

Exhibit 2.1.14: Relative Achievement in Science Cognitive Domains

Country	Overall Science Average Scale Score	Knowing (69 Items)		Applying (72 Items)		Reasoning (32 Items)	
		Average Scale Score	Difference from Overall Score	Average Scale Score	Difference from Overall Score	Average Scale Score	Difference from Overall Score
³ Singapore	607 (2.8)	610 (2.9)	3 (1.4)	595 (2.7)	-13 (1.4) ▼	621 (2.8)	14 (1.5) ▲
Korea, Rep. of	583 (2.5)	584 (2.9)	1 (1.6)	584 (2.5)	0 (1.2)	583 (2.4)	0 (1.2)
Chinese Taipei	573 (1.7)	580 (2.0)	7 (1.1) ▲	569 (2.5)	-4 (1.5)	567 (2.0)	-6 (1.2) ▼
³ Türkiye (5)	570 (3.4)	572 (4.1)	2 (2.5)	567 (4.0)	-3 (2.5)	574 (3.9)	4 (2.4)
² England	556 (2.6)	555 (3.1)	-1 (2.1)	558 (3.0)	1 (1.9)	556 (2.8)	-1 (2.0)
Japan	555 (2.4)	538 (3.3)	-17 (2.2) ▼	560 (2.9)	5 (1.2) ▲	568 (2.5)	13 (1.2) ▲
² Poland	550 (2.2)	548 (2.0)	-2 (1.2)	553 (2.3)	3 (1.2)	546 (2.5)	-4 (2.1)
Australia	550 (2.3)	552 (2.8)	3 (2.5)	548 (2.4)	-1 (1.5)	548 (3.6)	-2 (2.3)
[†] Hong Kong SAR	545 (3.8)	548 (4.9)	2 (2.5)	543 (3.8)	-3 (1.6)	542 (4.6)	-3 (2.4)
Finland	542 (2.9)	541 (2.9)	-1 (1.2)	545 (2.9)	3 (0.7) ▲	540 (3.0)	-2 (1.5)
² Lithuania	537 (2.9)	537 (2.7)	0 (1.3)	533 (2.7)	-4 (1.4) ▼	543 (2.5)	6 (2.0) ▲
Macao SAR	536 (1.4)	538 (1.8)	2 (1.4)	534 (1.6)	-2 (0.7) ▼	534 (1.5)	-2 (1.3)
² Sweden	533 (3.2)	523 (3.8)	-10 (1.6) ▼	532 (3.3)	0 (1.3)	546 (3.5)	14 (1.3) ▲
^{2†} United States	532 (2.8)	535 (3.3)	2 (1.3)	530 (3.0)	-2 (0.9)	530 (3.0)	-3 (0.7) ▼
Ireland	532 (3.2)	534 (3.1)	2 (1.6)	530 (3.7)	-2 (2.1)	531 (3.3)	-1 (1.1)
² Norway (5)	530 (2.6)	529 (2.5)	-2 (1.0)	530 (2.4)	0 (1.2)	534 (3.1)	3 (2.2)
Bulgaria	530 (4.8)	535 (5.0)	5 (1.9) ▲	528 (5.0)	-2 (1.6)	523 (5.3)	-6 (2.1) ▼
²⁼ Romania	526 (4.8)	523 (4.7)	-3 (1.9)	521 (4.9)	-5 (1.7) ▼	540 (4.9)	14 (1.3) ▲
² Czech Republic	526 (2.3)	524 (2.6)	-2 (1.2)	523 (2.3)	-3 (1.3)	529 (2.9)	3 (1.6)
Slovenia	526 (2.3)	524 (2.2)	-2 (2.0)	534 (2.6)	8 (1.6) ▲	512 (2.6)	-13 (2.2) ▼
Latvia	526 (3.0)	522 (3.0)	-4 (1.9)	525 (3.4)	0 (1.3)	529 (3.7)	4 (1.8)
Hungary	524 (3.2)	522 (3.7)	-3 (1.5)	524 (3.6)	-1 (1.3)	526 (3.6)	2 (1.6)
[†] Denmark	522 (2.6)	521 (2.7)	-2 (2.1)	520 (3.3)	-2 (1.6)	528 (2.7)	6 (1.7) ▲
¹³ Canada	521 (2.0)	527 (2.3)	6 (1.4) ▲	520 (2.5)	-1 (1.1)	515 (2.9)	-6 (1.7) ▼
Slovak Republic	521 (3.3)	524 (3.4)	4 (1.7)	520 (3.6)	-1 (1.2)	517 (4.6)	-4 (2.9)
^{2†} New Zealand	517 (2.8)	520 (2.2)	3 (1.5)	514 (2.7)	-3 (1.7)	514 (3.1)	-3 (2.2)
[†] Netherlands	517 (2.9)	518 (3.1)	1 (2.2)	513 (2.5)	-4 (1.8)	520 (3.0)	3 (3.1)
Germany	515 (2.8)	515 (2.5)	-1 (1.3)	512 (2.7)	-4 (1.3) ▼	516 (2.9)	0 (2.6)
Portugal	511 (2.3)	506 (2.7)	-5 (1.4) ▼	511 (3.5)	0 (2.3)	512 (2.8)	1 (1.6)
² Italy	511 (2.5)	511 (2.9)	1 (1.3)	508 (2.8)	-2 (1.9)	506 (2.7)	-4 (1.4) ▼
² Serbia	510 (3.2)	501 (3.0)	-8 (1.7) ▼	514 (3.5)	4 (1.8)	514 (3.8)	4 (1.5) ▲
² Spain	504 (2.1)	508 (2.3)	4 (0.6) ▲	502 (2.0)	-3 (1.1)	498 (2.5)	-6 (1.6) ▼
United Arab Emirates	495 (1.8)	507 (1.6)	12 (0.7) ▲	492 (1.7)	-3 (0.5) ▼	481 (1.5)	-14 (0.6) ▼
²⁼ Albania	491 (4.5)	489 (4.8)	-2 (1.9)	487 (4.5)	-3 (1.6)	496 (5.3)	6 (2.6)
^{2†} Belgium (Flemish)	488 (2.6)	488 (3.3)	0 (1.8)	485 (2.5)	-4 (1.3) ▼	497 (3.4)	9 (1.8) ▲
² France	488 (3.0)	491 (2.9)	3 (2.0)	487 (3.5)	-1 (1.7)	479 (3.5)	-9 (1.7) ▼
² Cyprus	487 (3.1)	480 (3.6)	-7 (2.0) ▼	493 (3.1)	6 (0.9) ▲	487 (2.9)	0 (1.9)
² Belgium (French)	481 (2.8)	478 (2.8)	-2 (1.6)	480 (3.1)	0 (1.7)	483 (2.5)	2 (2.1)
^{2†} Chile	479 (2.7)	479 (3.2)	0 (1.7)	479 (2.5)	-1 (1.9)	477 (2.9)	-3 (2.4)
Bahrain	475 (3.9)	477 (4.4)	2 (1.6)	475 (3.9)	0 (2.0)	465 (4.1)	-10 (1.3) ▼
Qatar	472 (3.6)	476 (3.7)	4 (1.0) ▲	470 (3.7)	-2 (1.0)	464 (3.7)	-8 (1.3) ▼
² Kazakhstan	467 (3.5)	460 (4.1)	-6 (1.7) ▼	466 (3.7)	-1 (1.5)	475 (3.9)	9 (1.6) ▲
¹ Georgia	465 (3.4)	460 (4.5)	-5 (2.7)	461 (3.6)	-4 (2.1)	470 (3.1)	5 (2.1)
² Montenegro	461 (2.0)	454 (2.9)	-7 (1.9) ▼	463 (2.2)	3 (1.0) ▲	461 (2.9)	0 (1.6)
² Armenia	457 (2.7)	458 (3.2)	1 (1.9)	453 (2.4)	-4 (1.0) ▼	461 (2.4)	4 (1.6)
¹ Bosnia & Herzegovina	448 (3.7)	441 (3.3)	-7 (2.6) ▼	454 (3.8)	5 (2.8)	443 (3.9)	-5 (2.2)
North Macedonia	439 (3.9)	434 (4.3)	-5 (1.3) ▼	440 (3.4)	1 (1.6)	442 (4.8)	4 (2.8)
Oman	433 (4.2)	426 (4.4)	-7 (1.4) ▼	435 (4.4)	2 (1.2)	435 (4.0)	3 (1.4)
Iran, Islamic Rep. of	432 (4.5)	435 (4.6)	3 (1.9)	428 (4.5)	-4 (1.3) ▼	431 (4.2)	-1 (1.9)
³ Saudi Arabia	428 (4.0)	430 (4.7)	3 (1.8)	425 (4.1)	-2 (2.0)	424 (4.3)	-4 (1.4) ▼
² Brazil	425 (3.5)	427 (3.5)	2 (0.9)	420 (3.4)	-5 (0.9) ▼	427 (3.6)	2 (1.1)
Azerbaijan	422 (3.3)	425 (3.0)	4 (1.8)	416 (3.3)	-6 (2.8)	421 (3.5)	-1 (2.0)
Jordan	418 (4.9)	423 (5.4)	5 (1.8) ▲	412 (5.5)	-6 (1.9) ▼	409 (4.9)	-9 (2.3) ▼
Uzbekistan	412 (3.5)	415 (4.3)	3 (1.6)	406 (3.6)	-6 (2.4)	406 (3.2)	-6 (1.6) ▼
² Kosovo	403 (3.6)	399 (3.8)	-4 (2.0)	406 (3.6)	3 (2.1)	397 (3.2)	-6 (2.7)
Morocco	390 (5.3)	386 (5.7)	-4 (2.0)	381 (5.5)	-9 (1.7) ▼	398 (5.0)	7 (2.1) ▲
^ψ Kuwait	373 (5.5)	382 (5.6)	9 (1.6) ▲	356 (5.7)	-17 (1.5) ▼	353 (6.0)	-20 (1.8) ▼
[✕] South Africa (5)	308 (4.7)	--	--	--	--	--	--
Benchmarking Participants							
Dubai, UAE	562 (1.8)	578 (1.7)	15 (1.1) ▲	561 (1.7)	-2 (1.0)	546 (1.8)	-16 (1.3) ▼
³ Ontario, Canada	525 (3.2)	532 (3.4)	6 (1.6) ▲	527 (3.5)	2 (1.4)	518 (4.1)	-7 (2.2) ▼
² Quebec, Canada	508 (2.7)	512 (2.8)	4 (1.4) ▲	502 (3.0)	-5 (1.3) ▼	504 (3.5)	-3 (1.9)
Sharjah, UAE	503 (3.9)	518 (4.1)	15 (1.9) ▲	500 (4.2)	-3 (1.7)	485 (3.6)	-18 (1.0) ▼
Abu Dhabi, UAE	446 (2.6)	454 (2.8)	8 (0.9) ▲	443 (2.4)	-3 (0.8) ▼	437 (2.2)	-9 (1.5) ▼

▲ ▼ Subscale score significantly different from overall score ($p < 0.01$)

Numbers of items are based on the TIMSS 2023 fourth-grade science items included in scaling.

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

See Appendix B.2 for population coverage notes 1, 2, and 3. See Appendix B.5 for sampling guidelines and sampling participation notes †, ‡, and =.

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

✕ Average achievement not reliably measured because the percentage of students with achievement too low for estimation exceeds 25%.

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