

**Exhibit 11.4: Example Item Statistics for a TIMSS 2015 Trend Item**

Trends in International Mathematics and Science Study - TIMSS 2015 Assessment Results - 8th Grade  
Trend Achievement Data Almanac for Science Items (Weighted)  
S06\_08 (S052049): Chemistry / Applying Type: CR 2 Points  
Label: Separating iron and copper

COUNTRY	Year	N	20		10		79		OMITTED		NOT REACHED		V1		V2		GIRL		BOY		
			%	N	%	N	%	N	%	N	%	N	%	N	PCT RIGHT	PCT RIGHT	PCT RIGHT	PCT RIGHT			
Australia	2011	1078	13.8	148	34.7	48.8	2.6	0.0	48.5	13.8	12.1	15.5	13.8	12.1	15.5	13.8	12.1	15.5	13.8	12.1	15.5
	2015	1468	12.1	178	32.2	52.1	3.3	0.4	44.3	13.5	13.5	10.5	13.5	13.5	10.5	13.5	13.5	10.5	13.5	10.5	13.5
Bahrain	2011	654	21.7	142	27.8	46.3	3.2	1.0	49.5	21.7	27.8	15.3	21.7	27.8	15.3	21.7	27.8	15.3	21.7	15.3	7.5
	2015	702	11.4	80	34.2	50.5	3.3	0.7	45.5	11.4	15.4	7.5	11.4	15.4	7.5	11.4	15.4	7.5	11.4	15.4	7.5
Botswana	2011	764	7.3	56	18.3	70.0	3.7	0.7	25.6	7.3	7.8	6.8	7.3	7.8	6.8	7.3	7.8	6.8	7.3	7.8	6.8
	2015	847	6.6	56	20.7	68.4	3.5	0.8	27.3	6.6	5.9	7.3	6.6	5.9	7.3	6.6	5.9	7.3	6.6	5.9	7.3
Chile	2011	828	4.2	35	26.7	57.1	10.8	1.3	30.9	4.2	4.3	4.2	4.2	4.3	4.2	4.2	4.3	4.2	4.3	4.2	10.1
	2015	676	11.1	75	18.5	53.2	16.7	0.5	29.6	11.1	12.1	10.1	11.1	12.1	10.1	11.1	12.1	10.1	11.1	12.1	10.1
Chinese Taipei	2011	718	28.3	207	42.3	27.1	2.2	0.1	70.6	28.3	30.9	25.9	28.3	30.9	25.9	28.3	30.9	25.9	28.3	30.9	25.9
	2015	821	24.7	181	47.2	25.3	2.7	0.2	71.9	24.7	27.1	22.1	24.7	27.1	22.1	24.7	27.1	22.1	24.7	27.1	22.1
England	2011	542	24.3	131	34.2	36.3	4.3	0.8	58.5	24.3	24.6	24.1	24.3	24.6	24.1	24.3	24.6	24.1	24.3	24.6	24.1
	2015	692	22.1	153	32.4	41.1	4.0	0.4	54.5	22.1	24.4	19.2	22.1	24.4	19.2	22.1	24.4	19.2	22.1	24.4	19.2
Georgia	2011	653	14.8	97	28.5	38.3	17.4	0.9	43.4	14.8	11.7	17.7	14.8	11.7	17.7	14.8	11.7	17.7	14.8	11.7	17.7
	2015	572	19.7	113	35.4	36.5	8.1	0.4	55.0	19.7	19.1	20.2	19.7	19.1	20.2	19.7	19.1	20.2	19.7	19.1	20.2
Hong Kong SAR	2011	576	12.5	72	34.6	49.8	3.0	0.2	47.0	12.5	15.5	9.3	12.5	15.5	9.3	12.5	15.5	9.3	12.5	15.5	9.3
	2015	597	11.6	69	35.7	50.9	1.8	0.0	47.3	11.6	11.8	11.3	11.6	11.8	11.3	11.6	11.8	11.3	11.6	11.8	11.3
Hungary	2011	730	17.1	132	46.0	33.8	3.0	0.0	63.2	17.1	15.1	18.9	17.1	15.1	18.9	17.1	15.1	18.9	17.1	15.1	18.9
	2015	704	17.7	125	48.6	30.8	2.9	0.0	66.3	17.7	21.4	13.8	17.7	21.4	13.8	17.7	21.4	13.8	17.7	21.4	13.8
Iran, Islamic Rep. of	2011	874	5.7	50	41.9	47.9	4.5	0.1	47.5	5.7	6.4	5.0	5.7	6.4	5.0	5.7	6.4	5.0	5.7	6.4	5.0
	2015	886	3.9	35	40.8	50.2	4.7	0.3	44.8	3.9	5.2	2.7	3.9	5.2	2.7	3.9	5.2	2.7	3.9	5.2	2.7
Israel	2011	664	18.1	119	35.0	43.5	2.6	0.8	53.1	18.1	21.9	14.6	18.1	21.9	14.6	18.1	21.9	14.6	18.1	21.9	14.6
	2015	787	18.5	145	37.9	38.6	4.5	0.5	56.3	18.5	22.6	14.0	18.5	22.6	14.0	18.5	22.6	14.0	18.5	22.6	14.0
Italy	2011	563	15.5	87	40.0	33.2	11.1	0.2	55.6	15.5	18.7	12.5	15.5	18.7	12.5	15.5	18.7	12.5	15.5	18.7	12.5
	2015	627	9.4	59	46.4	36.3	7.9	0.0	55.8	9.4	8.9	9.9	9.4	8.9	9.9	9.4	8.9	9.9	9.4	8.9	9.9
Japan	2011	628	32.4	203	25.6	38.2	3.8	0.0	57.9	32.4	29.6	35.3	32.4	29.6	35.3	32.4	29.6	35.3	32.4	29.6	35.3
	2015	681	19.7	131	43.5	33.2	3.1	0.5	63.2	19.7	19.1	20.3	19.7	19.1	20.3	19.7	19.1	20.3	19.7	19.1	20.3
Jordan	2011	1092	12.7	139	36.1	45.2	5.3	0.8	48.8	12.7	17.3	8.4	12.7	17.3	8.4	12.7	17.3	8.4	12.7	17.3	8.4
	2015	1134	9.0	102	31.3	52.2	7.4	0.2	40.3	9.0	9.4	8.6	9.0	9.4	8.6	9.0	9.4	8.6	9.0	9.4	8.6
Kazakhstan	2011	617	30.6	189	32.8	24.5	11.7	0.4	63.4	30.6	31.1	30.1	30.6	31.1	30.1	30.6	31.1	30.1	30.6	31.1	30.1
	2015	697	32.6	227	38.7	24.8	3.3	0.6	71.3	32.6	31.0	34.4	32.6	31.0	34.4	32.6	31.0	34.4	32.6	31.0	34.4
Korea, Rep. of	2011	741	21.5	161	47.2	29.7	1.5	0.1	68.7	21.5	24.6	18.2	21.5	24.6	18.2	21.5	24.6	18.2	21.5	24.6	18.2
	2015	757	13.9	106	43.0	41.5	1.6	0.0	56.9	13.9	13.9	12.0	13.9	13.9	12.0	13.9	13.9	12.0	13.9	13.9	12.0
Lebanon	2011	557	11.7	66	19.1	56.5	11.5	1.2	30.8	11.7	10.9	12.6	11.7	10.9	12.6	11.7	10.9	12.6	11.7	10.9	12.6
	2015	548	10.3	56	25.5	45.8	13.9	4.3	35.9	10.3	11.5	9.1	10.3	11.5	9.1	10.3	11.5	9.1	10.3	11.5	9.1
Lithuania	2011	673	5.9	40	45.7	44.2	4.0	0.3	51.5	5.9	7.1	4.8	5.9	7.1	4.8	5.9	7.1	4.8	5.9	7.1	4.8
	2015	621	6.6	41	41.7	48.6	3.1	0.1	48.3	6.6	6.6	3.7	6.6	6.6	3.7	6.6	6.6	3.7	6.6	6.6	3.7

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit. Because of missing gender information, some totals may appear inconsistent.

**Exhibit 11.4: Example Item Statistics for a TIMSS 2015 Trend Item (Continued)**

Trends in International Mathematics and Science Study - TIMSS 2015 Assessment Results - 8th Grade  
Trend Achievement Data Almanac for Science Items (Weighted)

S06\_08 (S052049): Chemistry / Applying Type: CR 2 Points  
Label: Separating iron and copper

COUNTRY	Year	N	20 %	10 %	79 %	OMITTED %	NOT REACHED %	V1 %	V2 %	GIRL PCT RIGHT	BOY PCT RIGHT
Malaysia	2011	833	12.0	26.4	53.4	6.7	1.6	38.4	12.0	12.6	11.4
	2015	1377	14.8	34.3	43.9	6.6	0.5	49.0	14.8	15.3	14.3
Morocco	2011	1335	3.0	22.8	66.3	6.8	1.1	25.7	3.0	3.4	2.6
	2015	1879	0.3	17.4	74.8	7.0	0.6	17.6	0.3	0.5	0.1
New Zealand	2011	755	21.1	29.9	43.6	5.1	0.4	51.0	21.1	20.9	21.2
	2015	1122	23.1	26.5	46.8	3.2	0.4	49.5	23.1	25.4	20.6
Oman	2011	1363	14.9	23.4	55.0	6.1	0.6	38.3	14.9	21.7	7.7
	2015	1255	12.2	25.2	55.6	6.6	0.4	37.4	12.2	14.6	10.0
Qatar	2011	624	15.0	25.4	55.1	4.3	0.2	40.3	15.0	19.0	11.3
	2015	768	11.7	31.1	50.9	5.6	0.7	42.8	11.7	12.3	11.2
Russian Federation	2011	709	15.8	49.3	28.4	5.2	1.3	65.0	15.8	13.3	18.2
	2015	677	35.8	32.5	28.0	3.6	0.1	68.3	35.8	33.6	37.8
Saudi Arabia	2011	628	4.1	19.8	72.4	3.4	0.3	23.9	4.1	3.3	4.9
	2015	531	3.7	24.0	69.4	2.5	0.5	27.6	3.7	4.0	3.3
Singapore	2011	850	33.1	31.8	33.6	1.3	0.1	65.0	33.1	36.7	29.7
	2015	872	43.4	30.6	25.4	0.6	0.0	74.0	43.4	43.5	43.3
Slovenia	2011	633	20.8	47.3	29.8	2.1	0.0	68.0	20.8	21.3	20.4
	2015	604	33.9	35.5	29.5	2.1	0.0	69.4	33.9	35.7	32.1
South Africa	2011	1704	6.0	7.0	77.8	7.7	1.5	13.0	6.0	6.0	5.9
	2015	1791	1.3	14.4	78.3	4.4	1.6	15.7	1.3	1.6	0.9
Sweden	2011	797	11.2	38.0	46.2	4.3	0.2	49.3	11.2	11.2	11.3
	2015	585	15.9	35.0	42.4	6.0	0.8	50.9	15.9	18.6	13.9
Thailand	2011	859	9.6	33.8	39.6	16.4	0.6	43.4	9.6	10.9	8.0
	2015	918	6.9	32.1	48.9	11.8	0.2	39.0	6.9	10.7	2.3
Turkey	2011	990	10.8	41.0	37.8	9.7	0.7	51.9	10.8	12.7	8.8
	2015	869	22.0	26.8	45.1	6.1	0.0	48.8	22.0	25.9	18.4
United Arab Emirates	2011	1999	12.0	33.8	50.0	3.3	0.8	45.8	12.0	12.6	11.5
	2015	2581	10.2	33.9	50.7	4.9	0.3	44.1	10.2	11.3	9.2
United States	2011	1490	13.9	37.0	45.7	3.2	0.3	50.8	13.9	13.7	14.0
	2015	1475	10.3	37.5	48.5	2.7	0.9	47.8	10.3	10.8	9.8
International Avg (n=33)	2011	28521	15.2	32.8	45.6	5.8	0.6	48.0	15.2	16.3	14.1
	2015	31121	15.3	33.0	46.0	5.1	0.5	48.4	15.3	16.6	14.1
Ontario, Canada	2011	682	19.8	28.5	44.9	6.2	0.7	48.3	19.8	18.9	20.4
	2015	644	10.0	26.9	56.3	6.1	0.8	36.8	10.0	9.7	10.2

VI = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit.  
Because of missing gender information, some totals may appear inconsistent.

**Exhibit 11.4: Example Item Statistics for a TIMSS 2015 Trend Item (Continued)**

Trends in International Mathematics and Science Study - TIMSS 2015 Assessment Results - 8th Grade  
Trend Achievement Data Almanac for Science Items (Weighted)  
S06\_08 (S052049): Chemistry / Applying Type: CR 2 Points  
Label: Separating iron and copper

COUNTRY	Year	N	20		10		79		OMITTED		NOT REACHED		V1		V2		GIRL		BOY	
			%	%	%	%	%	%	%	%	%	%	%	PCT RIGHT	PCT RIGHT	PCT RIGHT	PCT RIGHT			
Quebec, Canada	2011	880	20.2	33.2	41.5	4.5	0.6	53.4	20.2	20.9	19.5	12.7	15.0	15.0	12.7	15.0	12.7	15.0	12.7	15.0
	2015	555	13.9	33.1	46.8	5.0	1.2	47.0	13.9	13.9	12.7	15.0	15.0	12.7	15.0	12.7	15.0	12.7	15.0	12.7
Norway (8)	2011	540	8.6	37.2	48.9	5.0	0.3	45.8	8.6	11.1	5.9	10.3	10.3	10.1	10.5	10.3	10.1	10.5	10.3	10.5
	2015	685	10.3	35.4	46.7	7.2	0.4	45.8	10.3	10.3	10.5	10.3	10.3	10.1	10.5	10.3	10.1	10.5	10.3	10.5
Abu Dhabi, UAE	2011	624	12.2	31.7	52.5	2.7	0.9	43.9	12.2	9.8	14.3	14.3	7.1	7.8	6.5	12.2	9.8	14.3	14.3	14.3
	2015	692	7.1	30.0	56.4	6.0	0.5	37.1	7.1	7.1	6.5	14.3	7.1	7.8	6.5	12.2	9.8	14.3	14.3	14.3
Dubai, UAE	2011	789	14.0	32.8	48.1	4.0	1.2	46.8	14.0	15.3	12.7	16.8	16.8	17.7	15.8	16.8	17.7	15.8	16.8	17.7
	2015	879	16.8	37.4	42.1	3.3	0.4	54.3	16.8	16.8	15.8	17.7	17.7	15.8	16.8	17.7	15.8	16.8	17.7	15.8
Florida, US	2011	246	10.9	34.9	52.1	2.2	0.0	45.8	10.9	11.4	10.4	10.4	10.9	11.4	10.4	10.9	11.4	10.4	10.9	11.4
	2015	298	8.4	33.1	57.0	1.5	0.0	41.5	8.4	9.3	7.6	10.4	8.4	9.3	7.6	10.9	11.4	10.4	10.9	11.4

V1 = Percent scoring 1 pt or better; V2 = Percent scoring 2 pts; Percent right for boys and girls corresponds to percent obtaining full credit. Because of missing gender information, some totals may appear inconsistent.