

Appendix 15B: PIRLS 2021 Context Questionnaire Scales Based on Parents' Reports

Early Literacy Activities

About the Scale

Students were scored according to their parents' reports regarding the frequency they or someone in the home engaged their children in the nine activities on the *Early Literacy Activities* scale. Cut scores divide the scale into three categories. Students who **Often** engaged in early literacy activities before primary school had a score at or above the cut score corresponding to their parents reporting they "often" did five of the nine activities and "sometimes" did the other four, on average. Students who **Never or Almost Never** engaged in early literacy activities before primary school had a score at or below the cut score corresponding to their parents reporting they "never or almost never" did five of the nine activities and "sometimes" did the other four, on average. All other students **Sometimes** engaged in early literacy activities before primary school.

Before your child began primary/elementary school, how often did you or someone else in your home do the following activities with him/her?

	Often	Sometimes	Never or almost never
ASBH01A ^T 1) Read books -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01B ^T 2) Tell stories -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01C ^T 3) Sing songs -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01D ^T 4) Play with alphabet toys (e.g., blocks with letters of the alphabet) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01E ^T 5) Talk about things you had done -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01F ^T 6) Talk about what you had read -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01G ^T 7) Play word games -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01H ^T 8) Write letters or words -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01I ^T 9) Read aloud signs and labels -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Scale Cut Scores 10.7 6.2

^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Early Literacy Activities* Scale

Item	delta	tau_1	tau_2	Infit	Q-Index
ASBH01A	-0.35545	-1.38609	1.38609	0.99	0.16
ASBH01B	-0.22320	-1.36249	1.36249	0.95	0.15
ASBH01C	-0.02859	-0.94698	0.94698	1.17	0.20
ASBH01D	0.39025	-0.97329	0.97329	1.01	0.15
ASBH01E	-0.91060	-1.11960	1.11960	1.04	0.18
ASBH01F	0.25814	-1.31239	1.31239	0.94	0.13
ASBH01G	0.46321	-1.18785	1.18785	0.94	0.13
ASBH01H	0.07856	-1.08371	1.08371	0.97	0.14
ASBH01I	0.32768	-1.02960	1.02960	1.03	0.15

Scale Transformation Constants for the PIRLS 2021 *Early Literacy Activities* Scale

Scale Transformation Constants

A = 8.467126

B = 1.515277

Transformed Scale Score = 8.467126 + 1.515277 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Early Literacy Activities* Scale

Raw Score	Transformed Scale Score	Cutpoint
0	2.07166	
1	3.91689	
2	4.87777	
3	5.58478	
4	6.16995	6.2
5	6.68634	
6	7.16522	
7	7.61837	
8	8.05673	
9	8.48851	
10	8.91792	
11	9.35253	
12	9.79887	
13	10.26741	
14	10.77067	10.7
15	11.33758	
16	12.02203	
17	12.95777	
18	14.77456	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Literacy Activities Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			ASBH01A	ASBH01B	ASBH01C	ASBH01D	ASBH01E	ASBH01F	ASBH01G	ASBH01H	ASBH01I	
Albania	0.80	38	0.66	0.58	0.47	0.63	0.55	0.65	0.67	0.68	0.66	
Australia	–	–	–	–	–	–	–	–	–	–	–	
Austria	0.71	31	0.55	0.62	0.51	0.48	0.50	0.64	0.63	0.46	0.56	
Azerbaijan	0.69	30	0.60	0.56	0.36	0.58	0.39	0.61	0.55	0.61	0.60	
Bahrain	0.75	34	0.60	0.57	0.38	0.62	0.52	0.61	0.67	0.64	0.57	
Belgium (Flemish)	0.73	32	0.55	0.56	0.49	0.51	0.50	0.61	0.69	0.53	0.60	
Belgium (French)	0.73	32	0.54	0.59	0.45	0.60	0.49	0.58	0.68	0.55	0.54	
Brazil	0.81	40	0.68	0.69	0.51	0.68	0.49	0.65	0.69	0.65	0.62	
Bulgaria	0.86	47	0.73	0.68	0.49	0.73	0.60	0.74	0.73	0.74	0.68	
Chinese Taipei	0.79	38	0.65	0.66	0.56	0.60	0.54	0.62	0.65	0.58	0.66	
Croatia	0.76	35	0.54	0.63	0.51	0.59	0.47	0.64	0.65	0.63	0.63	
Cyprus	0.78	37	0.58	0.62	0.51	0.67	0.53	0.64	0.68	0.62	0.58	
Czech Republic	0.69	29	0.45	0.57	0.42	0.53	0.48	0.67	0.59	0.57	0.54	
Denmark	0.75	34	0.58	0.58	0.48	0.56	0.46	0.68	0.70	0.58	0.59	
Egypt	0.79	37	0.58	0.61	0.39	0.64	0.58	0.65	0.66	0.67	0.63	
England	–	–	–	–	–	–	–	–	–	–	–	
Finland	0.75	33	0.54	0.56	0.51	0.57	0.49	0.67	0.60	0.63	0.59	
France	0.73	32	0.57	0.58	0.45	0.62	0.48	0.57	0.64	0.60	0.53	
Georgia	0.73	32	0.59	0.57	0.42	0.63	0.55	0.59	0.57	0.54	0.62	
Germany	0.70	29	0.47	0.58	0.48	0.49	0.44	0.62	0.65	0.52	0.59	
Hong Kong SAR	0.76	35	0.63	0.63	0.54	0.49	0.55	0.64	0.66	0.55	0.58	
Hungary	0.72	31	0.51	0.49	0.45	0.63	0.46	0.58	0.61	0.60	0.62	
Iran, Islamic Rep. of	0.79	37	0.61	0.53	0.55	0.65	0.52	0.62	0.70	0.65	0.63	
Ireland	0.78	37	0.60	0.64	0.48	0.57	0.52	0.67	0.66	0.64	0.65	
Israel	0.76	35	0.46	0.57	0.46	0.63	0.49	0.69	0.70	0.65	0.61	
Italy	0.71	30	0.51	0.57	0.46	0.62	0.43	0.60	0.61	0.59	0.56	
Jordan	0.78	37	0.56	0.60	0.47	0.62	0.61	0.58	0.65	0.68	0.64	
Kazakhstan	0.75	34	0.61	0.51	0.43	0.59	0.57	0.67	0.56	0.65	0.59	
Kosovo	0.66	27	0.48	0.54	0.47	0.56	0.42	0.55	0.53	0.57	0.57	
Latvia	0.72	32	0.56	0.58	0.46	0.57	0.48	0.68	0.60	0.58	0.52	
Lithuania	0.75	34	0.57	0.57	0.47	0.65	0.53	0.70	0.66	0.60	0.46	
Macao SAR	0.74	33	0.60	0.57	0.52	0.52	0.54	0.63	0.65	0.56	0.58	
Malta	0.77	35	0.61	0.65	0.50	0.58	0.50	0.67	0.67	0.56	0.58	
Montenegro	0.72	31	0.59	0.60	0.52	0.55	0.46	0.63	0.60	0.51	0.55	
Morocco	0.83	42	0.68	0.65	0.33	0.66	0.61	0.72	0.67	0.74	0.66	
Netherlands	0.72	31	0.43	0.50	0.50	0.59	0.45	0.52	0.69	0.64	0.66	
New Zealand	0.82	41	0.62	0.68	0.57	0.60	0.56	0.71	0.71	0.63	0.68	
North Macedonia	0.80	38	0.63	0.65	0.51	0.65	0.55	0.64	0.66	0.65	0.61	
Northern Ireland	0.80	39	0.58	0.66	0.54	0.61	0.55	0.71	0.69	0.61	0.64	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Literacy Activities Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			ASBH01A	ASBH01B	ASBH01C	ASBH01D	ASBH01E	ASBH01F	ASBH01G	ASBH01H	ASBH01I	
Norway (5)	0.77	36	0.57	0.62	0.48	0.64	0.45	0.67	0.70	0.60	0.59	
Oman	0.70	31	0.59	0.49	0.24	0.59	0.47	0.59	0.62	0.65	0.62	
Poland	0.75	34	0.53	0.60	0.51	0.58	0.54	0.68	0.62	0.58	0.59	
Portugal	0.75	34	0.63	0.63	0.48	0.61	0.47	0.62	0.65	0.57	0.54	
Qatar	0.73	32	0.57	0.56	0.41	0.58	0.50	0.58	0.62	0.61	0.62	
Russian Federation	0.80	39	0.63	0.59	0.54	0.65	0.62	0.70	0.67	0.66	0.53	
Saudi Arabia	0.78	37	0.57	0.60	0.42	0.63	0.59	0.66	0.68	0.68	0.58	
Serbia	0.72	31	0.58	0.59	0.42	0.62	0.48	0.63	0.64	0.50	0.54	
Singapore	0.85	46	0.71	0.73	0.62	0.66	0.62	0.71	0.67	0.66	0.68	
Slovak Republic	0.78	37	0.60	0.59	0.34	0.63	0.63	0.71	0.63	0.62	0.66	
Slovenia	0.75	34	0.49	0.58	0.50	0.61	0.50	0.63	0.64	0.59	0.67	
South Africa	0.80	39	0.67	0.60	0.46	0.62	0.54	0.68	0.67	0.66	0.65	
Spain	0.74	33	0.57	0.59	0.46	0.62	0.46	0.62	0.65	0.61	0.56	
Sweden	0.76	35	0.50	0.54	0.47	0.63	0.49	0.67	0.69	0.66	0.62	
Turkiye	0.88	51	0.74	0.74	0.57	0.66	0.74	0.79	0.77	0.70	0.71	
United Arab Emirates	0.79	37	0.64	0.60	0.44	0.60	0.61	0.66	0.68	0.65	0.59	
United States	–	–	–	–	–	–	–	–	–	–	–	
Uzbekistan	0.65	27	0.57	0.48	0.41	0.58	0.37	0.59	0.50	0.57	0.57	
Benchmarking Participants												
Alberta, Canada	0.81	40	0.65	0.67	0.56	0.57	0.58	0.72	0.69	0.61	0.62	
British Columbia, Canada	0.81	40	0.60	0.64	0.59	0.63	0.63	0.72	0.70	0.59	0.62	
Newfoundland & Labrador, Can.	0.81	40	0.61	0.64	0.56	0.64	0.58	0.73	0.70	0.64	0.56	
Quebec, Canada	0.76	34	0.58	0.60	0.44	0.61	0.48	0.65	0.68	0.62	0.57	
Moscow City, Russian Fed.	0.75	35	0.54	0.57	0.52	0.62	0.62	0.69	0.65	0.61	0.44	
South Africa (6)	0.79	37	0.66	0.62	0.44	0.61	0.53	0.66	0.62	0.67	0.66	
Abu Dhabi, UAE	0.80	39	0.65	0.64	0.47	0.61	0.61	0.67	0.67	0.67	0.61	
Dubai, UAE	0.78	36	0.63	0.56	0.47	0.57	0.59	0.69	0.66	0.63	0.59	

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Early Literacy Activities* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.21	0.05	0.05
Australia	–	–	–
Austria	0.21	0.04	0.03
Azerbaijan	0.18	0.03	0.03
Bahrain	0.24	0.06	0.05
Belgium (Flemish)	0.14	0.02	0.01
Belgium (French)	0.19	0.04	0.02
Brazil	0.21	0.05	0.04
Bulgaria	0.37	0.14	0.13
Chinese Taipei	0.21	0.05	0.03
Croatia	0.23	0.05	0.04
Cyprus	0.23	0.05	0.03
Czech Republic	0.07	0.00	0.00
Denmark	0.15	0.02	0.02
Egypt	0.14	0.02	0.02
England	–	–	–
Finland	0.15	0.02	0.02
France	0.20	0.04	0.03
Georgia	0.05	0.00	0.01
Germany	0.13	0.02	0.02
Hong Kong SAR	0.17	0.03	0.01
Hungary	0.12	0.01	0.02
Iran, Islamic Rep. of	0.21	0.04	0.04
Ireland	0.20	0.04	0.03
Israel	0.14	0.02	0.02
Italy	0.17	0.03	0.02
Jordan	0.17	0.03	0.02
Kazakhstan	0.11	0.01	0.01
Kosovo	0.16	0.02	0.02
Latvia	0.13	0.02	0.01
Lithuania	0.15	0.02	0.02
Macao SAR	0.10	0.01	0.00
Malta	0.16	0.03	0.02
Montenegro	0.18	0.03	0.03
Morocco	0.23	0.05	0.04
Netherlands	0.12	0.02	0.01
New Zealand	0.22	0.05	0.04
North Macedonia	0.16	0.03	0.02
Northern Ireland	0.14	0.02	0.01
Norway (5)	0.16	0.03	0.02
Oman	0.17	0.03	0.03

Relationship Between the PIRLS 2021 *Early Literacy Activities* Scale and PIRLS 2021 Achievement

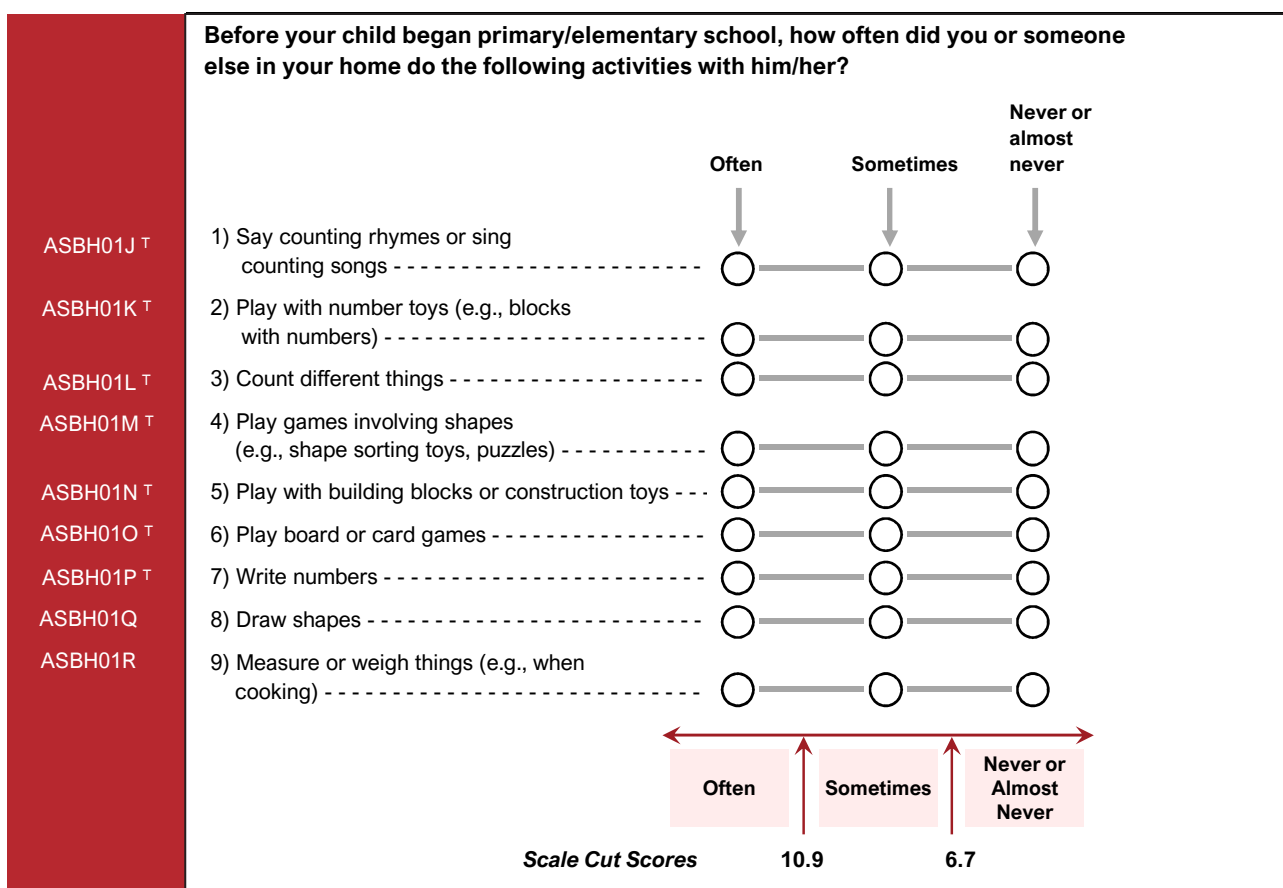
Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Poland	0.12	0.02	0.02
Portugal	0.18	0.03	0.03
Qatar	0.17	0.03	0.02
Russian Federation	0.14	0.02	0.01
Saudi Arabia	0.08	0.01	0.01
Serbia	0.16	0.03	0.02
Singapore	0.22	0.05	0.04
Slovak Republic	0.20	0.04	0.05
Slovenia	0.13	0.02	0.01
South Africa	0.17	0.03	0.02
Spain	0.23	0.05	0.04
Sweden	0.16	0.03	0.01
Turkiye	0.38	0.15	0.14
United Arab Emirates	0.21	0.04	0.03
United States	–	–	–
Uzbekistan	0.12	0.01	0.01
International Median	0.17	0.03	0.02
Benchmarking Participants			
Alberta, Canada	0.14	0.02	0.01
British Columbia, Canada	0.13	0.02	0.01
Newfoundland & Labrador, Can.	0.16	0.02	0.02
Quebec, Canada	0.11	0.01	0.01
Moscow City, Russian Fed.	0.09	0.01	0.01
South Africa (6)	0.17	0.03	0.02
Abu Dhabi, UAE	0.22	0.05	0.04
Dubai, UAE	0.21	0.04	0.03

A dash (–) indicates comparable data not available.

Early Numeracy Activities

About the Scale

Students were scored according to their parents' reports regarding the frequency they or someone in the home engaged their children in the nine activities on the *Early Numeracy Activities* scale. Cut scores divide the scale into three categories. Students who **Often** engaged in early numeracy activities before primary school had a score at or above the cut score corresponding to their parents reporting they "often" did five of the nine activities and "sometimes" did the other four, on average. Students who **Never or Almost Never** engaged in early numeracy activities before primary school had a score at or below the cut score corresponding to their parents reporting they "never or almost never" did five of the nine activities and "sometimes" did the other four, on average. All other students **Sometimes** engaged in early numeracy activities before primary school.



^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Early Numeracy Activities* Scale

Item	delta	tau_1	tau_2	Infit	Q-Index
ASBH01J	0.45467	-1.08249	1.08249	1.06	0.15
ASBH01K	0.25063	-1.06828	1.06828	0.92	0.11
ASBH01L	-0.78806	-1.23272	1.23272	0.90	0.13
ASBH01M	-0.48344	-1.06391	1.06391	0.94	0.13
ASBH01N	-0.52130	-0.82717	0.82717	1.05	0.15
ASBH01O	-0.05391	-1.18890	1.18890	1.07	0.17
ASBH01P	-0.25082	-1.22086	1.22086	1.00	0.14
ASBH01Q	-0.20124	-1.25638	1.25638	0.97	0.13
ASBH01R	1.59347	-1.17184	1.17184	1.13	0.19

Scale Transformation Constants for the PIRLS 2021 *Early Numeracy Activities* Scale

Scale Transformation Constants

A = 8.835875

B = 1.409821

Transformed Scale Score = 8.835875 + 1.409821 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Early Numeracy Activities* Scale

Raw Score	Transformed Scale Score	Cutpoint
0	2.85854	
1	4.56760	
2	5.45510	
3	6.10765	
4	6.64902	6.7
5	7.12878	
6	7.57471	
7	7.99769	
8	8.40746	
9	8.81024	
10	9.21443	
11	9.62426	
12	10.04897	
13	10.50035	
14	10.99170	10.9
15	11.55635	
16	12.25036	
17	13.20593	
18	15.01872	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Numeracy Activities Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBH01J	ASBH01K	ASBH01L	ASBH01M	ASBH01N	ASBH01O	ASBH01P	ASBH01Q	ASBH01R
Albania	0.82	42	0.63	0.72	0.66	0.72	0.67	0.63	0.64	0.64	0.48
Australia	–	–	–	–	–	–	–	–	–	–	–
Austria	0.74	33	0.58	0.63	0.62	0.60	0.52	0.48	0.58	0.62	0.52
Azerbaijan	0.76	36	0.53	0.68	0.59	0.71	0.69	0.43	0.55	0.65	0.49
Bahrain	0.80	39	0.60	0.70	0.66	0.69	0.66	0.61	0.63	0.65	0.39
Belgium (Flemish)	0.76	35	0.58	0.66	0.65	0.64	0.51	0.55	0.60	0.63	0.46
Belgium (French)	0.76	35	0.55	0.69	0.66	0.65	0.57	0.50	0.58	0.61	0.49
Brazil	0.81	41	0.62	0.73	0.58	0.74	0.73	0.53	0.64	0.67	0.42
Bulgaria	0.85	47	0.62	0.77	0.74	0.77	0.74	0.63	0.72	0.61	0.52
Chinese Taipei	0.85	47	0.70	0.77	0.78	0.78	0.74	0.47	0.69	0.73	0.42
Croatia	0.80	39	0.60	0.73	0.69	0.69	0.61	0.55	0.64	0.67	0.40
Cyprus	0.81	40	0.60	0.72	0.67	0.69	0.61	0.55	0.66	0.68	0.50
Czech Republic	0.74	33	0.49	0.65	0.62	0.61	0.52	0.46	0.66	0.62	0.52
Denmark	0.75	34	0.58	0.65	0.60	0.60	0.47	0.50	0.65	0.63	0.54
Egypt	0.80	40	0.60	0.70	0.64	0.67	0.70	0.60	0.67	0.64	0.39
England	–	–	–	–	–	–	–	–	–	–	–
Finland	0.77	35	0.56	0.66	0.65	0.58	0.46	0.48	0.71	0.63	0.55
France	0.75	34	0.53	0.67	0.64	0.64	0.56	0.49	0.61	0.63	0.45
Georgia	0.80	39	0.62	0.70	0.59	0.66	0.67	0.57	0.59	0.65	0.52
Germany	0.72	32	0.57	0.63	0.58	0.59	0.49	0.45	0.62	0.64	0.46
Hong Kong SAR	0.84	44	0.67	0.74	0.77	0.77	0.71	0.54	0.67	0.64	0.41
Hungary	0.75	34	0.61	0.69	0.64	0.58	0.48	0.47	0.57	0.64	0.55
Iran, Islamic Rep. of	0.80	39	0.59	0.66	0.64	0.68	0.65	0.65	0.60	0.63	0.47
Ireland	0.82	42	0.63	0.71	0.69	0.73	0.64	0.49	0.70	0.71	0.51
Israel	0.79	39	0.59	0.71	0.65	0.63	0.59	0.57	0.68	0.68	0.45
Italy	0.74	33	0.58	0.67	0.66	0.58	0.50	0.43	0.62	0.63	0.44
Jordan	0.82	41	0.65	0.68	0.65	0.67	0.67	0.64	0.67	0.68	0.41
Kazakhstan	0.77	36	0.61	0.67	0.61	0.63	0.57	0.47	0.64	0.68	0.52
Kosovo	0.74	33	0.54	0.68	0.61	0.65	0.62	0.55	0.49	0.54	0.45
Latvia	0.77	36	0.61	0.70	0.66	0.63	0.50	0.46	0.66	0.65	0.52
Lithuania	0.80	39	0.62	0.74	0.67	0.65	0.58	0.49	0.67	0.64	0.53
Macao SAR	0.82	42	0.62	0.74	0.75	0.76	0.71	0.49	0.65	0.62	0.41
Malta	0.80	40	0.62	0.72	0.71	0.74	0.63	0.45	0.64	0.68	0.44
Montenegro	0.76	35	0.61	0.69	0.62	0.64	0.58	0.47	0.56	0.61	0.49
Morocco	0.84	43	0.69	0.70	0.60	0.68	0.70	0.67	0.69	0.72	0.44
Netherlands	0.79	37	0.63	0.70	0.67	0.62	0.50	0.46	0.67	0.64	0.56
New Zealand	0.85	46	0.67	0.74	0.71	0.74	0.60	0.61	0.68	0.70	0.62
North Macedonia	0.82	42	0.66	0.69	0.66	0.66	0.53	0.63	0.69	0.70	0.62
Northern Ireland	0.83	43	0.60	0.73	0.69	0.70	0.62	0.58	0.69	0.71	0.57

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Numeracy Activities Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBH01J	ASBH01K	ASBH01L	ASBH01M	ASBH01N	ASBH01O	ASBH01P	ASBH01Q	ASBH01R
Norway (5)	0.77	36	0.61	0.70	0.63	0.63	0.49	0.53	0.66	0.57	0.54
Oman	0.76	35	0.51	0.64	0.57	0.64	0.60	0.66	0.60	0.60	0.43
Poland	0.78	37	0.57	0.67	0.65	0.59	0.53	0.53	0.68	0.68	0.52
Portugal	0.79	38	0.61	0.71	0.69	0.66	0.59	0.52	0.63	0.65	0.50
Qatar	0.80	40	0.60	0.73	0.68	0.70	0.65	0.56	0.66	0.66	0.36
Russian Federation	0.82	42	0.59	0.72	0.65	0.71	0.66	0.64	0.68	0.65	0.52
Saudi Arabia	0.83	42	0.58	0.67	0.61	0.69	0.70	0.70	0.69	0.70	0.47
Serbia	0.75	34	0.61	0.69	0.60	0.63	0.51	0.52	0.56	0.61	0.51
Singapore	0.87	51	0.71	0.76	0.77	0.79	0.71	0.58	0.75	0.76	0.51
Slovak Republic	0.82	42	0.63	0.72	0.68	0.70	0.63	0.53	0.68	0.70	0.55
Slovenia	0.78	36	0.61	0.68	0.67	0.64	0.43	0.48	0.65	0.67	0.53
South Africa	0.82	41	0.60	0.70	0.68	0.68	0.67	0.58	0.61	0.66	0.53
Spain	0.76	35	0.58	0.69	0.57	0.64	0.55	0.48	0.64	0.62	0.49
Sweden	0.81	40	0.66	0.71	0.63	0.68	0.53	0.52	0.70	0.68	0.53
Turkiye	0.89	54	0.73	0.77	0.75	0.80	0.71	0.73	0.73	0.76	0.63
United Arab Emirates	0.85	47	0.65	0.74	0.72	0.75	0.72	0.62	0.73	0.73	0.47
United States	–	–	–	–	–	–	–	–	–	–	–
Uzbekistan	0.69	30	0.53	0.63	0.55	0.63	0.52	0.48	0.51	0.57	0.44
Benchmarking Participants											
Alberta, Canada	0.83	43	0.64	0.73	0.69	0.72	0.59	0.55	0.70	0.70	0.56
British Columbia, Canada	0.83	43	0.63	0.74	0.71	0.74	0.62	0.54	0.67	0.69	0.53
Newfoundland & Labrador, Can.	0.83	44	0.65	0.73	0.70	0.73	0.64	0.55	0.71	0.71	0.54
Quebec, Canada	0.79	39	0.62	0.72	0.68	0.67	0.60	0.54	0.61	0.60	0.51
Moscow City, Russian Fed.	0.79	38	0.60	0.68	0.61	0.63	0.57	0.60	0.66	0.66	0.54
South Africa (6)	0.81	41	0.59	0.69	0.66	0.73	0.68	0.59	0.63	0.66	0.48
Abu Dhabi, UAE	0.86	49	0.67	0.74	0.73	0.75	0.73	0.66	0.75	0.74	0.48
Dubai, UAE	0.83	44	0.64	0.73	0.71	0.73	0.69	0.56	0.69	0.70	0.46

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Early Numeracy Activities* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.17	0.03	0.03
Australia	–	–	–
Austria	0.09	0.01	0.01
Azerbaijan	0.20	0.04	0.04
Bahrain	0.18	0.03	0.03
Belgium (Flemish)	0.06	0.00	0.00
Belgium (French)	0.10	0.01	0.01
Brazil	0.18	0.03	0.02
Bulgaria	0.32	0.10	0.09
Chinese Taipei	0.18	0.03	0.02
Croatia	0.16	0.03	0.02
Cyprus	0.19	0.04	0.02
Czech Republic	-0.02	0.00	0.00
Denmark	0.09	0.01	0.01
Egypt	0.11	0.01	0.01
England	–	–	–
Finland	0.07	0.00	0.00
France	0.16	0.03	0.02
Georgia	0.03	0.00	0.00
Germany	0.02	0.00	0.00
Hong Kong SAR	0.08	0.01	0.01
Hungary	0.10	0.01	0.01
Iran, Islamic Rep. of	0.18	0.03	0.04
Ireland	0.15	0.02	0.02
Israel	0.05	0.00	0.00
Italy	0.09	0.01	0.00
Jordan	0.15	0.02	0.02
Kazakhstan	0.06	0.00	0.00
Kosovo	0.17	0.03	0.03
Latvia	0.07	0.00	0.00
Lithuania	0.08	0.01	0.01
Macao SAR	0.04	0.00	0.00
Malta	0.12	0.01	0.01
Montenegro	0.12	0.01	0.01
Morocco	0.23	0.05	0.04
Netherlands	0.06	0.00	0.00
New Zealand	0.17	0.03	0.02
North Macedonia	0.07	0.01	0.01
Northern Ireland	0.10	0.01	0.02
Norway (5)	0.10	0.01	0.01

Relationship Between the PIRLS 2021 *Early Numeracy Activities* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Oman	0.14	0.02	0.01
Poland	0.05	0.00	0.00
Portugal	0.12	0.02	0.01
Qatar	0.11	0.01	0.01
Russian Federation	0.09	0.01	0.01
Saudi Arabia	0.07	0.00	0.00
Serbia	0.09	0.01	0.01
Singapore	0.17	0.03	0.02
Slovak Republic	0.16	0.02	0.05
Slovenia	0.06	0.00	0.00
South Africa	0.15	0.02	0.03
Spain	0.12	0.01	0.01
Sweden	0.07	0.00	0.00
Turkiye	0.35	0.13	0.12
United Arab Emirates	0.11	0.01	0.02
United States	–	–	–
Uzbekistan	0.10	0.01	0.01
International Median	0.10	0.01	0.01
Benchmarking Participants			
Alberta, Canada	0.09	0.01	0.01
British Columbia, Canada	0.10	0.01	0.00
Newfoundland & Labrador, Can.	0.10	0.01	0.01
Quebec, Canada	0.06	0.00	0.00
Moscow City, Russian Fed.	0.05	0.00	0.00
South Africa (6)	0.16	0.03	0.03
Abu Dhabi, UAE	0.11	0.01	0.01
Dubai, UAE	0.15	0.02	0.02

A dash (–) indicates comparable data not available.

Early Literacy and Numeracy Activities

About the Scale

Students were scored according to their parents' reports regarding the frequency they or someone in the home engaged their children in the eighteen activities on the *Early Literacy and Numeracy Activities* scale. Cut scores divide the scale into three categories. Students **Often** engaged in early literacy and numeracy activities before primary school had a score at or above the cut score corresponding to their parents reporting they "often" did nine of the eighteen activities and "sometimes" did the other nine, on average. Students **Never or Almost Never** engaged in early literacy and numeracy activities before primary school had a score at or below the cut score corresponding to their parents reporting they "never or almost never" did nine of the eighteen activities and "sometimes" did the other nine, on average. All other students **Sometimes** engaged in early literacy and numeracy activities.

Before your child began primary/elementary school, how often did you or someone else in your home do the following activities with him/her?

	Often	Sometimes	Never or almost never
ASBH01A ^T 1) Read books -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01B ^T 2) Tell stories -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01C ^T 3) Sing songs -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01D ^T 4) Play with alphabet toys (e.g., blocks with letters of the alphabet) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01E ^T 5) Talk about things you had done -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01F ^T 6) Talk about what you had read -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01G ^T 7) Play word games -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01H ^T 8) Write letters or words -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01I ^T 9) Read aloud signs and labels -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01J ^T 10) Say counting rhymes or sing counting songs -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01K ^T 11) Play with number toys (e.g., blocks with numbers) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01L ^T 12) Count different things -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01M ^T 13) Play games involving shapes (e.g., shape sorting toys, puzzles) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01N ^T 14) Play with building blocks or construction toys --	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01O ^T 15) Play board or card games -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01P ^T 16) Write numbers -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01Q 17) Draw shapes -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH01R 18) Measure or weigh things (e.g., when cooking) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Scale Cut Scores 10.6 6.6

^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Early Literacy and Numeracy Activities* Scale

Item	delta	tau_1	tau_2	Infit	Q-Index
ASBH01A	-0.39815	-1.38612	1.38612	1.03	0.20
ASBH01B	-0.27084	-1.36591	1.36591	0.99	0.19
ASBH01C	-0.07626	-0.94911	0.94911	1.20	0.23
ASBH01D	0.34161	-0.97569	0.97569	0.95	0.15
ASBH01E	-0.97514	-1.13702	1.13702	1.09	0.21
ASBH01F	0.20652	-1.31732	1.31732	0.99	0.17
ASBH01G	0.41270	-1.19198	1.19198	0.93	0.14
ASBH01H	0.02639	-1.08810	1.08810	0.95	0.15
ASBH01I	0.27655	-1.03300	1.03300	1.03	0.17
ASBH01J	0.48895	-1.03701	1.03701	1.02	0.17
ASBH01K	0.29015	-1.02381	1.02381	0.89	0.13
ASBH01L	-0.72944	-1.19802	1.19802	0.88	0.14
ASBH01M	-0.42437	-1.02352	1.02352	0.96	0.15
ASBH01N	-0.45303	-0.78422	0.78422	1.07	0.18
ASBH01O	0.00038	-1.14074	1.14074	1.07	0.20
ASBH01P	-0.18464	-1.16906	1.16906	0.95	0.15
ASBH01Q	-0.13457	-1.20297	1.20297	0.96	0.16
ASBH01R	1.60319	-1.13187	1.13187	1.12	0.22

Scale Transformation Constants for the PIRLS 2021 *Early Literacy and Numeracy Activities* Scale

Scale Transformation Constants

A = 8.577414

B = 1.490716

Transformed Scale Score = 8.577414 + 1.490716 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Early Literacy and Numeracy Activities* Scale

Raw Score	Transformed Scale Score	Cutpoint
0	1.30233	
1	3.02642	
2	3.87559	
3	4.46700	
4	4.93172	
5	5.32476	
6	5.66934	
7	5.98011	
8	6.26627	
9	6.53399	6.6
10	6.78757	
11	7.02962	
12	7.26405	
13	7.49173	
14	7.71419	
15	7.93271	
16	8.14839	
17	8.36223	
18	8.57506	
19	8.78784	
20	9.00134	
21	9.21650	
22	9.43432	
23	9.65595	
24	9.88273	
25	10.11630	
26	10.35760	
27	10.61066	10.6
28	10.87826	
29	11.16498	
30	11.47732	
31	11.82488	
32	12.22172	
33	12.69565	
34	13.29912	
35	14.16594	
36	15.91536	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Literacy and Numeracy Activities Scale

Country	Cronbach Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item																	
			ASBH01A	ASBH01B	ASBH01C	ASBH01D	ASBH01E	ASBH01F	ASBH01G	ASBH01H	ASBH01I	ASBH01J	ASBH01K	ASBH01L	ASBH01M	ASBH01N	ASBH01O	ASBH01P	ASBH01Q	ASBH01R
Albania	0.89	36	0.60	0.50	0.44	0.62	0.49	0.59	0.64	0.68	0.63	0.62	0.69	0.62	0.68	0.61	0.58	0.62	0.61	0.47
Australia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Austria	0.83	27	0.42	0.49	0.43	0.54	0.38	0.52	0.58	0.54	0.56	0.62	0.59	0.57	0.50	0.43	0.42	0.55	0.57	0.50
Azerbaijan	0.84	27	0.48	0.48	0.30	0.60	0.31	0.48	0.52	0.57	0.55	0.52	0.65	0.52	0.65	0.62	0.41	0.54	0.60	0.47
Bahrain	0.87	31	0.51	0.51	0.38	0.63	0.44	0.50	0.62	0.60	0.53	0.57	0.68	0.62	0.65	0.59	0.57	0.61	0.59	0.38
Belgium (Flemish)	0.85	28	0.43	0.45	0.44	0.56	0.39	0.49	0.65	0.55	0.56	0.58	0.63	0.61	0.54	0.40	0.49	0.58	0.57	0.46
Belgium (French)	0.85	28	0.42	0.48	0.41	0.62	0.36	0.47	0.64	0.57	0.52	0.54	0.66	0.63	0.56	0.47	0.47	0.55	0.56	0.48
Brazil	0.89	36	0.61	0.63	0.49	0.68	0.45	0.58	0.67	0.62	0.59	0.59	0.71	0.55	0.68	0.67	0.47	0.63	0.61	0.40
Bulgaria	0.92	42	0.66	0.62	0.46	0.74	0.56	0.68	0.71	0.73	0.64	0.61	0.75	0.71	0.71	0.68	0.58	0.71	0.56	0.49
Chinese Taipei	0.90	37	0.59	0.59	0.50	0.64	0.44	0.50	0.60	0.53	0.65	0.70	0.72	0.74	0.72	0.66	0.48	0.64	0.68	0.44
Croatia	0.87	32	0.44	0.54	0.45	0.63	0.37	0.52	0.61	0.63	0.59	0.61	0.69	0.64	0.61	0.52	0.51	0.64	0.63	0.40
Cyprus	0.88	33	0.50	0.51	0.44	0.66	0.45	0.54	0.64	0.62	0.56	0.59	0.69	0.62	0.61	0.53	0.52	0.63	0.62	0.49
Czech Republic	0.83	27	0.32	0.45	0.37	0.59	0.38	0.54	0.56	0.62	0.50	0.48	0.66	0.57	0.52	0.43	0.41	0.66	0.57	0.51
Denmark	0.85	29	0.46	0.48	0.41	0.60	0.38	0.60	0.66	0.61	0.56	0.61	0.63	0.57	0.51	0.38	0.43	0.61	0.56	0.50
Egypt	0.88	34	0.48	0.55	0.38	0.63	0.53	0.58	0.63	0.66	0.60	0.58	0.68	0.59	0.64	0.64	0.55	0.63	0.60	0.39
England	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Finland	0.86	30	0.44	0.48	0.44	0.59	0.40	0.58	0.60	0.64	0.58	0.57	0.64	0.61	0.52	0.40	0.45	0.67	0.56	0.52
France	0.84	28	0.49	0.49	0.41	0.64	0.40	0.47	0.61	0.61	0.49	0.53	0.65	0.60	0.56	0.46	0.44	0.59	0.57	0.44
Georgia	0.86	30	0.53	0.47	0.36	0.64	0.43	0.49	0.53	0.54	0.58	0.59	0.68	0.56	0.60	0.60	0.51	0.60	0.63	0.47
Germany	0.83	26	0.33	0.45	0.39	0.59	0.31	0.46	0.60	0.61	0.56	0.59	0.63	0.53	0.47	0.38	0.38	0.61	0.58	0.45
Hong Kong SAR	0.88	33	0.51	0.53	0.47	0.49	0.46	0.51	0.61	0.54	0.54	0.65	0.70	0.71	0.70	0.66	0.52	0.63	0.60	0.41
Hungary	0.84	28	0.43	0.42	0.39	0.63	0.40	0.49	0.59	0.57	0.56	0.59	0.66	0.57	0.49	0.39	0.42	0.61	0.58	0.54
Iran, Islamic Rep. of	0.88	33	0.55	0.48	0.50	0.63	0.47	0.55	0.66	0.62	0.61	0.58	0.65	0.60	0.61	0.57	0.60	0.59	0.59	0.46
Ireland	0.88	34	0.49	0.52	0.42	0.62	0.42	0.57	0.63	0.66	0.63	0.62	0.68	0.65	0.66	0.57	0.48	0.66	0.66	0.51
Israel	0.87	31	0.37	0.50	0.41	0.63	0.42	0.58	0.66	0.65	0.57	0.60	0.69	0.58	0.55	0.50	0.52	0.66	0.63	0.45
Italy	0.83	26	0.39	0.45	0.41	0.63	0.32	0.49	0.56	0.62	0.53	0.58	0.64	0.60	0.49	0.40	0.38	0.61	0.57	0.42
Jordan	0.89	34	0.45	0.53	0.45	0.61	0.56	0.51	0.61	0.65	0.61	0.62	0.66	0.62	0.63	0.59	0.59	0.65	0.63	0.41
Kazakhstan	0.85	30	0.52	0.45	0.40	0.58	0.50	0.57	0.55	0.62	0.56	0.59	0.63	0.56	0.56	0.49	0.42	0.63	0.62	0.51
Kosovo	0.82	25	0.40	0.45	0.42	0.58	0.34	0.44	0.50	0.51	0.49	0.55	0.64	0.57	0.58	0.53	0.48	0.50	0.52	0.45
Latvia	0.85	29	0.44	0.48	0.40	0.60	0.43	0.56	0.56	0.59	0.49	0.61	0.66	0.62	0.57	0.44	0.43	0.63	0.59	0.48
Lithuania	0.87	32	0.45	0.48	0.40	0.67	0.46	0.59	0.62	0.64	0.42	0.59	0.72	0.64	0.60	0.53	0.46	0.65	0.59	0.50
Macao SAR	0.86	31	0.51	0.49	0.48	0.45	0.44	0.50	0.58	0.47	0.55	0.61	0.68	0.69	0.69	0.63	0.47	0.60	0.58	0.44
Malta	0.87	33	0.51	0.54	0.47	0.64	0.40	0.54	0.63	0.58	0.55	0.60	0.69	0.66	0.67	0.56	0.43	0.61	0.64	0.45
Montenegro	0.85	28	0.49	0.49	0.45	0.58	0.39	0.51	0.56	0.54	0.52	0.62	0.65	0.56	0.58	0.51	0.42	0.53	0.56	0.47
Morocco	0.91	38	0.61	0.60	0.32	0.65	0.55	0.66	0.66	0.72	0.64	0.65	0.67	0.54	0.65	0.65	0.63	0.69	0.70	0.40
Netherlands	0.86	30	0.38	0.41	0.44	0.60	0.35	0.43	0.66	0.64	0.60	0.62	0.67	0.64	0.54	0.43	0.42	0.66	0.61	0.55
New Zealand	0.91	39	0.55	0.59	0.50	0.65	0.49	0.63	0.69	0.65	0.66	0.66	0.70	0.69	0.69	0.55	0.58	0.65	0.66	0.62
North Macedonia	0.89	36	0.57	0.55	0.46	0.65	0.47	0.56	0.62	0.66	0.61	0.64	0.67	0.64	0.66	0.46	0.56	0.66	0.67	0.58
Northern Ireland	0.89	36	0.49	0.55	0.48	0.65	0.46	0.62	0.66	0.64	0.62	0.61	0.70	0.66	0.64	0.54	0.55	0.67	0.66	0.56
Norway (5)	0.87	31	0.47	0.53	0.41	0.65	0.39	0.58	0.66	0.63	0.59	0.63	0.68	0.59	0.54	0.41	0.47	0.62	0.51	0.51

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Early Literacy and Numeracy Activities Scale

Country	Cronbach Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item																	
			ASBH01A	ASBH01B	ASBH01C	ASBH01D	ASBH01E	ASBH01F	ASBH01G	ASBH01H	ASBH01I	ASBH01J	ASBH01K	ASBH01L	ASBH01M	ASBH01N	ASBH01O	ASBH01P	ASBH01Q	ASBH01R
Oman	0.84	28	0.50	0.43	0.28	0.57	0.41	0.49	0.59	0.59	0.57	0.48	0.61	0.51	0.59	0.51	0.62	0.61	0.57	0.39
Poland	0.86	31	0.43	0.50	0.45	0.59	0.48	0.57	0.58	0.62	0.59	0.59	0.66	0.62	0.50	0.43	0.47	0.65	0.63	0.52
Portugal	0.87	31	0.51	0.52	0.43	0.62	0.41	0.52	0.63	0.59	0.51	0.61	0.69	0.65	0.59	0.51	0.47	0.60	0.59	0.47
Qatar	0.86	31	0.46	0.49	0.39	0.61	0.41	0.46	0.57	0.58	0.59	0.58	0.69	0.64	0.67	0.57	0.53	0.63	0.62	0.38
Russian Federation	0.89	36	0.58	0.52	0.50	0.65	0.55	0.63	0.65	0.65	0.51	0.57	0.69	0.62	0.67	0.62	0.59	0.66	0.61	0.49
Saudi Arabia	0.89	34	0.49	0.53	0.41	0.62	0.50	0.56	0.63	0.64	0.55	0.56	0.64	0.57	0.65	0.63	0.65	0.66	0.64	0.44
Serbia	0.84	28	0.49	0.50	0.37	0.60	0.41	0.53	0.59	0.53	0.51	0.61	0.65	0.55	0.57	0.45	0.46	0.53	0.55	0.48
Singapore	0.92	43	0.63	0.64	0.57	0.68	0.55	0.62	0.64	0.66	0.68	0.71	0.73	0.73	0.74	0.66	0.55	0.71	0.71	0.51
Slovak Republic	0.89	35	0.53	0.50	0.29	0.65	0.55	0.63	0.58	0.64	0.64	0.61	0.68	0.65	0.64	0.57	0.48	0.68	0.67	0.54
Slovenia	0.86	30	0.39	0.46	0.44	0.61	0.42	0.53	0.61	0.63	0.65	0.62	0.64	0.63	0.56	0.35	0.41	0.65	0.61	0.50
South Africa	0.89	34	0.58	0.54	0.44	0.63	0.48	0.60	0.63	0.61	0.62	0.58	0.67	0.65	0.61	0.59	0.53	0.60	0.60	0.52
Spain	0.86	29	0.47	0.50	0.41	0.64	0.41	0.54	0.61	0.61	0.53	0.57	0.67	0.54	0.58	0.50	0.45	0.60	0.56	0.44
Sweden	0.88	33	0.39	0.47	0.42	0.67	0.40	0.57	0.66	0.66	0.57	0.64	0.69	0.61	0.62	0.48	0.48	0.67	0.63	0.52
Türkiye	0.94	48	0.67	0.69	0.53	0.66	0.70	0.72	0.73	0.67	0.70	0.71	0.73	0.72	0.76	0.66	0.71	0.70	0.72	0.61
United Arab Emirates	0.89	37	0.53	0.51	0.39	0.62	0.52	0.55	0.63	0.62	0.58	0.64	0.71	0.69	0.71	0.66	0.59	0.69	0.67	0.48
United States	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Uzbekistan	0.79	23	0.45	0.42	0.39	0.56	0.30	0.49	0.49	0.51	0.50	0.52	0.60	0.49	0.55	0.41	0.43	0.49	0.52	0.42
Alberta, Canada	0.90	37	0.56	0.58	0.49	0.61	0.50	0.63	0.67	0.63	0.61	0.62	0.67	0.66	0.65	0.53	0.54	0.66	0.65	0.56
British Columbia, Canada	0.90	37	0.52	0.57	0.54	0.65	0.54	0.63	0.67	0.59	0.61	0.62	0.70	0.69	0.67	0.56	0.53	0.61	0.63	0.55
Newfoundland & Labrador	0.89	36	0.52	0.53	0.49	0.63	0.49	0.65	0.67	0.66	0.55	0.61	0.70	0.63	0.67	0.55	0.55	0.68	0.65	0.55
Quebec, Canada	0.87	32	0.49	0.52	0.42	0.64	0.40	0.54	0.64	0.61	0.53	0.61	0.68	0.64	0.61	0.51	0.51	0.60	0.57	0.51
Moscow City, Russian Fed.	0.87	32	0.49	0.48	0.47	0.63	0.54	0.60	0.61	0.63	0.42	0.57	0.67	0.58	0.58	0.51	0.56	0.63	0.62	0.52
South Africa (6)	0.89	34	0.58	0.55	0.42	0.63	0.48	0.56	0.58	0.64	0.63	0.58	0.66	0.62	0.67	0.61	0.54	0.61	0.61	0.47
Abu Dhabi, UAE	0.90	38	0.55	0.53	0.40	0.62	0.53	0.56	0.62	0.63	0.61	0.66	0.70	0.70	0.72	0.67	0.61	0.70	0.68	0.49
Dubai, UAE	0.89	35	0.52	0.48	0.41	0.61	0.49	0.56	0.61	0.61	0.59	0.62	0.68	0.68	0.68	0.61	0.54	0.66	0.65	0.48

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Early Literacy and Numeracy Activities* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.20	0.04	0.04
Australia	–	–	–
Austria	0.16	0.03	0.02
Azerbaijan	0.19	0.04	0.04
Bahrain	0.23	0.05	0.04
Belgium (Flemish)	0.11	0.01	0.01
Belgium (French)	0.16	0.02	0.01
Brazil	0.19	0.04	0.03
Bulgaria	0.36	0.13	0.12
Chinese Taipei	0.21	0.04	0.03
Croatia	0.21	0.04	0.03
Cyprus	0.23	0.05	0.03
Czech Republic	0.02	0.00	0.00
Denmark	0.13	0.02	0.01
Egypt	0.13	0.02	0.02
England	–	–	–
Finland	0.11	0.01	0.01
France	0.19	0.04	0.03
Georgia	0.04	0.00	0.00
Germany	0.08	0.01	0.01
Hong Kong SAR	0.14	0.02	0.01
Hungary	0.12	0.01	0.02
Iran, Islamic Rep. of	0.20	0.04	0.05
Ireland	0.18	0.03	0.02
Israel	0.10	0.01	0.01
Italy	0.14	0.02	0.01
Jordan	0.17	0.03	0.02
Kazakhstan	0.08	0.01	0.00
Kosovo	0.17	0.03	0.03
Latvia	0.10	0.01	0.01
Lithuania	0.12	0.01	0.01
Macao SAR	0.07	0.01	0.00
Malta	0.15	0.02	0.01
Montenegro	0.16	0.02	0.02
Morocco	0.24	0.06	0.04
Netherlands	0.10	0.01	0.00
New Zealand	0.20	0.04	0.03
North Macedonia	0.11	0.01	0.02
Northern Ireland	0.12	0.02	0.01
Norway (5)	0.14	0.02	0.02

Relationship Between the PIRLS 2021 *Early Literacy and Numeracy Activities* Scale and PIRLS 2021 Achievement

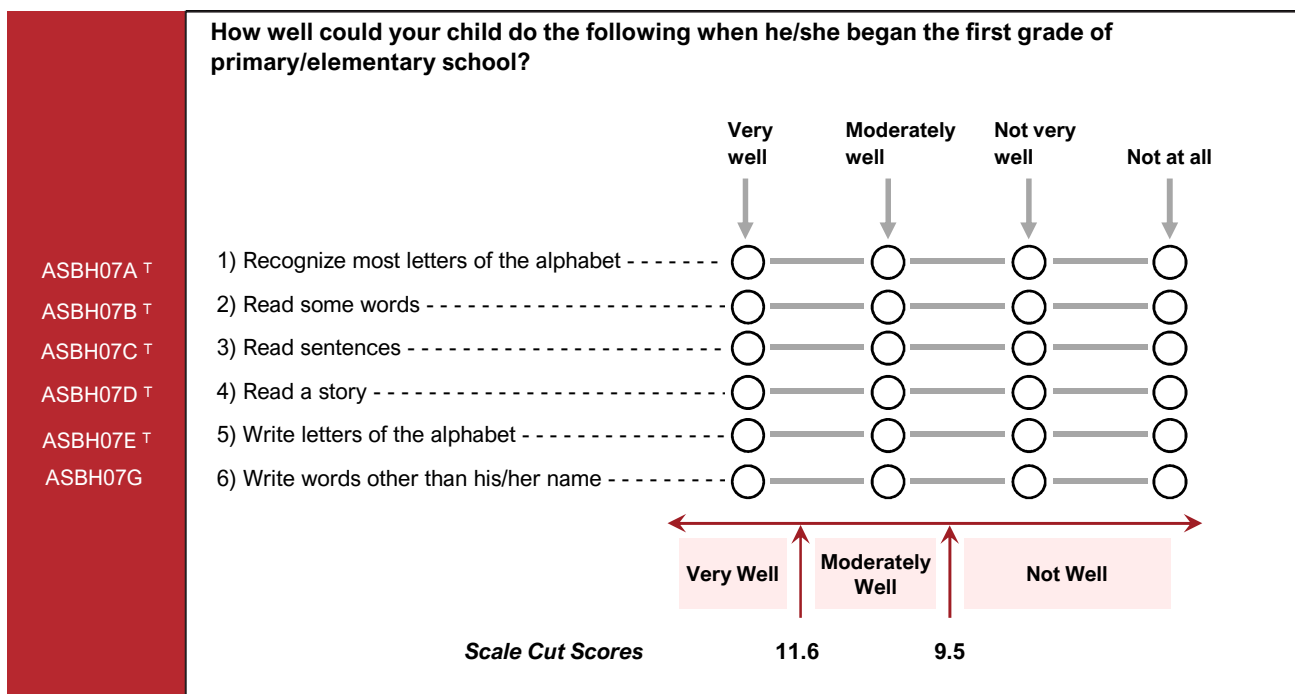
Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Oman	0.16	0.03	0.03
Poland	0.09	0.01	0.01
Portugal	0.16	0.03	0.02
Qatar	0.15	0.02	0.02
Russian Federation	0.12	0.01	0.01
Saudi Arabia	0.08	0.01	0.00
Serbia	0.13	0.02	0.02
Singapore	0.20	0.04	0.03
Slovak Republic	0.19	0.04	0.06
Slovenia	0.10	0.01	0.01
South Africa	0.16	0.03	0.03
Spain	0.19	0.03	0.02
Sweden	0.12	0.01	0.01
Turkiye	0.38	0.15	0.14
United Arab Emirates	0.17	0.03	0.03
United States	–	–	–
Uzbekistan	0.12	0.01	0.01
International Median	0.15	0.02	0.02
Benchmarking Participants			
Alberta, Canada	0.12	0.01	0.01
British Columbia, Canada	0.12	0.01	0.01
Newfoundland & Labrador, Can.	0.14	0.02	0.01
Quebec, Canada	0.10	0.01	0.01
Moscow City, Russian Fed.	0.08	0.01	0.00
South Africa (6)	0.17	0.03	0.03
Abu Dhabi, UAE	0.17	0.03	0.03
Dubai, UAE	0.19	0.04	0.03

A dash (–) indicates comparable data not available.

Early Literacy Tasks

About the Scale

Students were scored according to their parents' reports regarding how well their children could do the six tasks on the *Early Literacy Tasks* scale when they began primary school. Cut scores divide the scale into three categories. Students who could do the tasks **Very Well** had a score at or above the cut score corresponding to their parents reporting the students could do three of the six tasks "very well" and the other three "moderately well," on average. Students who could do the tasks **Not Well** had a score at or below the cut score corresponding to their parents reporting the students could do three of the six tasks "not very well" and the other three "moderately well," on average. All other students could do the early literacy tasks **Moderately Well** when they began primary school.



^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Early Literacy Tasks* Scale

Item	delta	tau_1	tau_2	tau_3	Infit	Q-Index
ASBH07A	-1.68714	-2.62711	-0.17431	2.80142	1.14	0.08
ASBH07B	-0.10607	-2.47126	-0.21686	2.68812	0.83	0.03
ASBH07C	1.28716	-2.18477	-0.19388	2.37865	0.82	0.03
ASBH07D	2.09702	-2.12959	-0.26341	2.39300	1.07	0.04
ASBH07E	-1.27941	-2.94605	-0.03125	2.97730	1.15	0.08
ASBH07G	-0.31156	-2.56729	-0.07438	2.64167	1.18	0.06

Scale Transformation Constants for the PIRLS 2021 *Early Literacy Tasks* Scale

Scale Transformation Constants

A = 9.372309

B = 0.773129

Transformed Scale Score = 9.372309 + 0.773129 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Early Literacy Tasks* Scale

Raw Score	Transformed Scale Score	Cutpoint
0	4.74222	
1	5.83720	
2	6.51512	
3	7.06955	
4	7.54587	
5	7.97118	
6	8.36153	
7	8.72843	
8	9.07960	
9	9.42233	9.5
10	9.76177	
11	10.10135	
12	10.44539	
13	10.80194	
14	11.18387	
15	11.61328	11.6
16	12.12899	
17	12.79881	
18	13.91987	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Early Literacy Tasks* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item					
			ASBH07A	ASBH07B	ASBH07C	ASBH07D	ASBH07E	ASBH07G
Albania	0.90	68	0.81	0.88	0.86	0.77	0.82	0.81
Australia	–	–	–	–	–	–	–	–
Austria	0.90	67	0.81	0.88	0.86	0.79	0.78	0.78
Azerbaijan	0.92	71	0.82	0.89	0.88	0.79	0.83	0.84
Bahrain	0.90	69	0.77	0.89	0.89	0.81	0.79	0.81
Belgium (Flemish)	0.91	68	0.76	0.87	0.88	0.84	0.79	0.81
Belgium (French)	0.88	62	0.73	0.85	0.85	0.78	0.77	0.73
Brazil	0.91	68	0.76	0.88	0.89	0.81	0.76	0.82
Bulgaria	0.93	74	0.83	0.92	0.89	0.83	0.83	0.87
Chinese Taipei	0.92	71	0.82	0.90	0.89	0.84	0.84	0.77
Croatia	0.91	69	0.76	0.88	0.89	0.83	0.81	0.83
Cyprus	0.92	72	0.77	0.90	0.90	0.83	0.80	0.86
Czech Republic	0.93	74	0.80	0.91	0.90	0.85	0.82	0.86
Denmark	0.90	68	0.77	0.89	0.89	0.81	0.78	0.80
Egypt	0.89	66	0.77	0.88	0.86	0.76	0.76	0.82
England	–	–	–	–	–	–	–	–
Finland	0.92	71	0.76	0.90	0.91	0.85	0.78	0.85
France	0.86	59	0.68	0.84	0.84	0.76	0.73	0.74
Georgia	0.92	72	0.79	0.89	0.90	0.80	0.84	0.85
Germany	0.89	64	0.78	0.86	0.86	0.78	0.78	0.76
Hong Kong SAR	0.91	70	0.77	0.88	0.90	0.84	0.83	0.79
Hungary	0.92	73	0.82	0.90	0.89	0.81	0.86	0.84
Iran, Islamic Rep. of	0.92	71	0.82	0.88	0.87	0.81	0.85	0.82
Ireland	0.92	72	0.78	0.88	0.90	0.87	0.81	0.84
Israel	0.90	68	0.74	0.89	0.88	0.82	0.81	0.81
Italy	0.91	69	0.79	0.88	0.87	0.79	0.80	0.83
Jordan	0.92	71	0.82	0.90	0.88	0.79	0.83	0.83
Kazakhstan	0.91	70	0.76	0.87	0.89	0.84	0.81	0.85
Kosovo	0.88	62	0.74	0.86	0.86	0.79	0.73	0.75
Latvia	0.90	68	0.77	0.87	0.89	0.83	0.78	0.80
Lithuania	0.92	72	0.77	0.89	0.91	0.88	0.76	0.85
Macao SAR	0.88	63	0.78	0.84	0.86	0.78	0.78	0.71
Malta	0.91	70	0.74	0.89	0.89	0.84	0.80	0.84
Montenegro	0.92	72	0.79	0.89	0.89	0.84	0.83	0.83
Morocco	0.92	72	0.83	0.91	0.89	0.76	0.84	0.86
Netherlands	0.91	70	0.79	0.88	0.89	0.83	0.80	0.82
New Zealand	0.92	72	0.77	0.88	0.89	0.86	0.83	0.86
North Macedonia	0.91	68	0.80	0.89	0.87	0.80	0.79	0.79
Northern Ireland	–	–	–	–	–	–	–	–

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Early Literacy Tasks* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item					
			ASBH07A	ASBH07B	ASBH07C	ASBH07D	ASBH07E	ASBH07G
Norway (5)	0.91	69	0.81	0.89	0.88	0.77	0.80	0.82
Oman	0.90	67	0.77	0.89	0.88	0.80	0.77	0.79
Poland	0.91	70	0.77	0.88	0.89	0.82	0.81	0.82
Portugal	0.90	68	0.76	0.89	0.88	0.81	0.79	0.82
Qatar	0.89	65	0.73	0.87	0.87	0.81	0.76	0.78
Russian Federation	0.93	73	0.79	0.90	0.91	0.86	0.81	0.85
Saudi Arabia	0.91	68	0.77	0.88	0.88	0.80	0.79	0.81
Serbia	0.91	70	0.77	0.87	0.90	0.84	0.80	0.83
Singapore	0.92	71	0.77	0.89	0.90	0.86	0.80	0.84
Slovak Republic	0.91	69	0.79	0.90	0.87	0.78	0.82	0.83
Slovenia	0.91	70	0.82	0.90	0.88	0.80	0.84	0.79
South Africa	0.88	63	0.71	0.83	0.87	0.83	0.77	0.75
Spain	0.92	71	0.79	0.89	0.90	0.83	0.81	0.82
Sweden	0.91	70	0.77	0.87	0.89	0.83	0.80	0.84
Turkiye	0.95	81	0.86	0.94	0.92	0.88	0.88	0.91
United Arab Emirates	0.90	69	0.77	0.88	0.88	0.83	0.79	0.81
United States	–	–	–	–	–	–	–	–
Uzbekistan	0.89	64	0.72	0.83	0.87	0.82	0.75	0.82
Benchmarking Participants								
Alberta, Canada	0.91	69	0.73	0.88	0.89	0.84	0.79	0.85
British Columbia, Canada	0.91	70	0.75	0.88	0.89	0.85	0.78	0.86
Newfoundland & Labrador, Can.	0.91	69	0.72	0.88	0.89	0.86	0.77	0.85
Quebec, Canada	0.90	67	0.71	0.88	0.88	0.82	0.77	0.84
Moscow City, Russian Fed.	0.90	68	0.73	0.87	0.90	0.84	0.78	0.80
South Africa (6)	0.88	61	0.72	0.81	0.85	0.83	0.74	0.75
Abu Dhabi, UAE	0.91	69	0.79	0.88	0.89	0.83	0.80	0.81
Dubai, UAE	0.90	68	0.75	0.88	0.88	0.84	0.79	0.81

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Early Literacy Tasks* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.22	0.05	0.05
Australia	–	–	–
Austria	0.03	0.00	0.00
Azerbaijan	0.24	0.06	0.05
Bahrain	0.30	0.09	0.07
Belgium (Flemish)	-0.02	0.00	0.00
Belgium (French)	0.09	0.01	0.01
Brazil	0.33	0.11	0.09
Bulgaria	0.38	0.15	0.10
Chinese Taipei	0.31	0.10	0.10
Croatia	0.33	0.11	0.09
Cyprus	0.21	0.05	0.05
Czech Republic	0.11	0.01	0.02
Denmark	0.32	0.10	0.09
Egypt	0.16	0.03	0.03
England	–	–	–
Finland	0.36	0.13	0.11
France	0.21	0.04	0.03
Georgia	0.12	0.01	0.02
Germany	0.08	0.01	0.01
Hong Kong SAR	0.36	0.13	0.12
Hungary	0.11	0.01	0.01
Iran, Islamic Rep. of	0.13	0.02	0.02
Ireland	0.39	0.15	0.13
Israel	0.08	0.01	0.00
Italy	0.11	0.01	0.02
Jordan	0.29	0.09	0.08
Kazakhstan	0.13	0.02	0.01
Kosovo	0.14	0.02	0.02
Latvia	0.42	0.17	0.16
Lithuania	0.42	0.18	0.16
Macao SAR	0.31	0.10	0.09
Malta	0.24	0.06	0.05
Montenegro	0.20	0.04	0.04
Morocco	0.31	0.09	0.10
Netherlands	0.19	0.04	0.03
New Zealand	0.15	0.02	0.02
North Macedonia	0.12	0.01	0.01
Northern Ireland	–	–	–
Norway (5)	0.26	0.07	0.05
Oman	0.30	0.09	0.08

Relationship Between the PIRLS 2021 *Early Literacy Tasks* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Poland	0.29	0.09	0.07
Portugal	0.18	0.03	0.02
Qatar	0.23	0.05	0.05
Russian Federation	0.29	0.09	0.07
Saudi Arabia	0.11	0.01	0.01
Serbia	0.26	0.07	0.07
Singapore	0.43	0.19	0.16
Slovak Republic	0.14	0.02	0.01
Slovenia	0.24	0.06	0.06
South Africa	0.25	0.06	0.06
Spain	0.37	0.14	0.12
Sweden	0.34	0.12	0.09
Turkiye	0.23	0.05	0.02
United Arab Emirates	0.25	0.06	0.06
United States	–	–	–
Uzbekistan	0.19	0.04	0.03
International Median	0.24	0.06	0.05
Benchmarking Participants			
Alberta, Canada	0.27	0.07	0.06
British Columbia, Canada	0.33	0.11	0.10
Newfoundland & Labrador, Can.	0.36	0.13	0.12
Quebec, Canada	0.20	0.04	0.03
Moscow City, Russian Fed.	0.34	0.11	0.11
South Africa (6)	0.18	0.03	0.03
Abu Dhabi, UAE	0.27	0.07	0.07
Dubai, UAE	0.19	0.03	0.04

A dash (–) indicates comparable data not available.

Home Resources for Learning

About the Scale

Students were scored according to their own and their parents' reports regarding the availability of five resources on the *Home Resources for Learning* scale. Cut scores divide the scale into three categories. Students with **Many Resources** had a score at or above the cut score corresponding to students reporting they had more than 100 books and both home study supports in their home and their parents reporting they had more than 25 children's books in their home, that at least one parent finished university, and that at least one parent had a professional occupation, on average. Students with **Few Resources** had a score at or below the cut score corresponding to students reporting they had 25 or fewer books and neither of the home study supports in their home and their parents reporting they had 10 or fewer children's books in the home, that neither parent had gone beyond upper secondary education, and that neither parent was a small business owner or worked in a clerical or professional occupation, on average. All other students had **Some Resources**.

ASBG04 ^T	Number of books in the home (students): 1) 0–10 2) 11–25 3) 26–100 4) 101–200 5) More than 200	Number of children's books in the home (parents): 1) 0–10 2) 11–25 3) 26–50 4) 51–100 5) More than 100	ASBH13 ^T
ASDG05S ^{T 1}	Number of home study supports (students): 1) None 2) Internet connection or own room 3) Both internet connection and own room	Highest level of education of either parent (parents): 1) Finished some primary or lower secondary or did not go to school 2) Finished lower secondary 3) Finished upper secondary 4) Finished post-secondary education 5) Finished university or higher	ASDHEDUP ^{T 1}
ASDHOCCP ^{T 1}	Highest level of occupation of either parent (parents): 1) Has never worked outside home for pay, general laborer, or semi-professional (skilled agricultural or fishery worker, craft or trade worker, plant or machine operator) 2) Clerical (clerk or service or sales worker) 3) Small business owner 4) Professional (corporate manager or senior official, professional, or technician or associate professional)		

Scale Cut Scores 11.7 7.6

^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

¹ Derived variable. For details, see Supplement 3 of the *PIRLS 2021 User Guide for the International Database*.

Item Parameters for the PIRLS 2021 Home Resources for Learning Scale

Item	delta	tau_1	tau_2	tau_3	tau_4	Infit	Q-Index
ASBG04	0.76712	-1.23479	-0.47642	0.95349	0.75772	1.01	0.12
ASBH13	0.73751	-0.86044	-0.51221	0.41029	0.96236	0.94	0.09
ASDG05S	-1.11963	-0.90853	0.90853			1.10	0.29
ASDHEDUP	-0.48614	-0.64976	-0.88603	1.26033	0.27546	0.95	0.12
ASDHOCCP	0.10114	-0.28853	0.88508	-0.59655		1.00	0.11

Scale Transformation Constants for the PIRLS 2021 Home Resources for Learning Scale

Scale Transformation Constants

A = 9.449654

B = 1.574800

Transformed Scale Score = 9.449654 + 1.574800 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 Home Resources for Learning Scale

Raw Score	Transformed Scale Score	Cutpoint
0	4.08500	
1	5.95459	
2	6.87523	
3	7.54207	7.6
4	8.08848	
5	8.54792	
6	8.94299	
7	9.29058	
8	9.60729	
9	9.91526	
10	10.22238	
11	10.54337	
12	10.89263	
13	11.28642	
14	11.74392	11.7
15	12.29825	
16	13.04647	
17	14.50919	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Home Resources for Learning Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item				
			ASBG04	ASBH13	ASDG05S	ASDHEDUP	ASDHOCCP
Albania	0.73	48	0.70	0.75	0.32	0.79	0.80
Australia	–	–	–	–	–	–	–
Austria	0.72	48	0.73	0.79	0.23	0.79	0.76
Azerbaijan	0.55	35	0.51	0.53	0.35	0.77	0.72
Bahrain	0.61	39	0.62	0.68	0.21	0.76	0.71
Belgium (Flemish)	0.67	45	0.68	0.73	0.33	0.77	0.74
Belgium (French)	0.70	46	0.71	0.77	0.36	0.74	0.73
Brazil	0.69	45	0.57	0.72	0.37	0.81	0.78
Bulgaria	0.81	57	0.79	0.82	0.36	0.87	0.81
Chinese Taipei	0.68	46	0.76	0.79	0.07	0.78	0.71
Croatia	0.66	44	0.65	0.72	0.05	0.79	0.78
Cyprus	0.67	44	0.67	0.77	0.18	0.76	0.76
Czech Republic	0.66	44	0.68	0.74	0.11	0.78	0.73
Denmark	0.63	42	0.69	0.73	0.25	0.71	0.72
Egypt	0.53	35	0.38	0.50	0.40	0.78	0.76
England	–	–	–	–	–	–	–
Finland	0.63	41	0.66	0.67	0.23	0.76	0.73
France	0.72	48	0.73	0.78	0.39	0.78	0.71
Georgia	0.66	41	0.68	0.75	0.27	0.79	0.58
Germany	0.71	47	0.70	0.76	0.22	0.81	0.76
Hong Kong SAR	0.74	50	0.74	0.79	0.21	0.82	0.78
Hungary	0.76	53	0.71	0.81	0.18	0.87	0.83
Iran, Islamic Rep. of	0.63	40	0.63	0.70	0.28	0.78	0.67
Ireland	0.71	48	0.77	0.78	0.14	0.78	0.74
Israel	0.69	53	0.64	0.74	–	0.78	0.75
Italy	0.69	46	0.67	0.76	0.11	0.81	0.78
Jordan	0.57	37	0.50	0.50	0.46	0.74	0.75
Kazakhstan	0.48	33	0.46	0.43	0.39	0.76	0.73
Kosovo	0.67	43	0.69	0.75	0.23	0.73	0.71
Latvia	0.67	44	0.69	0.76	0.21	0.77	0.73
Lithuania	0.66	45	0.72	0.74	0.08	0.75	0.76
Macao SAR	0.70	46	0.72	0.78	0.20	0.77	0.74
Malta	0.60	40	0.54	0.61	0.00	0.82	0.79
Montenegro	0.67	44	0.63	0.71	0.19	0.79	0.79
Morocco	0.62	40	0.60	0.64	0.51	0.75	0.63
Netherlands	0.66	43	0.68	0.71	0.11	0.79	0.72
New Zealand	0.65	43	0.64	0.68	0.36	0.77	0.73
North Macedonia	0.69	46	0.66	0.77	0.11	0.82	0.77

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Home Resources for Learning Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item				
			ASBG04	ASBH13	ASDG05S	ASDHEDUP	ASDHOCCP
Northern Ireland	0.70	46	0.74	0.74	0.19	0.81	0.73
Norway (5)	0.65	44	0.68	0.73	0.32	0.76	0.72
Oman	0.51	34	0.40	0.55	0.17	0.79	0.78
Poland	0.69	46	0.70	0.74	0.24	0.78	0.76
Portugal	0.71	47	0.70	0.77	0.07	0.80	0.80
Qatar	0.51	34	0.44	0.65	0.24	0.72	0.72
Russian Federation	0.60	40	0.61	0.71	0.32	0.74	0.70
Saudi Arabia	0.37	30	0.14	0.49	0.16	0.79	0.78
Serbia	0.72	49	0.73	0.78	0.11	0.82	0.79
Singapore	0.64	42	0.70	0.72	0.16	0.77	0.71
Slovak Republic	0.74	51	0.72	0.81	0.18	0.83	0.80
Slovenia	0.61	41	0.61	0.69	0.07	0.78	0.76
South Africa	0.69	42	0.57	0.60	0.54	0.73	0.76
Spain	0.69	46	0.69	0.77	0.01	0.80	0.78
Sweden	0.69	47	0.71	0.75	0.48	0.75	0.70
Turkiye	0.73	48	0.68	0.76	0.52	0.80	0.69
United Arab Emirates	0.53	34	0.55	0.70	0.29	0.65	0.65
United States	–	–	–	–	–	–	–
Uzbekistan	0.47	32	0.45	0.57	0.31	0.69	0.71
Benchmarking Participants							
Alberta, Canada	0.58	38	0.72	0.71	0.25	0.58	0.69
British Columbia, Canada	0.63	41	0.72	0.72	0.31	0.63	0.72
Newfoundland & Labrador, Can.	0.57	39	0.61	0.62	0.16	0.78	0.76
Quebec, Canada	0.59	38	0.66	0.71	0.14	0.70	0.69
Moscow City, Russian Fed.	0.56	38	0.65	0.72	0.27	0.65	0.66
South Africa (6)	0.70	43	0.64	0.60	0.60	0.71	0.73
Abu Dhabi, UAE	0.49	34	0.43	0.66	0.27	0.70	0.70
Dubai, UAE	0.60	39	0.70	0.76	0.37	0.61	0.61

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Home Resources for Learning* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.38	0.15	0.07
Australia	–	–	–
Austria	0.52	0.27	0.16
Azerbaijan	0.29	0.09	0.03
Bahrain	0.37	0.14	0.06
Belgium (Flemish)	0.38	0.14	0.10
Belgium (French)	0.45	0.20	0.14
Brazil	0.46	0.21	0.11
Bulgaria	0.54	0.29	0.21
Chinese Taipei	0.35	0.12	0.07
Croatia	0.40	0.16	0.08
Cyprus	0.44	0.19	0.12
Czech Republic	0.41	0.17	0.09
Denmark	0.37	0.14	0.10
Egypt	0.16	0.03	0.01
England	–	–	–
Finland	0.34	0.12	0.07
France	0.47	0.22	0.16
Georgia	0.33	0.11	0.05
Germany	0.45	0.21	0.14
Hong Kong SAR	0.29	0.08	0.06
Hungary	0.52	0.27	0.17
Iran, Islamic Rep. of	0.44	0.19	0.13
Ireland	0.46	0.21	0.15
Israel	0.42	0.17	0.09
Italy	0.37	0.13	0.07
Jordan	0.28	0.08	0.04
Kazakhstan	0.19	0.04	0.01
Kosovo	0.37	0.13	0.07
Latvia	0.33	0.11	0.06
Lithuania	0.37	0.13	0.08
Macao SAR	0.24	0.06	0.04
Malta	0.37	0.14	0.09
Montenegro	0.34	0.11	0.06
Morocco	0.26	0.07	0.06
Netherlands	0.32	0.10	0.06
New Zealand	0.42	0.18	0.14
North Macedonia	0.42	0.17	0.07
Northern Ireland	0.41	0.17	0.13
Norway (5)	0.36	0.13	0.10

Relationship Between the PIRLS 2021 *Home Resources for Learning* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Oman	0.27	0.07	0.02
Poland	0.41	0.16	0.10
Portugal	0.38	0.15	0.09
Qatar	0.33	0.11	0.05
Russian Federation	0.37	0.14	0.06
Saudi Arabia	0.14	0.02	0.01
Serbia	0.44	0.20	0.10
Singapore	0.43	0.19	0.12
Slovak Republic	0.47	0.22	0.13
Slovenia	0.38	0.14	0.08
South Africa	0.41	0.17	0.11
Spain	0.37	0.14	0.09
Sweden	0.41	0.17	0.12
Turkiye	0.50	0.25	0.17
United Arab Emirates	0.39	0.15	0.07
United States	–	–	–
Uzbekistan	0.19	0.04	0.02
International Median	0.38	0.14	0.08
Benchmarking Participants			
Alberta, Canada	0.30	0.09	0.06
British Columbia, Canada	0.31	0.09	0.07
Newfoundland & Labrador, Can.	0.30	0.09	0.06
Quebec, Canada	0.28	0.08	0.05
Moscow City, Russian Fed.	0.29	0.08	0.05
South Africa (6)	0.41	0.17	0.10
Abu Dhabi, UAE	0.41	0.17	0.06
Dubai, UAE	0.44	0.19	0.09

A dash (–) indicates comparable data not available.

Home Socioeconomic Status

About the Scale

Students were scored according to their parents' reports regarding the four indicators on the *Home Socioeconomic Status* scale. Cut scores divide the scale into three categories. Students with **Higher** socioeconomic status had a score at or above the cut score corresponding to their parents reporting they had more than 25 books and more than 25 children's books in their home, that at least one parent finished university, and that at least one parent had a professional occupation, on average. Students with **Lower** socioeconomic status had a score at or below the cut score corresponding to their parents reporting they had 25 or fewer books and 25 or fewer children's books in the home, that neither parent had gone beyond upper secondary education, and that neither parent was a small business owner or worked in a clerical or professional occupation, on average. All other students had **Middle** socioeconomic status.

ASBH12	Number of books in the home: 1) 0–10 2) 11–25 3) 26–100 4) 101–200 5) More than 200	Number of children's books in the home: 1) 0–10 2) 11–25 3) 26–50 4) 51–100 5) More than 100	ASBH13
ASDHEDUP ¹	Highest level of education of either parent: 1) Finished some primary or lower secondary or did not go to school 2) Finished lower secondary 3) Finished upper secondary 4) Finished post-secondary education 5) Finished university or higher		
ASDHOCCP ¹	Highest level of occupation of either parent: 1) Has never worked outside home for pay, general laborer, or semi-professional (skilled agricultural or fishery worker, craft or trade worker, plant or machine operator) 2) Clerical (clerk or service or sales worker) 3) Small business owner 4) Professional (corporate manager or senior official, professional, or technician or associate professional)		
<p style="text-align: center;">Scale Cut Scores 11.1 8.5</p>			

¹ Derived variable. For details, see Supplement 3 of the *PIRLS 2021 User Guide for the International Database*.

Item Parameters for the PIRLS 2021 Home Socioeconomic Status Scale

Item	delta	tau_1	tau_2	tau_3	tau_4	Infit	Q-Index
ASBH12	0.55443	-1.10690	-0.78940	1.13938	0.75692	0.93	0.06
ASBH13	0.56601	-1.16145	-0.60992	0.49628	1.27509	0.97	0.06
ASDHEDUP	-0.92069	-0.96584	-0.98614	1.35267	0.59931	1.05	0.16
ASDHOCCP	-0.19975	-0.48928	0.88063	-0.39135		1.13	0.15

Scale Transformation Constants for the PIRLS 2021 Home Socioeconomic Status Scale

Scale Transformation Constants

A = 9.763919

B = 1.511695

Transformed Scale Score = 9.763919 + 1.511695 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 Home Socioeconomic Status Scale

Raw Score	Transformed Scale Score	Cutpoint
0	4.82627	
1	6.33435	
2	7.22491	
3	7.92896	
4	8.47905	8.5
5	8.92588	
6	9.30780	
7	9.65449	
8	9.99175	
9	10.34719	
10	10.72985	
11	11.17158	11.1
12	11.68005	
13	12.27791	
14	13.04932	
15	14.51060	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Home Socioeconomic Status* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item			
			ASBH12	ASBH13	ASDHEDUP	ASDHOCCP
Albania	0.82	66	0.86	0.82	0.78	0.78
Australia	–	–	–	–	–	–
Austria	0.81	65	0.84	0.83	0.79	0.75
Azerbaijan	0.67	51	0.80	0.71	0.70	0.64
Bahrain	0.70	54	0.78	0.78	0.72	0.65
Belgium (Flemish)	0.74	58	0.77	0.79	0.75	0.73
Belgium (French)	0.77	59	0.81	0.80	0.74	0.73
Brazil	0.77	59	0.74	0.78	0.79	0.76
Bulgaria	0.87	73	0.87	0.85	0.87	0.81
Chinese Taipei	0.78	61	0.83	0.83	0.76	0.70
Croatia	0.78	60	0.81	0.77	0.77	0.76
Cyprus	0.77	60	0.80	0.80	0.75	0.74
Czech Republic	0.77	59	0.82	0.80	0.76	0.71
Denmark	0.71	55	0.79	0.75	0.70	0.73
Egypt	0.64	50	0.78	0.73	0.67	0.65
England	–	–	–	–	–	–
Finland	0.71	54	0.77	0.74	0.72	0.70
France	0.78	61	0.80	0.79	0.79	0.73
Georgia	0.75	58	0.86	0.82	0.78	0.54
Germany	0.80	63	0.83	0.82	0.80	0.74
Hong Kong SAR	0.79	62	0.75	0.80	0.82	0.78
Hungary	0.86	71	0.85	0.85	0.86	0.81
Iran, Islamic Rep. of	0.73	56	0.81	0.75	0.77	0.66
Ireland	0.77	61	0.80	0.80	0.77	0.74
Israel	0.74	58	0.77	0.79	0.76	0.71
Italy	0.81	64	0.84	0.80	0.80	0.76
Jordan	0.67	51	0.79	0.70	0.67	0.68
Kazakhstan	0.60	47	0.82	0.76	0.60	0.53
Kosovo	0.77	60	0.85	0.79	0.73	0.71
Latvia	0.76	59	0.80	0.81	0.75	0.70
Lithuania	0.75	59	0.81	0.79	0.72	0.75
Macao SAR	0.78	60	0.79	0.81	0.76	0.73
Malta	0.71	54	0.73	0.71	0.77	0.73
Montenegro	0.78	61	0.81	0.77	0.78	0.76
Morocco	0.68	53	0.81	0.77	0.73	0.60
Netherlands	0.74	57	0.78	0.74	0.78	0.71
New Zealand	0.74	56	0.79	0.77	0.74	0.71
North Macedonia	0.83	66	0.86	0.83	0.81	0.75

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Home Socioeconomic Status* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item			
			ASBH12	ASBH13	ASDHEDUP	ASDHOCCP
Northern Ireland	0.76	59	0.79	0.78	0.80	0.71
Norway (5)	0.74	58	0.81	0.79	0.75	0.68
Oman	0.65	49	0.75	0.73	0.68	0.65
Poland	0.77	60	0.80	0.78	0.77	0.75
Portugal	0.81	64	0.82	0.79	0.80	0.79
Qatar	0.66	50	0.78	0.80	0.63	0.60
Russian Federation	0.72	56	0.82	0.81	0.69	0.65
Saudi Arabia	0.61	47	0.79	0.73	0.61	0.59
Serbia	0.82	66	0.84	0.80	0.82	0.79
Singapore	0.69	53	0.71	0.76	0.75	0.70
Slovak Republic	0.83	68	0.84	0.83	0.83	0.79
Slovenia	0.73	56	0.78	0.77	0.74	0.71
South Africa	0.74	55	0.80	0.76	0.70	0.71
Spain	0.80	62	0.81	0.80	0.79	0.76
Sweden	0.75	59	0.81	0.80	0.75	0.69
Turkiye	0.78	61	0.82	0.82	0.79	0.69
United Arab Emirates	0.65	49	0.81	0.81	0.58	0.57
United States	–	–	–	–	–	–
Uzbekistan	0.64	49	0.83	0.76	0.59	0.59
Benchmarking Participants						
Alberta, Canada	0.64	49	0.79	0.76	0.56	0.65
British Columbia, Canada	0.67	51	0.77	0.77	0.62	0.70
Newfoundland & Labrador, Can.	0.62	49	0.63	0.66	0.76	0.74
Quebec, Canada	0.67	51	0.77	0.76	0.68	0.65
Moscow City, Russian Fed.	0.67	51	0.81	0.83	0.59	0.58
South Africa (6)	0.72	53	0.80	0.76	0.66	0.68
Abu Dhabi, UAE	0.65	50	0.81	0.80	0.59	0.58
Dubai, UAE	0.67	51	0.80	0.82	0.59	0.60

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Home Socioeconomic Status* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.36	0.13	0.12
Australia	–	–	–
Austria	0.50	0.25	0.23
Azerbaijan	0.26	0.07	0.05
Bahrain	0.38	0.14	0.12
Belgium (Flemish)	0.36	0.13	0.12
Belgium (French)	0.44	0.20	0.17
Brazil	0.45	0.20	0.15
Bulgaria	0.53	0.28	0.27
Chinese Taipei	0.34	0.12	0.11
Croatia	0.39	0.15	0.13
Cyprus	0.43	0.19	0.15
Czech Republic	0.40	0.16	0.14
Denmark	0.36	0.13	0.11
Egypt	0.19	0.04	0.03
England	–	–	–
Finland	0.33	0.11	0.09
France	0.46	0.21	0.19
Georgia	0.29	0.08	0.07
Germany	0.43	0.18	0.16
Hong Kong SAR	0.26	0.07	0.06
Hungary	0.52	0.27	0.26
Iran, Islamic Rep. of	0.43	0.19	0.14
Ireland	0.42	0.18	0.15
Israel	0.42	0.18	0.15
Italy	0.37	0.14	0.12
Jordan	0.29	0.09	0.07
Kazakhstan	0.21	0.04	0.03
Kosovo	0.35	0.13	0.10
Latvia	0.30	0.09	0.08
Lithuania	0.34	0.12	0.11
Macao SAR	0.22	0.05	0.04
Malta	0.36	0.13	0.11
Montenegro	0.35	0.12	0.10
Morocco	0.21	0.04	0.03
Netherlands	0.33	0.11	0.09
New Zealand	0.36	0.13	0.11
North Macedonia	0.41	0.17	0.14
Northern Ireland	0.38	0.14	0.13
Norway (5)	0.34	0.11	0.09

Relationship Between the PIRLS 2021 *Home Socioeconomic Status* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Oman	0.29	0.08	0.07
Poland	0.36	0.13	0.11
Portugal	0.37	0.13	0.12
Qatar	0.35	0.12	0.10
Russian Federation	0.34	0.12	0.10
Saudi Arabia	0.18	0.03	0.03
Serbia	0.44	0.19	0.17
Singapore	0.41	0.17	0.15
Slovak Republic	0.46	0.21	0.19
Slovenia	0.36	0.13	0.12
South Africa	0.38	0.14	0.13
Spain	0.36	0.13	0.11
Sweden	0.39	0.15	0.13
Turkiye	0.49	0.24	0.20
United Arab Emirates	0.40	0.16	0.14
United States	–	–	–
Uzbekistan	0.20	0.04	0.03
International Median	0.36	0.13	0.12
Benchmarking Participants			
Alberta, Canada	0.30	0.09	0.07
British Columbia, Canada	0.27	0.07	0.05
Newfoundland & Labrador, Can.	0.26	0.07	0.05
Quebec, Canada	0.26	0.07	0.05
Moscow City, Russian Fed.	0.26	0.07	0.06
South Africa (6)	0.33	0.11	0.09
Abu Dhabi, UAE	0.43	0.18	0.16
Dubai, UAE	0.44	0.19	0.18

A dash (–) indicates comparable data not available.

Parents Like Reading

About the Scale

Students were scored on the *Parents Like Reading* scale according to their parents' responses to eight statements about reading as well as how often they read for enjoyment. Cut scores divide the scale into three categories. Students whose parents **Very Much Like Reading** had a score at or above the cut score corresponding to their parents "agreeing a lot" with four of the eight statements and "agreeing a little" with the other four, as well as reading for enjoyment "every day or almost every day," on average. Students whose parents **Do Not Like Reading** had a score at or below the cut score corresponding to their parents "disagreeing a little" with four of the eight statements and "agreeing a little" with the other four, as well as reading for enjoyment "once or twice a month," on average. All other students had parents who **Somewhat Like Reading**.

Please indicate how much you agree with the following statements about reading.

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
ASBH11A ^T 1) I read only if I have to ^R -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11B ^T 2) I like talking about what I read with other people -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11C ^T 3) I like to spend my spare time reading -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11D ^T 4) I read only if I need information ^R -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11E ^T 5) Reading is an important activity in my home -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11F ^T 6) I would like to have more time for reading -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11G ^T 7) I enjoy reading -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH11H ^T 8) Reading is one of my favorite hobbies -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

^R Reverse coded

Very Much Like Somewhat Like Do Not Like

10.4 8.1

ASBH10^T When you are at home, how often do you read for your own enjoyment? -----

Every day or almost every day	Once or twice a week	Once or twice a month	Never or almost never
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Very Much Like Somewhat Like Do Not Like

10.4 8.1

Scale Cut Scores

^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Parents Like Reading* Scale

Item	delta	tau_1	tau_2	tau_3	Infit	Q-Index
ASBH11A ^R	0.50897	-0.63117	0.30040	0.33077	1.37	0.14
ASBH11B	-0.23785	-1.05099	-0.44563	1.49662	1.19	0.19
ASBH11C	-0.00112	-1.11031	-0.22330	1.33361	0.79	0.08
ASBH11D ^R	0.72012	-0.83058	0.17130	0.65928	1.27	0.13
ASBH11E	-0.18388	-1.39601	-0.09784	1.49385	0.94	0.12
ASBH11F	-0.53539	-0.83250	-0.18143	1.01393	0.99	0.14
ASBH11G	-0.71724	-0.70553	-0.32243	1.02796	0.69	0.06
ASBH11H	0.20210	-1.06956	-0.12629	1.19585	0.80	0.08
ASBH10	0.24429	-0.77111	-0.46117	1.23228	1.12	0.15

^R Reverse coded

Scale Transformation Constants for the PIRLS 2021 *Parents Like Reading* Scale

Scale Transformation Constants

A = 8.166833

B = 1.363641

Transformed Scale Score = 8.166833 + 1.363641 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Parents Like Reading* Scale

Raw Score	Transformed Scale Score	Cutpoint
0	2.77140	
1	4.27605	
2	4.99244	
3	5.47972	
4	5.86197	
5	6.18279	
6	6.46527	
7	6.72098	
8	6.96180	
9	7.19013	
10	7.40977	
11	7.62363	
12	7.83390	
13	8.04235	8.1
14	8.25040	
15	8.45942	
16	8.67085	
17	8.88647	
18	9.10865	
19	9.34052	
20	9.58447	
21	9.84880	
22	10.14182	
23	10.47788	10.4
24	10.88150	
25	11.39900	
26	12.15735	
27	13.71967	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Parents Like Reading Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBH11A _R	ASBH11B	ASBH11C	ASBH11D _R	ASBH11E	ASBH11F	ASBH11G	ASBH11H	ASBH10
Albania	0.80	45	0.32	0.63	0.79	0.30	0.76	0.76	0.82	0.82	0.60
Australia	–	–	–	–	–	–	–	–	–	–	–
Austria	0.91	58	0.76	0.55	0.87	0.75	0.81	0.67	0.86	0.85	0.70
Azerbaijan	0.83	51	0.00	0.54	0.76	0.00	0.73	0.70	0.84	0.83	0.53
Bahrain	0.82	44	0.46	0.51	0.79	0.49	0.69	0.67	0.82	0.83	0.59
Belgium (Flemish)	0.91	60	0.76	0.56	0.88	0.76	0.75	0.70	0.88	0.86	0.73
Belgium (French)	0.90	56	0.72	0.52	0.84	0.74	0.75	0.70	0.86	0.86	0.69
Brazil	0.85	46	0.50	0.66	0.80	0.52	0.67	0.63	0.81	0.82	0.64
Bulgaria	0.92	62	0.64	0.73	0.89	0.57	0.82	0.84	0.91	0.88	0.72
Chinese Taipei	0.86	50	0.58	0.46	0.78	0.55	0.79	0.79	0.86	0.87	0.55
Croatia	0.90	56	0.77	0.57	0.86	0.75	0.75	0.68	0.86	0.85	0.61
Cyprus	0.86	49	0.62	0.44	0.83	0.69	0.73	0.66	0.83	0.85	0.55
Czech Republic	0.91	58	0.77	0.63	0.86	0.76	0.71	0.69	0.87	0.90	0.63
Denmark	0.90	57	0.75	0.58	0.88	0.77	0.74	0.64	0.86	0.82	0.69
Egypt	0.79	48	-0.07	0.73	0.80	-0.18	0.82	0.82	0.88	0.86	0.53
England	–	–	–	–	–	–	–	–	–	–	–
Finland	0.91	60	0.75	0.60	0.88	0.78	0.83	0.66	0.87	0.87	0.68
France	0.88	52	0.72	0.53	0.83	0.71	0.65	0.60	0.83	0.85	0.67
Georgia	0.81	44	0.50	0.56	0.79	0.47	0.64	0.67	0.81	0.81	0.58
Germany	0.90	57	0.79	0.58	0.88	0.68	0.72	0.67	0.87	0.85	0.68
Hong Kong SAR	0.85	49	0.49	0.55	0.82	0.41	0.76	0.75	0.86	0.86	0.61
Hungary	0.89	54	0.69	0.60	0.85	0.71	0.70	0.70	0.84	0.85	0.62
Iran, Islamic Rep. of	0.79	42	0.36	0.50	0.78	0.26	0.69	0.75	0.81	0.82	0.58
Ireland	0.89	55	0.77	0.59	0.83	0.76	0.70	0.58	0.82	0.86	0.70
Israel	0.86	49	0.70	0.50	0.83	0.66	0.70	0.61	0.80	0.84	0.60
Italy	0.87	50	0.66	0.54	0.82	0.68	0.71	0.65	0.81	0.83	0.62
Jordan	0.82	46	0.26	0.67	0.79	0.12	0.80	0.76	0.84	0.85	0.56
Kazakhstan	0.78	42	0.21	0.53	0.79	0.26	0.74	0.75	0.79	0.82	0.56
Kosovo	0.74	39	0.31	0.43	0.78	0.36	0.68	0.74	0.80	0.75	0.57
Latvia	0.87	51	0.70	0.43	0.83	0.72	0.66	0.67	0.84	0.84	0.63
Lithuania	0.89	55	0.73	0.60	0.82	0.70	0.73	0.66	0.86	0.82	0.72
Macao SAR	0.84	48	0.49	0.50	0.77	0.48	0.76	0.77	0.86	0.86	0.58
Malta	0.87	50	0.69	0.51	0.81	0.70	0.62	0.69	0.83	0.85	0.62
Montenegro	0.82	43	0.60	0.44	0.77	0.64	0.65	0.58	0.80	0.76	0.56
Morocco	0.82	50	-0.01	0.77	0.80	-0.13	0.82	0.78	0.89	0.86	0.67
Netherlands	0.91	59	0.83	0.56	0.88	0.81	0.65	0.58	0.89	0.87	0.76
New Zealand	0.89	55	0.79	0.55	0.84	0.77	0.70	0.60	0.83	0.87	0.67
North Macedonia	0.84	48	0.46	0.54	0.81	0.50	0.77	0.69	0.84	0.84	0.64
Northern Ireland	0.91	60	0.82	0.66	0.87	0.79	0.71	0.61	0.84	0.89	0.72

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 Parents Like Reading Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			ASBH11A ^R	ASBH11B	ASBH11C	ASBH11D ^R	ASBH11E	ASBH11F	ASBH11G	ASBH11H	ASBH10	
Norway (5)	0.89	55	0.75	0.56	0.86	0.77	0.74	0.58	0.85	0.82	0.67	
Oman	0.78	41	0.26	0.53	0.77	0.35	0.71	0.70	0.81	0.82	0.53	
Poland	0.91	58	0.73	0.69	0.86	0.77	0.78	0.68	0.85	0.82	0.64	
Portugal	0.87	51	0.71	0.50	0.81	0.70	0.73	0.64	0.81	0.84	0.60	
Qatar	0.81	43	0.45	0.50	0.77	0.48	0.72	0.67	0.82	0.84	0.52	
Russian Federation	0.87	50	0.59	0.56	0.83	0.61	0.68	0.72	0.85	0.84	0.62	
Saudi Arabia	0.81	43	0.40	0.49	0.78	0.34	0.75	0.71	0.83	0.84	0.55	
Serbia	0.86	50	0.69	0.52	0.84	0.67	0.74	0.59	0.85	0.80	0.60	
Singapore	0.86	50	0.59	0.45	0.82	0.55	0.72	0.75	0.86	0.87	0.62	
Slovak Republic	0.91	60	0.76	0.66	0.86	0.69	0.76	0.74	0.88	0.89	0.70	
Slovenia	0.89	54	0.76	0.42	0.87	0.66	0.71	0.71	0.88	0.84	0.64	
South Africa	0.79	42	0.21	0.63	0.79	0.22	0.70	0.65	0.83	0.83	0.63	
Spain	0.89	53	0.72	0.54	0.84	0.74	0.68	0.65	0.81	0.86	0.67	
Sweden	0.87	51	0.71	0.56	0.87	0.74	0.66	0.56	0.86	0.81	0.61	
Turkiye	0.89	57	0.59	0.75	0.83	0.33	0.83	0.80	0.88	0.88	0.74	
United Arab Emirates	0.80	43	0.39	0.54	0.79	0.30	0.74	0.70	0.83	0.85	0.54	
United States	–	–	–	–	–	–	–	–	–	–	–	
Uzbekistan	0.69	37	0.22	0.47	0.70	0.22	0.67	0.74	0.79	0.80	0.48	
Benchmarking Participants												
Alberta, Canada	0.88	53	0.73	0.48	0.81	0.72	0.73	0.66	0.82	0.84	0.67	
British Columbia, Canada	0.88	53	0.73	0.54	0.81	0.72	0.70	0.65	0.85	0.84	0.64	
Newfoundland & Labrador, Can.	0.91	58	0.82	0.52	0.86	0.79	0.69	0.67	0.85	0.88	0.74	
Quebec, Canada	0.90	57	0.76	0.61	0.85	0.75	0.73	0.64	0.86	0.86	0.71	
Moscow City, Russian Fed.	0.87	50	0.65	0.54	0.81	0.66	0.68	0.63	0.84	0.84	0.62	
South Africa (6)	0.79	42	0.21	0.60	0.80	0.27	0.71	0.66	0.82	0.81	0.63	
Abu Dhabi, UAE	0.80	43	0.35	0.58	0.79	0.23	0.74	0.71	0.83	0.85	0.54	
Dubai, UAE	0.82	45	0.50	0.44	0.81	0.50	0.73	0.66	0.83	0.86	0.58	

^R Reverse coded

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Parents Like Reading* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.21	0.05	0.04
Australia	–	–	–
Austria	0.33	0.11	0.10
Azerbaijan	0.12	0.01	0.02
Bahrain	0.20	0.04	0.03
Belgium (Flemish)	0.23	0.05	0.04
Belgium (French)	0.29	0.08	0.09
Brazil	0.16	0.02	0.02
Bulgaria	0.37	0.14	0.13
Chinese Taipei	0.17	0.03	0.02
Croatia	0.20	0.04	0.04
Cyprus	0.23	0.05	0.05
Czech Republic	0.23	0.05	0.05
Denmark	0.23	0.05	0.04
Egypt	0.12	0.02	0.02
England	–	–	–
Finland	0.26	0.07	0.07
France	0.25	0.06	0.05
Georgia	0.17	0.03	0.03
Germany	0.29	0.08	0.07
Hong Kong SAR	0.12	0.01	0.01
Hungary	0.27	0.07	0.06
Iran, Islamic Rep. of	0.24	0.06	0.05
Ireland	0.23	0.05	0.05
Israel	0.20	0.04	0.05
Italy	0.21	0.04	0.04
Jordan	0.15	0.02	0.02
Kazakhstan	0.12	0.01	0.02
Kosovo	0.21	0.05	0.04
Latvia	0.21	0.04	0.04
Lithuania	0.22	0.05	0.05
Macao SAR	0.11	0.01	0.01
Malta	0.13	0.02	0.02
Montenegro	0.24	0.06	0.05
Morocco	0.23	0.05	0.05
Netherlands	0.24	0.06	0.05
New Zealand	0.25	0.06	0.06
North Macedonia	0.23	0.05	0.05
Northern Ireland	0.19	0.03	0.04
Norway (5)	0.22	0.05	0.04
Oman	0.13	0.02	0.01

Relationship Between the PIRLS 2021 *Parents Like Reading* Scale and PIRLS 2021 Achievement

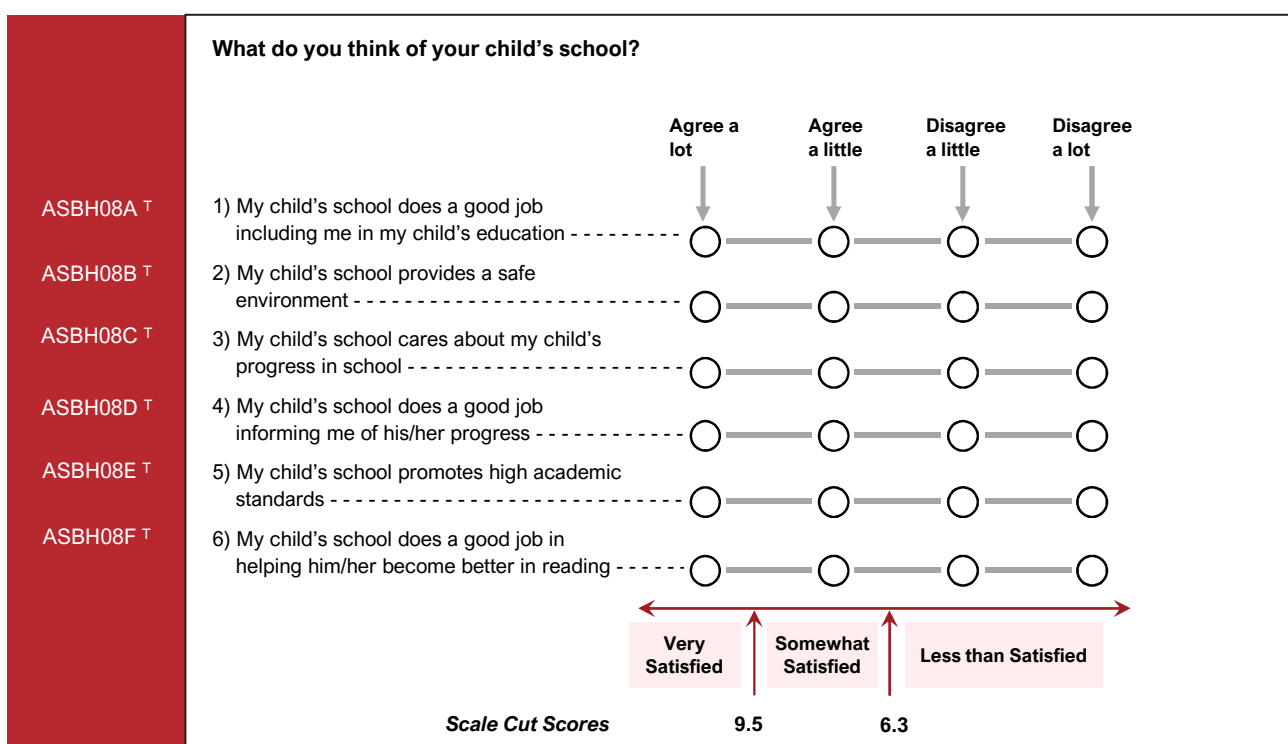
Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Poland	0.19	0.04	0.03
Portugal	0.21	0.04	0.04
Qatar	0.10	0.01	0.01
Russian Federation	0.19	0.04	0.03
Saudi Arabia	0.09	0.01	0.01
Serbia	0.25	0.06	0.06
Singapore	0.20	0.04	0.04
Slovak Republic	0.27	0.07	0.06
Slovenia	0.22	0.05	0.04
South Africa	0.20	0.04	0.04
Spain	0.23	0.05	0.05
Sweden	0.20	0.04	0.03
Turkiye	0.33	0.11	0.10
United Arab Emirates	0.14	0.02	0.02
United States	–	–	–
Uzbekistan	0.14	0.02	0.02
International Median	0.21	0.05	0.04
Benchmarking Participants			
Alberta, Canada	0.18	0.03	0.03
British Columbia, Canada	0.19	0.04	0.04
Newfoundland & Labrador, Can.	0.18	0.03	0.03
Quebec, Canada	0.17	0.03	0.04
Moscow City, Russian Fed.	0.17	0.03	0.03
South Africa (6)	0.20	0.04	0.04
Abu Dhabi, UAE	0.15	0.02	0.03
Dubai, UAE	0.18	0.03	0.03

A dash (–) indicates comparable data not available.

Parents' Perceptions of Their Child's School

About the Scale¹

Students were scored according to their parents' responses to six statements on the *Parents' Perceptions of Their Child's School* scale. Cut scores divide the scale into three categories. Students whose parents are **Very Satisfied** with their child's school had a score at or above the cut score corresponding to their parents "agreeing a lot" with three of the six statements and "agreeing a little" with the other three, on average. Students whose parents are **Less than Satisfied** had a score at or below the cut score corresponding to their parents "disagreeing a little" with three of the six statements and "agreeing a little" with the other three, on average. All other students had parents who are **Somewhat Satisfied**.



¹ For the purpose of scaling, categories in which there were very few respondents were combined. The categories "Disagree a little" and "Disagree a lot" were combined for all variables. Scale statistics reflect analysis of the items following collapsing.

^T Trend item—item was included in the same scale in PIRLS 2016 and was used for linking the PIRLS 2016 and PIRLS 2021 scales.

Item Parameters for the PIRLS 2021 *Parents' Perceptions of Their Child's School Scale*

Item	delta	tau_1	tau_2	Infit	Q-Index
ASBH08A	0.06049	-1.71466	1.71466	1.03	0.07
ASBH08B	-0.73338	-1.68044	1.68044	1.25	0.12
ASBH08C	-0.48074	-1.69200	1.69200	0.82	0.05
ASBH08D	0.06226	-1.47395	1.47395	0.93	0.06
ASBH08E	1.13338	-1.72542	1.72542	1.12	0.07
ASBH08F	-0.04201	-1.57614	1.57614	1.01	0.07

Scale Transformation Constants for the PIRLS 2021 *Parents' Perceptions of Their Child's School Scale*

Scale Transformation Constants

A = 7.908785

B = 0.951525

Transformed Scale Score = 7.908785 + 0.951525 • Logit Scale Score

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2021 *Parents' Perceptions of Their Child's School Scale*

Raw Score	Transformed Scale Score	Cutpoint
0	3.75630	
1	4.99314	
2	5.69599	
3	6.27013	6.3
4	6.80582	
5	7.35062	
6	7.91212	
7	8.46496	
8	8.99479	
9	9.52492	9.5
10	10.10603	
11	10.83953	
12	12.13203	

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Parents' Perceptions of Their Child's School* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item					
			ASBH08A	ASBH08B	ASBH08C	ASBH08D	ASBH08E	ASBH08F
Albania	0.77	50	0.73	0.64	0.78	0.73	0.64	0.71
Australia	–	–	–	–	–	–	–	–
Austria	0.87	60	0.79	0.65	0.82	0.84	0.75	0.79
Azerbaijan	0.78	50	0.66	0.68	0.77	0.72	0.67	0.73
Bahrain	0.87	61	0.79	0.71	0.82	0.81	0.80	0.76
Belgium (Flemish)	0.85	58	0.82	0.68	0.82	0.85	0.64	0.74
Belgium (French)	0.87	61	0.81	0.73	0.84	0.83	0.72	0.74
Brazil	0.85	58	0.79	0.66	0.79	0.80	0.75	0.77
Bulgaria	0.85	59	0.74	0.73	0.80	0.77	0.80	0.76
Chinese Taipei	0.87	63	0.81	0.75	0.88	0.87	0.66	0.78
Croatia	0.89	64	0.79	0.74	0.85	0.78	0.82	0.81
Cyprus	0.83	55	0.74	0.64	0.81	0.77	0.77	0.73
Czech Republic	0.87	60	0.74	0.65	0.84	0.83	0.78	0.79
Denmark	0.89	64	0.81	0.71	0.85	0.84	0.80	0.77
Egypt	0.89	64	0.80	0.76	0.83	0.80	0.79	0.80
England	–	–	–	–	–	–	–	–
Finland	0.83	55	0.76	0.68	0.83	0.79	0.64	0.75
France	0.87	61	0.81	0.71	0.85	0.83	0.72	0.77
Georgia	0.86	60	0.76	0.70	0.84	0.80	0.78	0.75
Germany	0.87	61	0.83	0.65	0.83	0.83	0.75	0.78
Hong Kong SAR	0.86	59	0.79	0.62	0.83	0.83	0.74	0.79
Hungary	0.89	65	0.79	0.73	0.85	0.83	0.82	0.82
Iran, Islamic Rep. of	0.83	56	0.72	0.70	0.80	0.76	0.72	0.77
Ireland	0.85	59	0.81	0.59	0.82	0.84	0.77	0.75
Israel	0.90	67	0.84	0.68	0.86	0.86	0.82	0.81
Italy	0.83	55	0.78	0.58	0.80	0.79	0.74	0.75
Jordan	0.90	66	0.79	0.78	0.84	0.83	0.80	0.84
Kazakhstan	0.85	57	0.70	0.70	0.81	0.77	0.77	0.77
Kosovo	0.79	52	0.73	0.68	0.78	0.74	0.66	0.71
Latvia	0.84	56	0.70	0.67	0.82	0.66	0.83	0.79
Lithuania	0.86	60	0.76	0.73	0.84	0.76	0.76	0.76
Macao SAR	0.85	57	0.76	0.64	0.82	0.83	0.74	0.73
Malta	0.82	54	0.78	0.56	0.80	0.79	0.75	0.69
Montenegro	0.84	57	0.71	0.66	0.84	0.78	0.76	0.78
Morocco	0.84	58	0.76	0.73	0.81	0.77	0.68	0.80
Netherlands	0.84	57	0.82	0.69	0.84	0.84	0.56	0.74
New Zealand	0.88	62	0.81	0.64	0.85	0.85	0.80	0.78
North Macedonia	0.82	55	0.70	0.71	0.84	0.75	0.71	0.73
Northern Ireland	0.87	62	0.84	0.53	0.85	0.86	0.81	0.78

Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2021 *Parents' Perceptions of Their Child's School* Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item					
			ASBH08A	ASBH08B	ASBH08C	ASBH08D	ASBH08E	ASBH08F
Norway (5)	0.89	64	0.82	0.65	0.85	0.84	0.83	0.80
Oman	0.83	55	0.75	0.67	0.80	0.75	0.72	0.77
Poland	0.88	63	0.74	0.73	0.86	0.78	0.84	0.80
Portugal	0.86	60	0.83	0.67	0.85	0.82	0.72	0.76
Qatar	0.86	60	0.76	0.67	0.82	0.78	0.82	0.77
Russian Federation	0.88	62	0.63	0.75	0.85	0.75	0.88	0.85
Saudi Arabia	0.87	63	0.76	0.74	0.86	0.83	0.76	0.80
Serbia	0.86	60	0.75	0.65	0.86	0.81	0.75	0.79
Singapore	0.88	62	0.81	0.68	0.86	0.83	0.76	0.78
Slovak Republic	0.85	58	0.73	0.60	0.82	0.79	0.83	0.79
Slovenia	0.86	60	0.73	0.71	0.84	0.83	0.75	0.77
South Africa	0.83	54	0.72	0.65	0.76	0.76	0.76	0.76
Spain	0.86	60	0.80	0.66	0.84	0.81	0.75	0.78
Sweden	0.90	66	0.81	0.74	0.86	0.84	0.82	0.80
Turkiye	0.89	64	0.75	0.74	0.84	0.82	0.82	0.80
United Arab Emirates	0.90	67	0.80	0.72	0.86	0.84	0.84	0.82
United States	–	–	–	–	–	–	–	–
Uzbekistan	0.76	47	0.69	0.61	0.73	0.64	0.69	0.75
Benchmarking Participants								
Alberta, Canada	0.88	63	0.82	0.68	0.85	0.82	0.80	0.77
British Columbia, Canada	0.88	63	0.82	0.65	0.85	0.84	0.80	0.79
Newfoundland & Labrador, Can.	0.88	64	0.82	0.66	0.85	0.85	0.79	0.82
Quebec, Canada	0.89	64	0.81	0.68	0.85	0.85	0.79	0.80
Moscow City, Russian Fed.	0.85	59	0.46	0.72	0.86	0.77	0.88	0.85
South Africa (6)	0.83	54	0.75	0.67	0.77	0.74	0.73	0.75
Abu Dhabi, UAE	0.90	67	0.81	0.72	0.87	0.84	0.85	0.83
Dubai, UAE	0.89	64	0.79	0.69	0.87	0.82	0.82	0.81

A dash (–) indicates comparable data not available.

Relationship Between the PIRLS 2021 *Parents' Perceptions of Their Child's School* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Albania	0.11	0.01	0.01
Australia	–	–	–
Austria	0.02	0.00	0.00
Azerbaijan	0.02	0.00	0.00
Bahrain	0.19	0.03	0.03
Belgium (Flemish)	-0.02	0.00	0.00
Belgium (French)	-0.08	0.01	0.01
Brazil	0.00	0.00	0.00
Bulgaria	-0.07	0.00	0.00
Chinese Taipei	-0.01	0.00	0.00
Croatia	-0.03	0.00	0.00
Cyprus	0.01	0.00	0.00
Czech Republic	-0.07	0.01	0.00
Denmark	0.05	0.00	0.00
Egypt	0.06	0.00	0.00
England	–	–	–
Finland	0.08	0.01	0.01
France	0.04	0.00	0.00
Georgia	-0.01	0.00	0.00
Germany	0.05	0.00	0.01
Hong Kong SAR	0.10	0.01	0.01
Hungary	-0.06	0.00	0.00
Iran, Islamic Rep. of	0.02	0.00	0.00
Ireland	-0.04	0.00	0.00
Israel	-0.09	0.01	0.00
Italy	0.03	0.00	0.00
Jordan	0.13	0.02	0.01
Kazakhstan	0.01	0.00	0.00
Kosovo	0.03	0.00	0.00
Latvia	-0.03	0.00	0.00
Lithuania	0.11	0.01	0.01
Macao SAR	0.09	0.01	0.01
Malta	-0.04	0.00	0.00
Montenegro	-0.01	0.00	0.00
Morocco	0.17	0.03	0.02
Netherlands	0.03	0.00	0.00
New Zealand	0.02	0.00	0.00
North Macedonia	-0.07	0.00	0.01
Northern Ireland	0.07	0.01	0.00
Norway (5)	0.02	0.00	0.00

Relationship Between the PIRLS 2021 *Parents' Perceptions of Their Child's School* Scale and PIRLS 2021 Achievement

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	r	r^2	
Oman	0.09	0.01	0.01
Poland	-0.07	0.00	0.00
Portugal	0.05	0.00	0.00
Qatar	0.10	0.01	0.02
Russian Federation	-0.07	0.00	0.00
Saudi Arabia	0.04	0.00	0.00
Serbia	-0.07	0.00	0.00
Singapore	0.07	0.01	0.01
Slovak Republic	-0.06	0.00	0.00
Slovenia	-0.02	0.00	0.00
South Africa	0.13	0.02	0.01
Spain	0.02	0.00	0.00
Sweden	0.04	0.00	0.00
Turkiye	-0.05	0.00	0.00
United Arab Emirates	0.09	0.01	0.01
United States	–	–	–
Uzbekistan	0.08	0.01	0.00
International Median	0.02	0.00	0.00
Benchmarking Participants			
Alberta, Canada	0.04	0.00	0.01
British Columbia, Canada	0.07	0.00	0.01
Newfoundland & Labrador, Can.	0.02	0.00	0.00
Quebec, Canada	0.05	0.00	0.00
Moscow City, Russian Fed.	0.01	0.00	0.00
South Africa (6)	0.14	0.02	0.02
Abu Dhabi, UAE	0.12	0.01	0.02
Dubai, UAE	0.10	0.01	0.01

A dash (–) indicates comparable data not available.