

Exhibit 9.12: Weekly Time Students Spend on Assigned Science Homework

Reported by Students

The general/integrated science panel summarizes responses for countries where students are enrolled in science as a single subject. The following panels for biology, chemistry, physics, and earth science summarize responses for countries where students are taught science as separate subjects.

Weekly Time Students Spend on Assigned General/Integrated Science Homework

General/Integrated Science Country	3 Hours or More		More than 45 Minutes but Less than 3 Hours		45 Minutes or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
South Africa (9)	15 (0.7)	345 (5.4)	39 (0.8)	374 (6.2)	47 (1.0)	360 (6.4)
Thailand	11 (0.8)	463 (5.8)	48 (1.0)	465 (4.3)	41 (1.2)	446 (4.8)
Malaysia	11 (0.5)	468 (4.9)	47 (0.9)	486 (3.7)	42 (1.0)	463 (5.4)
Botswana (9)	10 (0.6)	363 (6.1)	33 (1.0)	400 (2.9)	57 (1.1)	404 (3.7)
Singapore	9 (0.5)	606 (3.8)	52 (0.9)	609 (2.6)	39 (1.2)	579 (4.9)
Turkey	9 (0.7)	481 (6.3)	39 (1.1)	500 (4.3)	52 (1.3)	497 (4.5)
Egypt	8 (0.5)	355 (5.7)	24 (0.7)	373 (5.1)	68 (0.9)	384 (4.2)
Iran, Islamic Rep. of	7 (0.5)	455 (6.8)	31 (1.0)	468 (4.7)	62 (1.1)	453 (4.3)
Italy	6 (0.5)	492 (7.1)	37 (1.3)	501 (3.1)	57 (1.3)	500 (2.8)
Chinese Taipei	6 (0.5)	582 (6.2)	36 (1.2)	584 (2.8)	58 (1.4)	559 (2.2)
United Arab Emirates	6 (0.3)	464 (5.0)	26 (0.6)	499 (3.2)	68 (0.7)	474 (2.3)
Ireland	5 (0.5)	510 (6.1)	33 (1.2)	539 (3.0)	61 (1.5)	535 (3.1)
Jordan	5 (0.4)	399 (7.2)	25 (0.9)	427 (4.1)	70 (1.0)	437 (3.4)
Bahrain	5 (0.4)	434 (9.1)	18 (0.8)	469 (4.1)	77 (1.0)	472 (2.5)
Qatar	5 (0.4)	436 (10.6)	26 (0.9)	481 (4.9)	69 (0.9)	455 (3.2)
Canada	4 (0.5)	526 (6.9)	23 (1.5)	535 (3.8)	73 (1.8)	527 (2.2)
United States	4 (0.4)	525 (6.6)	22 (1.1)	540 (3.9)	74 (1.3)	531 (2.8)
Hong Kong SAR	4 (0.4)	533 (7.4)	34 (1.3)	549 (3.4)	62 (1.4)	546 (4.6)
Norway (9)	4 (0.5)	475 (7.4)	32 (1.3)	509 (3.5)	64 (1.5)	513 (3.1)
Israel	4 (0.3)	478 (8.9)	18 (0.9)	497 (5.7)	78 (1.0)	515 (3.9)
Australia	3 (0.4)	518 (7.3)	24 (0.9)	529 (3.9)	73 (1.0)	510 (2.7)
Oman	3 (0.3)	407 (11.0)	15 (0.5)	446 (4.4)	82 (0.6)	462 (2.7)
Chile	3 (0.4)	456 (8.8)	26 (1.3)	452 (4.0)	71 (1.4)	458 (3.4)
Saudi Arabia	3 (0.3)	352 (11.8)	14 (0.7)	390 (9.0)	83 (0.8)	405 (4.5)
New Zealand	3 (0.4)	515 (10.5)	23 (1.3)	534 (4.5)	74 (1.6)	510 (3.0)
Kuwait	2 (0.2)	~ ~	12 (0.8)	419 (13.7)	86 (0.9)	413 (4.9)
England	1 (0.2)	~ ~	26 (1.3)	568 (5.0)	72 (1.4)	529 (4.1)
Japan	1 (0.1)	~ ~	15 (1.4)	560 (3.9)	84 (1.5)	576 (2.0)
Korea, Rep. of	1 (0.2)	~ ~	8 (0.7)	546 (5.4)	91 (0.8)	557 (2.3)
International Avg.	5 (0.1)	466 (1.5)	28 (0.2)	491 (0.9)	67 (0.2)	485 (0.7)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Benchmarking Participants Teaching General/Integrated Science

Buenos Aires, Argentina	7 (0.8)	392 (10.7)	30 (1.4)	398 (5.4)	63 (1.8)	387 (5.2)
Dubai, UAE	6 (0.4)	524 (8.4)	32 (0.8)	543 (3.3)	63 (1.0)	518 (2.1)
Florida, US	5 (1.3)	517 (18.5)	21 (2.2)	511 (9.4)	73 (3.3)	512 (5.9)
Abu Dhabi, UAE	5 (0.4)	439 (12.3)	24 (1.5)	475 (9.9)	71 (1.7)	455 (4.8)
Ontario, Canada	4 (0.6)	520 (9.8)	23 (2.0)	534 (4.3)	72 (2.4)	524 (2.6)
Quebec, Canada	4 (0.7)	537 (8.3)	24 (1.9)	537 (5.3)	72 (2.3)	533 (4.3)
Norway (8)	4 (0.5)	477 (7.8)	31 (1.5)	492 (3.1)	65 (1.7)	491 (2.8)

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

A dash (-) indicates comparable data are not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

Exhibit 9.12: Weekly Time Students Spend on Assigned Science Homework (Continued)

A. How often does your teacher give you homework in <science/biology/chemistry/physics/earth science>?

- 1) Every day
- 2) 3 or 4 times a week
- 3) 1 or 2 times a week
- 4) Less than once a week
- 5) Never

B. When your teacher gives you homework in <science/biology/chemistry/physics/earth science>, about how many minutes do you usually spend on your homework?

- 1) My teacher never gives me homework
- 2) 1-15 minutes
- 3) 16-30 minutes
- 4) 31-60 minutes
- 5) 61-90 minutes
- 6) More than 90 minutes

The weekly time spent on <science> homework was calculated by multiplying how often students were given homework weekly by the minutes they spent on that homework.

The values for Part A were: Every day = 5; 3 or 4 times a week = 3.5; 1 or 2 times a week = 1.5; Less than once a week = 0.5; and Never = 0.

The values for Part B were: My teacher never gives me homework = 0; 1-15 minutes = 8; 16-30 minutes = 23; 31-60 minutes = 45; 61-90 minutes = 75; and More than 90 minutes = 105.

Separate Science Panels

Weekly Time Students Spend on Assigned Biology Homework

Biology	3 Hours or More		More than 45 Minutes but Less than 3 Hours		45 Minutes or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Kazakhstan	22 (1.1)	534 (6.1)	42 (1.0)	537 (5.2)	36 (1.2)	531 (5.0)
Russian Federation	11 (0.8)	534 (8.2)	35 (0.9)	536 (4.3)	54 (1.2)	553 (4.4)
Georgia	8 (0.7)	435 (6.8)	29 (1.2)	457 (4.8)	63 (1.6)	449 (3.3)
Lithuania	5 (0.4)	497 (8.0)	20 (1.0)	508 (3.9)	76 (1.2)	524 (3.0)
Morocco	3 (0.3)	376 (7.3)	20 (0.5)	390 (3.9)	77 (0.7)	401 (2.5)
Lebanon	3 (0.3)	385 (11.4)	16 (0.9)	394 (8.1)	81 (1.0)	405 (5.3)
Malta	3 (0.3)	490 (13.5)	20 (0.9)	529 (5.1)	78 (0.9)	490 (2.7)
Hungary	2 (0.2)	~ ~	14 (0.8)	510 (5.8)	84 (0.9)	533 (3.5)
Sweden	1 (0.2)	~ ~	16 (1.2)	518 (7.1)	83 (1.3)	528 (3.2)
Slovenia	1 (0.2)	~ ~	7 (0.7)	526 (5.8)	92 (0.8)	555 (2.4)
International Avg.	6 (0.2)	465 (3.4)	22 (0.3)	490 (1.8)	72 (0.3)	497 (1.2)

Weekly Time Students Spend on Assigned Chemistry Homework

Chemistry	3 Hours or More		More than 45 Minutes but Less than 3 Hours		45 Minutes or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Kazakhstan	28 (1.3)	536 (6.1)	42 (1.1)	539 (4.8)	30 (1.0)	527 (5.3)
Russian Federation	19 (0.9)	538 (6.2)	45 (1.0)	544 (4.7)	36 (1.3)	550 (4.4)
Georgia	12 (0.8)	438 (5.7)	34 (1.1)	457 (3.9)	54 (1.4)	449 (4.0)
Lithuania	10 (0.8)	498 (5.9)	31 (1.1)	511 (3.8)	59 (1.5)	528 (3.1)
Morocco	4 (0.3)	378 (6.8)	20 (0.6)	389 (3.7)	76 (0.6)	400 (2.6)
Lebanon	3 (0.4)	370 (12.2)	20 (0.9)	399 (7.0)	77 (1.0)	404 (5.4)
Hungary	3 (0.3)	502 (8.4)	17 (1.0)	519 (4.7)	80 (1.2)	532 (3.6)
Slovenia	3 (0.4)	522 (9.0)	14 (1.0)	537 (4.6)	84 (1.2)	556 (2.5)
Malta	2 (0.3)	~ ~	15 (0.8)	567 (4.8)	82 (0.8)	486 (2.7)
Sweden	1 (0.4)	~ ~	16 (1.1)	517 (6.4)	83 (1.4)	529 (3.4)
International Avg.	9 (0.2)	473 (2.8)	25 (0.3)	498 (1.6)	66 (0.4)	496 (1.2)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Exhibit 9.12: Weekly Time Students Spend on Assigned Science Homework (Continued)

Weekly Time Students Spend on Assigned Physics Homework

Physics	3 Hours or More		More than 45 Minutes but Less than 3 Hours		45 Minutes or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Kazakhstan	28 (1.2)	537 (6.5)	41 (1.0)	539 (4.5)	31 (0.9)	526 (5.7)
Russian Federation	18 (1.1)	535 (7.0)	44 (0.7)	545 (4.5)	38 (1.4)	549 (4.0)
Georgia	15 (0.7)	451 (4.5)	36 (1.0)	455 (4.5)	49 (1.3)	444 (3.9)
Lithuania	10 (0.9)	502 (5.7)	29 (1.3)	514 (4.6)	61 (1.8)	526 (3.1)
Slovenia	5 (0.5)	522 (7.4)	20 (1.2)	541 (4.4)	75 (1.5)	558 (2.4)
Morocco	4 (0.2)	374 (6.6)	21 (0.6)	393 (3.5)	75 (0.6)	400 (2.5)
Malta	4 (0.3)	455 (9.1)	27 (0.8)	499 (3.5)	70 (0.9)	485 (2.0)
Lebanon	4 (0.4)	369 (15.3)	20 (1.0)	397 (6.9)	76 (1.1)	405 (5.4)
Hungary	3 (0.3)	492 (8.2)	16 (1.0)	511 (6.0)	81 (1.2)	533 (3.4)
Sweden	1 (0.2)	~ ~	16 (1.1)	516 (6.4)	83 (1.1)	529 (3.3)
International Avg.	9 (0.2)	471 (2.8)	27 (0.3)	491 (1.6)	64 (0.4)	495 (1.2)

Weekly Time Students Spend on Assigned Earth Science Homework

Earth Science	3 Hours or More		More than 45 Minutes but Less than 3 Hours		45 Minutes or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Kazakhstan	22 (1.2)	531 (5.6)	39 (1.0)	538 (5.2)	39 (1.1)	533 (5.1)
Russian Federation	10 (0.6)	532 (7.3)	33 (1.1)	536 (4.7)	57 (1.3)	553 (4.4)
Lithuania	8 (0.6)	516 (6.1)	28 (1.0)	514 (3.6)	64 (1.3)	523 (3.2)
Georgia	8 (0.7)	438 (7.0)	24 (0.9)	450 (4.0)	68 (1.2)	452 (3.7)
Morocco	4 (0.3)	376 (7.6)	20 (0.5)	392 (3.6)	77 (0.6)	401 (2.5)
Hungary	2 (0.3)	~ ~	15 (1.0)	513 (6.1)	83 (1.1)	532 (3.5)
Malta	2 (0.3)	~ ~	9 (0.5)	475 (6.0)	89 (0.6)	482 (1.9)
Slovenia	1 (0.2)	~ ~	6 (0.7)	528 (6.3)	93 (0.8)	554 (2.5)
Lebanon	--	--	--	--	--	--
Sweden	--	--	--	--	--	--
International Avg.	7 (0.2)	479 (3.0)	22 (0.3)	493 (1.8)	71 (0.4)	504 (1.2)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015