

# Safe and Orderly School–Teachers’ Reports Scale, Fourth Grade

The Safe and Orderly School – Teachers’ Reports (SOS) scale was created based on teachers’ degree of agreement with the eight statements described below.

## Items in the TIMSS 2015 Safe and Orderly School–Teachers’ Reports Scale, Fourth Grade<sup>1</sup>

|   |         | Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements. |                |                   |                |
|---|---------|---|----------------|-------------------|----------------|
|   |         | Agree a lot   | Agree a little | Disagree a little | Disagree a lot |
| T | ATBG07A | 1) This school is located in a safe neighborhood ----- ○ ————— ○ ————— ○ ————— ○  |                |                   |                |
| T | ATBG07B | 2) I feel safe at this school ----- ○ ————— ○ ————— ○ ————— ○   |                |                   |                |
| T | ATBG07C | 3) This school's security policies and practices are sufficient ----- ○ ————— ○ ————— ○ ————— ○                               |                |                   |                |
| T | ATBG07D | 4) The students behave in an orderly manner ----- ○ ————— ○ ————— ○ ————— ○   |                |                   |                |
| T | ATBG07E | 5) The students are respectful of the teachers ----- ○ ————— ○ ————— ○ ————— ○  |                |                   |                |
|   | ATBG07F | 6) The students respect school property ----- ○ ————— ○ ————— ○ ————— ○   |                |                   |                |
|   | ATBG07G | 7) This school has clear rules about student conduct ----- ○ ————— ○ ————— ○ ————— ○  |                |                   |                |
|   | ATBG07H | 8) This school's rules are enforced in a fair and consistent manner ----- ○ ————— ○ ————— ○ ————— ○                           |                |                   |                |

Very Safe and Orderly 10.0      Safe and Orderly 6.7      Less than Safe and Orderly

<sup>1</sup> For the purpose of scaling, categories in which there were very few respondents were combined. The categories “Disagree a little” and “Disagree a lot” were combined for all variables. The scale statistics that are reported herein reflect analysis of the items following collapsing.

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 Safe and Orderly School – Teachers' Reports Scale, Fourth Grade**

| Item    | delta    | tau_1    | tau_2   | Infit |
|---------|----------|----------|---------|-------|
| ATBG07A | -0.40272 | -1.05787 | 1.05787 | 1.40  |
| ATBG07B | -1.33285 | -1.23553 | 1.23553 | 1.00  |
| ATBG07C | -0.54308 | -1.43816 | 1.43816 | 1.08  |
| ATBG07D | 0.97878  | -1.91297 | 1.91297 | 0.84  |
| ATBG07E | 0.55100  | -1.90039 | 1.90039 | 0.87  |
| ATBG07F | 1.18574  | -1.83791 | 1.83791 | 0.89  |
| ATBG07G | -0.48880 | -1.35559 | 1.35559 | 1.08  |
| ATBG07H | 0.05193  | -1.51487 | 1.51487 | 1.00  |

**Scale Transformation Constants for the TIMSS 2015 Safe and Orderly School – Teachers' Reports Scale, Fourth Grade**

| Scale Transformation Constants |   |
|--------------------------------|---|
| A = 8.379152                   | Transformed Scale Score = 8.379152 + 1.021142 • Logit Scale Score |
| B = 1.021142                   |   |

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

**Equivalence Table of Raw and Transformed Scale Scores for the TIMSS  
2015 Safe and Orderly School – Teachers' Reports Scale, Fourth Grade**

| Raw Score | Transformed Scale Score | Cutpoint |
|-----------|-------------------------|----------|
| 0         | 3.75218                 |          |
| 1         | 5.02760                 |          |
| 2         | 5.71019                 |          |
| 3         | 6.22383                 |          |
| 4         | 6.66369                 | 6.7      |
| 5         | 7.06780                 |          |
| 6         | 7.45682                 |          |
| 7         | 7.84491                 |          |
| 8         | 8.23956                 |          |
| 9         | 8.65006                 |          |
| 10        | 9.08289                 |          |
| 11        | 9.54538                 |          |
| 12        | 10.04965                | 10.0     |
| 13        | 10.61012                |          |
| 14        | 11.25092                |          |
| 15        | 12.04413                |          |
| 16        | 13.41271                |          |

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 Safe and Orderly School – Teachers' Reports Scale, Fourth Grade**

| Country                          | Cronbach's Alpha Reliability Coefficient | Percent of Variance Explained | Component Loadings for Each Item |         |         |         |         |         |         |         |
|----------------------------------|--|-------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|
|                                  |  |                               | ATB607A                          | ATB607B | ATB607C | ATB607D | ATB607E | ATB607F | ATB607G | ATB607H |
| Australia                        | 0.86                                     | 52                            | 0.64                             | 0.66    | 0.66    | 0.83    | 0.81    | 0.81    | 0.62    | 0.71    |
| Bahrain                          | 0.89                                     | 57                            | 0.51                             | 0.65    | 0.73    | 0.86    | 0.78    | 0.82    | 0.81    | 0.82    |
| Belgium (Flemish)                | 0.83                                     | 46                            | 0.49                             | 0.59    | 0.66    | 0.78    | 0.77    | 0.73    | 0.65    | 0.72    |
| Bulgaria                         | 0.83                                     | 46                            | 0.55                             | 0.68    | 0.64    | 0.78    | 0.76    | 0.75    | 0.58    | 0.66    |
| Canada                           | 0.86                                     | 51                            | 0.52                             | 0.60    | 0.64    | 0.81    | 0.79    | 0.80    | 0.73    | 0.76    |
| Chile                            | 0.88                                     | 54                            | 0.59                             | 0.70    | 0.72    | 0.79    | 0.83    | 0.81    | 0.66    | 0.77    |
| Chinese Taipei                   | 0.89                                     | 56                            | 0.70                             | 0.75    | 0.73    | 0.76    | 0.77    | 0.76    | 0.78    | 0.76    |
| Croatia                          | 0.88                                     | 55                            | 0.63                             | 0.72    | 0.73    | 0.77    | 0.78    | 0.74    | 0.74    | 0.81    |
| Cyprus                           | 0.87                                     | 53                            | 0.70                             | 0.67    | 0.70    | 0.77    | 0.77    | 0.79    | 0.72    | 0.69    |
| Czech Republic                   | 0.83                                     | 47                            | 0.56                             | 0.73    | 0.68    | 0.70    | 0.74    | 0.63    | 0.72    | 0.72    |
| Denmark                          | 0.83                                     | 47                            | 0.54                             | 0.51    | 0.63    | 0.78    | 0.77    | 0.76    | 0.68    | 0.74    |
| England                          | 0.86                                     | 52                            | 0.48                             | 0.64    | 0.61    | 0.83    | 0.80    | 0.77    | 0.71    | 0.85    |
| Finland                          | 0.82                                     | 45                            | 0.43                             | 0.63    | 0.55    | 0.79    | 0.78    | 0.69    | 0.70    | 0.74    |
| France                           | 0.84                                     | 48                            | 0.73                             | 0.78    | 0.72    | 0.74    | 0.70    | 0.71    | 0.50    | 0.58    |
| Georgia                          | 0.83                                     | 47                            | 0.58                             | 0.69    | 0.73    | 0.72    | 0.71    | 0.49    | 0.79    | 0.73    |
| Germany                          | 0.85                                     | 49                            | 0.70                             | 0.76    | 0.68    | 0.79    | 0.79    | 0.76    | 0.53    | 0.56    |
| Hong Kong SAR                    | 0.88                                     | 55                            | 0.55                             | 0.68    | 0.67    | 0.78    | 0.76    | 0.82    | 0.82    | 0.83    |
| Hungary                          | 0.86                                     | 51                            | 0.50                             | 0.67    | 0.74    | 0.77    | 0.80    | 0.77    | 0.71    | 0.69    |
| Indonesia                        | 0.85                                     | 50                            | 0.62                             | 0.70    | 0.67    | 0.81    | 0.74    | 0.81    | 0.59    | 0.70    |
| Iran, Islamic Rep. of            | 0.84                                     | 47                            | 0.62                             | 0.70    | 0.69    | 0.80    | 0.74    | 0.77    | 0.65    | 0.47    |
| Ireland                          | 0.86                                     | 53                            | 0.62                             | 0.67    | 0.55    | 0.83    | 0.84    | 0.83    | 0.66    | 0.73    |
| Italy                            | 0.82                                     | 45                            | 0.50                             | 0.61    | 0.57    | 0.76    | 0.73    | 0.79    | 0.62    | 0.71    |
| Japan                            | 0.74                                     | 36                            | 0.63                             | 0.64    | 0.52    | 0.72    | 0.54    | 0.70    | 0.44    | 0.57    |
| Jordan                           | 0.87                                     | 53                            | 0.55                             | 0.62    | 0.76    | 0.79    | 0.75    | 0.78    | 0.75    | 0.77    |
| Kazakhstan                       | 0.88                                     | 54                            | 0.67                             | 0.76    | 0.62    | 0.73    | 0.74    | 0.79    | 0.80    | 0.79    |
| Korea, Rep. of                   | 0.89                                     | 57                            | 0.60                             | 0.70    | 0.75    | 0.82    | 0.80    | 0.80    | 0.77    | 0.79    |
| Kuwait                           | 0.86                                     | 51                            | 0.49                             | 0.57    | 0.72    | 0.80    | 0.81    | 0.79    | 0.72    | 0.75    |
| Lithuania                        | 0.83                                     | 46                            | 0.46                             | 0.70    | 0.72    | 0.71    | 0.75    | 0.72    | 0.53    | 0.73    |
| Morocco                          | 0.88                                     | 56                            | 0.67                             | 0.76    | 0.71    | 0.80    | 0.70    | 0.79    | 0.79    | 0.74    |
| Netherlands                      | 0.84                                     | 47                            | 0.66                             | 0.62    | 0.64    | 0.84    | 0.82    | 0.75    | 0.43    | 0.64    |
| New Zealand                      | 0.86                                     | 53                            | 0.66                             | 0.69    | 0.67    | 0.79    | 0.80    | 0.77    | 0.71    | 0.72    |
| Northern Ireland                 | 0.81                                     | 47                            | 0.50                             | 0.60    | 0.63    | 0.83    | 0.85    | 0.81    | 0.57    | 0.56    |
| Norway (5)                       | 0.87                                     | 53                            | 0.60                             | 0.61    | 0.67    | 0.83    | 0.82    | 0.78    | 0.72    | 0.76    |
| Oman                             | 0.84                                     | 47                            | 0.46                             | 0.52    | 0.63    | 0.77    | 0.76    | 0.74    | 0.78    | 0.75    |
| Poland                           | 0.83                                     | 46                            | 0.54                             | 0.64    | 0.68    | 0.72    | 0.77    | 0.72    | 0.65    | 0.67    |
| Portugal                         | 0.86                                     | 51                            | 0.66                             | 0.69    | 0.80    | 0.75    | 0.71    | 0.78    | 0.64    | 0.67    |
| Qatar                            | 0.85                                     | 49                            | 0.39                             | 0.55    | 0.62    | 0.75    | 0.82    | 0.81    | 0.77    | 0.79    |
| Russian Federation               | 0.80                                     | 44                            | 0.53                             | 0.62    | 0.56    | 0.77    | 0.77    | 0.75    | 0.42    | 0.76    |
| Saudi Arabia                     | 0.85                                     | 51                            | 0.33                             | 0.42    | 0.63    | 0.83    | 0.82    | 0.84    | 0.82    | 0.83    |
| Serbia                           | 0.89                                     | 57                            | 0.62                             | 0.74    | 0.79    | 0.80    | 0.80    | 0.78    | 0.68    | 0.81    |
| Singapore                        | 0.89                                     | 56                            | 0.58                             | 0.63    | 0.74    | 0.81    | 0.81    | 0.82    | 0.78    | 0.80    |
| Slovak Republic                  | 0.85                                     | 49                            | 0.37                             | 0.68    | 0.65    | 0.76    | 0.80    | 0.79    | 0.72    | 0.75    |
| Slovenia                         | 0.84                                     | 47                            | 0.61                             | 0.62    | 0.74    | 0.72    | 0.71    | 0.66    | 0.65    | 0.76    |
| South Africa (5)                 | 0.88                                     | 55                            | 0.66                             | 0.74    | 0.70    | 0.80    | 0.74    | 0.79    | 0.72    | 0.75    |
| Spain                            | 0.85                                     | 49                            | 0.57                             | 0.66    | 0.71    | 0.78    | 0.78    | 0.79    | 0.59    | 0.70    |
| Sweden                           | 0.84                                     | 49                            | 0.61                             | 0.74    | 0.72    | 0.75    | 0.78    | 0.77    | 0.46    | 0.72    |
| Turkey                           | 0.89                                     | 57                            | 0.76                             | 0.76    | 0.74    | 0.75    | 0.76    | 0.75    | 0.75    | 0.76    |
| United Arab Emirates             | 0.89                                     | 56                            | 0.48                             | 0.63    | 0.71    | 0.82    | 0.81    | 0.84    | 0.80    | 0.82    |
| United States                    | 0.88                                     | 55                            | 0.62                             | 0.67    | 0.70    | 0.85    | 0.81    | 0.82    | 0.70    | 0.75    |
| <b>Benchmarking Participants</b> |  |                               |                                  |         |         |         |         |         |         |         |
| Buenos Aires, Argentina          | 0.87                                     | 52                            | 0.49                             | 0.65    | 0.59    | 0.78    | 0.82    | 0.74    | 0.80    | 0.82    |
| Ontario, Canada                  | 0.86                                     | 51                            | 0.53                             | 0.59    | 0.63    | 0.79    | 0.80    | 0.78    | 0.75    | 0.80    |
| Quebec, Canada                   | 0.83                                     | 47                            | 0.58                             | 0.65    | 0.60    | 0.76    | 0.67    | 0.74    | 0.73    | 0.73    |
| Norway (4)                       | 0.87                                     | 54                            | 0.74                             | 0.71    | 0.70    | 0.81    | 0.79    | 0.79    | 0.70    | 0.65    |
| Abu Dhabi, UAE                   | 0.87                                     | 53                            | 0.34                             | 0.59    | 0.67    | 0.82    | 0.79    | 0.84    | 0.79    | 0.82    |
| Dubai, UAE                       | 0.88                                     | 54                            | 0.39                             | 0.56    | 0.66    | 0.79    | 0.82    | 0.85    | 0.84    | 0.85    |
| Florida, US                      | 0.90                                     | 60                            | 0.64                             | 0.71    | 0.70    | 0.88    | 0.85    | 0.92    | 0.77    | 0.67    |

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

**Relationship Between the TIMSS 2015 Safe and Orderly School – Teachers' 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 ( $\eta^2$ ) |             |
|----------------------------------|--|-------------|-------------|-------------|---|-------------|
|                                  | (r)                                    |             | (r)         |             | Mathematics   | Science     |
|                                  | Mathematics                            | Science     | Mathematics | Science     |   |             |
| Australia                        | 0.24                                   | 0.22        | 0.06        | 0.05        | 0.05  | 0.04        |
| Bahrain                          | 0.18                                   | 0.13        | 0.03        | 0.02        | 0.02  | 0.01        |
| Belgium (Flemish)                | 0.16                                   | 0.17        | 0.03        | 0.03        | 0.01  | 0.01        |
| Bulgaria                         | 0.20                                   | 0.22        | 0.04        | 0.05        | 0.03  | 0.03        |
| Canada                           | 0.06                                   | 0.10        | 0.00        | 0.01        | 0.00  | 0.01        |
| Chile                            | 0.24                                   | 0.28        | 0.06        | 0.08        | 0.04  | 0.06        |
| Chinese Taipei                   | 0.01                                   | -0.02       | 0.00        | 0.00        | 0.00  | 0.00        |
| Croatia                          | -0.03                                  | -0.03       | 0.00        | 0.00        | 0.00  | 0.00        |
| Cyprus                           | 0.08                                   | 0.07        | 0.01        | 0.00        | 0.01  | 0.00        |
| Czech Republic                   | 0.06                                   | 0.07        | 0.00        | 0.01        | 0.00  | 0.00        |
| Denmark                          | 0.12                                   | 0.13        | 0.01        | 0.02        | 0.02  | 0.03        |
| England                          | 0.13                                   | 0.12        | 0.02        | 0.02        | 0.01  | 0.01        |
| Finland                          | 0.06                                   | 0.07        | 0.00        | 0.00        | 0.01  | 0.01        |
| France                           | 0.18                                   | 0.17        | 0.03        | 0.03        | 0.04  | 0.04        |
| Georgia                          | 0.04                                   | 0.05        | 0.00        | 0.00        | 0.00  | 0.00        |
| Germany                          | 0.16                                   | 0.18        | 0.03        | 0.03        | 0.02  | 0.02        |
| Hong Kong SAR                    | 0.06                                   | 0.14        | 0.00        | 0.02        | 0.00  | 0.01        |
| Hungary                          | 0.18                                   | 0.17        | 0.03        | 0.03        | 0.02  | 0.02        |
| Indonesia                        | 0.01                                   | 0.01        | 0.00        | 0.00        | 0.00  | 0.00        |
| Iran, Islamic Rep. of            | 0.09                                   | 0.09        | 0.01        | 0.01        | 0.01  | 0.01        |
| Ireland                          | 0.14                                   | 0.19        | 0.02        | 0.03        | 0.02  | 0.03        |
| Italy                            | 0.06                                   | 0.05        | 0.00        | 0.00        | 0.01  | 0.01        |
| Japan                            | 0.04                                   | 0.05        | 0.00        | 0.00        | 0.01  | 0.01        |
| Jordan                           | 0.13                                   | -           | 0.02        | -           | 0.01  | -           |
| Kazakhstan                       | 0.07                                   | 0.08        | 0.01        | 0.01        | 0.00  | 0.00        |
| Korea, Rep. of                   | 0.10                                   | 0.08        | 0.01        | 0.01        | 0.01  | 0.01        |
| Kuwait                           | 0.04                                   | 0.11        | 0.00        | 0.01        | 0.00  | 0.00        |
| Lithuania                        | 0.02                                   | 0.01        | 0.00        | 0.00        | 0.00  | 0.00        |
| Morocco                          | 0.13                                   | 0.13        | 0.02        | 0.02        | 0.02  | 0.02        |
| Netherlands                      | 0.10                                   | 0.14        | 0.01        | 0.02        | 0.01  | 0.02        |
| New Zealand                      | 0.25                                   | 0.23        | 0.06        | 0.05        | 0.05  | 0.04        |
| Northern Ireland                 | 0.11                                   | 0.10        | 0.01        | 0.01        | 0.01  | 0.01        |
| Norway (5)                       | 0.09                                   | 0.12        | 0.01        | 0.01        | 0.01  | 0.01        |
| Oman                             | 0.03                                   | 0.02        | 0.00        | 0.00        | 0.00  | 0.00        |
| Poland                           | 0.02                                   | 0.04        | 0.00        | 0.00        | 0.00  | 0.00        |
| Portugal                         | 0.16                                   | 0.14        | 0.02        | 0.02        | 0.01  | 0.01        |
| Qatar                            | 0.08                                   | 0.14        | 0.01        | 0.02        | 0.01  | 0.03        |
| Russian Federation               | 0.05                                   | 0.02        | 0.00        | 0.00        | 0.00  | 0.00        |
| Saudi Arabia                     | 0.18                                   | 0.14        | 0.03        | 0.02        | 0.03  | 0.02        |
| Serbia                           | 0.03                                   | 0.03        | 0.00        | 0.00        | 0.00  | 0.00        |
| Singapore                        | 0.10                                   | 0.12        | 0.01        | 0.02        | 0.00  | 0.02        |
| Slovak Republic                  | 0.13                                   | 0.13        | 0.02        | 0.02        | 0.02  | 0.03        |
| Slovenia                         | 0.04                                   | 0.05        | 0.00        | 0.00        | 0.00  | 0.00        |
| South Africa (5)                 | 0.08                                   | -           | 0.01        | -           | 0.01  | -           |
| Spain                            | 0.22                                   | 0.23        | 0.05        | 0.05        | 0.04  | 0.04        |
| Sweden                           | 0.22                                   | 0.24        | 0.05        | 0.06        | 0.05  | 0.06        |
| Turkey                           | 0.16                                   | 0.16        | 0.03        | 0.02        | 0.02  | 0.02        |
| United Arab Emirates             | 0.33                                   | 0.34        | 0.11        | 0.11        | 0.08  | 0.07        |
| United States                    | 0.21                                   | 0.22        | 0.05        | 0.05        | 0.04  | 0.04        |
| <b>International Median</b>      | <b>0.10</b>                            | <b>0.12</b> | <b>0.01</b> | <b>0.02</b> | <b>0.01</b>   | <b>0.01</b> |
| <b>Benchmarking Participants</b> |  |             |             |             |   |             |
| Buenos Aires, Argentina          | 0.20                                   | 0.19        | 0.04        | 0.04        | 0.03  | 0.03        |
| Ontario, Canada                  | 0.07                                   | 0.07        | 0.00        | 0.00        | 0.00  | 0.01        |
| Quebec, Canada                   | 0.09                                   | 0.08        | 0.01        | 0.01        | 0.00  | 0.00        |
| Norway (4)                       | 0.07                                   | 0.09        | 0.00        | 0.01        | 0.01  | 0.03        |
| Abu Dhabi, UAE                   | 0.24                                   | 0.22        | 0.06        | 0.05        | 0.06  | 0.02        |
| Dubai, UAE                       | 0.31                                   | 0.33        | 0.10        | 0.11        | 0.08  | 0.09        |
| Florida, US                      | 0.22                                   | 0.20        | 0.05        | 0.04        | 0.06  | 0.05        |

A dash (-) indicates comparable data not available.

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