

School Discipline Problems–Principals’ Reports Scale, Fourth Grade

The School Discipline Problems–Principals’ Reports (DAS) scale was created based on principals’ responses concerning the ten potential school problems described below.

Items in the TIMSS 2015 School Discipline Problems–Principals’ Reports Scale, Fourth Grade

		To what degree is each of the following a problem among fourth grade students in your school?				
		Not a problem	Minor problem	Moderate problem	Serious problem	
T	ACBG16A	1) Arriving late at school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16B	2) Absenteeism (i.e., unjustified absences) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16C	3) Classroom disturbance -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16D	4) Cheating -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16E	5) Profanity -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16F	6) Vandalism -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16G	7) Theft -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16H	8) Intimidation or verbal abuse among students (including texting, emailing, etc.) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16I	9) Physical fights among students -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG16J	10) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hardly Any Problems Minor Problems (9.7) Moderate to Severe Problems (7.6)

T Trend item—item was included in the same scale in TIMSS 2011 and was used for linking the TIMSS 2011 and TIMSS 2015 scales.

Item Parameters for the TIMSS 2015 School Discipline Problems - Principals' Reports Scale, Fourth Grade

Item	delta	tau_1	tau_2	tau_3	Infit
ACBG16A	-0.04434	-2.20733	-0.33916	2.54649	1.32
ACBG16B	0.26055	-1.25742	-0.52690	1.78432	1.23
ACBG16C	0.73852	-2.23001	-0.29453	2.52454	0.99
ACBG16D	-0.48580	-0.99657	-0.85069	1.84726	0.96
ACBG16E	0.48637	-1.57910	-0.46416	2.04326	0.90
ACBG16F	-0.25161	-0.42885	-0.69852	1.12737	0.80
ACBG16G	-0.46856	0.19761	-1.13779	0.94018	0.75
ACBG16H	0.20843	-1.29153	-0.75176	2.04329	0.93
ACBG16I	0.26742	-1.29267	-0.85001	2.14268	0.87
ACBG16J	-0.71098	0.19104	-0.78670	0.59566	0.85

Scale Transformation Constants for the TIMSS 2015 School Discipline Problems - Principals' Reports Scale, Fourth Grade

Scale Transformation Constants

A = 7.80934

B = 0.969053

Transformed Scale Score = 7.80934 + 0.969053 • Logit Scale Score

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



**Equivalence Table of Raw and Transformed Scale Scores for the TIMSS
2015 School Discipline Problems - Principals' Reports Scale, Fourth
Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	3.69215	
1	4.77953	
2	5.28846	
3	5.62589	
4	5.88225	
5	6.09144	
6	6.27112	
7	6.43124	
8	6.57814	
9	6.71457	
10	6.84760	
11	6.97770	
12	7.10707	
13	7.23779	
14	7.37193	
15	7.51249	7.6
16	7.65937	
17	7.81721	
18	7.98823	
19	8.17529	
20	8.38218	
21	8.61094	
22	8.86392	
23	9.14220	
24	9.44664	
25	9.77698	9.7
26	10.13829	
27	10.54381	
28	11.02588	
29	11.67067	
30	12.88232	

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 School Discipline Problems - Principals' Reports Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			ACBG16A	ACBG16B	ACBG16C	ACBG16D	ACBG16E	ACBG16F	ACBG16G	ACBG16H	ACBG16I	ACBG16J
Australia	0.92	62	0.71	0.79	0.78	0.74	0.84	0.82	0.76	0.77	0.85	0.77
Bahrain	0.97	78	0.80	0.84	0.82	0.92	0.90	0.93	0.91	0.92	0.87	0.93
Belgium (Flemish)	0.87	46	0.56	0.62	0.67	0.57	0.64	0.72	0.71	0.78	0.75	0.73
Bulgaria	0.93	61	0.79	0.71	0.82	0.74	0.84	0.83	0.69	0.78	0.83	0.75
Canada	0.86	49	0.63	0.55	0.69	0.69	0.78	0.80	0.76	0.68	0.76	0.58
Chile	0.86	46	0.52	0.65	0.72	0.67	0.82	0.68	0.72	0.66	0.75	0.52
Chinese Taipei	0.91	57	0.73	0.66	0.78	0.70	0.83	0.83	0.78	0.79	0.82	0.57
Croatia	0.81	38	0.44	0.39	0.62	0.56	0.70	0.71	0.61	0.78	0.72	0.47
Cyprus	0.93	62	0.71	0.74	0.84	0.77	0.78	0.80	0.81	0.80	0.85	0.78
Czech Republic	0.88	49	0.58	0.61	0.65	0.73	0.73	0.76	0.75	0.76	0.76	0.65
Denmark	0.83	40	0.63	0.69	0.63	0.36	0.68	0.70	0.61	0.69	0.63	0.63
England	0.82	41	0.58	0.57	0.69	0.42	0.71	0.70	0.52	0.69	0.75	0.72
Finland	0.83	43	0.62	0.62	0.61	0.69	0.74	0.67	0.74	0.61	0.67	0.58
France	0.90	53	0.61	0.65	0.71	0.67	0.80	0.79	0.76	0.77	0.76	0.75
Georgia	0.95	71	0.66	0.76	0.88	0.84	0.91	0.85	0.89	0.85	0.87	0.87
Germany	0.90	54	0.71	0.71	0.77	0.66	0.73	0.78	0.73	0.75	0.77	0.69
Hong Kong SAR	0.83	39	0.59	0.67	0.72	0.57	0.75	0.70	0.59	0.56	0.71	0.27
Hungary	0.92	60	0.71	0.80	0.79	0.77	0.69	0.80	0.78	0.84	0.80	0.73
Indonesia	0.97	80	0.78	0.89	0.83	0.89	0.94	0.89	0.93	0.93	0.92	0.92
Iran, Islamic Rep. of	0.92	58	0.57	0.67	0.65	0.75	0.85	0.82	0.85	0.82	0.79	0.77
Ireland	0.87	51	0.53	0.55	0.64	0.65	0.81	0.80	0.79	0.72	0.83	0.77
Italy	0.95	69	0.56	0.88	0.70	0.78	0.69	0.92	0.93	0.90	0.92	0.93
Japan	0.92	61	0.54	0.63	0.78	0.85	0.85	0.84	0.90	0.84	0.58	0.87
Jordan	0.94	67	0.62	0.71	0.68	0.86	0.87	0.84	0.90	0.87	0.90	0.86
Kazakhstan	0.98	81	0.85	0.89	0.89	0.74	0.95	0.95	0.94	0.94	0.92	0.94
Korea, Rep. of	0.96	76	0.75	0.88	0.76	0.92	0.84	0.93	0.93	0.88	0.92	0.91
Kuwait	0.94	67	0.68	0.78	0.85	0.80	0.86	0.89	0.82	0.83	0.85	0.79
Lithuania	0.82	39	0.47	0.52	0.65	0.72	0.73	0.58	0.73	0.67	0.66	0.43
Morocco	0.95	68	0.47	0.64	0.86	0.85	0.87	0.89	0.89	0.89	0.92	0.86
Netherlands	0.76	35	0.43	0.50	0.54	0.54	0.62	0.58	0.25	0.78	0.83	0.61
New Zealand	0.87	48	0.63	0.60	0.63	0.65	0.76	0.79	0.72	0.66	0.79	0.65
Northern Ireland	0.83	45	0.50	0.43	0.67	0.67	0.81	0.73	0.60	0.76	0.77	0.64
Norway (5)	0.84	43	0.73	0.69	0.60	0.60	0.77	0.77	0.54	0.64	0.65	0.52
Oman	0.95	69	0.75	0.80	0.78	0.87	0.88	0.90	0.90	0.85	0.75	0.79
Poland	0.84	41	0.61	0.40	0.66	0.64	0.70	0.72	0.71	0.68	0.67	0.58
Portugal	0.93	63	0.63	0.82	0.68	0.75	0.68	0.90	0.90	0.83	0.81	0.88
Qatar	0.96	75	0.67	0.76	0.78	0.92	0.90	0.90	0.89	0.93	0.93	0.91
Russian Federation	0.76	33	0.43	0.39	0.63	0.50	0.67	0.65	0.68	0.71	0.64	0.33
Saudi Arabia	0.96	73	0.59	0.63	0.82	0.91	0.90	0.93	0.93	0.92	0.92	0.92
Serbia	0.93	63	0.64	0.72	0.79	0.82	0.77	0.86	0.84	0.85	0.83	0.79
Singapore	0.88	49	0.64	0.67	0.71	0.74	0.72	0.72	0.73	0.80	0.70	0.52
Slovak Republic	0.88	48	0.57	0.66	0.59	0.75	0.77	0.76	0.74	0.71	0.72	0.64
Slovenia	0.88	49	0.71	0.72	0.68	0.68	0.69	0.75	0.63	0.70	0.70	0.71
South Africa (5)	0.87	47	0.54	0.60	0.69	0.71	0.68	0.74	0.76	0.72	0.79	0.56
Spain	0.94	68	0.66	0.80	0.77	0.78	0.79	0.90	0.89	0.86	0.86	0.92
Sweden	0.90	52	0.63	0.68	0.75	0.58	0.75	0.78	0.70	0.80	0.79	0.74
Turkey	0.96	73	0.71	0.82	0.82	0.89	0.83	0.89	0.92	0.91	0.85	0.87
United Arab Emirates	0.93	62	0.64	0.74	0.77	0.81	0.81	0.85	0.85	0.79	0.78	0.82
United States	0.88	49	0.62	0.68	0.72	0.67	0.78	0.67	0.74	0.71	0.73	0.67
Benchmarking Participants												
Buenos Aires, Argentina	0.90	54	0.38	0.60	0.65	0.71	0.81	0.81	0.85	0.81	0.78	0.81
Ontario, Canada	0.88	52	0.57	0.46	0.73	0.74	0.84	0.84	0.78	0.74	0.80	0.62
Quebec, Canada	0.80	39	0.62	0.63	0.56	0.65	0.72	0.58	0.63	0.65	0.61	0.58
Norway (4)	0.86	45	0.57	0.62	0.73	0.48	0.81	0.64	0.62	0.79	0.73	0.66
Abu Dhabi, UAE	0.86	48	0.60	0.69	0.76	0.60	0.72	0.74	0.70	0.64	0.74	0.73
Dubai, UAE	0.94	67	0.66	0.75	0.83	0.85	0.86	0.83	0.89	0.83	0.77	0.87
Florida, US	0.87	54	0.29	0.33	0.74	0.86	0.83	0.85	0.80	0.82	0.78	0.80

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

Relationship Between the TIMSS 2015 School Discipline Problems - Principals' Reports 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)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Australia	0.28	0.25	0.08	0.06	0.07	0.06
Bahrain	0.11	0.15	0.01	0.02	0.01	0.02
Belgium (Flemish)	0.14	0.18	0.02	0.03	0.02	0.02
Bulgaria	0.20	0.25	0.04	0.06	0.04	0.05
Canada	0.16	0.13	0.03	0.02	0.02	0.02
Chile	0.15	0.15	0.02	0.02	0.02	0.02
Chinese Taipei	0.13	0.15	0.02	0.02	0.01	0.01
Croatia	-0.04	-0.04	0.00	0.00	0.00	0.00
Cyprus	0.07	0.09	0.01	0.01	0.01	0.01
Czech Republic	0.08	0.08	0.01	0.01	0.01	0.01
Denmark	0.13	0.14	0.02	0.02	0.02	0.02
England	0.18	0.19	0.03	0.03	0.02	0.02
Finland	0.04	0.03	0.00	0.00	0.00	0.00
France	0.15	0.14	0.02	0.02	0.03	0.02
Georgia	-0.01	-0.03	0.00	0.00	0.02	0.02
Germany	0.17	0.18	0.03	0.03	0.02	0.02
Hong Kong SAR	0.17	0.14	0.03	0.02	0.00	0.00
Hungary	0.21	0.22	0.04	0.05	0.05	0.06
Indonesia	0.05	0.05	0.00	0.00	0.01	0.01
Iran, Islamic Rep. of	0.20	0.21	0.04	0.05	0.03	0.04
Ireland	0.17	0.17	0.03	0.03	0.02	0.02
Italy	0.04	0.03	0.00	0.00	0.00	0.00
Japan	0.03	0.03	0.00	0.00	0.00	0.00
Jordan	0.12	-	0.01	-	0.03	-
Kazakhstan	0.02	0.07	0.00	0.00	0.01	0.01
Korea, Rep. of	0.02	0.01	0.00	0.00	0.00	0.00
Kuwait	0.12	0.13	0.01	0.02	0.02	0.02
Lithuania	0.07	0.07	0.01	0.00	0.01	0.01
Morocco	0.06	0.10	0.00	0.01	0.01	0.01
Netherlands	0.11	0.15	0.01	0.02	0.00	0.01
New Zealand	0.26	0.26	0.07	0.07	0.06	0.06
Northern Ireland	0.15	0.13	0.02	0.02	0.01	0.01
Norway (5)	0.12	0.10	0.01	0.01	0.01	0.01
Oman	-0.06	-0.06	0.00	0.00	0.01	0.00
Poland	-0.03	-0.03	0.00	0.00	0.00	0.00
Portugal	0.07	0.06	0.00	0.00	0.01	0.00
Qatar	0.05	0.05	0.00	0.00	0.00	0.01
Russian Federation	0.09	0.10	0.01	0.01	0.00	0.00
Saudi Arabia	0.04	0.05	0.00	0.00	0.00	0.00
Serbia	-0.05	-0.08	0.00	0.01	0.00	0.00
Singapore	0.07	0.08	0.01	0.01	0.00	0.00
Slovak Republic	0.20	0.22	0.04	0.05	0.04	0.05
Slovenia	0.02	0.03	0.00	0.00	0.00	0.00
South Africa (5)	0.15	-	0.02	-	0.02	-
Spain	0.20	0.18	0.04	0.03	0.03	0.02
Sweden	0.21	0.24	0.04	0.06	0.05	0.07
Turkey	0.16	0.15	0.03	0.02	0.05	0.05
United Arab Emirates	0.28	0.28	0.08	0.08	0.06	0.06
United States	0.24	0.23	0.06	0.05	0.05	0.05
International Median	0.12	0.13	0.01	0.02	0.01	0.01
Benchmarking Participants						
Buenos Aires, Argentina	0.16	0.22	0.03	0.05	0.02	0.05
Ontario, Canada	0.12	0.11	0.01	0.01	0.02	0.01
Quebec, Canada	0.22	0.20	0.05	0.04	0.02	0.02
Norway (4)	0.06	0.05	0.00	0.00	0.02	0.02
Abu Dhabi, UAE	0.12	0.12	0.01	0.01	0.02	0.02
Dubai, UAE	0.36	0.37	0.13	0.14	0.10	0.11
Florida, US	0.20	0.18	0.04	0.03	0.05	0.04

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

A dash (-) indicates comparable data not available.