

## Early Literacy Activities Before Beginning Primary School Scale

The *Early Literacy Activities Before Beginning Primary School* (ELA) scale was created based on parents' frequency of doing the nine activities described below.

### Items in the PIRLS 2016 *Early Literacy Activities Before Beginning Primary School* Scale

		Before your child began primary/elementary school, how often did you or someone else in your home do the following activities with him or her?			
		Often	Sometimes	Never or almost never	
T	ASBH02A	1) Read books.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02B	2) Tell stories.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02C	3) Sing songs.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02D	4) Play with alphabet toys (e.g., blocks with letters of the alphabet).....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02E	5) Talk about things you had done.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02F	6) Talk about what you had read.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02G	7) Play word games.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02H	8) Write letters or words.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ASBH02I	9) Read aloud signs and labels.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Often 10.7      Sometimes 6.2      Never or Almost Never

T Trend item—item was included in the same scale in PIRLS 2011 and was used for linking the PIRLS 2011 and PIRLS 2016 scales.

**Item Parameters for the PIRLS 2016 Early Literacy Activities Before Beginning Primary School Scale**

Item	delta	tau_1	tau_2	Infit
ASBH02A	-0.43565	-1.37653	1.37653	0.96
ASBH02B	-0.21414	-1.38385	1.38385	0.97
ASBH02C	0.14115	-0.92504	0.92504	1.14
ASBH02D	0.31840	-0.99895	0.99895	1.02
ASBH02E	-0.89489	-1.18523	1.18523	1.03
ASBH02F	0.31620	-1.36183	1.36183	0.95
ASBH02G	0.54796	-1.22190	1.22190	0.95
ASBH02H	0.02688	-1.14591	1.14591	1.00
ASBH02I	0.19409	-0.98400	0.98400	1.00

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

**Scale Transformation Constants for the PIRLS 2016 Early Literacy Activities Before Beginning Primary School Scale**

Scale Transformation Constants	
A = 8.467126	Transformed Scale Score = 8.467126 + 1.488680 • Logit Scale Score
B = 1.488680	

**Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2016 Early Literacy Activities Before Beginning Primary School Scale**

Raw Score	Transformed Scale Score	Cutpoint
0	2.13736	
1	3.95698	
2	4.90763	
3	5.60873	
4	6.18976	6.2
5	6.70267	
6	7.17841	
7	7.62846	
8	8.06349	
9	8.49167	
10	8.91693	
11	9.34703	
12	9.78848	
13	10.25182	
14	10.74970	10.7
15	11.31055	
16	11.98750	
17	12.91216	
18	14.70318	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

**Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2016 Early Literacy Activities Before Beginning Primary School Scale**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBH02A	ASBH02B	ASBH02C	ASBH02D	ASBH02E	ASBH02F	ASBH02G	ASBH02H	ASBH02I
Australia	0.83	42	0.63	0.66	0.58	0.63	0.62	0.68	0.72	0.63	0.69
Austria	0.70	30	0.58	0.63	0.53	0.47	0.50	0.61	0.63	0.39	0.53
Azerbaijan	0.76	35	0.65	0.61	0.40	0.59	0.45	0.66	0.59	0.65	0.65
Bahrain	0.71	31	0.54	0.56	0.38	0.59	0.48	0.57	0.63	0.61	0.57
Belgium (Flemish)	0.75	33	0.55	0.56	0.51	0.56	0.51	0.60	0.67	0.59	0.62
Belgium (French)	0.72	31	0.57	0.56	0.44	0.60	0.47	0.55	0.67	0.58	0.56
Bulgaria	0.85	46	0.71	0.69	0.50	0.73	0.63	0.72	0.70	0.74	0.67
Canada	0.80	39	0.61	0.63	0.54	0.62	0.53	0.67	0.71	0.63	0.67
Chile	0.78	36	0.60	0.64	0.51	0.63	0.48	0.63	0.69	0.65	0.56
Chinese Taipei	0.81	40	0.69	0.69	0.58	0.60	0.57	0.64	0.67	0.58	0.67
Czech Republic	0.71	30	0.52	0.58	0.41	0.50	0.51	0.67	0.59	0.55	0.57
Denmark	0.75	33	0.56	0.58	0.50	0.56	0.46	0.67	0.66	0.59	0.58
Egypt	0.85	46	0.66	0.70	0.51	0.73	0.63	0.71	0.72	0.73	0.67
England	-	-	-	-	-	-	-	-	-	-	-
Finland	0.74	33	0.56	0.58	0.48	0.58	0.46	0.68	0.60	0.59	0.59
France	0.71	30	0.55	0.55	0.41	0.58	0.46	0.58	0.63	0.59	0.56
Georgia	0.77	37	0.66	0.59	0.42	0.67	0.46	0.61	0.65	0.64	0.69
Germany	0.69	30	0.54	0.57	0.46	0.48	0.47	0.61	0.66	0.51	0.57
Hong Kong SAR	0.78	36	0.63	0.65	0.59	0.49	0.55	0.66	0.69	0.53	0.62
Hungary	0.73	31	0.51	0.49	0.48	0.66	0.45	0.55	0.64	0.60	0.64
Iran, Islamic Rep. of	0.79	37	0.62	0.54	0.50	0.66	0.54	0.63	0.67	0.66	0.65
Ireland	0.80	38	0.58	0.63	0.54	0.59	0.52	0.65	0.68	0.66	0.68
Israel	0.76	35	0.53	0.58	0.47	0.65	0.49	0.64	0.69	0.63	0.60
Italy	0.71	30	0.54	0.57	0.41	0.61	0.41	0.59	0.61	0.58	0.58
Kazakhstan	0.70	30	0.60	0.44	0.40	0.54	0.54	0.63	0.48	0.60	0.61
Kuwait	0.72	31	0.54	0.51	0.35	0.62	0.49	0.55	0.66	0.64	0.59
Latvia	0.72	31	0.62	0.59	0.44	0.57	0.47	0.64	0.62	0.55	0.51
Lithuania	0.72	32	0.57	0.54	0.44	0.64	0.52	0.68	0.63	0.57	0.46
Macao SAR	0.78	36	0.65	0.65	0.57	0.52	0.53	0.64	0.65	0.58	0.61
Malta	0.80	38	0.66	0.65	0.52	0.59	0.53	0.69	0.67	0.60	0.64
Morocco	0.86	46	0.71	0.66	0.43	0.71	0.62	0.73	0.71	0.80	0.70
Netherlands	0.73	32	0.48	0.52	0.48	0.57	0.47	0.55	0.69	0.65	0.61
New Zealand	0.83	42	0.64	0.67	0.57	0.64	0.57	0.69	0.73	0.65	0.69
Northern Ireland	0.81	40	0.57	0.64	0.53	0.61	0.58	0.71	0.72	0.62	0.65
Norway (5)	0.76	34	0.57	0.59	0.46	0.62	0.43	0.65	0.67	0.59	0.62
Oman	0.70	31	0.59	0.55	0.24	0.57	0.46	0.58	0.62	0.62	0.63
Poland	0.76	34	0.55	0.57	0.50	0.62	0.54	0.67	0.61	0.60	0.58
Portugal	0.76	34	0.63	0.65	0.48	0.62	0.49	0.62	0.67	0.58	0.49
Qatar	0.77	35	0.60	0.59	0.49	0.60	0.52	0.62	0.64	0.64	0.63
Russian Federation	0.77	35	0.61	0.53	0.49	0.64	0.58	0.66	0.64	0.62	0.56
Saudi Arabia	0.72	32	0.59	0.60	0.22	0.60	0.51	0.61	0.65	0.65	0.57
Singapore	0.83	43	0.70	0.72	0.58	0.65	0.58	0.68	0.67	0.64	0.69
Slovak Republic	0.76	35	0.58	0.57	0.43	0.62	0.62	0.70	0.62	0.57	0.56
Slovenia	0.75	34	0.53	0.62	0.55	0.59	0.44	0.60	0.66	0.55	0.64
South Africa	0.77	36	0.64	0.51	0.46	0.64	0.52	0.64	0.65	0.66	0.66
Spain	0.75	34	0.59	0.60	0.46	0.63	0.45	0.60	0.66	0.62	0.56
Sweden	0.76	35	0.56	0.54	0.49	0.61	0.51	0.67	0.68	0.62	0.60
Trinidad and Tobago	0.78	36	0.67	0.65	0.51	0.55	0.50	0.66	0.62	0.61	0.63
United Arab Emirates	0.73	32	0.54	0.56	0.44	0.55	0.54	0.58	0.63	0.61	0.59
United States	-	-	-	-	-	-	-	-	-	-	-
<b>Benchmarking Participants</b>											
Buenos Aires, Argentina	0.76	34	0.62	0.62	0.49	0.66	0.46	0.58	0.67	0.62	0.52
Ontario, Canada	0.81	40	0.62	0.64	0.56	0.61	0.52	0.68	0.72	0.63	0.70
Quebec, Canada	0.76	35	0.58	0.60	0.48	0.62	0.51	0.61	0.68	0.59	0.62
Denmark (3)	0.74	33	0.56	0.59	0.50	0.55	0.47	0.67	0.65	0.55	0.56
Norway (4)	0.76	34	0.55	0.59	0.48	0.63	0.45	0.63	0.66	0.61	0.61
Moscow City, Russian Fed.	0.76	35	0.59	0.58	0.53	0.59	0.59	0.67	0.64	0.58	0.50
Eng/Afr/Zulu - RSA (5)	0.75	34	0.63	0.58	0.42	0.60	0.49	0.58	0.63	0.64	0.62
Andalusia, Spain	0.75	34	0.59	0.60	0.49	0.62	0.47	0.61	0.64	0.61	0.56
Madrid, Spain	0.73	32	0.56	0.58	0.47	0.57	0.42	0.62	0.63	0.61	0.57
Abu Dhabi, UAE	0.73	32	0.53	0.55	0.44	0.54	0.57	0.59	0.63	0.63	0.60
Dubai, UAE	0.75	33	0.60	0.59	0.45	0.57	0.52	0.61	0.63	0.60	0.61

A dash (-) indicates comparable data not available.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

**Relationship Between the PIRLS 2016 *Early Literacy Activities Before Beginning Primary School* Scale and PIRLS 2016 Reading Achievement**

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Australia	0.15	0.02	0.02
Austria	0.20	0.04	0.03
Azerbaijan	0.16	0.02	0.02
Bahrain	0.22	0.05	0.04
Belgium (Flemish)	0.18	0.03	0.03
Belgium (French)	0.19	0.03	0.03
Bulgaria	0.41	0.17	0.15
Canada	0.19	0.04	0.03
Chile	0.24	0.06	0.04
Chinese Taipei	0.24	0.06	0.04
Czech Republic	0.13	0.02	0.01
Denmark	0.19	0.04	0.03
Egypt	0.34	0.12	0.09
England	-	-	-
Finland	0.18	0.03	0.02
France	0.17	0.03	0.02
Georgia	0.08	0.01	0.01
Germany	0.18	0.03	0.02
Hong Kong SAR	0.08	0.01	0.00
Hungary	0.14	0.02	0.02
Iran, Islamic Rep. of	0.24	0.06	0.05
Ireland	0.27	0.07	0.06
Israel	0.16	0.02	0.02
Italy	0.15	0.02	0.01
Kazakhstan	0.10	0.01	0.00
Kuwait	0.19	0.04	0.02
Latvia	0.13	0.02	0.01
Lithuania	0.14	0.02	0.02
Macao SAR	0.10	0.01	0.01
Malta	0.19	0.04	0.03
Morocco	0.21	0.04	0.04
Netherlands	0.14	0.02	0.01
New Zealand	0.26	0.07	0.06
Northern Ireland	0.16	0.03	0.03
Norway (5)	0.18	0.03	0.03
Oman	0.25	0.06	0.04
Poland	0.12	0.01	0.01
Portugal	0.19	0.04	0.03
Qatar	0.22	0.05	0.04
Russian Federation	0.17	0.03	0.02
Saudi Arabia	0.16	0.03	0.02
Singapore	0.24	0.06	0.04
Slovak Republic	0.25	0.06	0.08
Slovenia	0.21	0.04	0.04
South Africa	0.11	0.01	0.02
Spain	0.23	0.05	0.04
Sweden	0.18	0.03	0.03
Trinidad and Tobago	0.25	0.06	0.05
United Arab Emirates	0.25	0.06	0.04
United States	-	-	-
<b>International Median</b>	<b>0.19</b>	<b>0.03</b>	<b>0.03</b>
<b>Benchmarking Participants</b>			
Buenos Aires, Argentina	0.26	0.07	0.05
Ontario, Canada	0.20	0.04	0.03
Quebec, Canada	0.17	0.03	0.03
Denmark (3)	0.16	0.02	0.02
Norway (4)	0.20	0.04	0.03
Moscow City, Russian Fed.	0.17	0.03	0.02
Eng/Afr/Zulu - RSA (5)	0.13	0.02	0.02
Andalusia, Spain	0.24	0.06	0.04
Madrid, Spain	0.17	0.03	0.02
Abu Dhabi, UAE	0.23	0.05	0.04
Dubai, UAE	0.27	0.07	0.05

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

A dash (-) indicates comparable data not available.