

The TIMSS 2011 Could Do Early Numeracy Tasks When Began Primary School Scale, Fourth Grade

1:

	100	20	10	?
1) Count by himself/herself	A	A	A	A
	3 4	1 2		
2) Recognize different shapes (e.g., square, triangle, circle)	A	A	A	A
	10	5 9	1 4	
3) Recognize the written numbers from 1–10	A	A	A	A
4) Write the numbers from 1–10	A	A	A	A
5) Do simple addition	A	5		

3:

Scale Transformation Constants

A = 10.28744

$$\text{Transformed Scale Score} = 10.28744 + 1.26023 \cdot \text{Logit Scale Score}$$

B = 1.26023

4:

Raw Score	Transformed Scale score	Cutpoint	Raw Score	Transformed Scale score	Cutpoint
0	2.27813		8	7.84932	
1	4.06273		9	8.22609	
2	5.07300		10		
3	5.79118				
4	6.33195	6.4			
5	6.76724				
6	7.14524				
7	7.50029				

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Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			ASBH07A	ASBH07B	ASBH07C	ASBH07D	ASBH07E	ASBH07F
Portugal	0.76	47	0.69	0.64	0.69	0.72	0.70	0.68
Qatar	0.79	52	0.65	0.67	0.72	0.79	0.73	0.74
Romania	0.87	65	0.79	0.75	0.84	0.85	0.81	0.80
Russian Federation	0.73	48	0.66	0.63	0.65	0.70	0.76	0.75
Saudi Arabia	0.78	51	0.67	0.70	0.75	0.77	0.70	0.71
Singapore	0.75	49	0.66	0.63	0.73	0.74	0.70	0.72
Slovak Republic	0.79	51	0.69	0.64	0.78	0.77	0.70	0.69
Slovenia	0.80	52	0.71	0.63	0.79	0.79	0.71	0.70
Spain	0.77	48	0.69	0.61	0.72	0.75	0.72	0.67
Sweden	0.79	51	0.73	0.62	0.77	0.79	0.69	0.66
United ArabO			D	b2		bx	b	bf

bH

Country	Pearson's Correlation with Mathematics Achievement		Variance in Mathematics Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	(r_1)	(r_2)	
Ireland	-	-	-
Italy	0.17	0.03	0.02
Lithuania	0.34	0.12	0.07
Malta	0.16	0.03	0.02
Morocco	0.09	0.01	0.01
Northern Ireland	0.18	0.03	0.02
Norway	0.28	0.08	0.06
Oman	0.17	0.03	0.02
Poland	0.31	0.10	0.06
Portugal	0.22	0.05	0.03

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