

# APPENDIX D

**D**

Percentiles and  
Standard Deviations  
of Mathematics  
Achievement



## Exhibit D.1 Percentiles of Achievement in Mathematics

	5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile
Australia	387 (6.5)	472 (5.6)	529 (6.2)	581 (4.5)	648 (7.3)
Belgium (Flemish)	423 (14.1)	511 (4.0)	563 (3.6)	611 (3.2)	675 (5.5)
Bulgaria	367 (6.3)	454 (5.8)	512 (7.0)	567 (10.8)	649 (11.9)
Canada	406 (4.6)	484 (3.8)	533 (2.6)	581 (2.1)	646 (6.0)
Chile	253 (7.5)	336 (4.3)	391 (2.9)	448 (5.7)	533 (13.1)
Chinese Taipei	396 (6.4)	524 (6.1)	595 (4.4)	656 (3.5)	739 (5.1)
Cyprus	335 (6.9)	422 (4.0)	481 (2.0)	534 (2.4)	603 (4.0)
Czech Republic	392 (9.9)	467 (5.0)	517 (5.7)	573 (6.0)	653 (9.9)
England	360 (6.4)	442 (4.8)	496 (5.1)	551 (3.5)	632 (6.4)
Finland	408 (4.0)	479 (3.9)	523 (2.4)	565 (3.1)	623 (4.6)
Hong Kong, SAR	456 (11.0)	538 (5.8)	587 (3.7)	632 (3.8)	693 (4.1)
Hungary	386 (6.4)	476 (3.4)	536 (3.7)	590 (4.1)	667 (5.1)
Indonesia	239 (8.4)	337 (7.8)	401 (4.8)	469 (4.3)	574 (8.8)
Iran, Islamic Rep.	284 (4.7)	367 (2.9)	423 (4.0)	478 (4.9)	556 (7.9)
Israel	300 (6.9)	402 (6.6)	473 (7.2)	534 (2.6)	614 (3.7)
Italy	331 (8.8)	423 (5.3)	482 (3.3)	540 (4.8)	615 (5.8)
Japan	441 (2.8)	529 (2.4)	583 (1.8)	633 (1.9)	702 (4.1)
Jordan	258 (4.3)	357 (3.8)	429 (3.6)	498 (4.3)	596 (4.2)
Korea, Rep. of	448 (5.8)	538 (3.6)	592 (2.3)	640 (2.0)	710 (3.2)
Latvia (LSS)	377 (5.1)	453 (4.0)	505 (4.6)	557 (3.7)	631 (4.3)
Lithuania	354 (9.1)	429 (3.9)	482 (4.2)	534 (3.4)	608 (7.5)
Macedonia, Rep. of	287 (7.2)	386 (5.1)	451 (5.0)	510 (3.5)	594 (5.5)
Malaysia	387 (6.0)	464 (5.0)	519 (5.3)	577 (6.8)	648 (4.3)
Moldova	331 (6.4)	412 (4.6)	468 (4.8)	528 (4.4)	607 (4.8)
Morocco	181 (7.1)	277 (3.9)	340 (2.8)	401 (2.6)	477 (4.8)
Netherlands	410 (9.1)	495 (9.0)	545 (6.1)	590 (5.6)	653 (9.7)
New Zealand	341 (5.5)	430 (5.9)	493 (7.0)	554 (6.5)	632 (7.4)
Philippines	185 (7.3)	278 (5.7)	345 (6.4)	414 (7.5)	504 (10.2)
Romania	312 (11.7)	412 (5.6)	477 (4.7)	537 (7.2)	616 (7.4)
Russian Federation	385 (12.0)	471 (8.0)	526 (6.9)	584 (6.1)	666 (13.4)
Singapore	464 (7.5)	555 (5.7)	608 (6.6)	658 (8.9)	728 (6.5)
Slovak Republic	407 (7.4)	485 (4.2)	534 (6.0)	585 (4.8)	656 (4.9)
Slovenia	392 (4.4)	476 (3.6)	531 (3.1)	587 (4.8)	663 (5.7)
South Africa	113 (9.6)	200 (5.5)	263 (6.6)	337 (9.9)	485 (11.1)
Thailand	328 (9.1)	412 (4.7)	465 (4.5)	524 (7.6)	609 (7.0)
Tunisia	341 (7.1)	406 (2.5)	449 (2.9)	491 (2.9)	551 (2.9)
Turkey	290 (5.9)	371 (3.8)	428 (3.5)	486 (6.7)	572 (7.1)
United States	356 (4.3)	442 (4.7)	504 (4.3)	562 (3.7)	642 (6.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

( ) Standard errors appear in parentheses.

## Exhibit D.2 Standard Deviations of Achievement in Mathematics

TIMSS 1999  
8<sup>th</sup> grade  
Mathematics

	Overall		Girls		Boys	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Australia	525 (4.8)	80 (2.9)	524 (5.7)	77 (3.8)	526 (5.7)	83 (3.3)
Belgium (Flemish)	558 (3.3)	77 (2.8)	560 (7.2)	74 (4.8)	556 (8.3)	79 (5.6)
Bulgaria	511 (5.8)	86 (3.8)	510 (5.9)	84 (3.5)	511 (6.9)	88 (4.7)
Canada	531 (2.5)	73 (1.7)	529 (2.5)	72 (1.9)	533 (3.2)	74 (1.7)
Chile	392 (4.4)	85 (3.5)	388 (4.3)	82 (2.9)	397 (5.8)	89 (4.2)
Chinese Taipei	585 (4.0)	104 (1.8)	583 (3.9)	98 (2.4)	587 (5.3)	110 (2.1)
Cyprus	476 (1.8)	82 (1.7)	479 (2.1)	77 (2.2)	474 (2.7)	85 (1.9)
Czech Republic	520 (4.2)	79 (2.4)	512 (4.0)	78 (2.6)	528 (5.8)	80 (2.9)
England	496 (4.1)	83 (2.2)	487 (5.4)	79 (3.5)	505 (5.0)	86 (2.8)
Finland	520 (2.7)	65 (1.3)	519 (3.0)	63 (1.7)	522 (3.5)	68 (1.7)
Hong Kong, SAR	582 (4.3)	73 (3.0)	583 (4.7)	69 (2.8)	581 (5.9)	77 (4.4)
Hungary	532 (3.7)	85 (2.0)	529 (4.0)	82 (2.3)	535 (4.3)	88 (2.6)
Indonesia	403 (4.9)	101 (2.9)	401 (5.4)	102 (3.4)	405 (5.0)	101 (3.1)
Iran, Islamic Rep.	422 (3.4)	83 (2.3)	408 (4.2)	81 (2.5)	432 (4.8)	83 (2.5)
Israel	466 (3.9)	96 (2.6)	459 (4.2)	90 (2.4)	474 (4.8)	100 (3.8)
Italy	479 (3.8)	87 (2.3)	475 (4.5)	85 (2.8)	484 (4.3)	88 (2.8)
Japan	579 (1.7)	80 (1.1)	575 (2.4)	76 (2.1)	582 (2.3)	82 (1.3)
Jordan	428 (3.6)	103 (1.6)	431 (4.7)	96 (2.3)	425 (5.9)	109 (2.2)
Korea, Rep. of	587 (2.0)	79 (1.0)	585 (3.1)	79 (1.3)	590 (2.2)	80 (1.6)
Latvia (LSS)	505 (3.4)	78 (2.0)	502 (3.8)	75 (2.6)	508 (4.4)	81 (2.4)
Lithuania	482 (4.3)	78 (2.6)	480 (4.7)	76 (3.2)	483 (4.8)	80 (3.2)
Macedonia, Rep. of	447 (4.2)	93 (2.5)	446 (5.3)	92 (3.0)	447 (4.3)	94 (2.8)
Malaysia	519 (4.4)	81 (2.0)	521 (4.7)	79 (2.2)	517 (6.0)	83 (2.6)
Moldova	469 (3.9)	85 (2.1)	468 (4.1)	83 (2.6)	471 (4.7)	87 (2.6)
Morocco	337 (2.6)	91 (2.0)	326 (5.3)	90 (3.5)	344 (4.1)	91 (2.0)
Netherlands	540 (7.1)	73 (4.2)	538 (7.6)	73 (4.4)	542 (7.0)	74 (4.3)
New Zealand	491 (5.2)	89 (2.3)	495 (5.5)	87 (2.9)	487 (7.6)	91 (3.0)
Philippines	345 (6.0)	97 (2.8)	352 (6.9)	96 (4.1)	337 (6.5)	98 (2.8)
Romania	472 (5.8)	93 (3.5)	475 (6.3)	90 (3.8)	470 (6.2)	96 (3.8)
Russian Federation	526 (5.9)	86 (3.0)	526 (6.0)	83 (3.0)	526 (6.4)	90 (3.8)
Singapore	604 (6.3)	79 (2.9)	603 (6.1)	76 (3.0)	606 (7.5)	82 (3.3)
Slovak Republic	534 (4.0)	75 (1.6)	532 (4.2)	72 (1.9)	536 (4.5)	79 (2.3)
Slovenia	530 (2.8)	83 (2.0)	529 (3.0)	79 (1.9)	531 (3.6)	86 (2.8)
South Africa	275 (6.8)	109 (4.7)	267 (7.5)	110 (5.1)	283 (7.3)	108 (4.7)
Thailand	467 (5.1)	85 (2.5)	469 (5.7)	84 (2.8)	465 (5.5)	86 (2.9)
Tunisia	448 (2.4)	64 (0.9)	436 (2.4)	64 (1.2)	460 (2.9)	61 (1.3)
Turkey	429 (4.3)	86 (2.0)	428 (4.7)	83 (2.1)	429 (4.4)	87 (2.4)
United States	502 (4.0)	88 (2.4)	498 (3.9)	84 (2.1)	505 (4.8)	91 (3.0)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

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