

## Appendix 10E: Modifications to the TIMSS 2019 Achievement Data

Grade 4 Mathematics
Items Deleted for All Countries
M02_10B – ME71217B, MP71217B (severe differential item functioning)
M04_10A – ME71135A, MP71135A (severe differential item functioning)
M08_09 – ME71199, M08_08 – MP71199 (severe differential item functioning)
M10_01 – ME71005, MP71005 (severe differential item functioning)
Items Recoded for All Countries
M05_12 – ME51080, MP51080 (20 to 10, 10 to 71, 11 to 72)
M10_11 – ME71189, MP71189 (20 to 10, 10 to 79, 11 to 79)
M12_11 – ME71190, M12_10 – MP71190 (20 to 10, 10 to 70)
M13_02 – ME61254, MP61254 (20 to 10, 10 to 70)
M13_08 – ME61224, MP61224 (70 to 12)
M14_09 – ME71177, MP71177 (20 to 10, 10 to 70)
Items Deleted by Country
Chile
M05_12 – ME51080 (poor discrimination)
Croatia
M12_03 – ME71062 (negative discrimination)
Hungary
M12_03 – ME71062 (negative discrimination)
Japan
M08_12 – MP71194 (translation error)

## Grade 4 Mathematics – Less Difficult

### Items Deleted for All Countries

MP02\_10B – MP71217B (severe differential item functioning)

MP08\_08 – MP71199 (severe differential item functioning)

### Items Recoded for All Countries

MP13\_02 – MP61254 (20 to 10, 10 to 70)

MP13\_08 – MP61224 (70 to 12)

### Items Deleted by Country

Bosnia and Herzegovina (Cyrillic language only)

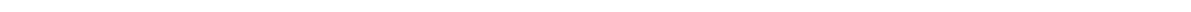
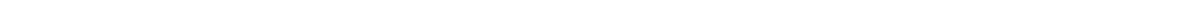
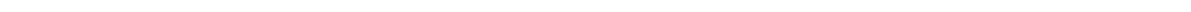
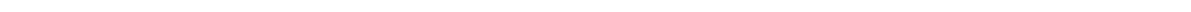
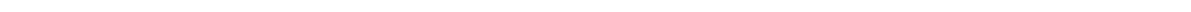
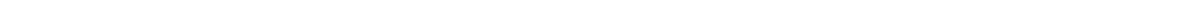
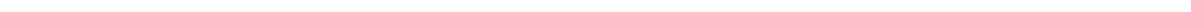
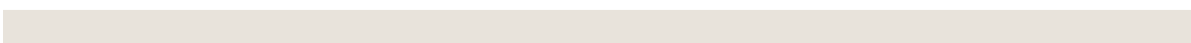
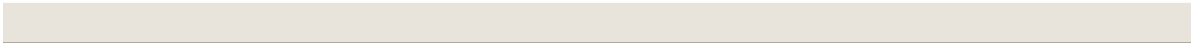
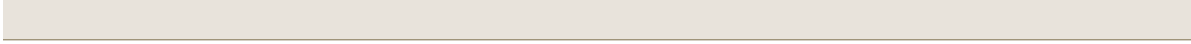
MP13\_03, MP61244 (translation error)

Morocco

MN11\_09 – MN11158 (poor reliability)

Saudi Arabia

MP13\_01 – MP61240 (derived item, translation error)



## Grade 8 Mathematics

### Items Deleted for All Countries

M06\_07 – ME62342, MP62342 (poor discrimination)

M09\_12B – ME62345B, MP62345B (derived item, poor discrimination)

M10\_03 – ME72038, MP72038 (severe differential item functioning)

M12\_14B – ME72211B, MP72211B (severe differential item functioning)

M13\_12 – ME62048, MP62048 (derived item, poor discrimination)

### Items Recoded for All Countries

M03\_13 – ME62254, MP62254 (20 to 10)

M07\_08 – ME52087, MP52087 (20 to 10, 10 to 70)

M08\_09B – ME72128B, MP72128B (10 to 20, 70 to 10)

### Items Deleted by Country

#### Georgia

M02\_03 – ME72017 (poor discrimination)

M03\_06 – MP62351 (negative discrimination)

#### Kazakhstan (Kazakh language only)

M10\_15 – MP72206 (translation error)

M12\_09A – MP72110A (translation error)

M12\_09B – MP72110B (translation error)

M12\_12 – MP72229 (translation error)

#### Lebanon

M09\_07 – MP62350 (negative discrimination)

#### Saudi Arabia

M03\_02 – MP62139 (translation error)

M05\_12 – MP52502 (translation error)

Items beginning with “ME” are eTIMSS items. Items beginning with “MP” are paperTIMSS items, or bridge items. paperTIMSS trend items deleted or recoded for all countries were also modified for eTIMSS bridge samples.

## Grade 8 Science

### Items Deleted for All Countries

S01\_06 – SE52134 (severe differential item functioning)

S03\_12 – SE62272, SP62272 (poor discrimination)

S04\_02 – SP72403 (severe differential item functioning)

S05\_11 – SE52221, SP52221 (poor discrimination)

S08\_09 – SE72133, SP72133 (severe differential item functioning)

S10\_07 – SE72048, SP72048 (severe differential item functioning)

S11\_12 – SE62036, SP62036 (attractive distracter)

S11\_15C – SE62242C, SP62242C (poor discrimination)

S12\_04 – SE72906, SP72906 (derived item, severe differential item functioning)

S12\_15 – SE72329, SP72329 (severe differential item functioning)

S13\_05 – SE62266, SP62266 (attractive distracter)

### Items Recoded for All Countries

S12\_09 – SE72523, SP72523 (t((S)30.3E30 9 64 50.6 ( 1.4 (2o 0)-27.2 (4)9a)2.7 52t54 9ere diffe.2.6 (3879 (56559.8843 Tm [(S)30.1 (1