

# Appendix E

*Mongolia—Science Achievement*

## Exhibit E.1 Mongolia – Selected Science Achievement Results\*

TIMSS2007  
Science 4<sup>th</sup> Grade

Distribution of Science Achievement									
Mean Achievement	Years of Formal Schooling**	Average Age at Time of Testing	5th Percentile (Scale Score)	10th Percentile (Scale Score)	25th Percentile (Scale Score)	50th Percentile (Scale Score)	75th Percentile (Scale Score)	90th Percentile (Scale Score)	95th Percentile (Scale Score)
421 (4.0)	4	11	270 (9.1)	304 (4.0)	363 (4.9)	428 (4.6)	483 (4.7)	529 (4.6)	554 (2.9)

Science Achievement by Gender		
Mean Achievement	Girls' Mean	Boys' Mean
421 (4.0)	424 (4.4)	419 (4.4)

Average Achievement in Science Content Domains by Gender			
Content Domain	Girls' Mean	Boys' Mean	Overall Mean
Life Science	437 (4.1)	432 (4.2)	434 (3.6)
Physical Science	435 (3.7)	432 (4.8)	433 (3.9)
Earth Science	414 (4.1) ▲	403 (4.3)	408 (3.6)

Average Achievement in Science Cognitive Domains by Gender			
Cognitive Domain	Girls' Mean	Boys' Mean	Overall Mean
Knowing	412 (4.1)	409 (5.0)	411 (4.1)
Applying	450 (3.6) ▲	443 (4.3)	446 (3.7)
Reasoning	434 (3.9)	444 (4.2)	439 (3.1)

Percentages of Students Reaching International Benchmarks in Science			
Advanced International Benchmark (625)	High International Benchmark (550)	Intermediate International Benchmark (475)	Low International Benchmark (400)
0 (0.2)	6 (0.6)	29 (2.0)	62 (2.0)

▲ Significantly higher than other gender

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2007

\* Because characteristics of their samples and data are not completely known, selected achievement results for Mongolia at the fourth and eighth grades are presented in Appendix E.

\*\* Represents years of schooling counting from the first year of ISCED Level 1.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

Exhibit E.1 **Mongolia – Selected Science Achievement Results\* (Continued)**

**TIMSS2007**  
Science **8<sup>th</sup>** Grade

Distribution of Science Achievement									
Mean Achievement	Years of Formal Schooling**	Average Age at Time of Testing	5th Percentile (Scale Score)	10th Percentile (Scale Score)	25th Percentile (Scale Score)	50th Percentile (Scale Score)	75th Percentile (Scale Score)	90th Percentile (Scale Score)	95th Percentile (Scale Score)
449 (2.9)	8	15	322 (6.2)	351 (5.0)	401 (2.9)	453 (2.6)	501 (3.2)	541 (2.8)	563 (3.8)

Science Achievement by Gender		
Mean Achievement	Girls' Mean	Boys' Mean
449 (2.9)	450 (2.9)	449 (3.6)

Average Achievement in Science Content Domains by Gender			
Content Domain	Girls' Mean	Boys' Mean	Overall Mean
Biology	459 (3.0) ▲	451 (3.4)	455 (2.9)
Chemistry	452 (3.9)	444 (4.6)	448 (3.6)
Physics	450 (2.8)	458 (2.9) ▲	454 (2.5)
Earth Science	432 (4.5)	437 (3.9)	434 (3.2)

Average Achievement in Science Cognitive Domains by Gender			
Cognitive Domain	Girls' Mean	Boys' Mean	Overall Mean
Knowing	426 (2.8)	426 (4.7)	426 (3.3)
Applying	459 (3.2)	462 (3.2)	461 (2.8)
Reasoning	463 (4.1) ▲	455 (3.6)	459 (3.5)

Percentages of Students Reaching International Benchmarks in Science			
Advanced International Benchmark (625)	High International Benchmark (550)	Intermediate International Benchmark (475)	Low International Benchmark (400)
0 (0.1)	8 (0.9)	38 (1.8)	76 (1.5)

▲ Significantly higher than other gender

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2007

\* Because characteristics of their samples and data are not completely known, selected achievement results for Mongolia at the fourth and eighth grades are presented in Appendix E.

\*\* Represents years of schooling counting from the first year of ISCED Level 1.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

