size (larger provinces, smaller provinces); languages of instruction and all provinces were grouped for the mixed track stratum
- Implicit stratification by province (9) and poverty quintile (5)
- Sampled one classroom per school; in schools with more than one language, classrooms were grouped by language prior to sampling and one classroom was sampled per class group
- The sixth grade sample was selected using the Chowdhury approach to maximize the overlap with the fourth grade sample
- Oversampled in the smaller provinces strata to allow for provincial estimates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Afrikaans - Track: Afrikaans > Afrikaans - Larger provinces	28	0	27	1	0	0	0
Afrikaans - Track: Afrikaans > Afrikaans - Smaller provinces	17	0	17	0	0	0	0
Afrikaans English - Mixed tracks Afrikaans and English - Larger provinces	27	0	26	0	0	1	0
Afrikaans English - Mixed tracks Afrikaans and English - Smaller provinces	17	0	16	1	0	0	0
English - Track: English > English - Larger provinces	32	0	29	2	0	1	0
English - Track: English > English - Smaller provinces	9	0	9	0	0	0	0
English - Track: African language > English - Larger provinces	68	0	68	0	0	0	0
English - Track: African language > English - Smaller provinces	51	0	51	0	0	0	0
All - All other mixed tracks - All	6	0	6	0	0	0	0
<b>Total</b>	<b>255</b>	<b>0</b>	<b>249</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>



## Abu Dhabi, United Arab Emirates

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of schools with language of instruction other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (private, public and charter) and main curriculum (Ministry of Education, UK/US/CAD/IB, others) within private stratum
- Implicit stratification by region (Abu Dhabi, Al Ain, Al Dhafra)
- Sampled two classrooms whenever possible
- All public schools and private schools with UK/US/CAD/AUS/International main curriculum were selected
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private - Ministry of Education	12	0	12	0	0	0	0
Private - UK/US/CAD/IB/SABIS	130	0	130	0	0	0	0
Private - Others	20	0	20	0	0	0	0
Public - Ministry of Education	92	4	88	0	0	0	1
Charter - American	12	0	12	0	0	0	0
<b>Total</b>	<b>266</b>	<b>4</b>	<b>262</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

## Dubai, United Arab Emirates

### Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of schools with language of instruction other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

### Sample Design

- Explicit stratification by school type (private, public)
- Implicit stratification by language of instruction (Arabic, English)
- Sampled at least two classrooms per school
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build Jackknife replicates

### School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1 <sup>st</sup> Replacements	2 <sup>nd</sup> Replacements		
Private	179	8	170	0	0	1	0
Public	25	5	20	0	0	0	0
<b>Total</b>	<b>204</b>	<b>13</b>	<b>190</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>