

Could Do Literacy and Numeracy Tasks When Began Primary School Scale, Fourth Grade

The Could Do Literacy and Numeracy Tasks When Began Primary School (LNT) scale was created based on parents' responses to how well their children could do the tasks described below when they began primary school.

Items in the TIMSS 2015 Could Do Literacy and Numeracy Tasks When Began Primary School, Fourth Grade

		How well could your child do the following when he/she began the first grade of primary/elementary school?			
		Very well	Moderately well	Not very well	Not at all
ASBH07A	1) Recognize most of the letters of the alphabet -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH07B	2) Read some words -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH07C	3) Read sentences -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH07D	4) Read a story -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH07E	5) Write letters of the alphabet -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH07F	6) Write some words -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Could your child do the following when he/she began the first grade of primary/elementary school?			
		Up to 100 or higher	Up to 20	Up to 10	Not at all
ASBH08A	1) Count by himself/herself -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH08B	2) Recognize written numbers -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBH08C	3) Write numbers -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Could your child do the following when he/she began the first grade of primary/elementary school?			
		Yes	No		
ASBH08D	1) Do simple addition -----	<input type="radio"/>	<input type="radio"/>		
ASBH08E	2) Do simple subtraction -----	<input type="radio"/>	<input type="radio"/>		

Very Well Moderately Well Not Well

11.5 8.7

Item Parameters for the TIMSS 2015 Could Do Literacy and Numeracy Tasks When Began Primary School Scale, Fourth Grade

Item	delta	tau_1	tau_2	tau_3	Infit
ASBH07A	-1.03450	-1.59845	-0.12765	1.72610	0.95
ASBH07B	0.00558	-1.49311	-0.20363	1.69674	0.80
ASBH07C	0.95109	-1.27650	-0.19632	1.47282	0.84
ASBH07D	1.46628	-1.16350	-0.27247	1.43597	1.06
ASBH07E	-0.54696	-1.61915	-0.16181	1.78096	0.91
ASBH07F	0.16992	-1.52300	-0.23087	1.75387	0.87
ASBH08A	-0.41760	-2.17966	0.18999	1.98967	1.43
ASBH08B	0.05264	-2.24322	0.38476	1.85846	1.14
ASBH08C	0.30953	-2.07283	0.40542	1.66741	1.10
ASBH08D	-0.97181				1.01
ASBH08E	0.01583				1.06

Scale Transformation Constants for the TIMSS 2015 Could Do Literacy and Numeracy Tasks When Began Primary School Scale, Fourth Grade

Scale Transformation Constants	
A = 8.878367	Transformed Scale Score = 8.878367 + 1.114077 • Logit Scale Score
B = 1.114077	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

**Equivalence Table of Raw and Transformed Scale Scores for the TIMSS
2015 Could Do Literacy and Numeracy Tasks When Began Primary
School Scale, Fourth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	3.40776	
1	4.74405	
2	5.42885	
3	5.92038	
4	6.31822	
5	6.66220	
6	6.96984	
7	7.25206	
8	7.51564	
9	7.76514	
10	8.00345	
11	8.23377	
12	8.45736	
13	8.67576	8.7
14	8.89052	
15	9.10234	
16	9.31314	
17	9.52414	
18	9.73701	
19	9.95373	
20	10.17669	
21	10.40891	
22	10.65416	
23	10.91566	
24	11.20323	
25	11.52771	11.5
26	11.90919	
27	12.38473	
28	13.05784	
29	14.38775	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015



Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2015 Could Do Literacy and Numeracy Tasks When Began Primary School Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item										
			ASBH07A	ASBH07B	ASBH07C	ASBH07D	ASBH07E	ASBH07F	ASBH08A	ASBH08B	ASBH08C	ASBH08D	ASBH08E
Australia	0.91	53	0.72	0.82	0.82	0.79	0.78	0.81	0.64	0.72	0.76	0.58	0.56
Bahrain	0.87	45	0.65	0.80	0.81	0.73	0.72	0.80	0.57	0.62	0.63	0.46	0.48
Belgium (Flemish)	0.89	48	0.73	0.82	0.80	0.75	0.78	0.80	0.44	0.63	0.68	0.50	0.53
Bulgaria	0.93	61	0.83	0.86	0.82	0.76	0.83	0.85	0.73	0.77	0.78	0.65	0.67
Canada	0.90	50	0.69	0.80	0.80	0.76	0.75	0.80	0.62	0.67	0.71	0.59	0.57
Chile	0.90	50	0.73	0.80	0.83	0.77	0.77	0.81	0.57	0.63	0.64	0.58	0.58
Chinese Taipei	0.83	40	0.78	0.85	0.85	0.79	0.80	0.76	0.21	0.26	0.26	0.39	0.42
Croatia	0.90	52	0.76	0.84	0.83	0.77	0.78	0.82	0.59	0.68	0.70	0.55	0.56
Cyprus	0.90	49	0.73	0.84	0.81	0.74	0.78	0.82	0.55	0.63	0.65	0.54	0.57
Czech Republic	0.89	49	0.78	0.85	0.83	0.77	0.79	0.82	0.50	0.60	0.62	0.45	0.50
Denmark	0.87	44	0.73	0.79	0.73	0.61	0.72	0.78	0.54	0.66	0.70	0.49	0.48
England	-	-	-	-	-	-	-	-	-	-	-	-	-
Finland	0.91	53	0.75	0.83	0.82	0.78	0.78	0.83	0.66	0.72	0.72	0.49	0.52
France	0.88	46	0.65	0.77	0.76	0.68	0.71	0.76	0.60	0.69	0.69	0.56	0.52
Georgia	0.88	46	0.74	0.83	0.82	0.71	0.78	0.80	0.42	0.57	0.62	0.46	0.50
Germany	0.88	46	0.75	0.79	0.76	0.67	0.75	0.75	0.52	0.65	0.71	0.50	0.51
Hong Kong SAR	0.82	38	0.74	0.82	0.83	0.71	0.79	0.78	0.31	0.32	0.33	0.32	0.35
Hungary	0.90	50	0.80	0.86	0.82	0.72	0.81	0.80	0.49	0.67	0.72	0.43	0.44
Indonesia	0.91	53	0.76	0.83	0.82	0.76	0.76	0.80	0.66	0.71	0.71	0.58	0.57
Iran, Islamic Rep. of	0.90	51	0.77	0.82	0.81	0.74	0.81	0.82	0.43	0.62	0.64	0.63	0.62
Ireland	0.89	51	0.75	0.83	0.85	0.80	0.80	0.83	0.56	0.60	0.63	0.55	0.54
Italy	0.90	49	0.73	0.80	0.79	0.70	0.75	0.79	0.58	0.71	0.73	0.55	0.54
Japan	0.86	46	0.82	0.84	0.86	0.82	0.84	0.85	0.27	0.36	0.40	0.52	0.48
Jordan	0.89	50	0.78	0.85	0.81	0.69	0.81	0.84	0.54	0.59	0.61	0.58	0.60
Kazakhstan	0.88	46	0.69	0.79	0.80	0.76	0.73	0.78	0.57	0.64	0.67	0.46	0.48
Korea, Rep. of	0.84	47	0.85	0.89	0.92	0.90	0.90	0.89	0.21	0.19	0.22	0.38	0.41
Kuwait	0.89	48	0.74	0.82	0.82	0.74	0.77	0.82	0.56	0.63	0.63	0.48	0.48
Lithuania	0.89	48	0.75	0.81	0.80	0.75	0.73	0.75	0.60	0.65	0.65	0.53	0.54
Morocco	0.93	59	0.78	0.88	0.86	0.74	0.83	0.86	0.66	0.76	0.78	0.70	0.57
Netherlands	0.91	52	0.79	0.84	0.82	0.78	0.77	0.79	0.58	0.70	0.72	0.49	0.54
New Zealand	0.90	51	0.73	0.81	0.80	0.74	0.78	0.80	0.57	0.70	0.74	0.58	0.57
Northern Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway (5)	0.90	50	0.78	0.83	0.81	0.69	0.80	0.82	0.52	0.70	0.72	0.53	0.50
Oman	0.88	47	0.69	0.79	0.79	0.71	0.73	0.80	0.61	0.65	0.65	0.52	0.54
Poland	0.90	51	0.75	0.83	0.83	0.76	0.80	0.83	0.59	0.70	0.71	0.47	0.51
Portugal	0.89	48	0.73	0.80	0.77	0.71	0.77	0.79	0.54	0.65	0.67	0.55	0.56
Qatar	0.89	48	0.68	0.81	0.80	0.73	0.76	0.82	0.59	0.65	0.66	0.50	0.52
Russian Federation	0.90	51	0.75	0.83	0.83	0.77	0.74	0.77	0.65	0.71	0.72	0.50	0.52
Saudi Arabia	0.89	49	0.70	0.83	0.82	0.73	0.78	0.83	0.53	0.61	0.62	0.55	0.57
Serbia	0.89	49	0.77	0.81	0.77	0.51	0.78	0.82	0.61	0.67	0.70	0.59	0.61
Singapore	0.88	47	0.73	0.82	0.83	0.78	0.76	0.80	0.59	0.60	0.60	0.44	0.47
Slovak Republic	0.89	48	0.75	0.82	0.76	0.67	0.78	0.79	0.52	0.66	0.72	0.54	0.55
Slovenia	0.92	54	0.80	0.84	0.82	0.74	0.81	0.84	0.60	0.72	0.76	0.55	0.56
South Africa (5)	0.86	42	0.65	0.74	0.77	0.72	0.72	0.74	0.52	0.58	0.61	0.47	0.49
Spain	0.91	53	0.76	0.80	0.83	0.78	0.78	0.82	0.64	0.67	0.70	0.59	0.55
Sweden	0.90	52	0.76	0.84	0.83	0.76	0.78	0.81	0.61	0.68	0.70	0.52	0.57
Turkey	0.92	58	0.81	0.84	0.83	0.80	0.85	0.86	0.57	0.69	0.73	0.66	0.67
United Arab Emirates	0.88	47	0.68	0.80	0.80	0.74	0.73	0.80	0.61	0.65	0.66	0.47	0.48
United States	-	-	-	-	-	-	-	-	-	-	-	-	-
Benchmarking Participants													
Buenos Aires, Argentina	0.91	52	0.76	0.81	0.80	0.73	0.77	0.77	0.65	0.73	0.73	0.54	0.54
Ontario, Canada	0.90	50	0.68	0.79	0.82	0.77	0.75	0.80	0.62	0.67	0.71	0.56	0.56
Quebec, Canada	0.89	48	0.68	0.79	0.76	0.69	0.73	0.77	0.65	0.68	0.72	0.59	0.55
Norway (4)	0.91	52	0.77	0.84	0.80	0.69	0.78	0.82	0.58	0.73	0.76	0.54	0.55
Abu Dhabi, UAE	0.89	47	0.70	0.82	0.81	0.75	0.74	0.81	0.61	0.64	0.65	0.45	0.45
Dubai, UAE	0.88	47	0.67	0.78	0.80	0.73	0.72	0.79	0.61	0.64	0.67	0.52	0.51
Florida, US	-	-	-	-	-	-	-	-	-	-	-	-	-

A dash (-) indicates comparable data not available.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Relationship Between the TIMSS 2015 Could Do Literacy and Numeracy Tasks When Began Primary School Scale, Fourth Grade, and TIMSS 2015 Achievement

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Australia	0.27	0.22	0.07	0.05	0.06	0.04
Bahrain	0.27	0.27	0.08	0.07	0.06	0.06
Belgium (Flemish)	0.03	-0.05	0.00	0.00	0.00	0.00
Bulgaria	0.30	0.35	0.09	0.12	0.07	0.09
Canada	0.32	0.31	0.10	0.09	0.08	0.07
Chile	0.35	0.28	0.12	0.08	0.10	0.07
Chinese Taipei	0.30	0.26	0.09	0.07	0.07	0.05
Croatia	0.35	0.31	0.12	0.09	0.10	0.08
Cyprus	0.25	0.21	0.06	0.05	0.05	0.04
Czech Republic	0.24	0.15	0.06	0.02	0.05	0.03
Denmark	0.21	0.14	0.05	0.02	0.03	0.01
England	-	-	-	-	-	-
Finland	0.45	0.35	0.20	0.12	0.18	0.11
France	0.22	0.14	0.05	0.02	0.04	0.02
Georgia	0.20	0.19	0.04	0.04	0.03	0.03
Germany	0.15	0.07	0.02	0.00	0.01	0.00
Hong Kong SAR	0.32	0.33	0.10	0.11	0.07	0.08
Hungary	0.19	0.14	0.04	0.02	0.03	0.02
Indonesia	0.35	0.33	0.12	0.11	0.11	0.11
Iran, Islamic Rep. of	0.26	0.23	0.07	0.05	0.04	0.03
Ireland	0.41	0.36	0.16	0.13	0.14	0.11
Italy	0.18	0.09	0.03	0.01	0.02	0.01
Japan	0.35	0.29	0.13	0.08	0.11	0.08
Jordan	0.43	-	0.19	-	0.15	-
Kazakhstan	0.16	0.16	0.03	0.02	0.03	0.02
Korea, Rep. of	0.34	0.32	0.12	0.10	0.10	0.09
Kuwait	0.30	0.27	0.09	0.07	0.07	0.05
Lithuania	0.44	0.35	0.19	0.12	0.15	0.10
Morocco	0.22	0.27	0.05	0.07	0.06	0.07
Netherlands	0.25	0.23	0.06	0.05	0.04	0.04
New Zealand	0.26	0.19	0.07	0.03	0.06	0.03
Northern Ireland	-	-	-	-	-	-
Norway (5)	0.30	0.23	0.09	0.05	0.06	0.03
Oman	0.26	0.29	0.07	0.08	0.05	0.06
Poland	0.31	0.26	0.10	0.07	0.08	0.06
Portugal	0.21	0.17	0.04	0.03	0.03	0.02
Qatar	0.28	0.31	0.08	0.10	0.06	0.08
Russian Federation	0.32	0.32	0.10	0.10	0.09	0.09
Saudi Arabia	0.15	0.19	0.02	0.04	0.02	0.03
Serbia	0.39	0.33	0.15	0.11	0.13	0.10
Singapore	0.46	0.45	0.21	0.20	0.17	0.17
Slovak Republic	0.22	0.18	0.05	0.03	0.03	0.02
Slovenia	0.29	0.23	0.08	0.05	0.07	0.04
South Africa (5)	0.27	-	0.07	-	0.06	-
Spain	0.35	0.29	0.12	0.08	0.09	0.06
Sweden	0.34	0.25	0.11	0.06	0.10	0.05
Turkey	0.25	0.24	0.06	0.06	0.03	0.03
United Arab Emirates	0.29	0.32	0.09	0.10	0.07	0.09
United States	-	-	-	-	-	-
International Median	0.28	0.26	0.08	0.07	0.06	0.05
Benchmarking Participants						
Buenos Aires, Argentina	0.35	0.22	0.12	0.05	0.10	0.05
Ontario, Canada	0.41	0.34	0.17	0.12	0.13	0.09
Quebec, Canada	0.27	0.21	0.07	0.04	0.06	0.04
Norway (4)	0.31	0.21	0.09	0.04	0.08	0.03
Abu Dhabi, UAE	0.35	0.37	0.12	0.14	0.10	0.11
Dubai, UAE	0.25	0.27	0.06	0.07	0.05	0.06
Florida, US	-	-	-	-	-	-

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

A dash (-) indicates comparable data not available.