

## Appendix 17E: Item Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks

### International Average Item Block Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 4

PSI Block	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4

#### Mathematics

MI01 - Positions 1 & 4	11,605	11,597	47.0	41.5	11.8	13.4	0.7	8.4
MI02 - Positions 2 & 3	11,597	11,605	34.2	30.5	9.0	10.6	0.2	15.4
<b>Overall</b>	<b>23,202</b>	<b>23,202</b>	<b>40.6</b>	<b>36.0</b>	<b>10.4</b>	<b>12.0</b>	<b>0.4</b>	<b>11.9</b>

#### Science

SI01 - Positions 2 & 3	11,596	11,614	48.9	43.9	6.5	7.4	0.1	16.8
SI02 - Positions 1 & 4	11,613	11,596	42.6	41.0	6.8	8.8	0.8	7.9
<b>Overall</b>	<b>23,209</b>	<b>23,210</b>	<b>45.8</b>	<b>42.5</b>	<b>6.6</b>	<b>8.1</b>	<b>0.4</b>	<b>12.4</b>

### International Average Item Block Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 8

PSI Block	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4

#### Mathematics

MI01 - Positions 1 & 4	8,120	8,156	28.1	25.8	11.5	10.8	0.2	5.7
MI02 - Positions 2 & 3	8,156	8,120	33.2	30.5	12.2	15.0	0.3	5.4
<b>Overall</b>	<b>16,276</b>	<b>16,276</b>	<b>30.6</b>	<b>28.1</b>	<b>11.8</b>	<b>12.9</b>	<b>0.3</b>	<b>5.5</b>

#### Science

SI01 - Positions 2 & 3	8,106	8,157	46.7	46.5	8.3	6.8	0.2	3.1
SI02 - Positions 1 & 4	8,157	8,106	43.2	38.4	5.7	10.6	0.1	1.7
<b>Overall</b>	<b>16,263</b>	<b>16,263</b>	<b>45.0</b>	<b>42.5</b>	<b>7.0</b>	<b>8.7</b>	<b>0.2</b>	<b>2.4</b>

### Country Average Item Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 4 Mathematics

Country	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4
Austria	633	633	43.4	38.4	13.4	15.5	0.2	10.4
Canada	1,919	1,919	35.5	29.9	9.6	12.4	0.8	15.5
Chile	599	599	24.5	19.6	13.9	17.1	1.7	24.4
Chinese Taipei	530	530	54.7	51.7	8.2	7.5	0.0	2.1
Croatia	550	550	36.8	33.3	11.4	11.5	0.1	6.1
Czech Republic	665	665	43.7	38.8	11.6	13.3	0.2	9.0
Denmark	465	465	45.3	38.9	9.8	13.3	1.3	23.4
England	475	475	49.9	47.0	6.9	7.7	0.2	5.0
Finland	664	664	42.6	37.3	11.0	12.5	0.2	8.9
France	606	606	32.6	26.9	15.1	18.9	1.0	18.7
Georgia	525	525	29.5	23.9	20.1	21.1	0.6	15.4
Germany	495	495	39.0	34.7	11.1	13.8	0.5	16.1
Hong Kong SAR	418	418	57.7	55.0	8.5	7.4	0.1	1.9
Hungary	656	656	43.8	39.0	8.9	9.6	0.2	7.5
Italy	527	527	36.1	30.8	13.9	15.8	1.0	21.7
Korea, Rep. of	555	555	57.1	53.2	5.9	6.7	0.0	3.1
Lithuania	524	524	44.0	39.8	9.2	11.0	0.0	6.2
Malta	522	522	37.7	32.4	7.3	8.9	0.2	7.3
Netherlands	474	474	46.2	41.6	7.9	9.2	0.2	7.4
Norway (5)	575	575	47.4	42.8	10.7	13.5	0.4	14.7
Portugal	614	614	38.9	31.7	10.2	13.1	0.7	15.5
Qatar	713	713	24.1	20.3	14.6	16.8	1.1	17.8
Russian Federation	574	574	51.7	47.1	9.7	10.1	0.1	7.6
Singapore	853	853	59.6	55.7	6.5	7.6	0.0	3.1
Slovak Republic	614	614	41.2	35.3	10.7	12.2	0.1	7.4
Spain	1,390	1,390	38.4	32.2	9.2	11.1	0.4	10.9
Sweden	567	567	42.7	36.7	11.9	14.7	1.2	22.7
Turkey (5)	571	571	36.9	32.4	11.6	11.3	0.1	6.9
United Arab Emirates	3,677	3,677	29.6	25.7	13.7	15.3	0.6	10.9
United States	1,252	1,252	40.3	36.3	6.6	9.1	0.4	11.7
<b>International Average</b>	<b>23,202</b>	<b>23,202</b>	<b>41.7</b>	<b>36.9</b>	<b>10.6</b>	<b>12.3</b>	<b>0.5</b>	<b>11.3</b>
<b>Benchmarking Participants</b>								
Ontario, Canada	528	528	37.5	31.4	9.0	12.1	0.7	15.0
Quebec, Canada	546	546	40.9	32.4	9.1	12.9	0.5	14.6
Moscow City, Russian Fed.	549	549	56.3	52.6	9.0	9.0	0.0	4.5
Madrid, Spain	488	488	40.3	34.0	8.5	10.3	0.3	9.0
Abu Dhabi, UAE	1,287	1,287	23.1	19.4	14.7	16.1	0.4	10.0
Dubai, UAE	1,034	1,034	42.6	37.3	8.8	12.1	0.2	7.4

### Country Average Item Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 4 Science

Country	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4
Austria	633	633	45.3	40.6	8.8	12.1	0.1	12.6
Canada	1,924	1,924	44.1	40.4	5.1	7.2	0.9	17.1
Chile	599	599	36.6	32.9	9.1	10.7	1.3	28.1
Chinese Taipei	530	530	50.3	49.4	7.6	10.0	0.1	6.7
Croatia	550	550	45.9	41.7	6.3	5.8	0.0	5.5
Czech Republic	666	666	48.8	44.8	8.1	8.3	0.2	8.9
Denmark	465	465	50.5	48.8	4.8	5.1	0.2	12.2
England	475	475	52.7	52.5	3.8	4.6	0.3	4.3
Finland	665	665	51.6	48.4	5.1	6.0	0.1	5.7
France	605	605	40.7	35.3	9.8	14.1	1.3	23.5
Georgia	526	526	31.6	25.7	12.5	15.5	0.4	18.0
Germany	496	496	43.9	38.4	7.2	10.1	1.4	24.4
Hong Kong SAR	418	418	43.7	40.6	8.1	9.3	0.4	7.8
Hungary	656	656	47.0	43.5	6.2	6.1	0.3	10.9
Italy	528	528	42.6	34.3	6.5	10.9	0.8	24.2
Korea, Rep. of	555	555	61.0	60.4	5.6	4.4	0.1	1.7
Lithuania	524	524	47.0	44.7	6.5	7.7	0.1	4.0
Malta	523	523	41.2	38.6	5.1	5.9	0.3	9.1
Netherlands	474	474	44.7	44.5	4.2	5.1	0.1	3.7
Norway (5)	575	575	48.8	47.1	5.7	6.8	0.4	7.7
Portugal	615	615	43.2	38.0	6.9	9.5	0.6	25.1
Qatar	712	712	27.9	24.6	11.8	13.5	1.4	24.5
Russian Federation	574	574	55.9	52.0	5.2	5.6	0.2	5.7
Singapore	851	851	59.3	56.4	3.7	4.6	0.0	4.4
Slovak Republic	615	615	48.0	45.4	6.0	7.4	0.0	6.6
Spain	1,390	1,390	45.0	42.9	5.2	7.2	0.1	9.5
Sweden	569	569	50.1	46.9	5.5	8.2	0.5	15.0
Turkey (5)	571	571	47.1	44.5	6.2	7.1	0.1	10.3
United Arab Emirates	3,673	3,674	31.0	28.0	8.9	10.2	0.6	16.8
United States	1,252	1,252	47.1	42.8	3.5	4.3	1.2	16.2
<b>International Average</b>	<b>23,209</b>	<b>23,210</b>	<b>45.8</b>	<b>42.5</b>	<b>6.6</b>	<b>8.1</b>	<b>0.4</b>	<b>12.4</b>
<b>Benchmarking Participants</b>								
Ontario, Canada	529	529	45.2	40.8	5.1	7.2	0.8	17.8
Quebec, Canada	547	547	45.0	39.8	5.0	7.7	0.9	16.4
Moscow City, Russian Fed.	549	549	60.0	54.7	5.1	6.4	0.0	5.2
Madrid, Spain	489	489	45.5	44.5	5.1	5.2	0.0	8.7
Abu Dhabi, UAE	1,287	1,287	22.9	19.4	9.1	12.1	0.7	18.5
Dubai, UAE	1,034	1,034	43.0	40.1	5.5	5.7	0.4	12.7

**Country Average Item Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 8 Mathematics**

Country	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4
Chile	579	579	17.9	14.6	17.8	18.8	0.3	10.8
Chinese Taipei	695	695	47.7	44.2	4.6	6.2	0.1	1.1
England	492	492	30.0	29.0	15.1	16.0	0.1	5.8
Finland	689	689	27.5	25.7	12.4	13.4	0.5	5.9
France	552	552	23.1	20.1	16.4	18.5	0.1	8.5
Georgia	473	473	16.3	15.2	22.8	22.1	1.2	10.2
Hong Kong SAR	465	465	43.7	42.8	6.1	6.3	0.1	1.4
Hungary	650	650	33.5	33.2	12.7	11.6	0.0	1.7
Israel	537	537	29.4	24.5	11.4	12.5	0.4	7.0
Italy	519	519	24.6	21.1	17.2	18.2	0.3	5.7
Korea, Rep. of	548	548	42.4	42.0	7.8	8.5	0.2	2.2
Lithuania	540	540	31.1	29.2	12.8	13.7	0.1	3.5
Malaysia	1,012	1,012	26.0	24.5	3.7	4.7	0.0	3.1
Norway (9)	638	638	29.8	27.9	21.2	21.3	1.5	12.9
Portugal	489	489	28.0	24.2	13.2	14.6	0.2	5.5
Qatar	552	552	18.4	15.4	10.1	11.3	0.1	5.1
Russian Federation	555	555	36.1	33.3	14.5	16.0	0.1	5.6
Singapore	693	693	55.2	52.1	3.7	4.1	0.0	1.9
Sweden	567	567	33.6	27.4	14.5	18.5	0.7	11.5
Turkey	585	585	22.9	21.5	10.9	11.5	0.1	2.4
United Arab Emirates	3,203	3,203	22.0	18.7	7.3	7.7	0.0	3.8
United States	1,243	1,243	31.3	28.3	3.8	4.8	0.3	5.8
<b>International Average</b>	<b>16,276</b>	<b>16,276</b>	<b>30.5</b>	<b>28.0</b>	<b>11.8</b>	<b>12.7</b>	<b>0.3</b>	<b>5.5</b>
<b>Benchmarking Participants</b>								
Ontario, Canada	553	553	35.5	31.2	8.8	10.3	0.1	7.7
Quebec, Canada	458	458	38.1	32.4	8.9	10.1	0.1	5.8
Moscow City, Russian Fed.	541	541	44.9	41.4	13.1	13.3	0.0	5.2
Abu Dhabi, UAE	1,175	1,175	17.6	15.0	5.9	6.6	0.0	2.9
Dubai, UAE	816	816	34.1	30.7	7.6	8.5	0.1	4.8

**Country Average Item Statistics by Booklet Position for the TIMSS 2019 Problem Solving and Inquiry Tasks—Grade 8 Science**

Country	Sample Sizes		Average Percent Correct Across Items (Weighted)		Average Percent Omitted Across Items (Weighted)		Average Percent Not Reached Across Items (Weighted)	
	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4	Positions 1 & 3	Positions 2 & 4
Chile	579	579	38.1	34.9	8.5	10.1	0.0	4.2
Chinese Taipei	695	695	53.5	53.2	4.0	4.5	0.0	0.7
England	491	491	47.2	46.6	6.6	7.6	0.6	1.9
Finland	691	691	51.5	50.2	4.2	5.4	0.3	1.3
France	552	552	45.7	42.8	7.1	10.0	0.4	6.0
Georgia	473	473	32.3	28.7	14.4	17.5	0.4	4.1
Hong Kong SAR	465	465	46.8	43.2	6.5	7.6	0.0	1.2
Hungary	648	648	47.8	47.0	6.2	7.4	0.0	0.2
Israel	537	537	45.6	42.1	9.0	12.1	0.1	3.3
Italy	519	519	38.0	34.7	9.5	10.8	0.0	2.4
Korea, Rep. of	548	548	53.6	51.1	4.4	5.4	0.1	0.8
Lithuania	540	540	45.4	44.5	6.0	6.3	0.0	0.2
Malaysia	1,012	1,012	41.1	38.3	4.1	5.3	0.0	3.0
Norway (9)	630	630	43.3	40.5	9.3	10.9	1.3	4.9
Portugal	490	490	40.6	36.9	7.7	9.5	0.1	2.0
Qatar	552	552	34.2	30.7	9.1	12.0	0.2	3.0
Russian Federation	555	555	46.1	45.9	8.1	7.8	0.0	2.1
Singapore	692	692	64.2	63.4	2.6	2.8	0.1	0.5
Sweden	560	560	48.5	44.6	7.6	10.2	0.3	4.6
Turkey	585	585	42.4	40.0	9.0	11.0	0.1	2.2
United Arab Emirates	3,205	3,205	33.4	30.0	8.7	10.6	0.0	2.7
United States	1,244	1,244	52.0	50.0	2.7	3.9	0.2	3.2
<b>International Average</b>	<b>16,263</b>	<b>16,263</b>	<b>45.1</b>	<b>42.7</b>	<b>7.1</b>	<b>8.6</b>	<b>0.2</b>	<b>2.5</b>
<b>Benchmarking Participants</b>								
Ontario, Canada	553	553	49.5	46.0	4.9	6.0	0.3	3.5
Quebec, Canada	459	459	52.9	50.3	4.4	5.5	0.0	1.5
Moscow City, Russian Fed.	540	540	55.2	53.6	6.2	5.9	0.0	1.8
Abu Dhabi, UAE	1,176	1,176	28.3	24.9	8.5	11.4	0.0	2.0
Dubai, UAE	816	816	47.0	43.1	6.0	7.3	0.0	2.5