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|  | 2011 TIMSS Results | |
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| 2011 Trends in International Mathematics and Science Study (TIMSS)  June 2013 | |
| Massachusetts Department of Elementary and Secondary Education  75 Pleasant Street, Malden, MA 02148-4906  Phone 781-338-3000 TTY: N.E.T. Relay 800-439-2370  www.doe.mass.edu | |
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# Executive Summary

# TIMSS is an international assessment of mathematics and science achievement that has been administered to fourth-grade and eighth- grade students every four years since 1995. In 2011, a nationally representative sample of students from 63 countries and 14 benchmarking entities, including nine U.S. states, participated in TIMSS. Countries and benchmarking participants could elect to participate in the fourth- grade assessment, the eighth- grade assessment, or both. Fifty-two countries and seven benchmarking entities participated in the fourth- grade assessment, and 45 countries and 14 benchmarking entities participated in the eighth- grade assessment. In total, more than 600,000 students around the world participated in TIMSS 2011. TIMSS 2011 continues the series of international assessments in mathematics and science conducted by the International Association for the Evaluation of Educational Achievement (IEA).

The 2011 administration marks the third time that Massachusetts has participated in TIMSS (1999 and 2007 were the two previous assessment administrations). In 2011, Massachusetts was one of eight states asked by the U.S. Department of Education to participate in TIMSS at the eighth- grade level. In Massachusetts, TIMSS was administered to 2,075 students from 56 randomly selected Massachusetts public schools. This report will focus only on eighth grade results.

Following are some highlights of the TIMSS 2011 assessment in Massachusetts:

* When comparing results from 1999, Massachusetts 8th graders made the highest gains of any participating nation or benchmarking entity in mathematics (+48, from 513 in 1999 to 561 in 2011) and second highest gains in science (+34, from 533 in 1999 to 567 in 2011).
* In mathematics, Massachusetts 8th graders had an average scale score of 561, statistically tied with Japan (570), and surpassed only by Korea (613), Singapore (611), Chinese Taipei (609), and Hong Kong SAR (586). Nineteen percent of the state’s 8th graders performed at the Advanced level. See figure 1 for a multi-year comparison of mathematics benchmarks.
* In science, Massachusetts 8th graders had an average scale score of 567, statistically tied with Chinese Taipei (564), Korea (560), Japan (558), and Minnesota (553), and surpassed only by Singapore (590). Twenty-four percent of the state’s 8th graders performed at the Advanced level. See figure 2 for a multi-year comparison of science benchmarks.
* In both mathematics and science, there is no statistical difference between the performances of male and female students, although the scale scores of males was slightly higher than the scale scores of females.
* In mathematics, Massachusetts 8th graders outperformed students in the other 8 participating states (Alabama, California, Colorado, Connecticut, Florida, Indiana, Minnesota, and North Carolina) and the United States.
* In science, Massachusetts 8th graders scored similarly to students in Minnesota and higher than students in the remaining seven participating states and the United States.

**Figure 1. TIMSS Mathematics Benchmark Growth for Massachusetts Grade 8 1999-2011**

Bar graph: Math Benchmark Growth for Massachusetts Grade 8 1999 to 2011.
 
1999-Advanced 10%, High 30%, Intermediate 72%, Low 95%
2007-Advanced 15%, High 55%, Intermediate 80%, Low 95%
2011-Advanced 20%, High 58%, Intermediate 85%, Low 98%

**Figure 2. TIMSS Science Benchmark Growth for Massachusetts Grade 8 1999-2011**

Science Benchmark Growth for Massachusetts Grade 8 1999 to 2011

Numbers are approximations.
1999-Advanced18%, High 40%, Intermediate 70%, Low 90%
2007-Advanced 22%, High 62%, Intermediate 90%, Low 100%
2011-Advanced 24%, High 60%, Intermediate 85%, Low 98%


**Background on the TIMSS Assessment**

The TIMSS mathematics and science assessments, developed collaboratively with the participating countries, are based on comprehensive test frameworks that are organized around two dimensions:

* A content dimension specifying the domains or subject matter to be assessed within the subject; and
* A cognitive dimension specifying the domains or thinking processes expected of students as they engage with the subject matter.

The content and cognitive domains for eighth grade mathematics are:

|  |  |  |  |
| --- | --- | --- | --- |
| Percent | Content Domains | Percent | Cognitive Domains |
| 30% | Number | 35% | Knowing |
| 30% | Algebra | 40% | Applying |
| 20% | Geometry | 25% | Reasoning |
| 20% | Data and Chance | ̶ | ̶ |

The content and cognitive domains for eighth grade science are:

|  |  |  |  |
| --- | --- | --- | --- |
| Percent | Content Domains | Percent | Cognitive Domains |
| 35% | Biology | 35% | Knowing |
| 20% | Chemistry | 35% | Applying |
| 25% | Physics | 30% | Reasoning |
| 20% | Earth Science | ̶ | ̶ |

Given the frameworks’ broad coverage goals, the assessment item pools are necessarily large with about half being multiple choice and half being constructed response items where students write a short answer. The achievement results are reported on the 8th grade TIMSS achievement scales with a range of 1-1,000 (although student performance typically ranges between 300 and 700). TIMSS uses the center point of the scale (500) as a point of reference that remains constant from assessment to assessment. TIMSS reports achievement at four points along the scale as international benchmarks: Advanced (625), High (550), Intermediate (475), and Low (400).

**2011 TIMSS Mathematics Results**

In 2011, the Massachusetts mathematics eighth grade average scale score of 561 was higher than that of 2007 (547) and 1999 (513). In 2011, only four nations scored statistically higher than Massachusetts (see Table 1 for complete results). In 2007, five nations scored significantly higher. In 2011, 19% of Massachusetts eighth grade students scored at the Advanced International Level, behind Chinese Taipei (49%), the Republic of Korea (47%), Singapore (48%), Hong Kong SAR (34%), and Japan (27%).

**Table 1. TIMSS 2011 Grade 8 Mathematics Average Scale Scores**

|  |  |  |
| --- | --- | --- |
|  | **All students** | |
| **Jurisdiction** | **Average** | **Standard error** |
| Korea, Rep. of | 613 | (2.9) |
| Singapore | 611 | (3.8) |
| Chinese Taipei | 609 | (3.2) |
| Hong Kong SAR | 586 | (3.8) |
| Japan | 570 | (2.6) |
| Massachusetts, US | 561 | (5.3) |
| Minnesota, US | 545 | (4.6) |
| Russian Federation | 539 | (3.6) |
| North Carolina, US | 537 | (6.8) |
| Quebec, Canada | 532 | (2.3) |
| Indiana, US | 522 | (5.1) |
| Colorado, US | 518 | (4.9) |
| Connecticut, US | 518 | (4.8) |
| Israel | 516 | (4.1) |
| Finland | 514 | (2.5) |
| Florida, US | 513 | (6.4) |
| Ontario, Canada | 512 | (2.5) |
| United States | 509 | (2.6) |
| Alberta, Canada | 505 | (2.6) |
| Hungary | 505 | (3.5) |
| Australia | 505 | (5.1) |
| Slovenia | 505 | (2.2) |
| Lithuania | 502 | (2.5) |
| International Average | 500 | (0.0) |
| Italy | 498 | (2.4) |
| California, US | 493 | (4.9) |
| New Zealand | 488 | (5.5) |
| Kazakhstan | 487 | (4.0) |
| Sweden | 484 | (1.9) |
| Ukraine | 479 | (3.9) |
| Dubai, UAE | 478 | (2.1) |
| Norway | 475 | (2.4) |
| Armenia | 467 | (2.7) |
| Alabama, US | 466 | (5.9) |
| Romania | 458 | (4.0) |
| United Arab Emirates | 456 | (2.1) |
| Turkey | 452 | (3.9) |
| Lebanon | 449 | (3.7) |
|  | **All students** | |
| **Jurisdiction** | **Average** | **Standard error** |
| Abu Dhabi, UAE | 449 | (3.7) |
| Malaysia | 440 | (5.4) |
| Georgia | 431 | (3.8) |
| Thailand | 427 | (4.3) |
| Macedonia, Rep. of | 426 | (5.2) |
| Tunisia | 425 | (2.8) |
| Chile | 416 | (2.6) |
| Iran, Islamic Rep. of | 415 | (4.3) |
| Qatar | 410 | (3.1) |
| Bahrain | 409 | (2.0) |
| Jordan | 406 | (3.7) |
| Palestinian Nat'l Auth. | 404 | (3.5) |
| Saudi Arabia | 394 | (4.6) |
| Indonesia | 386 | (4.3) |
| Syrian Arab Republic | 380 | (4.5) |
| Morocco | 371 | (2.0) |
| Oman | 366 | (2.8) |
| Ghana | 331 | (4.3) |

**2011 TIMSS Mathematics Results by Subgroup**

**Race/Ethnicity**

The United States is the only nation participating in TIMSS which reports student achievement by race/ethnicity; therefore, no comparisons with other nations in this category can be reported. Massachusetts is only able to compare its’ race/ethnicity data to the nation itself and the other benchmark entities in the United States. Table 2 shows the results by race/ethnicity.

**Table 2. TIMSS 2011 Mathematics Grade 8 Performance by Race/Ethnicity**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **White, not Hispanic** | | **Black, not Hispanic** | | **Hispanic** | | **Asian** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 530 | (2.8) | 465 | (3.9) | 485 | (3.4) | 568 | (7.8) |
| Alabama | 489 | (6.6) | 428 | (4.9) | 454 | (9.5) | ‡ | † |
| California | 525 | (6.4) | 468 | (12.5) | 470 | (5.6) | 555 | (8.6) |
| Colorado | 544 | (5.2) | ‡ | † | 480 | (5.2) | ‡ | † |
| Connecticut | 543 | (5.5) | 453 | (10.8) | 467 | (6.1) | 577 | (12.3) |
| Florida | 531 | (6.1) | 484 | (8.1) | 505 | (9.5) | 615 | (15.5) |
| Indiana | 530 | (5.7) | 467 | (8.3) | 501 | (7.2) | ‡ | † |
| Massachusetts | 572 | (5.6) | 516 | (8.7) | 507 | (7.0) | 599 | (8.0) |
| Minnesota | 558 | (4.6) | 497 | (12.3) | 496 | (5.8) | 536 | (17.3) |
| North Carolina | 563 | (7.3) | 495 | (8.4) | 510 | (9.4) | ‡ | † |
|  |  |  |  |  |  |  |  |  |
| † Not applicable. |  |  |  |  |  |  |  |  |
| ‡ Reporting standards not met. |  |  |  |  |  |  |  |  |

**Gender**

Although the difference between genders is not statistically significant for any of the three assessment administrations, both males and females have made substantial gains since 1999. Males average scale scores have gone from 517 (1999) to 550 (2007) to 563 (2011) whereas, females average scale scores have risen from 510 (1999) to 544 (2007) to 558 (2011). Table 3 shows the results by gender.

**Table 3. TIMSS 2011 Mathematics Grade 8 Performance by Gender**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Female** | | **Male** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** |
| Singapore | 615 | (3.7) | 607 | (4.5) |
| Chinese Taipei | 613 | (3.7) | 606 | (3.8) |
| Korea, Rep. of | 610 | (3.5) | 616 | (3.1) |
| Hong Kong SAR | 588 | (5.0) | 583 | (4.3) |
| Japan | 566 | (3.1) | 574 | (3.5) |
| Massachusetts, US | 558 | (6.0) | 563 | (5.5) |
| Minnesota, US | 545 | (4.9) | 545 | (5.1) |
| Russian Federation | 539 | (3.8) | 539 | (3.9) |
| North Carolina, US | 535 | (6.2) | 539 | (8.3) |
| Israel | 520 | (3.9) | 512 | (5.2) |
| Connecticut, US | 520 | (5.2) | 516 | (5.4) |
| Indiana, US | 518 | (5.1) | 526 | (5.9) |
| Finland | 516 | (2.7) | 512 | (2.7) |
| Colorado, US | 516 | (5.4) | 520 | (5.0) |
| Florida, US | 509 | (6.6) | 517 | (7.3) |
| England | 508 | (5.7) | 505 | (6.6) |
| United States | 508 | (2.9) | 511 | (2.8) |
| Lithuania | 507 | (2.6) | 498 | (3.2) |
| Slovenia | 502 | (2.4) | 507 | (2.8) |
| Hungary | 502 | (3.9) | 508 | (3.9) |
| Australia | 500 | (4.7) | 509 | (7.3) |
| Italy | 493 | (2.9) | 504 | (2.8) |
| California, US | 491 | (5.6) | 494 | (5.0) |
| Sweden | 486 | (2.1) | 482 | (2.4) |
| Kazakhstan | 486 | (4.1) | 488 | (4.5) |
| New Zealand | 478 | (5.5) | 496 | (6.2) |
| Ukraine | 478 | (4.0) | 481 | (4.9) |
| Norway | 476 | (2.9) | 473 | (2.9) |
| Armenia | 472 | (3.1) | 462 | (3.2) |
| International Average | 469 | (0.6) | 465 | (0.7) |
| Alabama, US | 467 | (6.3) | 465 | (6.2) |
| Romania | 464 | (4.6) | 453 | (4.2) |
| Turkey | 457 | (3.8) | 448 | (4.7) |
| Malaysia | 449 | (5.2) | 430 | (6.2) |
| Lebanon | 444 | (4.2) | 456 | (4.7) |
| Thailand | 435 | (4.2) | 417 | (5.3) |
| Bahrain | 431 | (2.5) | 388 | (3.1) |
| Georgia | 430 | (4.1) | 432 | (4.4) |
| Macedonia, Rep. of | 430 | (5.8) | 423 | (5.6) |
| Jordan | 420 | (4.3) | 392 | (5.9) |
| Tunisia | 417 | (3.1) | 433 | (3.1) |
|  | **Female** | | **Male** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** |
| Palestinian Nat'l Auth. | 415 | (4.2) | 392 | (5.6) |
| Qatar | 415 | (5.8) | 404 | (5.5) |
| Iran, Islamic Rep. of | 411 | (5.9) | 418 | (5.9) |
| Chile | 409 | (3.2) | 424 | (3.0) |
| Saudi Arabia | 401 | (4.1) | 387 | (8.0) |
| Oman | 397 | (3.1) | 334 | (3.8) |
| Indonesia | 392 | (4.9) | 379 | (4.5) |
| Syrian Arab Republic | 375 | (5.3) | 385 | (5.3) |
| Morocco | 371 | (2.3) | 371 | (2.7) |

**TIMSS 2011Mathematics Results by Parent’s Level of Education**

Students who participated were asked to indicate the highest level of education they thought their father and mother had completed. Due to the differences in describing the global levels of education, only U.S. states are listed in both tables. Table 4 shows the results of the mother’s highest level of education. Table 5 shows the father’s highest level of education.

**Table 4. TIMSS 2011 Grade 8 Mathematics Results by Mother’s Level of Education**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Completed high school** | | **Completed a 2yr or 4yr college/university degree** | | **Completed Master or Above** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 501 | (2.3) | 536 | (3.7) | 545 | (4.2) |
| Alabama | 461 | (4.8) | 496 | (6.4) | 502 | (11.6) |
| California | 486 | (6.2) | 533 | (6.6) | 529 | (7.3) |
| Colorado | 506 | (7.2) | 547 | (5.6) | 560 | (6.1) |
| Connecticut | 495 | (6.6) | 552 | (5.3) | 556 | (7.1) |
| Florida | 513 | (6.6) | 533 | (6.2) | 556 | (10.8) |
| Indiana | 514 | (5.6) | 544 | (6.1) | 555 | (5.6) |
| Massachusetts | 541 | (5.0) | 580 | (5.8) | 584 | (7.8) |
| Minnesota | 533 | (5.0) | 571 | (4.7) | 573 | (6.5) |
| North Carolina | 521 | (8.3) | 561 | (6.7) | 569 | (14.7) |

**Table 5. TIMSS 2011 Grade 8 Mathematics Results by Father’s Level of Education**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Completed high school** | | **Completed a 2yr or 4yr college/university degree** | | **Completed Master or Above** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 503 | (2.2) | 539 | (3.4) | 555 | (5.6) |
| Alabama | 460 | (5.2) | 494 | (7.8) | 509 | (12.6) |
| California | 486 | (4.8) | 531 | (7.1) | 546 | (7.5) |
| Colorado | 511 | (6.0) | 550 | (5.9) | 566 | (6.1) |
| Connecticut | 503 | (7.3) | 553 | (6.6) | 569 | (6.0) |
| Florida | 510 | (7.7) | 543 | (8.1) | 549 | (10.7) |
| Indiana | 513 | (5.4) | 552 | (6.3) | 562 | (5.8) |
| Massachusetts | 547 | (6.2) | 575 | (6.2) | 595 | (7.3) |
| Minnesota | 537 | (4.6) | 570 | (5.0) | 584 | (7.9) |
| North Carolina | 528 | (7.5) | 565 | (8.4) | 583 | (12.7) |

**TIMSS 2011 Science Results**

In 2011, the Massachusetts science eighth grade average scale score of 567 was higher than that of 2007 (556) and 1999 (533). In 2011, only one nation scored statistically higher than Massachusetts (see Table 6 for complete results). In 2011, 24% of Massachusetts eighth grade students scored at the Advanced International Level behind only Singapore (40%).

**Table 6. TIMSS 2011 Science Average Scale Scores**

|  |  |  |
| --- | --- | --- |
|  | **All students** | |
| **Jurisdiction** | **Average** | **Standard error** |
| Singapore | 590 | (4.3) |
| Massachusetts, US | 567 | (5.1) |
| Chinese Taipei | 564 | (2.3) |
| Korea, Rep. of | 560 | (2.0) |
| Japan | 558 | (2.4) |
| Minnesota, US | 553 | (4.6) |
| Finland | 552 | (2.5) |
| Slovenia | 543 | (2.7) |
| Russian Federation | 542 | (3.2) |
| Colorado, US | 542 | (4.4) |
| Hong Kong SAR | 535 | (3.4) |
| England | 533 | (4.9) |
| Indiana, US | 533 | (4.8) |
| Connecticut, US | 532 | (4.6) |
| North Carolina, US | 532 | (6.3) |
| United States | 525 | (2.6) |
| Hungary | 522 | (3.1) |
| Australia | 519 | (4.8) |
| Israel | 516 | (4.0) |
| Lithuania | 514 | (2.6) |
| New Zealand | 512 | (4.6) |
| Sweden | 509 | (2.5) |
| Italy | 501 | (2.5) |
| Ukraine | 501 | (3.4) |
| International Average | 500 | (0.0) |
| California, US | 499 | (4.6) |
| Norway | 494 | (2.6) |
| Kazakhstan | 490 | (4.3) |
| Alabama, US | 485 | (6.2) |
| Turkey | 483 | (3.4) |
| Iran, Islamic Rep. of | 474 | (4.0) |
| Romania | 465 | (3.5) |
| United Arab Emirates | 465 | (2.4) |
| Chile | 461 | (2.5) |
| Bahrain | 452 | (2.0) |
| Thailand | 451 | (3.9) |
| Jordan | 449 | (4.0) |
| Tunisia | 439 | (2.5) |
| Armenia | 437 | (3.1) |
| Saudi Arabia | 436 | (3.9) |
| Malaysia | 426 | (6.3) |
| Syrian Arab Republic | 426 | |
|  | **All students** | |
| **Jurisdiction** | **Average** | **Standard error** |
| Palestinian Nat'l Auth. | 420 | (3.2) |
| Georgia | 420 | (3.0) |
| Oman | 420 | (3.2) |
| Qatar | 419 | (3.4) |
| Macedonia, Rep. of | 407 | (5.4) |
| Lebanon | 406 | (4.9) |
| Indonesia | 406 | (4.5) |
| Morocco | 376 | (2.2) |
| Ghana | 306 | (5.2) |

**2011 TIMSS Science Results by Subgroup**

**Race/Ethnicity**

The United States is the only nation participating in TIMSS which reports student achievement by race/ethnicity; therefore, no comparisons with other nations in this category can be reported. Massachusetts is only able to compare its’ race/ethnicity data to the nation itself and the other benchmark entities in the United States. Table 7 shows the results by race/ethnicity.

**Table 7. TIMSS 2011 Science Grade 8 Performance by Race/Ethnicity**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **White, not Hispanic** | | **Black, not Hispanic** | | | **Hispanic** | | **Asian** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 553 | (2.6) | 470 | | (4.0) | 493 | (3.4) | 556 | (7.2) |
| Alabama | 519 | (5.5) | 435 | | (5.2) | 470 | (9.8) | ‡ | † |
| California | 546 | (6.5) | 460 | | (12.6) | 475 | (5.4) | 542 | (8.5) |
| Colorado | 572 | (4.3) | ‡ | | † | 499 | (5.3) | ‡ | † |
| Connecticut | 562 | (5.1) | 459 | | (11.4) | 474 | (5.3) | 565 | (13.9) |
| Florida | 560 | (6.1) | 485 | | (9.9) | 523 | (10.3) | 600 | (14.5) |
| Indiana | 546 | (5.3) | 460 | | (8.5) | 499 | (6.2) | ‡ | † |
| Massachusetts | 587 | (5.1) | 514 | | (10.0) | 494 | (9.1) | 576 | (8.8) |
| Minnesota | 570 | (4.2) | 489 | | (13.2) | 512 | (7.1) | 511 | (14.0) |
| North Carolina | 565 | (6.4) | 481 | | (6.3) | 502 | (8.7) | ‡ | † |
|  |  |  |  | |  |  |  |  |  |
| † Not applicable. |  |  |  | |  |  |  |  |  |
| ‡ Reporting standards not met. |  |  |  | |  |  |  |  |  |

**Gender**

Although the difference between genders is not statistically significant for any of the three assessment administrations, both males and females have made substantial gains since 1999. Males average scale scores have gone from 540 (1999) to 561(2007) to 570 (2011) whereas, females average scale scores have risen from 527 (1999) to 551 (2007) to 564 (2011). Table 8 shows the results by gender.

**Table 8. TIMSS 2011 Science Grade 8 Performance by Gender**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Female** | | **Male** | |
| **Jurisdiction** | **Average** | **Standard error** | **Jurisdiction** | **Average** |
| Singapore | 589 | (4.2) | 591 | (5.3) |
| Chinese Taipei | 564 | (2.7) | 564 | (2.8) |
| Massachusetts, US | 564 | (5.8) | 570 | (5.1) |
| Korea, Rep. of | 558 | (2.6) | 563 | (2.4) |
| Finland | 555 | (2.4) | 550 | (3.1) |
| Japan | 554 | (2.9) | 562 | (2.9) |
| Minnesota, US | 548 | (4.9) | 559 | (5.3) |
| Slovenia | 541 | (3.0) | 545 | (3.4) |
| Russian Federation | 539 | (3.6) | 546 | (3.5) |
| Colorado, US | 537 | (4.7) | 548 | (5.2) |
| Hong Kong SAR | 536 | (4.5) | 534 | (3.7) |
| England | 534 | (5.0) | 532 | (6.2) |
| Connecticut, US | 530 | (4.5) | 533 | (5.9) |
| North Carolina, US | 526 | (5.7) | 537 | (7.7) |
| Indiana, US | 526 | (4.9) | 541 | (5.4) |
| Florida, US | 522 | (8.5) | 537 | (7.6) |
| Israel | 519 | (3.7) | 512 | (5.2) |
| United States | 519 | (2.8) | 530 | (2.9) |
| Lithuania | 518 | (3.0) | 510 | (3.1) |
| Hungary | 513 | (3.5) | 531 | (3.7) |
| Australia | 511 | (4.5) | 527 | (6.5) |
| Sweden | 511 | (2.7) | 508 | (3.1) |
| New Zealand | 501 | (4.6) | 522 | (5.1) |
| Ukraine | 499 | (3.7) | 503 | (4.3) |
| Norway | 495 | (3.2) | 494 | (3.0) |
| Italy | 493 | (3.1) | 508 | (2.6) |
| California, US | 493 | (5.0) | 504 | (5.0) |
| Kazakhstan | 492 | (4.6) | 488 | (4.6) |
| Turkey | 491 | (3.2) | 475 | (4.3) |
| Bahrain | 482 | (2.2) | 423 | (3.6) |
| Alabama, US | 482 | (6.3) | 489 | (6.8) |
| International Average | 480 | (0.6) | 474 | (0.7) |
| Iran, Islamic Rep. of | 477 | (5.3) | 472 | (5.3) |
| United Arab Emirates | 477 | (2.9) | 452 | (3.3) |
| Jordan | 471 | (4.3) | 428 | (6.4) |
| Romania | 466 | (3.8) | 464 | (4.0) |
| Oman | 458 | (2.9) | 380 | (4.4) |
| Thailand | 458 | (3.9) | 443 | (5.2) |
| Chile | 454 | (3.2) | 470 | (2.9) |
| Saudi Arabia | 450 | (3.5) | 424 | (6.4) |
| Armenia | 446 | (3.5) | 428 | (3.6) |
| Malaysia | 434 | (6.3) | 419 | (7.3) |
| Palestinian Nat'l Auth. | 434 | (3.8) | 406 | (5.4) |
| Qatar | 432 | (7.0) | 406 | (5.4) |
| Tunisia | 431 | (2.6) | 447 | (2.9) |
| Georgia | 425 | (3.3) | 415 | (3.5) |
| Syrian Arab Republic | 424 | (4.4) | 429 | (4.9) |
| Macedonia, Rep. of | 417 | (5.6) | 399 | (6.1) |
| Indonesia | 409 | (5.1) | 402 | (4.5) |
|  | **Female** | | **Male** | |
| **Jurisdiction** | **Average** | **Standard error** | **Jurisdiction** | **Average** |
| Lebanon | 404 | (5.4) | 408 | (6.5) |
| Morocco | 378 | (2.6) | 374 | (2.7) |
| Ghana | 290 | (5.7) | 320 | (5.4) |

**2011 TIMSS Science Results by Parent’s Level of Education**

Students who participated in the 2011 TIMSS were asked to indicate the highest level of educations they thought their father and mother had completed. Table 9 shows the results of the mother’s highest level of education. Table 10 shows the father’s highest level of education

**Table 9. TIMSS 2011 Grade 8 Science Results by Mother’s Level of Education**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Completed high school** | | **Completed a 2yr or 4yr college/university degree** | | **Completed Masters or beyond** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 519 | (2.3) | 554 | (3.0) | 559 | (3.3) |
| Alabama | 490 | (5.8) | 519 | (6.0) | 519 | (11.1) |
| California | 494 | (5.8) | 547 | (6.1) | 541 | (6.8) |
| Colorado | 530 | (6.5) | 571 | (5.4) | 583 | (5.9) |
| Connecticut | 510 | (7.2) | 565 | (5.7) | 571 | (7.3) |
| Florida | 535 | (7.3) | 554 | (8.5) | 566 | (10.0) |
| Indiana | 529 | (5.1) | 558 | (6.1) | 563 | (5.8) |
| Massachusetts | 544 | (6.1) | 590 | (5.3) | 596 | (7.4) |
| Minnesota | 544 | (4.8) | 579 | (4.9) | 583 | (6.2) |
| North Carolina | 512 | (8.0) | 557 | (6.4) | 561 | (12.8) |

**Table 10. TIMSS 2011 Grade 8 Science Results by Father’s Level of Education**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Completed high school** | | **Completed a 2yr or 4yr college/university degree** | | **Completed Masters or beyond** | |
| **Jurisdiction** | **Average** | **Standard error** | **Average** | **Standard error** | **Average** | **Standard error** |
| United States | 522 | (2.5) | 555 | (3.1) | 572 | (4.5) |
| Alabama | 482 | (5.1) | 518 | (7.7) | 528 | (11.6) |
| California | 496 | (4.5) | 540 | (6.8) | 559 | (6.8) |
| Colorado | 533 | (4.9) | 576 | (5.7) | 588 | (5.3) |
| Connecticut | 516 | (8.5) | 566 | (6.1) | 585 | (6.3) |
| Florida | 526 | (9.3) | 563 | (8.3) | 564 | (9.6) |
| Indiana | 527 | (4.8) | 565 | (6.0) | 570 | (5.9) |
| Massachusetts | 552 | (7.2) | 587 | (6.1) | 606 | (6.6) |
| Minnesota | 550 | (4.6) | 578 | (5.2) | 591 | (8.1) |
| North Carolina | 517 | (7.8) | 557 | (7.0) | 583 | (12.3) |