

Exhibit 3.19: Average Achievement in Mathematics Cognitive Domains by Gender

Country	Knowing (64 Items)		Applying (96 Items)		Reasoning (46 Items)	
	Girls	Boys	Girls	Boys	Girls	Boys
Australia	509 (3.7)	513 (5.8)	519 (3.6)	524 (5.6)	512 (4.0)	517 (5.7)
Bahrain	484 (2.8) ▲	459 (2.2)	489 (2.7) ▲	469 (2.2)	501 (2.9) ▲	478 (2.5)
^ψ Chile	428 (3.8)	439 (4.1) ▲	433 (3.9)	442 (3.9)	447 (3.9)	454 (4.4)
Chinese Taipei	619 (3.4)	613 (3.7)	611 (3.0)	609 (3.2)	616 (3.0)	616 (3.2)
Cyprus	510 (3.5)	507 (2.9)	497 (2.3)	495 (2.3)	509 (3.4) ▲	501 (2.5)
^{2 ψ} Egypt	426 (5.8) ▲	404 (8.9)	411 (5.6)	399 (7.7)	421 (6.0) ▲	399 (8.6)
England	507 (6.1)	514 (7.3)	519 (5.7)	517 (7.2)	512 (6.1)	512 (7.8)
Finland	506 (2.8)	504 (3.0)	513 (2.9)	508 (3.3)	509 (3.2)	504 (3.5)
France	470 (2.7)	476 (3.6)	480 (2.7)	490 (3.6) ▲	487 (2.5)	491 (3.3)
¹ Georgia	- -	- -	- -	- -	- -	- -
[†] Hong Kong SAR	584 (5.0)	577 (5.3)	580 (5.1)	572 (5.4)	584 (5.7)	580 (5.8)
Hungary	509 (3.5)	523 (3.8) ▲	509 (3.4)	524 (3.6) ▲	504 (3.5)	521 (3.6) ▲
Iran, Islamic Rep. of	452 (5.7) ▲	431 (6.5)	446 (4.7)	440 (5.1)	466 (5.2) ▲	450 (6.0)
Ireland	533 (3.4)	528 (3.6)	527 (2.9)	526 (3.6)	507 (3.5)	509 (4.3)
³ Israel	511 (5.3)	521 (5.6) ▲	513 (4.2)	525 (5.2) ▲	520 (4.6)	530 (6.4)
Italy	487 (2.9)	497 (3.9) ▲	490 (2.9)	504 (3.0) ▲	500 (4.4)	510 (4.1) ▲
Japan	589 (3.6)	589 (3.5)	594 (3.0)	598 (3.2)	598 (3.3)	600 (3.6)
^ψ Jordan	428 (4.5) ▲	400 (7.6)	425 (3.7) ▲	406 (6.1)	446 (4.0) ▲	418 (6.8)
² Kazakhstan	492 (4.4)	485 (4.3)	488 (3.6)	485 (3.7)	490 (4.1)	484 (4.1)
Korea, Rep. of	612 (4.2)	616 (3.5)	602 (3.5)	606 (2.9)	606 (3.3)	612 (3.7)
^ψ Kuwait	- -	- -	- -	- -	- -	- -
Lebanon	453 (3.7)	458 (3.1)	407 (4.5)	417 (3.6) ▲	408 (4.1)	406 (4.8)
Lithuania	518 (2.9)	519 (3.8)	523 (3.3)	525 (3.6)	513 (3.9)	514 (4.2)
Malaysia	457 (4.2) ▲	446 (4.8)	468 (3.1) ▲	459 (4.2)	462 (3.7)	461 (3.7)
^ψ Morocco	382 (2.9)	382 (3.5)	384 (2.5)	394 (2.9) ▲	381 (3.6)	382 (3.1)
[†] New Zealand	462 (3.7)	473 (5.2)	483 (3.5)	489 (4.6)	483 (3.4)	489 (5.0)
[†] Norway (9)	500 (2.8)	499 (2.9)	504 (2.8)	503 (3.4)	496 (3.2)	497 (3.3)
^ψ Oman	432 (3.5) ▲	382 (4.8)	427 (3.1) ▲	392 (3.8)	436 (3.4) ▲	390 (4.2)
Portugal	493 (3.7)	504 (4.3) ▲	492 (3.6)	501 (4.3) ▲	501 (3.8)	514 (3.8) ▲
^ψ Qatar	444 (5.5)	442 (6.1)	442 (5.4)	433 (5.7)	453 (4.8)	442 (5.1)
Romania	490 (5.5) ▲	474 (6.2)	482 (4.6) ▲	468 (4.6)	490 (5.2) ▲	470 (4.8)
² Russian Federation	549 (5.6)	550 (5.6)	538 (4.8)	547 (4.8) ▲	533 (5.4)	540 (5.1)
^{2 ψ} Saudi Arabia	- -	- -	- -	- -	- -	- -
² Singapore	618 (5.0)	611 (4.8)	616 (4.4)	613 (4.2)	622 (5.0)	619 (5.1)
[✕] South Africa (9)	- -	- -	- -	- -	- -	- -
² Sweden	497 (3.6)	495 (2.9)	501 (3.3)	501 (3.1)	516 (3.7)	511 (3.3)
Turkey	503 (5.2) ▲	485 (6.7)	494 (4.4)	488 (5.4)	511 (4.6) ▲	497 (5.4)
United Arab Emirates	483 (3.6)	474 (3.5)	468 (3.4)	464 (3.4)	482 (3.4)	476 (3.4)
[†] United States	525 (4.4)	519 (6.6)	517 (4.1)	513 (6.3)	508 (3.9)	507 (5.8)
International Average	499 (0.7) ▲	494 (0.8)	497 (0.6)	496 (0.8)	501 (0.7) ▲	497 (0.8)
Benchmarking Participants						
Ontario, Canada	518 (4.1)	518 (5.0)	529 (4.5)	532 (4.9)	538 (4.9)	543 (4.9)
[‡] Quebec, Canada	543 (4.3)	548 (4.2)	543 (4.6)	546 (4.5)	533 (4.5)	543 (4.3) ▲
Moscow City, Russian Fed.	582 (4.3)	596 (5.0) ▲	564 (4.4)	583 (5.0) ▲	558 (4.2)	576 (5.2) ▲
^ψ Gauteng, RSA (9)	417 (4.1) ▲	405 (3.9)	424 (3.6)	420 (3.7)	429 (3.7)	424 (3.7)
^ψ Western Cape, RSA (9)	429 (6.3)	437 (7.2)	436 (4.8)	449 (5.1) ▲	439 (5.2)	451 (5.9) ▲
^ψ Abu Dhabi, UAE	448 (5.8)	434 (4.4)	433 (5.5)	424 (4.4)	447 (5.2)	436 (4.2)
² Dubai, UAE	537 (5.0)	543 (6.3)	527 (5.0)	538 (6.1)	537 (4.9)	546 (5.9)

▲ Average significantly higher than other gender

Numbers of items are based on the TIMSS 2019 eighth grade mathematics items included in scaling.

^ψ Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 15% but does not exceed 25%.[✕] Reservations about reliability because the percentage of students with achievement too low for estimation exceeds 25%.

See Appendix B.7 for target population coverage notes 1, 2, and 3. See Appendix B.10 for sampling guidelines and sampling participation notes †, ‡, and ≡.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available because average achievement could not be accurately estimated.