

APPENDIX D

Percentiles and
Standard Deviations of
Science Achievement

D



Exhibit D.1 Percentiles of Achievement in Science

	5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile
Australia	391 (5.9)	485 (7.8)	544 (4.4)	601 (5.6)	675 (3.8)
Belgium (Flemish)	415 (10.9)	490 (4.5)	539 (3.4)	583 (3.3)	642 (6.2)
Bulgaria	356 (9.9)	459 (5.4)	521 (4.5)	581 (7.4)	663 (9.8)
Canada	403 (4.9)	482 (3.2)	534 (2.5)	586 (2.5)	657 (3.6)
Chile	272 (5.8)	363 (3.6)	423 (3.3)	480 (6.1)	561 (7.8)
Chinese Taipei	414 (7.0)	514 (4.2)	574 (5.6)	630 (4.2)	704 (4.8)
Cyprus	315 (4.4)	407 (3.4)	464 (2.7)	518 (2.8)	593 (5.4)
Czech Republic	410 (6.8)	485 (5.4)	539 (4.5)	593 (7.2)	672 (4.0)
England	388 (4.5)	479 (6.8)	540 (6.2)	598 (5.8)	686 (8.4)
Finland	407 (8.3)	485 (3.7)	536 (3.8)	587 (2.6)	662 (8.6)
Hong Kong, SAR	410 (9.3)	488 (5.0)	533 (4.1)	576 (4.6)	637 (4.5)
Hungary	411 (10.1)	499 (4.7)	556 (3.5)	609 (4.1)	686 (4.1)
Indonesia	291 (11.6)	383 (4.4)	439 (4.5)	492 (4.0)	568 (6.7)
Iran, Islamic Rep.	307 (8.6)	392 (4.3)	449 (3.9)	505 (6.2)	584 (4.9)
Israel	282 (9.6)	400 (7.6)	476 (4.5)	543 (3.7)	627 (4.6)
Italy	344 (5.6)	436 (4.8)	496 (5.1)	554 (4.4)	631 (4.3)
Japan	421 (5.2)	501 (1.8)	553 (2.3)	602 (3.2)	667 (3.8)
Jordan	276 (10.6)	380 (3.5)	454 (3.9)	524 (4.8)	611 (4.6)
Korea, Rep. of	406 (4.1)	493 (2.8)	550 (3.6)	607 (3.9)	684 (4.7)
Latvia (LSS)	371 (12.6)	452 (4.5)	504 (4.2)	555 (5.6)	627 (7.7)
Lithuania	352 (9.6)	434 (5.9)	490 (4.2)	543 (3.5)	622 (6.5)
Macedonia, Rep. of	289 (8.2)	394 (8.0)	464 (3.8)	527 (5.3)	607 (5.8)
Malaysia	356 (7.7)	440 (4.7)	493 (4.5)	547 (4.3)	626 (4.8)
Moldova	299 (7.1)	396 (4.2)	462 (4.0)	525 (4.8)	611 (3.2)
Morocco	147 (8.5)	256 (5.6)	326 (5.8)	395 (3.7)	483 (5.1)
Netherlands	411 (14.5)	500 (9.0)	551 (5.7)	595 (5.3)	662 (9.9)
New Zealand	348 (11.2)	451 (5.7)	515 (6.7)	574 (4.4)	652 (9.3)
Philippines	144 (9.2)	261 (7.2)	347 (8.1)	431 (10.3)	539 (7.7)
Romania	306 (8.3)	409 (9.1)	476 (7.4)	539 (8.2)	624 (5.2)
Russian Federation	374 (5.9)	468 (8.0)	529 (5.6)	591 (7.5)	683 (11.8)
Singapore	395 (15.2)	507 (9.8)	574 (8.9)	635 (8.0)	718 (9.3)
Slovak Republic	406 (4.6)	485 (4.5)	537 (3.0)	586 (5.5)	659 (8.8)
Slovenia	392 (5.9)	477 (3.3)	534 (4.4)	590 (2.6)	670 (6.1)
South Africa	53 (4.4)	149 (5.1)	223 (6.2)	316 (12.9)	504 (12.1)
Thailand	362 (4.7)	435 (2.9)	483 (4.8)	532 (6.3)	602 (6.6)
Tunisia	318 (5.3)	385 (4.5)	431 (3.1)	474 (3.2)	538 (6.3)
Turkey	302 (8.1)	380 (5.6)	434 (5.0)	487 (4.4)	562 (4.6)
United States	349 (5.5)	450 (5.4)	520 (5.3)	583 (4.6)	667 (3.4)

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

() Standard errors appear in parentheses.

Exhibit D.2 Standard Deviations of Achievement in Science

TIMSS 1999
8th grade
Science

	Overall		Girls		Boys	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Australia	540 (4.4)	87 (2.1)	532 (5.1)	82 (2.6)	549 (6.0)	92 (2.7)
Belgium (Flemish)	535 (3.1)	69 (2.9)	526 (4.6)	67 (3.1)	544 (7.2)	71 (4.7)
Bulgaria	518 (5.4)	93 (3.3)	511 (5.8)	89 (3.6)	525 (6.5)	97 (3.6)
Canada	533 (2.1)	78 (1.5)	526 (3.2)	76 (2.2)	540 (2.4)	79 (1.6)
Chile	420 (3.7)	88 (2.8)	409 (4.3)	84 (3.0)	432 (5.1)	90 (2.9)
Chinese Taipei	569 (4.4)	89 (2.2)	561 (3.9)	83 (2.2)	578 (5.7)	94 (2.7)
Cyprus	460 (2.4)	84 (1.5)	455 (3.1)	78 (2.2)	465 (3.0)	89 (2.5)
Czech Republic	539 (4.2)	80 (2.0)	523 (4.8)	77 (2.5)	557 (4.9)	80 (2.7)
England	538 (4.8)	91 (3.0)	522 (6.2)	87 (4.0)	554 (5.3)	91 (3.4)
Finland	535 (3.5)	78 (2.4)	530 (4.0)	73 (2.4)	540 (4.5)	83 (3.6)
Hong Kong, SAR	530 (3.7)	70 (3.2)	522 (4.4)	64 (3.5)	537 (5.1)	74 (4.3)
Hungary	552 (3.7)	84 (2.4)	540 (4.0)	80 (2.2)	565 (4.5)	86 (3.8)
Indonesia	435 (4.5)	84 (3.3)	427 (6.5)	84 (3.6)	444 (4.8)	84 (3.0)
Iran, Islamic Rep.	448 (3.8)	84 (2.6)	430 (5.7)	81 (2.9)	461 (4.4)	84 (2.6)
Israel	468 (4.9)	105 (3.4)	461 (6.0)	99 (3.2)	476 (5.5)	110 (3.7)
Italy	493 (3.9)	87 (2.0)	484 (4.1)	84 (2.5)	503 (5.6)	90 (2.4)
Japan	550 (2.2)	76 (1.8)	543 (2.8)	72 (2.1)	556 (3.6)	79 (2.3)
Jordan	450 (3.8)	103 (2.9)	460 (5.0)	96 (2.6)	442 (5.9)	107 (3.8)
Korea, Rep. of	549 (2.6)	85 (1.6)	538 (4.0)	84 (2.1)	559 (3.2)	85 (1.4)
Latvia (LSS)	503 (4.8)	78 (2.2)	495 (5.6)	75 (2.1)	510 (4.8)	81 (3.0)
Lithuania	488 (4.1)	83 (2.9)	478 (4.4)	79 (3.7)	499 (5.0)	86 (3.0)
Macedonia, Rep. of	458 (5.2)	97 (2.8)	458 (6.0)	95 (3.2)	458 (5.4)	99 (3.2)
Malaysia	492 (4.4)	82 (2.6)	488 (5.5)	81 (2.8)	498 (5.8)	83 (3.2)
Moldova	459 (4.0)	95 (2.1)	454 (4.4)	93 (2.2)	465 (5.4)	97 (3.5)
Morocco	323 (4.3)	102 (1.9)	312 (5.9)	102 (2.7)	330 (5.9)	102 (2.4)
Netherlands	545 (6.9)	77 (4.1)	536 (7.1)	74 (3.3)	554 (7.3)	78 (5.4)
New Zealand	510 (4.9)	93 (3.1)	506 (5.4)	90 (3.2)	513 (7.0)	96 (3.7)
Philippines	345 (7.5)	121 (3.3)	351 (8.2)	118 (3.5)	339 (8.9)	123 (4.3)
Romania	472 (5.8)	97 (2.7)	468 (6.4)	97 (3.0)	475 (6.5)	98 (3.3)
Russian Federation	529 (6.4)	93 (2.7)	519 (7.1)	91 (3.4)	540 (6.2)	95 (2.7)
Singapore	568 (8.0)	97 (3.9)	557 (7.9)	93 (4.3)	578 (9.7)	100 (4.4)
Slovak Republic	535 (3.3)	78 (2.0)	525 (3.4)	74 (2.5)	546 (4.5)	80 (2.2)
Slovenia	533 (3.2)	84 (2.0)	527 (3.7)	80 (1.4)	540 (3.7)	88 (3.7)
South Africa	243 (7.8)	132 (5.5)	234 (9.2)	133 (6.1)	253 (7.7)	131 (6.0)
Thailand	482 (4.0)	73 (2.4)	481 (4.6)	72 (2.5)	484 (4.4)	75 (2.9)
Tunisia	430 (3.4)	67 (1.3)	417 (3.3)	65 (1.5)	442 (4.3)	67 (1.9)
Turkey	433 (4.3)	80 (2.5)	431 (4.8)	76 (2.8)	434 (4.3)	82 (2.7)
United States	515 (4.6)	97 (2.0)	505 (4.6)	92 (2.0)	524 (5.5)	102 (2.6)

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

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