

Exhibit 3.16: Average Achievement in Mathematics Content Domains by Gender

Country	Number (63 Items)		Algebra (61 Items)		Geometry (43 Items)		Data and Probability (39 Items)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Australia	515 (3.7)	528 (5.7) ▲	502 (4.1)	501 (5.9)	510 (3.9)	517 (5.8)	532 (3.8)	534 (5.7)
Bahrain	482 (3.1) ▲	464 (2.9)	497 (3.0) ▲	473 (2.8)	503 (3.2) ▲	484 (2.7)	482 (3.1) ▲	449 (3.0)
ψ Chile	435 (4.2)	448 (3.9) ▲	436 (3.8)	441 (4.3)	431 (5.5)	438 (5.0)	426 (4.4)	442 (4.8) ▲
Chinese Taipei	612 (3.3)	614 (3.5)	623 (3.0) ▲	613 (3.4)	623 (3.2)	623 (3.7)	593 (3.7)	594 (3.4)
Cyprus	495 (3.1)	504 (3.1)	523 (3.7) ▲	507 (2.7)	494 (4.3)	486 (2.8)	494 (3.9)	493 (3.3)
² ψ Egypt	419 (5.7)	407 (8.0)	422 (6.3) ▲	401 (8.7)	422 (5.4)	411 (8.2)	390 (5.8) ▲	368 (8.2)
England	513 (5.6)	526 (7.4)	507 (6.5)	500 (7.8)	510 (5.8)	507 (7.2)	523 (6.6)	523 (8.3)
Finland	512 (2.8)	517 (3.1)	495 (3.2) ▲	483 (3.6)	517 (3.7) ▲	504 (3.8)	517 (3.6)	511 (4.4)
France	468 (2.7)	485 (3.3) ▲	468 (3.3)	468 (3.0)	490 (3.4)	496 (3.7)	490 (2.9)	500 (3.5) ▲
¹ Georgia	459 (4.5)	473 (6.1) ▲	472 (5.2)	474 (5.5)	447 (4.6)	450 (5.7)	424 (5.7)	435 (6.2)
† Hong Kong SAR	570 (5.0)	569 (5.5)	588 (4.8)	580 (5.3)	602 (5.6)	591 (6.0)	571 (6.4) ▲	555 (7.0)
Hungary	506 (3.8)	525 (3.9) ▲	506 (3.4)	512 (3.8)	514 (3.8)	529 (3.8) ▲	511 (3.4)	531 (4.0) ▲
Iran, Islamic Rep. of	444 (5.5)	440 (6.2)	465 (5.1) ▲	437 (5.8)	450 (5.5) ▲	434 (6.3)	438 (5.1)	433 (6.6)
Ireland	538 (3.4)	544 (4.0)	510 (3.1) ▲	501 (3.7)	504 (3.5)	508 (3.6)	541 (3.6)	540 (4.6)
³ Israel	511 (4.3)	527 (5.2) ▲	526 (5.0)	530 (6.5)	500 (5.1)	513 (5.9) ▲	503 (4.9)	520 (5.9) ▲
Italy	485 (2.7)	505 (3.0) ▲	488 (2.9)	494 (3.6)	506 (4.0)	513 (4.7)	487 (4.0)	501 (4.5) ▲
Japan	573 (3.7)	583 (4.0) ▲	605 (2.9)	600 (4.1)	609 (3.4)	611 (4.0)	592 (2.7)	597 (3.0)
ψ Jordan	416 (4.0) ▲	401 (6.8)	460 (4.2) ▲	425 (7.1)	425 (5.3) ▲	402 (6.6)	408 (4.0) ▲	385 (6.3)
² Kazakhstan	483 (4.2)	481 (3.8)	508 (4.2) ▲	499 (4.2)	489 (4.9)	483 (4.1)	462 (4.1)	463 (4.0)
Korea, Rep. of	602 (3.3)	608 (3.2)	611 (4.2)	608 (4.0)	613 (3.9)	621 (3.3)	594 (3.5)	601 (3.0)
ψ Kuwait	-	-	-	-	-	-	-	-
Lebanon	427 (3.2)	436 (3.2) ▲	453 (3.7)	451 (3.6)	420 (3.7)	424 (3.7)	378 (4.5)	388 (4.1) ▲
Lithuania	512 (3.0)	517 (3.7)	520 (3.2)	516 (3.5)	530 (3.8)	529 (4.0)	518 (3.3)	526 (3.9) ▲
Malaysia	460 (3.0)	455 (4.0)	461 (3.0) ▲	451 (4.5)	470 (3.6)	462 (4.8)	464 (3.7) ▲	449 (4.6)
ψ Morocco	374 (2.8)	381 (3.1) ▲	373 (3.3)	367 (4.5)	407 (2.6)	419 (2.8) ▲	370 (3.7)	375 (2.9)
† New Zealand	477 (3.8)	489 (5.1) ▲	464 (4.1)	464 (5.2)	474 (4.1)	479 (5.1)	492 (3.9)	499 (5.5)
† Norway (9)	503 (2.9)	512 (3.1) ▲	481 (3.5)	474 (3.6)	505 (2.7)	499 (3.2)	518 (3.4)	518 (3.6)
ψ Oman	411 (3.3) ▲	375 (4.7)	452 (3.3) ▲	403 (4.8)	435 (3.9) ▲	402 (5.1)	418 (3.4) ▲	370 (4.5)
Portugal	483 (3.6)	502 (4.2) ▲	500 (3.8)	498 (4.5)	506 (3.6)	512 (4.2)	487 (3.3)	508 (3.9) ▲
ψ Qatar	442 (5.1)	440 (5.4)	462 (4.9) ▲	446 (5.4)	440 (5.7)	430 (5.7)	425 (5.9)	422 (6.0)
Romania	484 (4.7) ▲	472 (5.0)	503 (5.2) ▲	477 (5.0)	480 (5.4) ▲	464 (5.5)	464 (5.0) ▲	451 (4.8)
² Russian Federation	535 (5.0)	547 (5.1) ▲	563 (5.4)	557 (5.3)	538 (5.5)	543 (5.7)	509 (5.2)	525 (5.2) ▲
² ψ Saudi Arabia	-	-	-	-	-	-	-	-
² Singapore	611 (4.5)	611 (4.8)	623 (5.1)	615 (5.3)	620 (4.7)	618 (4.4)	623 (5.4)	618 (5.3)
✱ South Africa (9)	-	-	-	-	-	-	-	-
² Sweden	500 (2.8)	504 (3.2)	499 (3.7)	492 (3.2)	500 (4.0)	491 (3.6)	514 (4.8)	512 (4.0)
Turkey	496 (4.7)	490 (5.8)	503 (5.0) ▲	482 (6.3)	496 (4.6) ▲	483 (5.7)	506 (4.7)	498 (5.8)
United Arab Emirates	473 (3.4)	475 (3.3)	493 (3.6) ▲	480 (3.5)	465 (3.7)	459 (3.8)	455 (3.8)	447 (3.6)
† United States	518 (3.7)	522 (5.7)	528 (4.5) ▲	512 (6.8)	500 (4.1)	499 (6.1)	510 (4.4)	509 (7.0)
International Average	493 (0.7)	497 (0.8) ▲	503 (0.7) ▲	493 (0.8)	499 (0.7) ▲	495 (0.8)	490 (0.7)	489 (0.8)
Benchmarking Participants								
Ontario, Canada	527 (4.3)	533 (4.9)	515 (4.7)	515 (4.7)	535 (5.0)	537 (5.8)	540 (5.2)	543 (6.0)
‡ Quebec, Canada	540 (4.4)	548 (4.7)	529 (4.9)	532 (4.5)	548 (5.0)	550 (4.8)	553 (4.7)	556 (5.7)
Moscow City, Russian Fed.	562 (4.8)	585 (5.1) ▲	588 (4.3)	597 (4.8) ▲	558 (5.3)	572 (5.2) ▲	551 (4.7)	577 (4.8) ▲
ψ Gauteng, RSA (9)	422 (3.6)	419 (3.6)	437 (4.3) ▲	424 (3.7)	407 (4.0)	406 (3.9)	408 (3.9)	403 (3.7)
ψ Western Cape, RSA (9)	438 (6.1)	453 (6.0) ▲	449 (5.7)	454 (5.9)	420 (6.0)	435 (6.1) ▲	421 (5.7)	431 (6.0)
ψ Abu Dhabi, UAE	441 (5.3)	438 (4.6)	457 (5.6) ▲	440 (4.6)	426 (5.8)	414 (5.1)	418 (5.9)	404 (4.9)
² Dubai, UAE	529 (4.9)	544 (5.9)	546 (5.2)	548 (6.0)	522 (5.3)	532 (6.4)	521 (5.4)	530 (6.5)

▲ 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.