

# REFERENCE 1

Students' Backgrounds  
and Attitudes  
Towards Science

# R

# 1



	Have All Three Educational Aids		Do Not Have All Three Educational Aids		Percentage of Students		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Have Dictionary	Have Study Desk/Table for Own Use	Have Computer
Australia	82 (1.1)	548 (4.2)	18 (1.1)	508 (6.3)	99 (0.2)	95 (0.4)	86 (1.0)
Belgium (Flemish)	82 (1.2)	541 (2.7)	18 (1.2)	507 (6.9)	98 (0.7)	96 (0.6)	86 (1.0)
Bulgaria	21 (2.4)	549 (9.7)	79 (2.4)	511 (4.7)	89 (0.9)	87 (1.2)	23 (2.3)
Canada	78 (0.8)	539 (2.2)	22 (0.8)	513 (3.6)	98 (0.2)	91 (0.6)	85 (0.8)
Chile	21 (1.7)	468 (7.9)	79 (1.7)	409 (2.8)	97 (0.4)	78 (0.9)	23 (1.7)
Chinese Taipei	61 (1.1)	588 (4.2)	39 (1.1)	541 (5.5)	98 (0.2)	94 (0.4)	63 (1.0)
Cyprus	56 (0.8)	475 (2.6)	44 (0.8)	444 (3.9)	97 (0.3)	97 (0.3)	58 (0.9)
Czech Republic	43 (1.2)	563 (4.1)	57 (1.2)	522 (4.8)	94 (0.8)	91 (0.7)	47 (1.2)
England	79 (0.9)	550 (4.8)	21 (0.9)	501 (7.3)	98 (0.3)	92 (0.6)	85 (0.8)
Finland	71 (1.2)	544 (3.8)	29 (1.2)	516 (5.1)	89 (0.7)	97 (0.4)	79 (0.9)
Hong Kong, SAR	57 (1.3)	537 (3.8)	43 (1.3)	522 (4.5)	99 (0.1)	75 (0.9)	72 (1.3)
Hungary	48 (1.4)	577 (3.9)	52 (1.4)	530 (4.7)	95 (0.8)	95 (0.5)	50 (1.4)
Indonesia	6 (0.8)	474 (15.9)	94 (0.8)	434 (4.3)	86 (0.9)	84 (1.1)	7 (0.8)
Iran, Islamic Rep.	5 (0.7)	492 (8.4)	95 (0.7)	447 (3.6)	51 (1.5)	47 (2.2)	7 (0.8)
Israel	78 (1.5)	490 (4.2)	22 (1.5)	402 (6.9)	98 (0.3)	97 (0.3)	80 (1.5)
Italy	59 (1.1)	506 (4.5)	41 (1.1)	476 (4.8)	98 (0.3)	93 (0.6)	63 (1.0)
Japan	52 (1.0)	564 (2.8)	48 (1.0)	536 (2.7)	99 (0.1)	97 (0.2)	52 (0.9)
Jordan	16 (0.9)	493 (5.8)	84 (0.9)	448 (4.1)	80 (0.9)	73 (1.1)	23 (1.1)
Korea, Rep. of	65 (0.9)	563 (3.0)	35 (0.9)	523 (3.2)	99 (0.2)	96 (0.2)	67 (0.9)
Latvia (LSS)	14 (1.0)	529 (6.5)	86 (1.0)	499 (5.1)	94 (0.7)	98 (0.3)	15 (1.0)
Lithuania †	15 (1.1)	530 (9.7)	85 (1.1)	481 (4.0)	86 (0.9)	95 (0.5)	16 (1.1)
Macedonia, Rep. of	18 (1.2)	498 (6.4)	82 (1.2)	452 (5.2)	83 (1.2)	87 (0.8)	21 (1.3)
Malaysia	28 (1.2)	533 (6.6)	72 (1.2)	477 (4.2)	99 (0.2)	87 (0.6)	31 (1.3)
Moldova	5 (0.6)	478 (13.0)	95 (0.6)	459 (4.3)	72 (1.3)	79 (0.9)	7 (0.7)
Morocco	6 (0.7)	340 (16.4)	94 (0.7)	326 (3.6)	71 (1.2)	52 (1.1)	9 (0.9)
Netherlands	94 (1.0)	548 (6.7)	6 (1.0)	499 (16.2)	100 (0.2)	99 (0.2)	96 (1.0)
New Zealand	67 (1.3)	532 (4.9)	33 (1.3)	468 (5.4)	97 (0.4)	90 (0.6)	72 (1.2)
Philippines	11 (0.9)	404 (16.1)	89 (0.9)	342 (7.4)	89 (0.7)	74 (1.0)	15 (0.9)
Romania	11 (0.8)	507 (9.7)	89 (0.8)	470 (5.7)	69 (1.6)	76 (1.4)	14 (1.0)
Russian Federation	19 (1.2)	540 (7.6)	81 (1.2)	528 (6.7)	88 (1.3)	92 (0.8)	22 (1.2)
Singapore	75 (1.4)	582 (7.6)	25 (1.4)	524 (9.7)	99 (0.2)	92 (0.5)	80 (1.3)
Slovak Republic	36 (1.3)	555 (5.0)	64 (1.3)	524 (3.4)	96 (0.5)	88 (0.8)	41 (1.3)
Slovenia	61 (1.2)	552 (3.2)	39 (1.2)	507 (4.3)	92 (0.6)	96 (0.3)	66 (1.2)
South Africa	8 (1.0)	423 (20.0)	92 (1.0)	230 (6.2)	75 (1.1)	56 (1.1)	11 (1.1)
Thailand	8 (0.6)	535 (9.4)	92 (0.6)	478 (4.0)	75 (1.2)	63 (1.5)	8 (0.7)
Tunisia	23 (1.3)	438 (4.7)	77 (1.3)	427 (3.6)	87 (1.0)	92 (0.6)	24 (1.3)
Turkey	8 (0.6)	467 (7.7)	92 (0.6)	431 (4.3)	89 (0.7)	69 (1.3)	10 (0.7)
United States	74 (1.3)	535 (3.9)	26 (1.3)	469 (5.8)	97 (0.3)	90 (0.5)	80 (1.2)
<b>International Avg.</b>	<b>41 (0.2)</b>	<b>515 (1.2)</b>	<b>59 (0.2)</b>	<b>471 (0.9)</b>	<b>90 (0.1)</b>	<b>86 (0.1)</b>	<b>45 (0.2)</b>

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

Background data provided by students.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

## Exhibit R1.2 Trends in Educational Aids in the Home

	Have All Three Educational Aids		Have Dictionary		Have Study Desk/ Table for Own Use		Have Computer	
	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference	Percent of Students	1995 - 1999 Difference
Australia	82 (1.1)	16 (1.6) ▲	99 (0.2)	11 (0.8) ▲	95 (0.4)	-2 (0.5) ▼	86 (1.0)	13 (1.5) ▲
Belgium (Flemish)	82 (1.2)	19 (1.8) ▲	98 (0.7)	0 (0.8) ●	96 (0.6)	-1 (0.8) ●	86 (1.0)	19 (1.6) ▲
Canada	78 (0.8)	21 (1.6) ▲	98 (0.2)	2 (0.4) ▲	91 (0.6)	2 (0.8) ●	85 (0.8)	24 (1.6) ▲
Cyprus	56 (0.8)	18 (1.2) ▲	97 (0.3)	0 (0.5) ●	97 (0.3)	1 (0.6) ●	58 (0.9)	19 (1.3) ▲
Czech Republic	43 (1.2)	11 (1.8) ▲	94 (0.8)	-1 (0.9) ●	91 (0.7)	2 (0.9) ●	47 (1.2)	11 (1.7) ▲
England	79 (0.9)	-1 (1.4) ●	98 (0.3)	0 (0.5) ●	92 (0.6)	2 (1.0) ●	85 (0.8)	-4 (1.2) ▼
Hong Kong, SAR	57 (1.3)	24 (2.2) ▲	99 (0.1)	0 (0.2) ●	75 (0.9)	-5 (1.4) ▼	72 (1.3)	33 (2.3) ▲
Hungary	--	--	--	--	95 (0.5)	3 (0.9) ▲	50 (1.4)	13 (1.8) ▲
Iran, Islamic Rep.	5 (0.7)	4 (0.8) ▲	51 (1.5)	-2 (2.1) ●	47 (2.2)	8 (3.0) ●	7 (0.8)	3 (1.0) ▲
Israel †	83 (1.7)	9 (2.7) ▲	99 (0.2)	-1 (0.3) ●	98 (0.2)	0 (0.5) ●	85 (1.8)	9 (2.7) ▲
Italy	58 (1.4)	-1 (2.1) ●	98 (0.4)	-1 (0.4) ●	93 (0.6)	-1 (1.0) ●	62 (1.3)	0 (2.0) ●
Japan	--	--	--	--	--	--	--	--
Korea, Rep. of	65 (0.9)	27 (1.5) ▲	99 (0.2)	0 (0.3) ●	96 (0.2)	1 (0.5) ●	67 (0.9)	27 (1.5) ▲
Latvia (LSS)	14 (1.0)	2 (1.3) ●	94 (0.7)	1 (0.9) ●	98 (0.3)	0 (0.5) ●	15 (1.0)	2 (1.3) ●
Lithuania	--	--	86 (0.9)	-2 (1.4) ●	95 (0.5)	1 (0.8) ●	--	--
Netherlands	94 (1.0)	11 (1.6) ▲	100 (0.2)	0 (0.2) ●	99 (0.2)	0 (0.3) ●	96 (1.0)	11 (1.6) ▲
New Zealand	67 (1.3)	11 (1.9) ▲	97 (0.4)	-2 (0.4) ▼	90 (0.6)	0 (0.8) ●	72 (1.2)	12 (1.8) ▲
Romania	11 (0.8)	3 (1.3) ●	69 (1.6)	9 (2.2) ▲	76 (1.4)	7 (1.9) ▲	14 (1.0)	-5 (1.5) ▼
Russian Federation	19 (1.2)	-11 (1.9) ▼	88 (1.3)	-1 (1.7) ●	92 (0.8)	-3 (1.1) ●	22 (1.2)	-13 (2.0) ▼
Singapore	75 (1.4)	28 (2.0) ▲	99 (0.2)	0 (0.2) ●	92 (0.5)	0 (0.7) ●	80 (1.3)	31 (2.0) ▲
Slovak Republic	36 (1.3)	9 (1.8) ▲	96 (0.5)	0 (0.7) ●	88 (0.8)	1 (1.1) ●	41 (1.3)	10 (1.8) ▲
Slovenia	61 (1.2)	18 (1.8) ▲	92 (0.6)	-2 (0.8) ●	96 (0.3)	3 (0.7) ▲	66 (1.2)	19 (1.8) ▲
Thailand †	8 (0.6)	4 (1.0) ▲	75 (1.2)	8 (2.4) ▲	63 (1.5)	-2 (2.6) ●	8 (0.7)	4 (1.1) ▲
United States	74 (1.3)	18 (2.1) ▲	97 (0.3)	0 (0.5) ●	90 (0.5)	0 (0.9) ●	80 (1.2)	21 (2.1) ▲
<b>International Avg. §</b>	<b>53 (0.2)</b>	<b>10 (0.4) ▲</b>	<b>93 (0.1)</b>	<b>1 (0.2) ▲</b>	<b>90 (0.2)</b>	<b>1 (0.2) ▲</b>	<b>57 (0.2)</b>	<b>10 (0.4) ▲</b>

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

▲	1999 significantly higher than 1995
●	No significant difference between 1995 and 1999
▼	1999 significantly lower than 1995
Significance tests adjusted for multiple comparisons	

Background data provided by students.

† Countries with unapproved sampling procedures at the classroom level in 1995.

§ International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian-Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates data are not available.

## Exhibit R1.3 Number of Books in the Home

	Three or More Bookcases (More Than 200 Books)		About Two Bookcases (101-200 Books)		About One Bookcase (26-100 Books)		About One Shelf (11-25 Books)		None or Very Few (0-10 Books)	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	38 (1.2)	565 (4.7)	27 (0.9)	544 (4.8)	24 (0.9)	521 (6.0)	7 (0.6)	495 (9.2)	3 (0.4)	483 (15.0)
Belgium (Flemish)	14 (0.8)	561 (4.9)	14 (0.6)	557 (5.7)	31 (1.3)	542 (4.2)	21 (0.7)	522 (5.8)	19 (1.3)	504 (5.4)
Bulgaria	37 (2.2)	548 (7.6)	19 (0.9)	529 (5.6)	24 (1.1)	509 (5.2)	12 (1.0)	477 (8.1)	9 (1.3)	450 (9.1)
Canada	31 (0.9)	553 (4.0)	24 (0.8)	541 (3.3)	28 (0.7)	527 (3.4)	11 (0.5)	498 (5.1)	5 (0.3)	495 (12.4)
Chile	9 (0.6)	468 (10.4)	11 (0.6)	457 (8.1)	28 (0.9)	441 (5.3)	32 (0.9)	403 (4.0)	20 (1.1)	378 (4.7)
Chinese Taipei	16 (0.8)	616 (6.1)	12 (0.5)	603 (7.3)	31 (0.7)	579 (6.0)	23 (0.7)	554 (4.7)	17 (0.9)	507 (4.4)
Cyprus	17 (0.8)	479 (4.5)	23 (0.9)	476 (3.7)	36 (1.0)	465 (4.0)	19 (0.9)	437 (4.9)	5 (0.5)	402 (10.0)
Czech Republic	28 (1.4)	565 (5.5)	30 (1.4)	548 (5.8)	34 (1.1)	523 (4.8)	7 (0.8)	493 (7.6)	1 (0.2)	~ ~
England	26 (1.2)	593 (6.7)	23 (0.8)	550 (7.3)	32 (1.1)	526 (4.7)	13 (0.8)	483 (6.4)	7 (0.7)	472 (11.5)
Finland	22 (1.1)	552 (5.7)	22 (0.9)	544 (4.7)	39 (1.1)	536 (4.4)	14 (0.8)	506 (5.3)	4 (0.4)	495 (11.6)
Hong Kong, SAR	8 (0.5)	548 (6.4)	10 (0.5)	534 (6.0)	27 (0.7)	537 (4.9)	27 (0.7)	530 (4.8)	28 (0.9)	517 (4.2)
Hungary	38 (1.4)	581 (3.7)	21 (0.8)	561 (5.6)	25 (1.0)	539 (4.4)	12 (0.8)	502 (8.6)	3 (0.5)	460 (14.4)
Indonesia	5 (0.5)	437 (17.8)	5 (0.4)	451 (14.1)	26 (0.9)	446 (4.6)	39 (1.0)	429 (5.5)	26 (1.3)	438 (5.5)
Iran, Islamic Rep.	9 (0.7)	482 (8.3)	8 (0.7)	479 (8.8)	22 (0.6)	465 (6.1)	32 (0.8)	443 (4.7)	29 (1.4)	425 (4.9)
Israel	22 (1.3)	498 (5.3)	21 (0.8)	504 (5.7)	33 (1.0)	471 (6.1)	18 (0.9)	434 (7.0)	6 (0.5)	388 (15.8)
Italy	20 (0.9)	523 (7.5)	15 (0.7)	518 (5.9)	28 (0.9)	497 (4.4)	25 (0.9)	471 (5.6)	12 (0.8)	453 (7.2)
Japan	18 (0.7)	577 (5.3)	18 (0.6)	567 (5.0)	31 (0.7)	548 (2.6)	19 (0.6)	541 (4.6)	14 (0.6)	518 (5.1)
Jordan	10 (0.6)	485 (6.7)	10 (0.6)	493 (6.5)	28 (0.8)	471 (4.8)	31 (1.1)	447 (4.3)	21 (1.2)	416 (5.8)
Korea, Rep. of	20 (0.8)	589 (3.8)	23 (0.6)	562 (4.6)	36 (0.7)	544 (2.1)	10 (0.5)	510 (4.9)	10 (0.4)	490 (5.6)
Latvia (LSS)	47 (1.4)	522 (6.2)	25 (0.9)	499 (4.5)	21 (0.9)	480 (4.6)	6 (0.7)	465 (10.6)	1 (0.2)	~ ~
Lithuania <sup>‡</sup>	17 (1.0)	528 (7.1)	21 (1.0)	517 (6.2)	36 (1.2)	482 (5.2)	20 (1.1)	454 (6.1)	7 (0.8)	433 (10.1)
Macedonia, Rep. of	7 (0.7)	492 (8.0)	9 (0.6)	498 (5.9)	30 (1.2)	487 (5.4)	38 (1.3)	449 (6.6)	15 (1.3)	408 (9.8)
Malaysia	9 (0.7)	538 (8.1)	12 (0.6)	521 (8.3)	32 (0.9)	505 (6.3)	34 (0.9)	472 (4.7)	13 (0.8)	460 (6.6)
Moldova	9 (0.7)	486 (7.8)	11 (0.8)	489 (7.5)	28 (1.0)	470 (4.9)	33 (1.2)	456 (5.1)	20 (1.1)	427 (7.4)
Morocco	3 (0.3)	343 (13.9)	5 (0.4)	372 (20.0)	20 (1.0)	335 (11.4)	35 (0.9)	323 (5.9)	37 (1.7)	320 (5.7)
Netherlands	24 (1.8)	575 (9.3)	23 (1.2)	554 (6.9)	31 (1.1)	546 (7.2)	15 (1.4)	508 (12.1)	8 (1.4)	499 (12.3)
New Zealand	33 (1.1)	541 (5.7)	24 (0.8)	529 (5.3)	27 (0.8)	499 (5.3)	10 (0.7)	460 (8.2)	6 (0.5)	407 (12.1)
Philippines	5 (0.4)	355 (16.5)	5 (0.4)	388 (17.3)	15 (0.8)	393 (11.9)	33 (0.9)	350 (8.0)	41 (1.4)	323 (7.0)
Romania	15 (1.3)	515 (8.1)	15 (0.9)	510 (8.3)	32 (1.1)	474 (6.0)	24 (1.6)	447 (6.8)	14 (1.1)	434 (9.3)
Russian Federation	23 (1.5)	555 (6.0)	29 (1.1)	541 (7.1)	31 (1.3)	521 (7.7)	13 (1.0)	495 (8.9)	4 (0.5)	470 (20.8)
Singapore	12 (0.6)	599 (11.4)	14 (0.7)	599 (10.3)	40 (1.1)	579 (7.2)	22 (1.0)	540 (8.8)	12 (0.8)	516 (8.8)
Slovak Republic	17 (0.9)	566 (6.6)	24 (1.0)	550 (5.6)	43 (1.1)	531 (3.9)	14 (1.0)	494 (6.4)	2 (0.4)	~ ~
Slovenia	14 (0.9)	564 (5.6)	20 (0.8)	556 (5.6)	46 (1.0)	532 (3.3)	16 (0.8)	498 (6.4)	4 (0.4)	483 (11.1)
South Africa	7 (0.5)	293 (25.6)	6 (0.5)	337 (18.9)	14 (0.8)	308 (15.3)	31 (0.8)	245 (8.7)	43 (1.6)	208 (5.9)
Thailand	6 (0.5)	509 (7.0)	8 (0.5)	502 (6.6)	27 (0.9)	493 (4.5)	37 (1.1)	477 (4.1)	22 (1.0)	465 (5.4)
Tunisia	9 (0.6)	438 (7.2)	9 (0.6)	444 (6.4)	25 (0.7)	438 (4.7)	36 (0.9)	424 (5.2)	21 (1.1)	422 (3.4)
Turkey	6 (0.4)	441 (11.1)	8 (0.5)	459 (7.4)	28 (0.8)	449 (5.3)	37 (0.8)	426 (5.0)	22 (1.1)	415 (5.2)
United States	28 (1.2)	557 (4.5)	22 (0.6)	538 (4.6)	29 (0.8)	508 (3.9)	14 (0.7)	468 (7.0)	8 (0.6)	442 (6.0)
<b>International Avg.</b>	<b>18 (0.2)</b>	<b>517 (1.6)</b>	<b>16 (0.1)</b>	<b>511 (1.2)</b>	<b>29 (0.2)</b>	<b>493 (1.0)</b>	<b>22 (0.1)</b>	<b>464 (1.0)</b>	<b>14 (0.2)</b>	<b>441 (1.5)</b>

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

Background data provided by students.

<sup>‡</sup> Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

	Two or More Bookcases (More Than 100 Books)		About One Bookcase (26-100 Books)		About One Shelf or Fewer (0-25 Books)	
	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference
Australia	65 (1.3)	-2 (1.9) ●	24 (0.9)	1 (1.3) ●	11 (0.8)	1 (1.1) ●
Belgium (Flemish)	28 (1.0)	-11 (1.7) ▼	31 (1.3)	-2 (1.7) ●	41 (1.6)	13 (2.3) ▲
Canada	56 (1.1)	-2 (1.7) ●	28 (0.7)	0 (1.3) ●	16 (0.6)	2 (1.0) ●
Cyprus	40 (1.0)	-2 (1.5) ●	36 (1.0)	2 (1.3) ●	24 (1.0)	0 (1.5) ●
Czech Republic	58 (1.5)	-8 (2.4) ▼	34 (1.1)	4 (1.9) ●	8 (0.8)	4 (1.0) ▲
England	49 (1.6)	-5 (2.3) ●	32 (1.1)	5 (1.7) ●	19 (1.1)	0 (1.5) ●
Hong Kong, SAR	17 (0.8)	-3 (1.6) ●	27 (0.7)	-2 (1.2) ●	55 (1.2)	4 (1.9) ●
Hungary	60 (1.5)	-4 (2.1) ●	25 (1.0)	1 (1.4) ●	15 (1.1)	3 (1.4) ●
Iran, Islamic Rep.	16 (1.3)	3 (1.6) ●	22 (0.6)	5 (1.1) ▲	62 (1.6)	-8 (2.2) ▼
Israel †	44 (1.9)	-7 (3.3) ●	34 (1.1)	2 (2.3) ●	23 (1.3)	5 (1.9) ●
Italy	34 (1.5)	-8 (2.2) ▼	28 (1.2)	-4 (1.8) ●	38 (1.5)	12 (1.9) ▲
Japan	--	--	--	--	--	--
Korea, Rep. of	44 (1.0)	-1 (1.6) ●	36 (0.7)	3 (1.2) ●	20 (0.7)	-2 (1.2) ●
Latvia (LSS)	72 (1.3)	-6 (1.8) ▼	21 (0.9)	4 (1.3) ▲	8 (0.8)	2 (1.0) ●
Lithuania	38 (1.6)	-6 (2.1) ▼	36 (1.2)	0 (1.7) ●	26 (1.6)	6 (1.9) ▲
Netherlands	47 (2.6)	5 (3.3) ●	31 (1.1)	-3 (1.7) ●	23 (2.3)	-2 (2.8) ●
New Zealand	56 (1.3)	-9 (1.8) ▼	27 (0.8)	3 (1.2) ●	16 (1.0)	6 (1.3) ▲
Romania	30 (1.8)	-5 (2.7) ●	32 (1.1)	12 (1.4) ▲	38 (2.0)	-8 (2.8) ●
Russian Federation	53 (2.0)	2 (2.7) ●	31 (1.3)	-5 (1.8) ●	17 (1.3)	3 (1.6) ●
Singapore	26 (1.2)	0 (1.8) ●	40 (1.1)	-1 (1.4) ●	34 (1.5)	1 (2.0) ●
Slovak Republic	41 (1.5)	-1 (2.1) ●	43 (1.1)	-2 (1.5) ●	16 (1.2)	3 (1.4) ●
Slovenia	34 (1.3)	-10 (1.9) ▼	46 (1.0)	7 (1.6) ▲	20 (1.1)	2 (1.4) ●
Thailand †	15 (0.7)	-3 (1.6) ●	27 (0.9)	-7 (1.5) ▼	59 (1.3)	10 (2.4) ▲
United States	50 (1.4)	-2 (2.2) ●	29 (0.8)	0 (1.2) ●	22 (1.1)	1 (1.8) ●
<b>International Avg. §</b>	<b>43 (0.3)</b>	<b>-4 (0.4) ▼</b>	<b>31 (0.2)</b>	<b>1 (0.3) ▲</b>	<b>26 (0.3)</b>	<b>2 (0.4) ▲</b>

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

- ▲ 1999 significantly higher than 1995
  - No significant difference between 1995 and 1999
  - ▼ 1999 significantly lower than 1995
- Significance tests adjusted for multiple comparisons

Background data provided by students.

† Countries with unapproved sampling procedures at the classroom level in 1995.

§ International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian-Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

## Exhibit R1.5 Highest Level of Education of Either Parent\*

	Finished University <sup>1</sup>		Finished Upper Secondary School But Not University <sup>2</sup>		Finished Primary School But Not Upper Secondary School <sup>3</sup>		Did Not Finish Primary School <sup>4</sup>		Do Not Know	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	28 (1.8)	581 (5.4)	30 (1.1)	545 (5.4)	21 (1.1)	526 (5.0)	0 (0.1)	~ ~	21 (1.0)	508 (6.7)
Belgium (Flemish)	16 (1.0)	564 (6.0)	45 (0.9)	546 (4.5)	10 (0.7)	516 (7.0)	0 (0.1)	~ ~	29 (1.0)	513 (3.2)
Bulgaria	34 (2.9)	547 (8.5)	51 (2.4)	511 (4.2)	7 (0.8)	465 (8.8)	1 (0.2)	~ ~	7 (0.7)	496 (12.9)
Canada	45 (1.3)	548 (2.8)	34 (1.0)	532 (2.6)	6 (0.5)	509 (9.8)	0 (0.1)	~ ~	15 (0.7)	504 (4.5)
Chile	14 (1.4)	491 (9.0)	30 (1.2)	444 (5.0)	34 (1.4)	392 (5.0)	13 (0.8)	380 (5.9)	10 (0.6)	407 (7.0)
Chinese Taipei	15 (1.0)	612 (5.9)	64 (0.8)	571 (4.5)	14 (0.7)	542 (5.7)	1 (0.1)	~ ~	7 (0.4)	524 (7.5)
Cyprus	22 (0.7)	495 (3.6)	48 (0.9)	469 (2.8)	26 (0.9)	425 (4.5)	1 (0.2)	~ ~	3 (0.3)	442 (11.4)
Czech Republic	22 (1.2)	577 (5.7)	46 (1.3)	546 (4.8)	21 (1.2)	520 (6.4)	0 (0.0)	~ ~	11 (0.9)	503 (8.8)
England	--	--	--	--	--	--	--	--	--	--
Finland	7 (0.8)	575 (6.7)	28 (1.1)	559 (5.4)	11 (0.7)	522 (5.6)	3 (0.4)	520 (14.1)	51 (1.5)	526 (3.8)
Hong Kong, SAR	7 (0.7)	553 (7.8)	38 (1.0)	536 (4.0)	32 (0.9)	533 (4.2)	9 (0.7)	508 (6.5)	13 (0.6)	515 (6.2)
Hungary	27 (1.4)	598 (4.2)	59 (1.3)	546 (3.9)	7 (0.7)	489 (8.0)	0 (0.0)	~ ~	7 (0.7)	514 (10.2)
Indonesia	9 (0.9)	466 (14.1)	30 (1.2)	454 (4.9)	44 (1.4)	428 (5.6)	10 (0.6)	413 (6.9)	7 (0.6)	422 (9.7)
Iran, Islamic Rep.	8 (1.1)	504 (8.8)	17 (1.4)	479 (5.1)	48 (1.5)	444 (3.9)	25 (1.5)	432 (4.3)	2 (0.2)	~ ~
Israel	34 (1.6)	511 (5.4)	42 (1.3)	472 (4.4)	10 (0.6)	425 (7.7)	3 (0.7)	345 (33.1)	11 (1.0)	439 (11.5)
Italy	10 (0.8)	529 (8.8)	45 (1.3)	514 (4.0)	40 (1.5)	466 (4.6)	2 (0.3)	~ ~	3 (0.4)	472 (11.6)
Japan	--	--	--	--	--	--	--	--	--	--
Jordan	29 (1.1)	485 (5.3)	34 (1.0)	458 (5.3)	23 (0.9)	425 (5.3)	5 (0.5)	406 (11.5)	8 (0.7)	435 (11.4)
Korea, Rep. of	25 (1.0)	583 (3.5)	48 (0.8)	547 (4.1)	14 (0.5)	528 (5.9)	5 (0.4)	528 (7.8)	8 (0.4)	508 (4.9)
Latvia (LSS)	29 (1.5)	534 (6.1)	42 (1.3)	505 (4.9)	7 (0.7)	468 (11.3)	0 (0.1)	~ ~	21 (1.3)	478 (8.1)
Lithuania <sup>†</sup>	29 (1.6)	529 (7.0)	54 (1.5)	482 (4.4)	4 (0.6)	438 (15.3)	0 (0.1)	~ ~	13 (0.9)	460 (7.4)
Macedonia, Rep. of	18 (1.2)	519 (6.5)	51 (1.2)	478 (4.8)	24 (1.5)	411 (7.8)	3 (0.6)	354 (15.8)	3 (0.4)	418 (11.9)
Malaysia	12 (0.9)	546 (8.3)	44 (0.9)	499 (4.8)	29 (1.0)	478 (4.3)	3 (0.3)	470 (10.5)	12 (0.9)	460 (7.8)
Moldova	28 (1.5)	482 (5.9)	49 (1.6)	461 (5.3)	8 (0.8)	447 (11.5)	1 (0.1)	~ ~	14 (1.2)	436 (10.0)
Morocco	7 (0.7)	350 (14.6)	14 (0.8)	349 (7.7)	27 (0.9)	330 (6.1)	42 (1.9)	317 (4.8)	9 (0.7)	329 (12.1)
Netherlands	12 (1.1)	571 (9.6)	53 (2.4)	558 (6.4)	7 (1.0)	519 (12.0)	1 (0.5)	~ ~	27 (2.1)	521 (9.6)
New Zealand	28 (1.4)	549 (5.6)	34 (0.7)	508 (4.8)	12 (0.7)	493 (6.6)	0 (0.1)	~ ~	25 (1.1)	482 (6.9)
Philippines	30 (1.5)	397 (11.2)	37 (0.9)	339 (7.4)	25 (1.1)	321 (9.4)	5 (0.4)	286 (15.3)	4 (0.4)	333 (16.1)
Romania	20 (1.7)	507 (10.2)	49 (1.6)	483 (5.6)	17 (1.6)	451 (8.4)	3 (0.5)	420 (17.5)	11 (0.9)	434 (8.7)
Russian Federation	33 (1.4)	554 (7.4)	47 (1.2)	527 (6.5)	5 (0.5)	490 (15.7)	1 (0.2)	~ ~	14 (0.9)	503 (7.8)
Singapore	11 (1.0)	634 (9.0)	51 (1.0)	575 (7.2)	23 (1.0)	542 (10.2)	4 (0.3)	532 (12.2)	12 (0.6)	544 (9.7)
Slovak Republic	22 (1.5)	574 (5.9)	64 (1.3)	531 (2.8)	6 (0.7)	498 (9.9)	0 (0.1)	~ ~	8 (0.7)	492 (5.8)
Slovenia	19 (0.9)	572 (6.8)	65 (1.0)	532 (3.2)	10 (0.7)	502 (6.9)	1 (0.2)	~ ~	5 (0.5)	495 (13.5)
South Africa	15 (1.1)	306 (14.6)	30 (1.3)	269 (10.0)	32 (1.1)	215 (6.4)	11 (1.2)	183 (9.4)	12 (0.9)	230 (10.1)
Thailand	9 (0.9)	538 (8.4)	13 (0.8)	503 (6.1)	40 (1.3)	481 (4.3)	30 (1.5)	467 (5.7)	9 (0.7)	471 (7.7)
Tunisia	10 (0.8)	451 (6.8)	28 (1.1)	438 (4.4)	41 (1.3)	426 (2.2)	14 (0.9)	412 (6.4)	6 (0.9)	417 (6.4)
Turkey	9 (0.8)	487 (6.7)	20 (1.0)	447 (6.0)	60 (1.3)	425 (4.2)	10 (0.7)	418 (10.5)	2 (0.2)	~ ~
United States	35 (1.7)	551 (4.6)	46 (1.3)	510 (4.9)	5 (0.4)	461 (9.7)	1 (0.2)	~ ~	13 (0.7)	476 (7.3)
<b>International Avg.</b>	<b>20 (0.2)</b>	<b>524 (1.3)</b>	<b>41 (0.2)</b>	<b>492 (0.8)</b>	<b>21 (0.2)</b>	<b>460 (1.5)</b>	<b>6 (0.1)</b>	<b>411 (4.9)</b>	<b>12 (0.1)</b>	<b>462 (1.5)</b>

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

Background data provided by students.

\* Response categories were defined by each country to conform to their own educational system and may not be strictly comparable across countries. See reference exhibit R1.6 for country modifications to the definitions of educational levels.

<sup>1</sup> In most countries, defined as completion of at least a 4-year degree program at a university or an equivalent institute of higher education.<sup>2</sup> Finished upper secondary school with or without some tertiary education not equivalent to a university degree. In most countries, finished secondary corresponds to completion of an upper-secondary track terminating after 11 to 13 years of schooling (ISCED level 3 vocational, apprenticeship or academic tracks).<sup>3</sup> Finished primary school or attended some secondary school not equivalent to completion of upper secondary.<sup>4</sup> Some primary school or did not go to school.<sup>†</sup> Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

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

An "r" indicates a 70-84% student response rate.



**Exhibit R1.6 Overleaf**

## Exhibit R1.6 Country Modifications to the Definitions of Educational Levels for Parents' Education or Students' Expectations for Finishing School\*

	Finished University	Finished Upper Secondary School But Not University	
		Post-Secondary Level	Upper-Secondary Level <sup>1</sup>
<b>Internationally Defined Level</b>	Finished University	Some Vocational-Technical Education After Secondary School or Some University	Finished Secondary School
Australia <sup>§</sup>			
Belgium (Flemish) <sup>§</sup>		Post-Secondary Tertiary Higher Education Outside University or Some Years of University	Finish Higher Secondary School
Canada	Finish University or College	Some Vocational-Technical Education After Secondary School or Some University or College	
Chile			
Cyprus <sup>§</sup>	University Degree		Finish Upper Secondary
Czech Republic (P) <sup>§†</sup>	Finish University (4-5 years university study)	Some Vocational-Technical Education After Secondary School or Some University	Vocational Training or Secondary With Maturita
Czech Republic (S)	Finish University (4-5 years university study)	Medium-cycle higher education or bachelor studies (3 years university study or special higher education)	Vocational Training or Secondary With Maturita
Finland			Finish secondary school (about 12 years)
Hungary <sup>§</sup>	University or College Degree	Not Included	Apprenticeship (3-year trade school) or Final Exam in Secondary School (4-year academic/vocational)
Indonesia	Completed University Degree (Sarjana 1/2/3)	Academy (3 years or less of higher education outside university - Diploma D1/D2/D3) or Some University (Did Not Complete Degree)	Finish Secondary (SMP, SMA, SMEA, STM, etc.)
Italy <sup>§</sup>	Finish University (Laurea or Dottorato di Ricerca; 4-6 Year Diploma)	Vocational/Professional Course After Secondary Diploma or Some University (2-3 Year Short-Course Diploma)	Finish Secondary School With Maturita (Classical/Technical) or Vocational Training Diploma
Japan (S) <sup>‡</sup>	University or Graduate School	Vocational/Technical Education After Secondary or 2-year college	Upper secondary
Korea, Rep. of <sup>§</sup>			
Latvia (LSS) <sup>§</sup>	Higher Education (5 years)	Vocational School (Post-Secondary) or Technikum (3 years) or Some Higher Education	Finish Secondary or Vocational School (11 years)
Lithuania <sup>§</sup>	University or Other Higher Education	Vocational or Agricultural School or College (Technical, Art, Music)	
Netherlands	University With Diploma	Vocational/Technical Education After Secondary (bv, hbo, hts, pedagogical academy) or Some Years At University (Without Diploma)	Finish Secondary School With Diploma
New Zealand (P) <sup>‡</sup>	University or Teachers' College (College of Education)	Vocational/Polytechnic Education After Secondary School or Some University	Complete Form 6 or Form 7
New Zealand (S) <sup>§</sup>	University, College of Education (teacher training) or degree or national diploma course at polytech	Certificate course at polytech (e.g. trade certificate) or some university	Finish secondary school (complete Form 6 or Form 7)
Philippines <sup>§</sup>	Finish College/University	Some Vocational/Technical Education After High School or Some College/University	Finish High School
Romania <sup>§</sup>	Finish University (facultate)	Post-Secondary Technical School or Did Not Complete University	Finish Senior Secondary (liceu)
Singapore <sup>§</sup>		Finish JC/Pre-U or Polytechnic or Some Other Vocational/Technical Education After Secondary (e.g., ITE, VITB) [includes GCE 'A' level, which is 2 years additional schooling beyond completion of secondary.]	Finish Secondary School
Slovenia (S) <sup>§†</sup>			Finish gymnasium or secondary school
South Africa <sup>§</sup>		Finish Technikon or Some University	Finish Secondary
Thailand <sup>§</sup>	Graduate level (Finish Tertiary Education, 4 years)	Diploma/Undergraduate Level (higher certificate, 2 years)	Finish Academic or Vocational/Technical Upper-Secondary Track
Tunisia	Bachelor's Degree (BA)		
United States (P) <sup>‡</sup>	Completed Bachelor's Degree at College or University	Some Vocational-Technical Education After Secondary School or Some Community College, College or University Courses	Finish High School
United States (S) <sup>§</sup>	Finish community college, college or university	Some Vocational-Technical Education After Secondary School or Some Community College, College or University Courses	Finish High School

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

■ National educational level is the same as the internationally-defined level

\* Educational levels were translated and defined in most countries to be comparable to the internationally-defined levels. Countries that used modified response options to conform to their national education systems are indicated to aid in the interpretation of the reporting categories in exhibits 4.4 and R1.5. National modifications pertain to both the parents' education and students' expectations questions unless otherwise indicated.

<sup>1</sup> Upper-secondary corresponds to ISCED level 3 tracks terminating after 11 to 13 years in most countries. (Education at a Glance, OECD, 1995.)

<sup>2</sup> Primary school or lower educational levels were included only in the parents' education question.

<sup>3</sup> Japan administered the question pertaining to students' expectations but not the question pertaining to parents' education.

<sup>§</sup> Some educational levels modified from 1995.

<sup>‡</sup> Educational levels differ for the parent's education (P) question and the students' expectations (S) question.



Finished Primary School But Not Upper Secondary School		Did Not Finish Primary School <sup>2</sup>	Internationally Defined Level
Lower-Secondary Level	Primary Level <sup>2</sup>		
Finished Some Secondary School	Finished Primary School	Some Primary School or Did Not Go to School	Australia
		Less Than Year 6 in Primary School	Belgium (Flemish)
Finish Lower Secondary School	Finish Basic School	Some Years of Basic School or Did Not Go to School	Canada
	Finish Primary School (grade 8)		Chile
Finish Lower Secondary (Gymnasium - grade 9)			Cyprus
Vocational Training or Secondary School Without Maturita		Not Included	Czech Republic (P)
Vocational Training or Secondary School Without Maturita			Czech Republic (S)
Some Secondary School (10 - 11 years)	Finish Primary School (about 9 years)	Did Not Go to School, Primary School or Part of Lower Secondary (< 9 years)	Finland
Finish General School (grade 8)	Some General School	Not Included	Hungary
	Finish Primary School (SD)		Indonesia
Finish Middle School			Italy
Lower Secondary			Japan (S)
Some High School	Finish Middle School	Some middle school or did not go to school	Korea, Rep. of
			Latvia (LSS)
	Finish Basic School (grade 10)	Some Basic School or Did Not Go to School	Lithuania
Some Years of Secondary School (mavo, havo, vwo) without Diploma	Finish Primary School (grade 8)		Netherlands
			New Zealand (P)
			New Zealand (S)
Some High School	Finish Elementary School	Some Elementary School or Did Not Go to School	Philippines
Did Not Complete Senior Secondary	Finish Junior Secondary (Gymnasium - grade 8)	Did Not Finish Grade 8 or Did Not Go to School	Romania
			Singapore
			Slovenia (S)
			South Africa
Finish Lower Secondary School	Finish Upper Primary School	Finish Lower Primary School or Did Not Go to School	Thailand
			Tunisia
Some High School	Finish Elementary School	Finish elementary school or did not go to school	United States (P)
Some High School			United States (S)

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

■ National educational level is the same as the internationally-defined level

	Percentage of Students Agreeing That It Is Important to Do Each Activity				
	Do Well in Science	Do Well in Mathematics	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	92 (0.6)	97 (0.3)	97 (0.4)	99 (0.2)	83 (0.8)
Belgium (Flemish)	91 (0.8)	98 (0.3)	96 (0.4)	98 (0.4)	77 (0.9)
Bulgaria	91 (0.8)	96 (0.6)	96 (0.5)	96 (0.5)	83 (1.0)
Canada	95 (0.4)	98 (0.2)	97 (0.5)	99 (0.2)	82 (0.6)
Chile	98 (0.2)	99 (0.2)	98 (0.2)	98 (0.3)	95 (0.4)
Chinese Taipei	89 (0.5)	89 (0.5)	89 (0.5)	99 (0.1)	94 (0.3)
Cyprus	91 (0.5)	96 (0.3)	96 (0.3)	97 (0.3)	90 (0.5)
Czech Republic	93 (0.6)	98 (0.3)	97 (0.4)	97 (0.4)	82 (1.0)
England	97 (0.3)	99 (0.2)	99 (0.2)	98 (0.3)	79 (0.9)
Finland	84 (0.9)	93 (0.6)	91 (0.6)	96 (0.4)	82 (1.0)
Hong Kong, SAR	86 (0.7)	95 (0.4)	96 (0.4)	97 (0.3)	84 (0.6)
Hungary	87 (0.6)	97 (0.3)	97 (0.4)	96 (0.4)	68 (0.9)
Indonesia	98 (0.2)	97 (0.3)	98 (0.2)	71 (1.0)	96 (0.3)
Iran, Islamic Rep.	96 (0.3)	96 (0.4)	94 (0.5)	89 (0.6)	93 (0.5)
Israel	90 (0.7)	98 (0.3)	92 (0.6)	96 (0.4)	86 (0.7)
Italy	94 (0.5)	97 (0.4)	97 (0.3)	98 (0.3)	89 (0.6)
Japan	83 (0.7)	88 (0.5)	89 (0.6)	99 (0.2)	82 (0.6)
Jordan	97 (0.3)	96 (0.4)	95 (0.4)	87 (0.7)	89 (0.5)
Korea, Rep. of	87 (0.5)	90 (0.4)	89 (0.4)	92 (0.3)	88 (0.5)
Latvia (LSS)	86 (0.9)	98 (0.3)	98 (0.3)	97 (0.3)	88 (0.7)
Lithuania <sup>†</sup>	84 (1.0)	97 (0.4)	98 (0.3)	96 (0.4)	92 (0.6)
Macedonia, Rep. of	96 (0.4)	95 (0.4)	97 (0.3)	94 (0.5)	95 (0.4)
Malaysia	99 (0.1)	99 (0.1)	99 (0.2)	78 (1.0)	93 (0.5)
Moldova	95 (0.6)	93 (0.7)	95 (0.4)	92 (0.7)	91 (0.5)
Morocco	r 92 (0.6)	r 91 (0.5)	r 90 (0.5)	r 65 (1.1)	r 91 (0.5)
Netherlands	94 (0.9)	98 (0.3)	99 (0.3)	98 (0.3)	76 (1.5)
New Zealand	93 (0.5)	97 (0.3)	97 (0.3)	98 (0.2)	86 (0.8)
Philippines	93 (0.5)	91 (0.6)	90 (0.8)	78 (1.0)	87 (0.7)
Romania	94 (0.6)	97 (0.4)	98 (0.3)	91 (0.8)	83 (1.0)
Russian Federation	96 (0.3)	97 (0.4)	97 (0.4)	98 (0.3)	90 (0.6)
Singapore	98 (0.2)	99 (0.2)	100 (0.1)	93 (0.6)	90 (0.5)
Slovak Republic	96 (0.5)	99 (0.2)	99 (0.2)	99 (0.2)	91 (0.7)
Slovenia	80 (0.9)	91 (0.6)	92 (0.5)	97 (0.3)	87 (0.7)
South Africa	89 (1.3)	90 (0.5)	91 (0.6)	72 (1.1)	83 (0.7)
Thailand	96 (0.3)	95 (0.3)	97 (0.3)	92 (0.5)	95 (0.3)
Tunisia	97 (0.3)	96 (0.5)	96 (0.3)	83 (0.7)	91 (0.5)
Turkey	97 (0.3)	96 (0.3)	97 (0.2)	75 (1.0)	86 (0.6)
United States	96 (0.3)	97 (0.3)	96 (0.3)	99 (0.2)	84 (0.6)
<b>International Avg.</b>	92 (0.1)	96 (0.1)	96 (0.1)	92 (0.1)	87 (0.1)

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

Background data provided by students.

<sup>†</sup> Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates a 70-84% student response rate.

## Students' Perception of Their Mothers' View of the Importance of Various Activities

	Percentage of Students Agreeing That Their Mothers Think It Is Important to Do Each Activity				
	Do Well in Science	Do Well in Mathematics	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	96 (0.4)	98 (0.2)	98 (0.3)	95 (0.5)	78 (0.7)
Belgium (Flemish)	92 (0.6)	97 (0.4)	97 (0.5)	96 (0.5)	66 (1.6)
Bulgaria	92 (0.6)	97 (0.3)	96 (0.6)	90 (0.7)	79 (1.3)
Canada	98 (0.3)	99 (0.1)	99 (0.2)	96 (0.4)	76 (0.8)
Chile	98 (0.2)	99 (0.2)	99 (0.2)	93 (0.5)	95 (0.4)
Chinese Taipei	95 (0.4)	95 (0.5)	93 (0.4)	95 (0.3)	91 (0.4)
Cyprus	92 (0.5)	96 (0.4)	97 (0.3)	95 (0.4)	85 (0.8)
Czech Republic	96 (0.5)	99 (0.2)	99 (0.3)	90 (0.7)	72 (1.1)
England	98 (0.3)	99 (0.2)	99 (0.2)	94 (0.5)	74 (1.0)
Finland	90 (0.7)	96 (0.4)	95 (0.4)	88 (0.7)	74 (1.1)
Hong Kong, SAR	87 (0.7)	96 (0.3)	97 (0.3)	82 (0.7)	73 (0.9)
Hungary	86 (0.7)	97 (0.4)	97 (0.3)	83 (0.8)	46 (1.1)
Indonesia	98 (0.3)	97 (0.3)	98 (0.2)	65 (1.0)	95 (0.4)
Iran, Islamic Rep.	94 (0.5)	94 (0.4)	93 (0.5)	82 (0.8)	89 (0.6)
Israel	94 (0.5)	98 (0.2)	96 (0.3)	94 (0.4)	83 (0.8)
Italy	97 (0.3)	99 (0.3)	99 (0.2)	95 (0.4)	84 (0.8)
Japan	87 (0.6)	92 (0.5)	92 (0.5)	94 (0.4)	82 (0.6)
Jordan	96 (0.3)	95 (0.4)	95 (0.5)	82 (0.8)	86 (0.7)
Korea, Rep. of	90 (0.4)	95 (0.3)	92 (0.4)	66 (0.7)	78 (0.6)
Latvia (LSS)	90 (0.7)	98 (0.4)	98 (0.3)	90 (0.7)	82 (0.7)
Lithuania <sup>†</sup>	80 (1.0)	95 (0.5)	97 (0.4)	85 (0.8)	86 (0.8)
Macedonia, Rep. of	97 (0.3)	96 (0.3)	97 (0.3)	91 (0.7)	91 (0.6)
Malaysia	98 (0.2)	99 (0.1)	98 (0.2)	66 (1.2)	90 (0.5)
Moldova	91 (0.6)	91 (0.6)	93 (0.6)	85 (0.9)	86 (0.7)
Morocco	r 86 (0.7)	r 88 (0.7)	r 88 (0.6)	r 53 (1.2)	r 86 (0.7)
Netherlands	94 (0.8)	98 (0.3)	98 (0.3)	97 (0.5)	59 (1.9)
New Zealand	96 (0.3)	98 (0.2)	98 (0.2)	95 (0.4)	84 (0.9)
Philippines	93 (0.5)	90 (0.7)	89 (0.8)	75 (0.8)	85 (0.6)
Romania	96 (0.7)	97 (0.5)	98 (0.4)	79 (1.0)	75 (1.5)
Russian Federation	96 (0.4)	96 (0.4)	97 (0.4)	92 (0.4)	86 (0.7)
Singapore	98 (0.2)	99 (0.2)	98 (0.2)	76 (0.9)	80 (0.7)
Slovak Republic	98 (0.3)	99 (0.2)	99 (0.2)	96 (0.4)	89 (0.8)
Slovenia	83 (0.8)	91 (0.5)	94 (0.5)	89 (0.6)	82 (0.9)
South Africa	89 (1.2)	89 (0.6)	91 (0.6)	70 (1.0)	81 (0.8)
Thailand	96 (0.3)	94 (0.4)	97 (0.3)	80 (0.7)	93 (0.4)
Tunisia	96 (0.3)	92 (0.7)	94 (0.4)	72 (0.7)	87 (0.5)
Turkey	95 (0.4)	94 (0.5)	95 (0.4)	67 (1.0)	79 (0.9)
United States	98 (0.2)	98 (0.2)	98 (0.2)	93 (0.4)	76 (0.6)
<b>International Avg.</b>	93 (0.1)	96 (0.1)	96 (0.1)	85 (0.1)	81 (0.1)

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

Background data provided by students.

<sup>†</sup> Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates a 70-84% student response rate.

## Exhibit R1.9 Students' Perception of Their Friends' View of the Importance of Various Activities

	Percentage of Students Agreeing That Their Friends Think It Is Important to Do Each Activity				
	Do Well in Science	Do Well in Mathematics	Do Well in Language	Have Time to Have Fun	Be Good at Sports
Australia	65 (1.4)	79 (1.0)	78 (1.0)	98 (0.2)	81 (0.8)
Belgium (Flemish)	66 (1.2)	81 (1.1)	77 (1.4)	98 (0.5)	76 (1.1)
Bulgaria	70 (1.7)	84 (0.8)	85 (0.9)	96 (0.4)	82 (1.2)
Canada	72 (0.9)	84 (0.6)	82 (0.7)	99 (0.1)	84 (0.9)
Chile	89 (0.6)	94 (0.3)	94 (0.4)	98 (0.3)	95 (0.4)
Chinese Taipei	82 (0.7)	84 (0.7)	84 (0.6)	98 (0.2)	94 (0.4)
Cyprus	75 (0.9)	87 (0.6)	88 (0.6)	94 (0.4)	89 (0.5)
Czech Republic	68 (1.0)	84 (0.9)	83 (0.8)	97 (0.4)	83 (0.9)
England	84 (1.0)	90 (0.8)	90 (0.7)	99 (0.2)	80 (1.0)
Finland	53 (1.2)	70 (1.2)	65 (1.2)	97 (0.4)	74 (1.2)
Hong Kong, SAR	66 (1.0)	84 (0.7)	87 (0.8)	96 (0.3)	83 (0.8)
Hungary	62 (0.9)	80 (0.9)	79 (1.0)	94 (0.5)	62 (1.0)
Indonesia	96 (0.3)	96 (0.2)	97 (0.3)	69 (1.0)	95 (0.4)
Iran, Islamic Rep.	90 (0.5)	92 (0.5)	89 (0.8)	87 (0.6)	92 (0.5)
Israel	68 (1.2)	92 (0.5)	79 (0.9)	96 (0.4)	81 (0.9)
Italy	66 (1.3)	80 (0.9)	84 (0.7)	98 (0.3)	94 (0.5)
Japan	78 (0.8)	85 (0.6)	85 (0.8)	99 (0.2)	80 (0.7)
Jordan	95 (0.4)	93 (0.5)	93 (0.4)	85 (0.7)	88 (0.6)
Korea, Rep. of	72 (0.8)	77 (0.7)	73 (0.8)	93 (0.3)	80 (0.8)
Latvia (LSS)	53 (1.6)	87 (0.9)	87 (0.8)	96 (0.4)	85 (0.7)
Lithuania †	54 (1.4)	87 (1.0)	88 (0.8)	96 (0.4)	90 (0.7)
Macedonia, Rep. of	86 (0.7)	89 (0.6)	92 (0.5)	93 (0.6)	93 (0.5)
Malaysia	98 (0.2)	99 (0.2)	97 (0.3)	77 (1.0)	91 (0.5)
Moldova	90 (0.7)	91 (0.7)	93 (0.6)	93 (0.5)	90 (0.6)
Morocco	r 86 (0.6)	r 88 (0.7)	r 86 (0.6)	r 63 (1.0)	r 89 (0.5)
Netherlands	79 (1.2)	88 (1.0)	90 (0.9)	98 (0.4)	70 (1.9)
New Zealand	67 (1.1)	76 (0.9)	75 (0.8)	97 (0.4)	86 (0.7)
Philippines	91 (0.6)	88 (0.7)	87 (0.7)	79 (0.9)	86 (0.7)
Romania	84 (1.2)	90 (0.9)	92 (0.6)	92 (0.9)	83 (1.0)
Russian Federation	83 (0.7)	89 (0.6)	89 (0.6)	97 (0.4)	87 (0.8)
Singapore	94 (0.6)	96 (0.3)	97 (0.3)	93 (0.6)	88 (0.6)
Slovak Republic	78 (1.2)	88 (0.9)	89 (0.7)	99 (0.2)	93 (0.6)
Slovenia	44 (1.4)	69 (1.2)	70 (1.1)	96 (0.3)	85 (0.9)
South Africa	85 (1.1)	88 (0.6)	90 (0.6)	72 (1.1)	81 (0.7)
Thailand	95 (0.4)	94 (0.4)	96 (0.3)	93 (0.4)	95 (0.4)
Tunisia	88 (0.6)	91 (0.7)	91 (0.6)	81 (0.7)	88 (0.5)
Turkey	93 (0.4)	93 (0.3)	94 (0.3)	77 (0.8)	85 (0.7)
United States	72 (0.8)	79 (0.8)	76 (1.0)	98 (0.2)	86 (0.5)
<b>International Avg.</b>	77 (0.2)	86 (0.1)	86 (0.1)	92 (0.1)	85 (0.1)

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

Background data provided by students.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates a 70-84% student response rate.



**Exhibit R1.10 Overleaf**

## Exhibit R1.10 Why Students Need to Do Well in the Sciences\*

	Percentage of Students Reporting								
	To Get Desired Job			To Please Parents			To Get Into Desired Secondary School or University		
	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree
<b>General/Integrated Science</b>									
<b>G</b> Australia	24 (0.9)	30 (0.7)	46 (1.0)	20 (0.9)	49 (0.9)	32 (1.2)	26 (1.0)	36 (0.8)	38 (1.1)
Canada	27 (0.7)	33 (0.8)	40 (0.8)	22 (1.0)	46 (1.0)	32 (0.7)	42 (0.8)	40 (0.6)	18 (0.7)
Chile	33 (0.8)	31 (0.7)	36 (1.0)	32 (0.8)	37 (0.6)	31 (0.8)	48 (0.8)	32 (0.7)	20 (0.6)
Chinese Taipei <sup>a</sup>	26 (0.7)	45 (0.7)	30 (0.8)	28 (0.8)	50 (0.8)	22 (0.6)	37 (0.9)	48 (0.7)	15 (0.6)
Cyprus	26 (0.7)	33 (0.9)	41 (0.9)	25 (0.8)	37 (0.8)	38 (0.8)	34 (0.9)	35 (1.0)	31 (0.7)
England	28 (1.1)	31 (1.0)	41 (1.4)	20 (1.0)	42 (1.2)	38 (1.2)	37 (1.3)	38 (1.3)	25 (1.0)
Hong Kong, SAR	20 (0.7)	44 (0.8)	37 (0.9)	22 (0.7)	53 (0.7)	24 (0.7)	24 (0.8)	47 (0.9)	29 (0.9)
Indonesia <sup>b</sup>	44 (0.9)	52 (0.9)	4 (0.3)	43 (1.0)	52 (0.9)	5 (0.4)	45 (0.9)	50 (0.8)	5 (0.4)
Iran, Islamic Rep.	42 (1.2)	38 (0.8)	20 (1.0)	52 (1.1)	40 (1.0)	8 (0.5)	50 (1.3)	37 (0.9)	13 (0.7)
Israel	30 (0.9)	26 (0.8)	44 (1.1)	29 (1.0)	35 (0.9)	36 (1.0)	46 (1.2)	35 (0.8)	18 (0.8)
Italy	19 (0.7)	36 (1.0)	44 (1.2)	25 (0.9)	51 (1.0)	24 (1.0)	24 (0.8)	43 (1.0)	33 (1.1)
Japan	11 (0.5)	31 (0.8)	58 (1.0)	6 (0.4)	24 (0.6)	70 (0.7)	29 (0.8)	54 (0.7)	16 (0.8)
Jordan	60 (1.0)	31 (0.9)	9 (0.6)	57 (1.1)	33 (0.9)	10 (0.6)	64 (0.9)	26 (0.6)	10 (0.6)
Korea, Rep. of	13 (0.5)	31 (0.5)	57 (0.8)	13 (0.5)	49 (0.6)	38 (0.7)	29 (0.7)	54 (0.7)	17 (0.5)
Malaysia	55 (1.0)	36 (0.8)	9 (0.5)	56 (1.3)	37 (1.0)	7 (0.6)	60 (1.1)	34 (0.9)	6 (0.4)
New Zealand	25 (0.7)	33 (0.9)	43 (1.0)	21 (0.8)	44 (0.8)	35 (0.9)	27 (0.8)	41 (0.9)	32 (1.0)
Philippines	43 (1.0)	44 (0.8)	12 (0.7)	34 (0.8)	47 (0.7)	19 (0.7)	48 (1.0)	39 (0.8)	13 (0.7)
Singapore	35 (1.1)	40 (0.7)	25 (1.1)	28 (0.7)	46 (0.6)	26 (0.6)	50 (1.3)	42 (1.0)	7 (0.7)
South Africa	53 (1.2)	29 (0.7)	19 (1.0)	41 (1.2)	34 (1.0)	25 (1.1)	51 (1.2)	28 (0.9)	21 (1.1)
Thailand	43 (1.0)	49 (1.0)	8 (0.5)	53 (1.0)	45 (1.0)	2 (0.2)	53 (1.1)	42 (1.0)	5 (0.4)
Tunisia	44 (0.8)	34 (0.9)	22 (0.8)	34 (0.9)	43 (0.6)	22 (0.9)	44 (0.9)	35 (0.8)	21 (0.7)
Turkey	41 (1.0)	42 (0.9)	17 (0.6)	34 (0.8)	43 (0.8)	23 (0.9)	52 (0.9)	40 (0.8)	8 (0.5)
United States	28 (0.8)	31 (0.7)	40 (0.7)	32 (0.7)	47 (0.6)	21 (0.5)	46 (0.9)	40 (0.6)	14 (0.6)
<b>International Avg.</b>	<b>33 (0.2)</b>	<b>36 (0.2)</b>	<b>31 (0.2)</b>	<b>32 (0.2)</b>	<b>43 (0.2)</b>	<b>26 (0.2)</b>	<b>42 (0.2)</b>	<b>40 (0.2)</b>	<b>18 (0.2)</b>
<b>Earth Science</b>									
Belgium (Flemish)	3 (0.8)	12 (0.6)	85 (0.8)	14 (0.7)	55 (0.8)	31 (0.9)	4 (0.8)	17 (0.8)	78 (1.0)
Bulgaria	27 (1.6)	33 (1.8)	40 (2.9)	20 (1.0)	36 (1.2)	44 (1.3)	29 (1.5)	35 (1.8)	35 (2.7)
Czech Republic	19 (1.3)	31 (1.3)	50 (1.5)	25 (1.2)	56 (1.2)	20 (1.0)	25 (1.4)	40 (1.2)	35 (1.3)
Finland	9 (0.6)	28 (1.0)	63 (1.0)	8 (0.6)	33 (0.8)	58 (1.0)	11 (0.6)	40 (1.2)	49 (1.2)
Hungary	9 (0.5)	32 (1.1)	60 (1.2)	6 (0.5)	37 (1.0)	57 (1.0)	20 (0.8)	48 (1.2)	32 (1.1)
Latvia (LSS)	--	--	--	--	--	--	--	--	--
Lithuania <sup>†</sup>	--	--	--	--	--	--	--	--	--
Macedonia, Rep. of	38 (1.2)	32 (1.0)	30 (1.0)	32 (1.0)	33 (0.9)	35 (1.2)	44 (1.1)	37 (0.9)	19 (0.8)
Moldova	30 (1.3)	43 (1.1)	27 (1.1)	26 (1.2)	44 (1.1)	30 (1.4)	31 (1.3)	48 (1.2)	21 (0.9)
Morocco	x x	x x	x x	x x	x x	x x	x x	x x	x x
Netherlands	6 (0.9)	17 (1.5)	77 (1.3)	10 (0.7)	40 (1.3)	50 (1.4)	6 (0.7)	23 (1.0)	71 (1.3)
Romania	31 (1.3)	42 (1.3)	28 (1.3)	28 (1.2)	48 (1.3)	24 (1.5)	30 (1.2)	45 (1.1)	25 (1.1)
Russian Federation	20 (0.8)	32 (1.1)	48 (1.2)	17 (0.8)	41 (0.9)	42 (1.2)	27 (0.8)	49 (1.0)	24 (0.8)
Slovak Republic	12 (0.8)	34 (1.1)	54 (1.4)	10 (0.7)	44 (1.3)	46 (1.6)	18 (0.9)	46 (1.1)	36 (1.3)
Slovenia	--	--	--	--	--	--	--	--	--
<b>International Avg.</b>	<b>18 (0.3)</b>	<b>31 (0.4)</b>	<b>51 (0.4)</b>	<b>18 (0.3)</b>	<b>42 (0.3)</b>	<b>40 (0.4)</b>	<b>22 (0.3)</b>	<b>39 (0.3)</b>	<b>39 (0.4)</b>

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

Background data provided by students.

\* Countries administered either a general/integrated science or separate subject area form of the questionnaire. In countries that administered the separate subject area form, students were asked about each subject area separately.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

<sup>a</sup> Chinese Taipei: Students were asked about 'natural science'; data pertain to grade 8 physics/chemistry course.

<sup>b</sup> Indonesia: Students were asked about 'IPA science'; data pertain to the composite course taught by biology and physics teachers.

<sup>c</sup> Netherlands: Data in physics panel pertain to physics/chemistry course.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "s" indicates a 50-69% student response rate. An "x" indicates a <50% student response rate.

	Percentage of Students Reporting								
	To Get Desired Job			To Please Parents			To Get Into Desired Secondary School or University		
	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree	Strongly Agree	Agree	Disagree/Strongly Disagree
<b>Biology</b>									
Belgium (Flemish)	8 (0.8)	17 (0.6)	75 (1.1)	12 (1.1)	55 (0.8)	33 (1.2)	8 (0.8)	23 (0.8)	69 (1.1)
Bulgaria	28 (1.7)	34 (1.4)	38 (2.5)	19 (0.9)	36 (1.1)	45 (1.4)	32 (1.7)	36 (1.3)	32 (2.1)
Czech Republic	19 (1.2)	30 (1.1)	52 (1.5)	19 (1.1)	58 (1.1)	23 (0.9)	27 (1.3)	41 (1.2)	33 (1.4)
Finland	8 (0.6)	27 (0.9)	64 (1.1)	6 (0.6)	35 (1.0)	59 (1.0)	11 (0.7)	41 (1.1)	47 (1.1)
Hungary	10 (0.6)	31 (1.0)	59 (1.0)	5 (0.4)	35 (1.0)	60 (1.0)	22 (0.9)	49 (1.1)	29 (1.0)
Latvia (LSS)	12 (0.9)	36 (1.2)	53 (1.3)	12 (0.9)	53 (1.1)	34 (1.3)	19 (1.0)	50 (1.0)	31 (1.1)
Lithuania †	17 (0.8)	36 (1.1)	46 (1.2)	6 (0.5)	27 (1.1)	67 (1.2)	22 (0.9)	44 (1.0)	34 (1.1)
Macedonia, Rep. of	37 (1.2)	34 (0.9)	29 (1.2)	31 (1.1)	34 (0.8)	35 (1.2)	48 (1.1)	36 (1.0)	15 (0.7)
Moldova	29 (1.2)	45 (1.2)	26 (1.2)	25 (1.2)	45 (1.1)	30 (1.4)	32 (1.1)	49 (1.1)	20 (1.0)
Morocco s	49 (1.0)	34 (0.9)	18 (1.0)	s 52 (1.4)	32 (1.5)	16 (1.1)	s 50 (1.0)	35 (1.0)	16 (0.8)
Netherlands	12 (0.9)	23 (1.4)	65 (1.9)	9 (1.0)	38 (1.6)	53 (1.4)	14 (1.0)	28 (1.9)	58 (2.3)
Romania	24 (1.1)	43 (1.2)	33 (1.3)	23 (1.1)	47 (1.2)	30 (1.6)	28 (1.2)	44 (1.0)	28 (1.1)
Russian Federation	23 (0.9)	31 (0.9)	46 (1.2)	16 (0.9)	41 (0.9)	44 (1.2)	27 (0.9)	50 (1.0)	23 (0.9)
Slovak Republic	13 (0.7)	35 (1.2)	52 (1.4)	8 (0.6)	43 (1.5)	48 (1.6)	22 (1.0)	48 (1.3)	30 (1.3)
Slovenia	9 (0.5)	28 (1.0)	63 (1.1)	3 (0.4)	23 (0.9)	74 (1.1)	14 (0.7)	45 (0.9)	41 (1.1)
<b>International Avg.</b>	20 (0.3)	32 (0.3)	48 (0.4)	16 (0.2)	40 (0.3)	44 (0.3)	25 (0.3)	41 (0.3)	34 (0.3)
<b>Physics</b>									
Belgium (Flemish)	5 (0.6)	20 (1.3)	75 (1.4)	16 (1.1)	57 (1.4)	27 (1.2)	7 (0.7)	28 (1.4)	65 (1.6)
Bulgaria	30 (1.4)	31 (1.9)	38 (2.5)	23 (1.4)	34 (1.3)	43 (1.5)	33 (1.6)	35 (1.4)	33 (2.1)
Czech Republic	20 (1.4)	32 (1.2)	48 (1.4)	26 (1.3)	55 (1.2)	20 (1.0)	28 (1.3)	39 (1.1)	34 (1.4)
Finland	9 (0.7)	25 (1.1)	66 (1.3)	8 (0.6)	32 (1.0)	60 (1.0)	11 (0.7)	37 (1.1)	53 (1.3)
Hungary	12 (0.6)	34 (1.1)	54 (1.3)	7 (0.5)	37 (1.0)	56 (1.0)	21 (0.9)	48 (1.2)	31 (1.2)
Latvia (LSS)	17 (0.8)	44 (1.0)	40 (1.2)	20 (1.0)	53 (1.0)	27 (1.1)	24 (1.0)	52 (1.0)	24 (1.0)
Lithuania †	22 (1.1)	42 (1.2)	36 (1.4)	8 (0.6)	28 (1.2)	63 (1.3)	25 (1.0)	45 (1.2)	31 (1.4)
Macedonia, Rep. of	38 (1.1)	33 (0.9)	30 (1.1)	31 (1.1)	34 (1.0)	35 (1.3)	43 (1.1)	37 (0.9)	19 (0.9)
Moldova	28 (1.2)	42 (1.2)	30 (1.2)	24 (1.1)	45 (1.2)	31 (1.6)	28 (1.2)	49 (1.1)	23 (1.0)
Morocco s	61 (1.3)	28 (1.0)	11 (0.8)	s 56 (1.4)	33 (1.2)	11 (0.8)	s 56 (1.8)	32 (1.2)	12 (0.9)
Netherlands c	9 (0.8)	23 (1.3)	68 (1.6)	9 (0.8)	39 (1.5)	52 (1.6)	10 (0.8)	26 (1.6)	64 (1.8)
Romania	23 (1.1)	40 (1.2)	37 (1.3)	23 (1.0)	47 (1.4)	30 (1.5)	23 (1.0)	42 (1.0)	35 (1.2)
Russian Federation	25 (0.8)	35 (1.2)	39 (1.2)	20 (0.9)	41 (1.1)	39 (1.5)	32 (1.1)	48 (1.1)	21 (1.0)
Slovak Republic	14 (0.8)	35 (1.0)	50 (1.3)	10 (0.8)	44 (1.2)	45 (1.4)	21 (0.9)	48 (1.0)	31 (1.2)
Slovenia	12 (0.6)	31 (1.0)	57 (1.1)	5 (0.5)	25 (0.9)	70 (1.0)	14 (0.8)	45 (1.1)	41 (1.3)
<b>International Avg.</b>	22 (0.3)	33 (0.3)	45 (0.4)	19 (0.3)	40 (0.3)	41 (0.3)	25 (0.3)	41 (0.3)	34 (0.3)
<b>Chemistry</b>									
Belgium (Flemish)	--	--	--	--	--	--	--	--	--
Bulgaria	25 (1.3)	31 (1.7)	44 (2.6)	19 (1.2)	34 (1.1)	47 (1.5)	28 (1.4)	35 (1.7)	37 (2.5)
Czech Republic	19 (1.1)	30 (1.2)	51 (1.3)	23 (1.1)	56 (1.1)	21 (1.1)	26 (1.3)	40 (1.1)	34 (1.3)
Finland	9 (0.7)	26 (1.0)	66 (1.3)	7 (0.6)	31 (1.0)	62 (1.0)	11 (0.7)	38 (1.3)	51 (1.4)
Hungary	9 (0.5)	30 (1.0)	61 (1.1)	5 (0.4)	36 (1.0)	59 (1.0)	20 (0.9)	47 (1.1)	33 (1.1)
Latvia (LSS)	17 (1.0)	39 (1.1)	44 (1.1)	18 (1.0)	54 (1.0)	29 (1.2)	23 (0.9)	52 (1.1)	25 (0.8)
Lithuania †	17 (1.0)	40 (1.3)	43 (1.3)	7 (0.6)	29 (1.2)	64 (1.2)	21 (0.9)	46 (1.1)	33 (1.2)
Macedonia, Rep. of	34 (1.3)	34 (1.1)	33 (1.2)	29 (1.1)	34 (0.9)	37 (1.3)	42 (1.2)	39 (1.1)	19 (0.9)
Moldova	26 (1.1)	41 (1.1)	32 (1.3)	24 (1.2)	44 (1.1)	32 (1.5)	27 (1.0)	50 (1.1)	23 (1.0)
Morocco s	54 (1.3)	32 (1.1)	13 (1.2)	s 54 (1.5)	32 (1.3)	13 (0.9)	s 52 (1.2)	34 (1.1)	14 (0.9)
Netherlands	--	--	--	--	--	--	--	--	--
Romania	22 (1.1)	39 (1.2)	39 (1.4)	22 (1.2)	46 (1.3)	32 (1.6)	25 (1.2)	42 (1.1)	33 (1.2)
Russian Federation	24 (0.9)	32 (1.0)	44 (1.1)	17 (0.9)	41 (1.1)	42 (1.4)	29 (0.9)	49 (1.1)	23 (0.8)
Slovak Republic	13 (0.8)	33 (1.1)	54 (1.4)	10 (0.7)	43 (1.1)	47 (1.3)	21 (0.9)	47 (1.1)	33 (1.2)
Slovenia	10 (0.6)	28 (1.0)	62 (1.1)	3 (0.3)	24 (0.9)	73 (0.9)	14 (0.7)	45 (1.0)	41 (1.0)
<b>International Avg.</b>	21 (0.3)	34 (0.3)	45 (0.4)	18 (0.3)	39 (0.3)	43 (0.3)	26 (0.3)	43 (0.3)	31 (0.3)

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

	Average Hours Spent Each Day Studying or Doing Homework <sup>1</sup>				Percentage of Students Reporting Spending Some Time Studying All Three Subjects: Science, Mathematics, and Other
	Science	Mathematics	Other School Subjects	Total	
Australia	0.6 (0.02)	0.7 (0.02)	0.8 (0.02)	2.0 (0.04)	74 (1.6)
Belgium (Flemish)	0.8 (0.03)	1.1 (0.03)	1.4 (0.04)	2.9 (0.05)	86 (1.2)
Bulgaria	1.1 (0.03)	1.1 (0.04)	1.3 (0.04)	3.0 (0.06)	74 (1.9)
Canada	0.6 (0.01)	0.8 (0.02)	1.0 (0.02)	2.2 (0.04)	78 (1.0)
Chile	0.9 (0.02)	0.9 (0.02)	1.2 (0.03)	2.4 (0.04)	75 (1.0)
Chinese Taipei	0.6 (0.02)	0.7 (0.02)	1.0 (0.02)	2.0 (0.05)	55 (1.3)
Cyprus	0.7 (0.02)	1.1 (0.03)	1.5 (0.03)	2.8 (0.04)	79 (0.8)
Czech Republic	0.6 (0.02)	0.7 (0.02)	0.7 (0.02)	1.9 (0.04)	74 (1.4)
England	--	--	--	--	--
Finland	0.5 (0.01)	0.6 (0.01)	0.7 (0.01)	1.8 (0.02)	90 (0.8)
Hong Kong, SAR	0.5 (0.01)	0.7 (0.02)	0.7 (0.02)	1.6 (0.04)	53 (1.3)
Hungary	1.1 (0.02)	0.8 (0.02)	1.2 (0.03)	2.8 (0.04)	90 (0.8)
Indonesia	1.1 (0.02)	1.2 (0.03)	1.3 (0.02)	3.0 (0.05)	83 (1.0)
Iran, Islamic Rep.	1.6 (0.03)	1.9 (0.03)	2.0 (0.04)	r 4.0 (0.05)	92 (0.5)
Israel	0.8 (0.02)	1.1 (0.03)	1.4 (0.04)	2.7 (0.05)	79 (0.9)
Italy	1.0 (0.02)	1.3 (0.03)	1.9 (0.03)	3.6 (0.04)	91 (0.8)
Japan	0.4 (0.01)	0.6 (0.01)	0.8 (0.02)	1.7 (0.04)	59 (1.4)
Jordan	1.5 (0.03)	1.7 (0.03)	2.4 (0.05)	r 3.7 (0.06)	r 87 (0.9)
Korea, Rep. of	0.4 (0.01)	0.6 (0.02)	0.7 (0.02)	1.6 (0.03)	50 (0.9)
Latvia (LSS)	0.8 (0.02)	1.0 (0.02)	1.5 (0.03)	3.0 (0.04)	89 (0.7)
Lithuania †	0.8 (0.02)	0.9 (0.03)	1.5 (0.04)	2.8 (0.04)	89 (1.0)
Macedonia, Rep. of	2.0 (0.05)	1.2 (0.03)	1.5 (0.04)	r 3.4 (0.05)	90 (0.5)
Malaysia	1.3 (0.02)	1.6 (0.02)	1.8 (0.03)	3.8 (0.04)	94 (0.4)
Moldova	1.7 (0.04)	1.1 (0.03)	1.4 (0.04)	r 3.3 (0.05)	83 (0.8)
Morocco	r 1.5 (0.06)	r 1.7 (0.07)	r 1.8 (0.06)	s 3.1 (0.05)	s 77 (1.3)
Netherlands	0.6 (0.02)	0.6 (0.02)	1.0 (0.02)	2.2 (0.04)	89 (1.1)
New Zealand	0.6 (0.02)	0.7 (0.02)	0.9 (0.02)	2.0 (0.04)	76 (1.3)
Philippines	1.7 (0.04)	1.7 (0.04)	2.1 (0.04)	r 3.3 (0.04)	88 (0.7)
Romania	1.2 (0.03)	1.6 (0.05)	1.4 (0.04)	3.4 (0.06)	77 (1.2)
Russian Federation	1.5 (0.03)	1.1 (0.03)	1.2 (0.04)	3.1 (0.05)	89 (0.7)
Singapore	1.2 (0.02)	1.3 (0.02)	1.7 (0.03)	3.5 (0.04)	90 (0.8)
Slovak Republic	0.8 (0.02)	0.8 (0.02)	0.9 (0.02)	2.3 (0.03)	88 (0.8)
Slovenia	0.9 (0.02)	0.8 (0.02)	0.9 (0.02)	2.5 (0.03)	85 (1.0)
South Africa	1.5 (0.05)	1.8 (0.04)	2.0 (0.06)	r 3.1 (0.06)	71 (1.9)
Thailand	1.0 (0.02)	1.1 (0.02)	1.2 (0.02)	2.9 (0.04)	88 (0.6)
Tunisia	1.2 (0.03)	1.8 (0.03)	2.1 (0.03)	r 3.6 (0.04)	82 (0.8)
Turkey	1.2 (0.02)	1.2 (0.02)	1.9 (0.03)	3.5 (0.05)	90 (0.7)
United States	0.6 (0.01)	0.8 (0.02)	0.9 (0.02)	2.1 (0.04)	72 (1.6)
<b>International Avg.</b>	<b>1.0 (0.00)</b>	<b>1.1 (0.00)</b>	<b>1.3 (0.01)</b>	<b>2.8 (0.01)</b>	<b>80 (0.2)</b>

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

Background data provided by students.

<sup>1</sup> Average hours based on: No time=0; less than 1 hour=.5; 1-2 hours=1.5; 3-5 hours=4; more than 5 hours=7.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates a 70-84% student response rate. An "s" indicates a 50-69% student response rate.



	Spend Any Time Studying All Three Science, Mathematics, and Other Subjects		Spend At Least 3 Hours Studying Across Subjects		Spend 1 Hour or More Studying Science	
	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference	Percent of Students 1999	1995 - 1999 Difference
Australia	74 (1.6)	4 (2.1) ●	17 (0.9)	1 (1.1) ●	14 (0.8)	2 (1.0) ●
Belgium (Flemish)	85 (1.2)	-3 (1.5) ●	41 (1.3)	-1 (2.0) ●	31 (1.4)	0 (2.0) ●
Canada	78 (1.0)	7 (2.0) ▲	24 (0.8)	4 (1.3) ▲	18 (0.7)	2 (1.2) ●
Cyprus	79 (0.8)	4 (1.2) ●	35 (1.1)	-5 (1.4) ▼	25 (1.0)	-5 (1.5) ▼
Czech Republic	74 (1.4)	5 (2.2) ●	16 (1.1)	3 (1.3) ●	20 (1.1)	3 (1.4) ●
England	--	--	--	--	--	--
Hong Kong, SAR	53 (1.3)	-17 (2.1) ▼	16 (0.8)	-12 (1.4) ▼	13 (0.6)	-2 (1.0) ●
Hungary	90 (0.8)	2 (1.1) ●	40 (1.3)	2 (1.9) ●	45 (1.3)	0 (1.8) ●
Iran, Islamic Rep.	92 (0.5)	r -3 (0.7) ▼	69 (1.1)	s -4 (1.9) ●	68 (1.1)	-8 (1.9) ▼
Israel †	80 (0.9)	4 (1.7) ●	33 (1.7)	2 (2.5) ●	20 (1.2)	3 (2.0) ●
Italy	92 (0.8)	0 (1.2) ●	60 (1.6)	0 (2.2) ●	46 (1.7)	1 (2.4) ●
Japan	59 (1.4)	-13 (1.9) ▼	17 (0.9)	-10 (1.3) ▼	12 (0.7)	-7 (1.1) ▼
Korea, Rep. of	50 (0.9)	-15 (1.6) ▼	16 (0.7)	-11 (1.4) ▼	13 (0.6)	-5 (1.1) ▼
Latvia (LSS)	89 (0.7)	9 (1.6) ▲	40 (1.2)	13 (1.6) ▲	25 (1.0)	8 (1.5) ▲
Lithuania	89 (1.0)	7 (1.5) ▲	35 (1.2)	10 (1.8) ▲	25 (1.2)	4 (1.8) ●
Netherlands	89 (1.1)	-1 (1.6) ●	19 (1.4)	3 (1.6) ●	15 (1.3)	2 (1.6) ●
New Zealand	76 (1.3)	0 (1.8) ●	17 (1.0)	1 (1.3) ●	15 (1.0)	2 (1.2) ●
Romania	76 (1.2)	1 (1.8) ●	55 (1.6)	r 4 (2.2) ●	48 (1.3)	-7 (2.1) ▼
Russian Federation	89 (0.7)	4 (1.1) ▲	48 (1.3)	13 (1.9) ▲	61 (1.3)	18 (1.9) ▲
Singapore	90 (0.8)	-2 (1.0) ●	59 (1.2)	-18 (1.5) ▼	55 (1.2)	-18 (1.6) ▼
Slovak Republic	88 (0.8)	4 (1.3) ▲	24 (0.9)	2 (1.3) ●	25 (1.2)	-1 (1.7) ●
Slovenia	85 (1.0)	-1 (1.3) ●	32 (1.0)	-3 (1.4) ●	38 (1.1)	-4 (1.6) ●
Thailand †	88 (0.6)	-3 (1.0) ●	45 (1.2)	-6 (2.0) ▼	42 (1.2)	-3 (1.9) ●
United States	72 (1.6)	1 (2.1) ●	22 (0.8)	0 (1.1) ●	16 (0.8)	-2 (1.0) ●
<b>International Avg. §</b>	<b>79 (0.2)</b>	<b>0 (0.4) ●</b>	<b>33 (0.2)</b>	<b>0 (0.4) ●</b>	<b>30 (0.2)</b>	<b>-1 (0.3) ●</b>

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

▲ 1999 significantly higher than 1995

● No significant difference between 1995 and 1999

▼ 1999 significantly lower than 1995

Significance tests adjusted for multiple comparisons

Background data provided by students.

† Countries with unapproved sampling procedures at the classroom level in 1995.

§ International average is for countries that participated and met sampling guidelines in both 1995 and 1999.

Trend notes: Because coverage fell below 65% in 1995 and 1999, Latvia is annotated LSS for Latvian-Speaking Schools only. Lithuania tested later in 1999 than in 1995, at the beginning of the next school year. In 1995, Italy and Israel were unable to cover their International Desired Population; 1999 data are based on their comparable populations.

Background data for Bulgaria and South Africa are unavailable for 1995.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates data are not available.

An "r" indicates a 70-84% student response rate, based on the lower response rate in either 1995 or 1999. An "s" indicates a 50-69% student response rate, based on the lower response rate in either 1995 or 1999.

	Average Hours Spent Each Day <sup>1</sup>					
	Watching Television or Videos	Playing Computer Games	Playing or Talking With	Doing Jobs at Home	Playing Sports	Reading a Book for Enjoyment
Australia	2.3 (0.05)	0.8 (0.03)	1.5 (0.03)	0.9 (0.03)	1.6 (0.03)	0.6 (0.02)
Belgium (Flemish)	2.1 (0.04)	0.9 (0.04)	1.8 (0.05)	1.0 (0.04)	1.8 (0.07)	0.6 (0.02)
Bulgaria	2.8 (0.05)	0.8 (0.04)	2.6 (0.06)	1.9 (0.04)	1.5 (0.05)	1.0 (0.03)
Canada	2.2 (0.03)	0.8 (0.02)	2.1 (0.04)	1.1 (0.03)	1.9 (0.03)	0.7 (0.04)
Chile	2.7 (0.05)	0.6 (0.02)	1.9 (0.04)	1.5 (0.03)	2.0 (0.03)	0.7 (0.02)
Chinese Taipei	2.0 (0.04)	0.9 (0.03)	1.3 (0.03)	1.0 (0.02)	1.2 (0.02)	0.9 (0.02)
Cyprus	2.2 (0.04)	1.0 (0.03)	1.8 (0.04)	0.9 (0.03)	1.4 (0.04)	0.7 (0.02)
Czech Republic	2.3 (0.05)	0.9 (0.06)	3.0 (0.07)	1.2 (0.03)	2.0 (0.05)	1.0 (0.04)
England	2.6 (0.05)	1.2 (0.04)	2.5 (0.08)	0.8 (0.02)	1.6 (0.04)	0.6 (0.02)
Finland	2.5 (0.04)	1.1 (0.03)	3.2 (0.07)	0.9 (0.02)	1.6 (0.04)	0.8 (0.02)
Hong Kong, SAR	2.4 (0.04)	1.0 (0.03)	1.3 (0.04)	0.6 (0.01)	1.0 (0.03)	0.8 (0.02)
Hungary	2.7 (0.05)	1.0 (0.03)	2.0 (0.05)	1.6 (0.04)	1.5 (0.04)	0.8 (0.02)
Indonesia	1.7 (0.05)	0.2 (0.02)	1.1 (0.02)	1.9 (0.03)	1.0 (0.02)	0.9 (0.02)
Iran, Islamic Rep.	1.8 (0.04)	0.3 (0.03)	1.3 (0.04)	1.7 (0.04)	1.3 (0.06)	0.9 (0.02)
Israel	3.1 (0.05)	1.5 (0.04)	2.4 (0.04)	1.3 (0.05)	1.8 (0.05)	1.0 (0.03)
Italy	1.8 (0.03)	1.0 (0.03)	2.7 (0.05)	1.1 (0.03)	1.7 (0.03)	0.7 (0.02)
Japan	3.1 (0.05)	0.9 (0.03)	1.8 (0.04)	0.5 (0.02)	1.1 (0.03)	0.8 (0.02)
Jordan	1.7 (0.04)	0.8 (0.04)	1.1 (0.04)	1.3 (0.05)	1.4 (0.05)	r 1.4 (0.04)
Korea, Rep. of	2.9 (0.04)	0.8 (0.03)	1.3 (0.03)	0.6 (0.01)	0.6 (0.02)	0.6 (0.01)
Latvia (LSS)	2.8 (0.05)	0.7 (0.03)	2.6 (0.06)	1.7 (0.03)	1.3 (0.03)	0.9 (0.03)
Lithuania †	2.4 (0.05)	0.6 (0.03)	2.4 (0.06)	1.6 (0.05)	1.0 (0.03)	0.7 (0.02)
Macedonia, Rep. of	2.2 (0.05)	0.7 (0.04)	1.8 (0.05)	1.9 (0.04)	1.8 (0.05)	1.2 (0.04)
Malaysia	1.9 (0.05)	0.5 (0.02)	1.2 (0.03)	1.8 (0.03)	1.1 (0.02)	1.1 (0.02)
Moldova	2.6 (0.07)	1.0 (0.05)	1.9 (0.06)	3.2 (0.09)	1.4 (0.04)	1.5 (0.04)
Morocco	r 1.1 (0.03)	r 0.7 (0.02)	r 0.9 (0.03)	r 1.5 (0.03)	r 1.5 (0.04)	r 1.4 (0.05)
Netherlands	2.4 (0.10)	0.9 (0.04)	2.6 (0.09)	0.8 (0.04)	1.8 (0.06)	0.7 (0.04)
New Zealand	2.5 (0.05)	0.9 (0.04)	1.6 (0.04)	1.0 (0.03)	1.5 (0.04)	0.7 (0.02)
Philippines	1.7 (0.04)	0.7 (0.03)	1.2 (0.03)	2.4 (0.05)	1.6 (0.04)	1.6 (0.04)
Romania	2.2 (0.06)	0.6 (0.04)	1.6 (0.05)	2.0 (0.06)	1.2 (0.04)	1.0 (0.03)
Russian Federation	2.6 (0.05)	0.7 (0.03)	3.0 (0.05)	1.5 (0.03)	1.3 (0.03)	1.2 (0.03)
Singapore	2.4 (0.04)	1.1 (0.03)	1.5 (0.04)	0.9 (0.02)	1.5 (0.04)	1.0 (0.02)
Slovak Republic	2.5 (0.06)	0.6 (0.03)	2.7 (0.06)	1.6 (0.05)	1.9 (0.04)	0.7 (0.02)
Slovenia	2.3 (0.05)	0.9 (0.03)	1.8 (0.04)	1.2 (0.03)	1.6 (0.04)	0.7 (0.02)
South Africa	2.0 (0.07)	0.8 (0.04)	1.5 (0.04)	2.0 (0.04)	2.0 (0.05)	1.8 (0.05)
Thailand	2.1 (0.05)	0.4 (0.02)	1.6 (0.04)	1.6 (0.02)	1.5 (0.03)	1.0 (0.02)
Tunisia	2.0 (0.04)	0.9 (0.03)	1.3 (0.03)	1.7 (0.04)	1.9 (0.04)	1.4 (0.03)
Turkey	1.6 (0.04)	r 0.4 (0.02)	1.5 (0.03)	1.1 (0.04)	1.4 (0.03)	1.2 (0.03)
United States	2.5 (0.06)	0.9 (0.02)	2.4 (0.05)	1.1 (0.03)	1.9 (0.03)	0.6 (0.02)
<b>International Avg.</b>	<b>2.3 (0.01)</b>	<b>0.8 (0.01)</b>	<b>1.9 (0.01)</b>	<b>1.4 (0.01)</b>	<b>1.5 (0.01)</b>	<b>1.0 (0.00)</b>

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

Background data provided by students.

\* Activities are not necessarily exclusive; students may have reported engaging in more than one activity at the same time.

<sup>1</sup> Average hours based on: No time=0; less than 1 hour=.5; 1-2 hours=1.5; 3-5 hours=4; more than 5 hours=7.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates a 70-84% student response rate.

Percentage of Students Reporting Agree or Strongly Agree						
Countries with General/ Integrated Science		Countries with Separate Science Subjects				
		Earth Science	Biology	Physics	Chemistry	
Australia	45 (1.4)	Belgium (Flemish)	50 (1.1)	44 (1.5)	49 (2.3)	--
Canada	43 (0.8)	Bulgaria	41 (1.5)	35 (2.3)	45 (2.0)	52 (1.3)
Chile	46 (1.1)	Czech Republic	33 (1.3)	29 (1.2)	45 (1.5)	45 (1.8)
Chinese Taipei <sup>a</sup>	50 (1.1)	Finland	41 (1.3)	38 (1.4)	58 (1.3)	48 (1.4)
Cyprus	42 (1.0)	Hungary	36 (1.2)	30 (1.3)	48 (1.3)	55 (1.4)
England	36 (1.1)	Latvia (LSS)	--	33 (1.3)	59 (1.4)	57 (1.6)
Hong Kong, SAR	55 (1.1)	Lithuania <sup>‡</sup>	--	33 (1.4)	55 (1.5)	63 (1.2)
Indonesia <sup>b</sup>	55 (1.0)	Macedonia, Rep. of	37 (1.4)	38 (1.1)	48 (1.2)	52 (1.2)
Iran, Islamic Rep.	30 (0.9)	Moldova	23 (1.3)	25 (1.2)	31 (1.3)	32 (1.2)
Israel	38 (1.1)	Morocco	r 54 (0.9)	r 52 (0.9)	r 45 (1.5)	r 51 (1.0)
Italy	36 (1.1)	Netherlands <sup>c</sup>	38 (1.4)	34 (1.2)	44 (2.1)	--
Japan	53 (0.9)	Romania	54 (1.4)	56 (1.5)	70 (1.2)	67 (1.3)
Jordan	37 (1.0)	Russian Federation	24 (1.0)	15 (1.0)	29 (1.1)	38 (1.7)
Korea, Rep. of	55 (1.1)	Slovak Republic	36 (1.4)	40 (1.4)	53 (1.3)	44 (1.4)
Malaysia	33 (1.1)	Slovenia	--	12 (0.7)	28 (1.1)	32 (1.0)
New Zealand	48 (1.1)	<b>International Avg.</b>	39 (0.4)	34 (0.3)	47 (0.4)	49 (0.4)
Philippines	47 (1.2)					
Singapore	41 (1.2)					
South Africa	55 (1.4)					
Thailand	53 (1.1)					
Tunisia	28 (0.8)					
Turkey	42 (1.1)					
United States	35 (0.9)					
<b>International Avg.</b>	44 (0.2)					

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

Background data provided by students.

\* Countries administered either a general/integrated science or separate subject area form of the questionnaire. In countries that administered the separate subject form, students were asked about each subject area separately.

‡ Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

<sup>a</sup> Chinese Taipei: Students were asked about 'natural science'; data pertain to grade 8 physics/chemistry course.<sup>b</sup> Indonesia: Students were asked about 'IPA science'; data pertain to the composite course taught by biology and physics teachers.<sup>c</sup> Netherlands: Data in physics panel pertain to physics/chemistry course.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates data are not available.

An "r" indicates a 70-84% student response rate.

Percentage of Students Reporting Like or Like A Lot						
Countries with General/ Integrated Science		Countries with Separate Science Subjects				
		Earth Science	Biology	Physics	Chemistry	
Australia	66 (1.5)	Belgium (Flemish)	51 (1.6)	67 (1.1)	57 (2.3)	--
Canada	70 (1.0)	Bulgaria	76 (2.1)	87 (1.0)	74 (1.9)	63 (1.7)
Chile	89 (0.7)	Czech Republic	72 (1.6)	78 (1.6)	54 (2.1)	58 (2.1)
Chinese Taipei <sup>a</sup>	69 (0.9)	Finland	71 (1.3)	74 (1.3)	50 (1.5)	68 (1.3)
Cyprus	75 (0.9)	Hungary	66 (1.4)	77 (1.2)	52 (1.5)	48 (1.6)
England	83 (0.9)	Latvia (LSS)	--	80 (1.3)	55 (1.7)	63 (1.7)
Hong Kong, SAR	76 (1.1)	Lithuania <sup>†</sup>	--	81 (1.3)	55 (1.8)	50 (1.7)
Indonesia <sup>b</sup>	96 (0.4)	Macedonia, Rep. of	94 (0.6)	96 (0.4)	84 (1.2)	84 (1.0)
Iran, Islamic Rep.	92 (0.6)	Moldova	22 (1.1)	23 (1.1)	38 (1.3)	40 (1.4)
Israel	67 (1.4)	Morocco <sup>r</sup>	62 (1.1)	67 (1.2)	90 (0.6)	77 (0.9)
Italy	72 (1.2)	Netherlands	--	--	--	--
Japan	55 (1.1)	Romania	83 (1.1)	82 (1.3)	58 (1.8)	58 (1.6)
Jordan	87 (0.9)	Russian Federation	81 (1.2)	92 (0.6)	78 (1.1)	75 (1.3)
Korea, Rep. of	52 (1.2)	Slovak Republic	79 (1.7)	77 (1.2)	57 (1.6)	70 (1.9)
Malaysia	96 (0.5)	Slovenia	--	77 (1.3)	55 (1.4)	53 (1.3)
New Zealand	70 (1.1)	<b>International Avg.</b>	69 (0.4)	76 (0.3)	61 (0.4)	62 (0.4)
Philippines	92 (0.6)					
Singapore	86 (1.1)					
South Africa	86 (1.4)					
Thailand	90 (0.6)					
Tunisia	90 (0.6)					
Turkey	87 (0.7)					
United States	73 (0.8)					
<b>International Avg.</b>	79 (0.2)					

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

Background data provided by students.

\* Countries administered either a general/integrated science or separate subject area form of the questionnaire. In countries that administered the separate subject area form, students were asked about each subject area separately. Percentages for separate science subject areas are based only on those students taking each subject.

† Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

<sup>a</sup> Chinese Taipei: Students were asked about 'natural science'; data pertain to grade 8 physics/chemistry course.

<sup>b</sup> Indonesia: Students were asked about 'IPA science'; data pertain to the composite course taught by biology and physics teachers.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates a 70-84% student response rate.