

APPENDIX C

The Test-Curriculum Matching Analysis

TIMSS went to great lengths to ensure that comparisons of student achievement across countries are as fair and equitable as possible. The *TIMSS 2019 Assessment Frameworks* were designed to specify the important aspects of mathematics and science that participating countries agreed should be the focus of an international assessment of mathematics and science achievement. The assessment items were developed through a collaborative process with national representatives to reflect the assessment specifications articulated in the frameworks and all items were field tested extensively in participating countries. Finalizing the TIMSS 2019 assessments involved a series of reviews by representatives of the participating countries, experts in mathematics and science, and measurement specialists. At the end of this process, the National Research Coordinators (NRCs) from each participating country formally approved the TIMSS 2019 assessments, thus accepting the assessments as sufficiently fair to compare their students' mathematics and science achievement with that of students from other countries.

Although the assessments were developed to represent agreed-upon frameworks and were intended to have as much in common across countries as possible, it was unavoidable that the match between the TIMSS 2019 assessments (or tests) and countries' mathematics and science curricula would not be the same for all countries. To restrict test items to just those topics included in the curricula and covered in the same sequence in all participating countries would severely limit test coverage and restrict the research questions that the study is designed to address. The tests, therefore, inevitably have some items measuring topics unfamiliar to some students in some countries.

The Test-Curriculum Matching Analysis (TCMA) was conducted to investigate the extent to which the TIMSS 2019 assessments matched each country's mathematics and science curricula.¹ The TCMA also investigates the impact on a country's performance of including only achievement items that were judged to be relevant to its own curriculum.

To gather data about the extent to which the TIMSS 2019 assessments matched the curricula of the TIMSS countries and benchmarking participants, NRCs were asked to examine each TIMSS achievement item and indicate whether the particular knowledge and skills assessed by the item was in their country's intended curriculum at the grade tested (fourth or eighth grade). The NRCs were asked to choose persons very familiar with the curriculum at these grades to make this determination.

In some countries, the curriculum was prescribed for a range of grades and was not explicit about what was to be covered by the end of the fourth or eighth grades. For example, in France the curriculum specifies the curricular goals to be achieved by the end of primary school Cycle 2 (Grades

¹ It should be noted that because there may be content areas covered by the curricula in some countries that are not covered by the TIMSS 2019 tests, the TCMA may not provide complete information about how well the tests cover the curricula of the countries.

1–3), Cycle 3 (Grades 4–6), and Cycle 4 (Grades 7–9), rather than a grade-by-grade specification (see *TIMSS 2019 Encyclopedia*). In such situations, coordinators were asked to make the best judgment possible. Because an item might be in the curriculum for some but not all students in a country, NRCs were asked to consider an item included if it was in the intended curriculum for more than 50 percent of the students.

Match Between TIMSS Tests and Countries' Mathematics and Science Curricula

Exhibits C.1 through C.4 present the TCMA results for the TIMSS 2019 mathematics test and science test at the fourth and eighth grades, respectively. The bottom row of each exhibit shows the number of items, with the corresponding number of score points in parentheses, identified by each country as appropriate according to its curriculum.

In mathematics at the fourth grade (Exhibit C.1), countries' average mathematics achievement was based on students' performance on 171 items yielding 183 score points, which is the maximum number of items and score points a country could identify.² Generally, the proportion of mathematics items judged appropriate was fairly high. Reading along the bottom row, it can be seen that 4 of the 47 countries included in the analysis judged 100 percent of the items to be included in their curricula as did 2 of the 6 benchmarking participants. A further 36 countries and 4 benchmarking participants judged 75 percent or more (138 score points for eTIMSS, 136 score points for paperTIMSS) to be appropriate. All but 1 of the participants at the fourth grade agreed that more than half of the mathematics items were included in their curricula.

The last page of Exhibit C.1 presents the TCMA results for the 11 countries that administered the less difficult version of the fourth grade mathematics assessment, which included 177 items yielding 190 score points.³ Two of the 11 countries judged 100 percent of the items to be included in their mathematics curricula, and an additional 7 countries judged 75 percent or more (143 score points) to be appropriate. All 11 countries identified more than half of the items as being appropriate for their students.

In fourth grade science (Exhibit C.2), the maximum number of score points in the assessment was 174 for eTIMSS countries and 173 for paperTIMSS countries. Similar to mathematics, the proportion of science items judged appropriate by the countries at the fourth grade was fairly high overall, but with more variation than for mathematics. A number of high performing countries, notably Singapore, Korea, the Russian Federation, Japan, and Chinese Taipei, chose relatively few fourth grade science items as appropriate for their students. Of the 58 countries and 6 benchmarking participants at the fourth grade, 7 countries and 2 benchmarking participants judged 100 percent of the science items to be included in their curricula. An additional 25 countries and 1 benchmarking participant judged 75 percent or more (131 score points for eTIMSS and 130 for paperTIMSS).

² TIMSS 2019 fourth grade mathematics achievement scores were estimated based on 171 items and 183 score points for eTIMSS countries and 169 items and 181 score points for paperTIMSS countries. See Chapter 10 of *Methods and Procedures: TIMSS 2019 Technical Report* for details about items deleted or recoded for scaling.

³ About one-third of the items in the less difficult mathematics assessment are shared with the regular mathematics assessment.

At the eighth grade, the proportions of mathematics and science items judged appropriate were somewhat higher compared with the fourth grade. In mathematics (Exhibit C.3), 7 of the 39 participating countries and 2 of the 7 benchmarking participants judged 100 percent of the mathematics items to be included in their curricula, including all 206 items yielding 217 score points. Additionally, 31 countries and the remaining 5 benchmarking participants judged 75 percent or more (163 score points) to be appropriate. In science (Exhibit C.4), 4 of the 39 countries and 2 of the 7 benchmarking participants judged 100 percent of the science items to be appropriate (all 233 score points). A further 26 countries and 4 of the 5 benchmarking participants judged 75 percent or more (175 score points) to be appropriate. All but 2 countries agreed that more than half of the science items were included in their curricula at the eighth grade.

Impact of Item Selection on Average Scale Scores

The first columns in Exhibits C.1 through C.4 show, for each grade and subject, the average scale score and its standard error, for each country on the assessment as a whole, based on all test items as reported in Exhibits 1.1, 2.1, 3.1, and 4.1 of this report. Countries are presented in descending order according to this overall achievement score. Subsequent columns show the average performance of the countries based only on those items judged appropriate by the participant listed at the head of the column. To interpret these exhibits, choosing a country at the top of the exhibit and reading down its column provides the average scale score and standard error for the country in each row, based only on the items selected as appropriate for that country's students.⁴ For example, in Exhibit C.1, looking down the column for Singapore shows that Singapore had an average fourth grade mathematics scale score of 629 based on its own set of items, while Hong Kong SAR had an average scale score of 602 based on Singapore's items, Korea had an average scale score of 599 based on Singapore's items, and so forth.

The shaded diagonal element in these exhibits shows how each country performed on the set of items that it selected based on its own curriculum. In general, countries performed better on their own item sets than on the items overall, although not by much. Comparing the diagonal element for a country with the overall average scale score shows the difference between performance on the set of items chosen as appropriate for that country and performance on the test as a whole. To illustrate, Singapore's average scale score based on all fourth grade mathematics items was 625, as shown in the first column. Singapore's diagonal element in Exhibit C.1 (629) shows that students from Singapore performed slightly better on the set of items selected by Singapore than they did on the assessment as a whole, although this 4-point difference was within the margin of sampling error. In fourth grade mathematics, most participants had a difference of no more than 1 or 2 scale score points between the two scores. The largest differences occurred in the Russian Federation (16 points), Bulgaria (11 points), Croatia (11 points), and Bosnia and Herzegovina (10 points).

⁴ Standard errors provide a margin of error for comparing average scale scores across countries. Differences in one country's average scale scores across exhibit columns should be interpreted with caution.

Compared with mathematics at the fourth grade, the differences between countries' performance based on their chosen set of items (the diagonal element) and their overall performance based on all items were somewhat larger in science (Exhibit C.2). Although most participants had a difference of 1 or 2 scale score points or fewer, the largest difference was observed in Singapore (80 points), followed by Japan and Chinese Taipei (24–30 points). Of the 58 countries and 6 benchmarking participants included in the analysis, Singapore and Japan had the smallest proportions of science test items identified as appropriate for their students (25–27%).

The differences between countries' average scale scores based on all items and based on their item subsets were smaller at the eighth grade. In mathematics (Exhibit C.3), 27 of the 39 countries and 5 of the 7 benchmarking participants had differences of 1 scale score point or fewer. Lebanon had the largest difference in mathematics performance between the average score based on its own item selections and the average score based on all items (10 points). The results were similar in science (Exhibit C.4), with Lebanon again having the largest difference between performance estimates (17 points). Japan, Singapore, and Cyprus had the next largest differences (12–14 points).

The TCMA results show that the selection of items does not have a major effect on the relative performance of countries. Participants that had relatively high or low mathematics or science achievement based on all the items also had relatively high or low achievement based on each of the various sets of items selected for the TCMA. Although there are some changes in the ordering of countries based on the items selected for the TCMA, most of these differences are within the boundaries of sampling error.⁵

Even when countries performed better on the items identified as being appropriate for their curriculum than they did overall, their performance relative to other participants changed very little. As an example, consider the 64 items (65 score points) selected by Korea in science at the fourth grade (Exhibit C.2). The students in Korea had higher average achievement based on these items (604) than on the test as a whole (588). However, most other countries also had higher achievement based on this subset of items selected by Korea. For example, Singapore and Japan also had higher achievement based on Korea's selected items compared with their average achievement based on all items.

The TCMA results provide evidence that the TIMSS 2019 assessment provides a sound basis for comparing achievement of the participating countries and benchmarking entities. This result is not unexpected, given that making the assessment as fair as possible was a major consideration in test development and reporting. The fact that the majority of countries indicated that most items were appropriate for their students means that the different average scale scores were based on many of the same items. Insofar as countries rejected items that would be difficult for their students, these items tended to be difficult for students in other countries as well. The analysis shows that omitting such items tends to improve the results for that country, but also tends to improve the results for all other countries, so that the overall pattern of relative performance is largely unaffected.

5 Small differences in average scale scores between adjacent countries shown in the exhibits usually are not statistically significant with 95 percent confidence.

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

Read down the column under a country name to compare achievement scores based on the items identified by that country. Scores on the diagonal are countries' achievement scores based on the test items they identified.

Country	Average Mathematics Scale Score based on All Items	Singapore	Hong Kong SAR	Korea, Rep. of	Chinese Taipei	Japan	Russian Federation	Northern Ireland	England	Ireland	Latvia
Singapore	625 (3.9)	629 (3.9)	624 (4.0)	625 (3.9)	626 (3.9)	624 (3.9)	623 (4.0)	626 (3.8)	625 (3.9)	627 (3.9)	619 (3.8)
Hong Kong SAR	602 (3.3)	602 (3.4)	601 (3.4)	601 (3.3)	601 (3.4)	601 (3.3)	598 (3.7)	602 (3.3)	601 (3.3)	602 (3.3)	600 (3.3)
Korea, Rep. of	600 (2.2)	599 (2.2)	599 (2.3)	606 (2.3)	598 (2.3)	604 (2.3)	592 (2.3)	600 (2.2)	599 (2.2)	600 (2.2)	596 (2.2)
Chinese Taipei	599 (1.9)	601 (2.0)	599 (2.0)	601 (1.9)	601 (2.0)	604 (2.0)	593 (2.1)	600 (2.0)	600 (1.9)	600 (1.9)	592 (2.0)
Japan	593 (1.8)	591 (1.8)	591 (1.8)	598 (1.7)	591 (1.7)	601 (1.7)	586 (1.8)	593 (1.8)	594 (1.7)	593 (1.8)	591 (1.7)
Russian Federation	567 (3.3)	565 (3.3)	568 (3.4)	566 (3.3)	567 (3.3)	567 (3.3)	583 (3.5)	566 (3.3)	567 (3.3)	567 (3.3)	572 (3.4)
Northern Ireland	566 (2.7)	569 (2.8)	567 (2.9)	566 (2.8)	567 (2.8)	564 (2.8)	566 (3.0)	566 (2.8)	566 (2.7)	566 (2.7)	565 (2.7)
England	556 (3.0)	559 (3.1)	554 (3.1)	556 (3.0)	556 (3.1)	553 (3.0)	549 (3.3)	557 (3.0)	556 (3.0)	556 (3.0)	554 (3.0)
Ireland	548 (2.5)	550 (2.5)	549 (2.5)	548 (2.5)	549 (2.5)	547 (2.5)	545 (2.5)	549 (2.5)	549 (2.5)	549 (2.5)	546 (2.4)
Latvia	546 (2.6)	545 (2.5)	547 (2.7)	545 (2.5)	546 (2.6)	546 (2.6)	557 (2.9)	546 (2.6)	546 (2.6)	546 (2.6)	552 (2.7)
Norway (5)	543 (2.2)	543 (2.2)	542 (2.2)	542 (2.2)	542 (2.2)	540 (2.2)	536 (2.2)	544 (2.2)	542 (2.2)	543 (2.2)	542 (2.2)
Lithuania	542 (2.8)	539 (2.8)	541 (2.9)	541 (2.7)	540 (2.8)	543 (2.7)	545 (3.0)	541 (2.8)	541 (2.7)	542 (2.8)	546 (2.9)
Austria	539 (2.0)	540 (2.0)	540 (2.0)	538 (2.0)	540 (2.0)	539 (2.1)	543 (2.0)	539 (2.0)	539 (2.0)	539 (2.0)	539 (2.1)
Netherlands	538 (2.2)	536 (2.2)	532 (2.2)	538 (2.2)	536 (2.2)	536 (2.3)	532 (2.3)	538 (2.2)	537 (2.2)	537 (2.2)	540 (2.3)
United States	535 (2.5)	536 (2.6)	536 (2.6)	534 (2.5)	536 (2.6)	534 (2.5)	534 (2.5)	535 (2.5)	534 (2.6)	535 (2.5)	534 (2.5)
Czech Republic	533 (2.5)	532 (2.5)	535 (2.6)	532 (2.6)	533 (2.5)	532 (2.5)	535 (2.6)	532 (2.5)	533 (2.5)	533 (2.5)	532 (2.6)
Belgium (Flemish)	532 (1.9)	533 (2.0)	531 (2.0)	533 (1.9)	532 (2.0)	532 (1.9)	523 (1.9)	533 (1.9)	533 (1.9)	533 (1.9)	527 (1.9)
Cyprus	532 (2.9)	534 (2.9)	532 (2.9)	531 (2.9)	531 (2.8)	531 (2.8)	529 (2.8)	532 (2.9)	532 (2.9)	532 (2.8)	531 (2.8)
Finland	532 (2.3)	529 (2.4)	528 (2.4)	530 (2.4)	530 (2.3)	529 (2.4)	521 (2.4)	532 (2.3)	531 (2.4)	532 (2.3)	530 (2.3)
Denmark	525 (1.9)	524 (2.0)	522 (2.0)	524 (1.9)	523 (2.0)	520 (2.0)	516 (2.1)	525 (1.9)	524 (1.9)	525 (1.9)	524 (1.9)
Portugal	525 (2.6)	528 (2.7)	526 (2.7)	525 (2.6)	526 (2.7)	524 (2.7)	521 (2.8)	526 (2.6)	526 (2.6)	525 (2.6)	524 (2.6)
Hungary	523 (2.6)	524 (2.6)	525 (2.6)	523 (2.6)	523 (2.6)	522 (2.6)	531 (2.6)	523 (2.6)	523 (2.6)	523 (2.6)	524 (2.7)
Turkey (5)	523 (4.4)	526 (4.5)	525 (4.4)	525 (4.4)	525 (4.4)	525 (4.4)	525 (4.4)	523 (4.4)	523 (4.5)	523 (4.4)	519 (4.4)
Germany	521 (2.3)	521 (2.2)	520 (2.3)	521 (2.3)	520 (2.3)	520 (2.3)	524 (2.4)	521 (2.3)	521 (2.3)	521 (2.3)	521 (2.3)
Sweden	521 (2.8)	520 (2.8)	519 (2.9)	521 (2.8)	519 (2.8)	516 (2.8)	519 (2.9)	522 (2.8)	520 (2.8)	521 (2.8)	524 (2.8)
Poland	520 (2.7)	520 (2.7)	520 (2.7)	520 (2.7)	520 (2.7)	520 (2.7)	518 (2.7)	520 (2.7)	520 (2.7)	520 (2.7)	521 (2.7)
Australia	516 (2.8)	514 (2.8)	514 (2.7)	514 (2.8)	514 (2.8)	512 (2.8)	508 (2.8)	516 (2.8)	515 (2.8)	516 (2.8)	517 (2.8)
Azerbaijan	515 (2.7)	516 (2.7)	518 (2.8)	516 (2.7)	516 (2.7)	517 (2.7)	530 (3.0)	515 (2.7)	515 (2.7)	516 (2.7)	520 (2.8)
Bulgaria	515 (4.3)	516 (4.1)	521 (4.1)	515 (4.3)	518 (4.0)	519 (4.2)	535 (4.5)	514 (4.3)	515 (4.2)	515 (4.3)	519 (4.5)
Italy	515 (2.4)	518 (2.5)	517 (2.4)	517 (2.4)	517 (2.4)	518 (2.4)	516 (2.5)	516 (2.4)	515 (2.4)	516 (2.4)	514 (2.4)
Canada	512 (1.9)	511 (1.9)	511 (1.9)	511 (1.9)	509 (1.9)	509 (1.9)	505 (1.9)	512 (1.9)	511 (1.9)	512 (1.9)	512 (1.8)
Kazakhstan	512 (2.5)	512 (2.5)	515 (2.5)	512 (2.5)	514 (2.5)	514 (2.5)	526 (2.7)	511 (2.5)	512 (2.5)	513 (2.5)	514 (2.5)
Slovak Republic	510 (3.5)	509 (3.4)	511 (3.4)	509 (3.5)	509 (3.4)	507 (3.5)	513 (3.6)	509 (3.4)	509 (3.5)	510 (3.5)	511 (3.5)
Croatia	509 (2.2)	510 (2.1)	512 (2.2)	511 (2.1)	511 (2.1)	510 (2.2)	519 (2.2)	509 (2.2)	509 (2.2)	509 (2.2)	509 (2.2)
Malta	509 (1.4)	512 (1.5)	511 (1.5)	508 (1.5)	509 (1.4)	506 (1.5)	506 (1.6)	510 (1.4)	510 (1.4)	509 (1.4)	509 (1.5)
Serbia	508 (3.2)	509 (3.1)	512 (3.2)	510 (3.1)	510 (3.0)	510 (3.1)	524 (3.3)	507 (3.2)	508 (3.2)	508 (3.2)	511 (3.3)
Spain	502 (2.1)	505 (2.2)	504 (2.2)	505 (2.2)	504 (2.2)	505 (2.2)	502 (2.3)	503 (2.1)	503 (2.1)	503 (2.1)	502 (2.1)
Armenia	498 (2.5)	502 (2.5)	503 (2.4)	500 (2.5)	503 (2.5)	500 (2.5)	513 (2.4)	498 (2.5)	498 (2.6)	499 (2.5)	498 (2.6)
New Zealand	487 (2.6)	485 (2.7)	483 (2.7)	485 (2.7)	485 (2.6)	483 (2.6)	480 (2.7)	487 (2.6)	487 (2.6)	487 (2.6)	489 (2.6)
France	485 (3.0)	486 (3.0)	487 (3.0)	487 (3.0)	486 (3.0)	486 (3.0)	481 (3.0)	485 (3.0)	485 (3.0)	485 (3.0)	483 (3.0)
Georgia	482 (3.7)	483 (3.6)	487 (3.5)	485 (3.6)	485 (3.6)	486 (3.7)	496 (3.7)	481 (3.6)	482 (3.7)	482 (3.7)	483 (3.7)
United Arab Emirates	481 (1.7)	483 (1.7)	482 (1.7)	482 (1.7)	481 (1.7)	481 (1.7)	480 (1.7)	482 (1.7)	481 (1.7)	482 (1.7)	481 (1.7)
Bahrain	480 (2.6)	484 (2.6)	480 (2.6)	482 (2.5)	481 (2.5)	481 (2.5)	477 (2.7)	481 (2.6)	480 (2.6)	480 (2.6)	478 (2.6)
Qatar	449 (3.4)	452 (3.4)	449 (3.4)	451 (3.4)	451 (3.3)	451 (3.3)	448 (3.4)	450 (3.4)	450 (3.4)	450 (3.4)	449 (3.4)
Iran, Islamic Rep. of	443 (3.9)	447 (3.8)	446 (3.9)	445 (3.8)	447 (3.8)	448 (3.8)	442 (3.9)	443 (3.8)	445 (3.8)	444 (3.8)	441 (3.8)
Chile	441 (2.7)	440 (2.8)	439 (2.8)	440 (2.7)	439 (2.7)	438 (2.7)	437 (2.8)	442 (2.7)	440 (2.7)	442 (2.7)	444 (2.7)
Oman	431 (3.7)	433 (3.7)	434 (3.6)	431 (3.6)	430 (3.8)	431 (3.7)	428 (3.7)	431 (3.7)	431 (3.7)	431 (3.7)	431 (3.6)
International Average	523 (0.4)	524 (0.4)	524 (0.4)	524 (0.4)	523 (0.4)	523 (0.4)	524 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Benchmarking Participants											
Moscow City, Russian Fed.	593 (2.2)	590 (2.3)	595 (2.3)	593 (2.2)	591 (2.2)	593 (2.2)	611 (2.6)	592 (2.2)	592 (2.2)	592 (2.2)	602 (2.4)
Dubai, UAE	544 (1.6)	546 (1.7)	544 (1.6)	544 (1.7)	544 (1.7)	543 (1.7)	541 (1.7)	545 (1.7)	544 (1.6)	545 (1.6)	543 (1.6)
Quebec, Canada	532 (2.3)	533 (2.3)	532 (2.3)	532 (2.3)	531 (2.3)	531 (2.3)	524 (2.4)	533 (2.3)	532 (2.3)	532 (2.3)	530 (2.3)
Madrid, Spain	518 (2.2)	521 (2.2)	521 (2.3)	522 (2.2)	521 (2.2)	522 (2.2)	518 (2.2)	519 (2.1)	519 (2.2)	519 (2.2)	517 (2.1)
Ontario, Canada	512 (3.3)	510 (3.4)	512 (3.4)	511 (3.3)	509 (3.4)	509 (3.2)	504 (3.4)	513 (3.3)	511 (3.3)	512 (3.3)	512 (3.3)
Abu Dhabi, UAE	441 (2.2)	442 (2.2)	441 (2.2)	442 (2.2)	440 (2.2)	441 (2.2)	440 (2.3)	441 (2.2)	440 (2.2)	441 (2.2)	441 (2.2)
Number of Items (Score Points)*	171 (183)	137 (146)	129 (138)	132 (142)	144 (154)	127 (135)	100 (108)	164 (176)	161 (173)	166 (177)	148 (160)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Norway (5)	Lithuania	Austria	Netherlands	United States	Czech Republic	Belgium (Flemish)	Cyprus	Finland	Denmark
Singapore	625 (3.9)	625 (3.9)	619 (3.8)	620 (3.8)	617 (3.8)	625 (3.9)	618 (3.8)	624 (3.9)	624 (3.9)	625 (3.9)	624 (3.8)
Hong Kong SAR	602 (3.3)	602 (3.3)	601 (3.3)	600 (3.3)	598 (3.5)	602 (3.4)	598 (3.3)	600 (3.3)	602 (3.4)	601 (3.3)	601 (3.3)
Korea, Rep. of	600 (2.2)	599 (2.2)	599 (2.2)	598 (2.2)	592 (2.2)	599 (2.2)	594 (2.2)	603 (2.3)	596 (2.2)	601 (2.2)	601 (2.2)
Chinese Taipei	599 (1.9)	598 (1.9)	596 (1.9)	597 (2.0)	593 (2.0)	599 (1.9)	595 (2.0)	599 (2.0)	594 (2.0)	601 (2.0)	599 (1.9)
Japan	593 (1.8)	590 (1.8)	595 (1.7)	593 (1.8)	590 (1.7)	592 (1.8)	591 (1.7)	594 (1.7)	587 (1.8)	596 (1.8)	594 (1.8)
Russian Federation	567 (3.3)	566 (3.4)	571 (3.4)	570 (3.4)	569 (3.3)	567 (3.4)	571 (3.4)	566 (3.3)	567 (3.4)	566 (3.3)	567 (3.4)
Northern Ireland	566 (2.7)	567 (2.8)	564 (2.7)	564 (2.7)	567 (2.8)	566 (2.8)	565 (2.8)	566 (2.7)	567 (2.8)	565 (2.8)	565 (2.7)
England	556 (3.0)	556 (3.0)	553 (3.0)	554 (2.9)	555 (3.0)	556 (3.0)	552 (3.0)	556 (3.0)	555 (3.1)	555 (3.0)	556 (3.0)
Ireland	548 (2.5)	549 (2.5)	545 (2.4)	546 (2.4)	547 (2.5)	549 (2.5)	546 (2.5)	549 (2.5)	549 (2.5)	548 (2.5)	548 (2.5)
Latvia	546 (2.6)	546 (2.6)	551 (2.7)	548 (2.6)	552 (2.6)	546 (2.6)	550 (2.6)	546 (2.6)	548 (2.7)	545 (2.6)	546 (2.6)
Norway (5)	543 (2.2)	543 (2.2)	542 (2.2)	542 (2.2)	544 (2.2)	542 (2.2)	541 (2.2)	543 (2.2)	543 (2.2)	542 (2.2)	544 (2.2)
Lithuania	542 (2.8)	542 (2.8)	547 (2.8)	543 (2.8)	545 (2.9)	542 (2.8)	545 (2.8)	541 (2.7)	543 (2.8)	542 (2.8)	542 (2.8)
Austria	539 (2.0)	540 (2.0)	536 (2.1)	543 (2.1)	541 (2.1)	538 (2.0)	542 (2.1)	539 (2.0)	539 (2.0)	538 (2.1)	540 (2.0)
Netherlands	538 (2.2)	537 (2.2)	541 (2.2)	539 (2.3)	544 (2.3)	537 (2.2)	538 (2.2)	537 (2.2)	537 (2.3)	539 (2.1)	539 (2.2)
United States	535 (2.5)	535 (2.5)	532 (2.5)	533 (2.5)	533 (2.5)	535 (2.5)	533 (2.5)	535 (2.5)	536 (2.5)	535 (2.5)	534 (2.5)
Czech Republic	533 (2.5)	532 (2.6)	533 (2.5)	536 (2.6)	532 (2.6)	533 (2.5)	537 (2.6)	533 (2.5)	533 (2.5)	532 (2.5)	533 (2.6)
Belgium (Flemish)	532 (1.9)	531 (1.9)	529 (1.9)	529 (1.9)	528 (1.9)	532 (1.9)	529 (1.9)	533 (1.9)	531 (1.9)	532 (1.9)	533 (1.9)
Cyprus	532 (2.9)	533 (2.9)	530 (2.8)	529 (2.8)	530 (2.9)	532 (2.9)	530 (2.8)	531 (2.9)	535 (2.9)	531 (2.9)	532 (2.9)
Finland	532 (2.3)	532 (2.4)	531 (2.3)	530 (2.3)	533 (2.3)	531 (2.3)	530 (2.3)	531 (2.4)	532 (2.3)	532 (2.4)	532 (2.3)
Denmark	525 (1.9)	525 (2.0)	524 (1.9)	525 (1.9)	527 (1.9)	524 (1.9)	522 (2.0)	524 (1.9)	524 (1.9)	525 (1.9)	526 (1.9)
Portugal	525 (2.6)	526 (2.6)	523 (2.6)	524 (2.6)	523 (2.6)	525 (2.6)	523 (2.7)	525 (2.6)	524 (2.7)	525 (2.6)	526 (2.6)
Hungary	523 (2.6)	523 (2.6)	524 (2.6)	525 (2.7)	523 (2.6)	524 (2.6)	527 (2.7)	524 (2.6)	525 (2.6)	522 (2.6)	524 (2.6)
Turkey (5)	523 (4.4)	524 (4.5)	521 (4.4)	520 (4.4)	518 (4.4)	523 (4.4)	519 (4.5)	523 (4.4)	521 (4.4)	524 (4.4)	522 (4.4)
Germany	521 (2.3)	521 (2.3)	521 (2.3)	523 (2.4)	523 (2.3)	520 (2.3)	523 (2.3)	521 (2.3)	522 (2.3)	520 (2.3)	522 (2.3)
Sweden	521 (2.8)	522 (2.8)	523 (2.8)	522 (2.8)	524 (2.8)	521 (2.8)	521 (2.8)	521 (2.8)	523 (2.8)	520 (2.8)	522 (2.8)
Poland	520 (2.7)	520 (2.7)	521 (2.7)	521 (2.7)	521 (2.7)	520 (2.7)	523 (2.7)	521 (2.7)	521 (2.7)	521 (2.7)	520 (2.7)
Australia	516 (2.8)	517 (2.8)	516 (2.7)	516 (2.8)	518 (2.8)	516 (2.8)	515 (2.7)	515 (2.8)	517 (2.8)	516 (2.8)	516 (2.8)
Azerbaijan	515 (2.7)	515 (2.7)	517 (2.8)	519 (2.8)	519 (2.8)	516 (2.7)	521 (2.8)	515 (2.7)	517 (2.8)	513 (2.7)	515 (2.7)
Bulgaria	515 (4.3)	514 (4.3)	517 (4.4)	514 (4.6)	514 (4.4)	516 (4.3)	518 (4.6)	516 (4.2)	516 (4.2)	513 (4.2)	515 (4.3)
Italy	515 (2.4)	516 (2.5)	513 (2.5)	514 (2.5)	513 (2.5)	514 (2.4)	513 (2.5)	516 (2.4)	514 (2.4)	515 (2.4)	516 (2.4)
Canada	512 (1.9)	512 (1.9)	511 (1.8)	512 (1.9)	512 (1.9)	511 (1.9)	509 (1.9)	511 (1.9)	512 (1.9)	512 (1.9)	513 (1.9)
Kazakhstan	512 (2.5)	511 (2.5)	514 (2.5)	513 (2.6)	514 (2.5)	512 (2.5)	515 (2.6)	511 (2.5)	512 (2.5)	511 (2.5)	511 (2.5)
Slovak Republic	510 (3.5)	510 (3.5)	511 (3.5)	512 (3.5)	512 (3.5)	510 (3.5)	513 (3.6)	510 (3.5)	511 (3.5)	508 (3.5)	510 (3.4)
Croatia	509 (2.2)	508 (2.2)	509 (2.2)	510 (2.2)	504 (2.1)	510 (2.2)	511 (2.1)	509 (2.1)	509 (2.1)	509 (2.1)	509 (2.2)
Malta	509 (1.4)	511 (1.5)	508 (1.5)	508 (1.5)	511 (1.5)	509 (1.5)	509 (1.5)	509 (1.5)	510 (1.5)	508 (1.5)	510 (1.4)
Serbia	508 (3.2)	507 (3.2)	510 (3.2)	510 (3.3)	510 (3.2)	509 (3.2)	513 (3.2)	508 (3.1)	509 (3.2)	507 (3.2)	507 (3.2)
Spain	502 (2.1)	502 (2.2)	502 (2.2)	502 (2.1)	500 (2.1)	502 (2.1)	501 (2.2)	504 (2.2)	501 (2.2)	504 (2.2)	503 (2.2)
Armenia	498 (2.5)	498 (2.5)	497 (2.6)	498 (2.6)	500 (2.6)	499 (2.5)	500 (2.6)	497 (2.5)	499 (2.5)	495 (2.6)	498 (2.5)
New Zealand	487 (2.6)	487 (2.6)	488 (2.6)	487 (2.6)	489 (2.8)	487 (2.6)	486 (2.6)	487 (2.6)	487 (2.6)	488 (2.6)	487 (2.6)
France	485 (3.0)	484 (3.0)	483 (3.0)	484 (3.0)	481 (3.0)	484 (3.0)	483 (3.0)	485 (3.0)	483 (3.0)	485 (3.0)	485 (3.0)
Georgia	482 (3.7)	481 (3.6)	483 (3.7)	483 (3.7)	483 (3.7)	482 (3.7)	485 (3.7)	481 (3.7)	485 (3.6)	480 (3.7)	481 (3.7)
United Arab Emirates	481 (1.7)	482 (1.7)	480 (1.7)	481 (1.7)	480 (1.7)	482 (1.7)	479 (1.7)	482 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)
Bahrain	480 (2.6)	480 (2.6)	477 (2.7)	480 (2.6)	478 (2.6)	481 (2.6)	477 (2.6)	479 (2.6)	479 (2.7)	480 (2.6)	480 (2.6)
Qatar	449 (3.4)	449 (3.4)	447 (3.4)	449 (3.4)	449 (3.5)	450 (3.4)	447 (3.4)	450 (3.4)	450 (3.4)	449 (3.4)	449 (3.4)
Iran, Islamic Rep. of	443 (3.9)	444 (3.9)	441 (3.8)	440 (3.9)	441 (3.9)	444 (3.8)	442 (3.9)	445 (3.8)	443 (3.9)	445 (3.8)	442 (3.8)
Chile	441 (2.7)	442 (2.7)	443 (2.7)	441 (2.7)	444 (2.7)	440 (2.7)	440 (2.8)	440 (2.7)	442 (2.7)	442 (2.7)	441 (2.7)
Oman	431 (3.7)	431 (3.8)	431 (3.7)	430 (3.7)	430 (3.6)	432 (3.7)	429 (3.6)	431 (3.6)	432 (3.7)	431 (3.7)	431 (3.7)
International Average	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Benchmarking Participants											
Moscow City, Russian Fed.	593 (2.2)	592 (2.2)	599 (2.3)	598 (2.3)	597 (2.3)	594 (2.2)	600 (2.4)	592 (2.2)	595 (2.3)	591 (2.2)	593 (2.2)
Dubai, UAE	544 (1.6)	545 (1.7)	542 (1.6)	543 (1.6)	542 (1.7)	544 (1.7)	541 (1.6)	544 (1.6)	543 (1.7)	544 (1.6)	544 (1.7)
Quebec, Canada	532 (2.3)	532 (2.3)	530 (2.3)	531 (2.3)	530 (2.4)	532 (2.3)	528 (2.4)	532 (2.3)	531 (2.3)	532 (2.3)	533 (2.3)
Madrid, Spain	518 (2.2)	518 (2.1)	517 (2.1)	517 (2.1)	516 (2.1)	518 (2.2)	517 (2.1)	521 (2.2)	516 (2.2)	519 (2.2)	519 (2.1)
Ontario, Canada	512 (3.3)	513 (3.3)	512 (3.3)	512 (3.4)	512 (3.3)	512 (3.3)	510 (3.4)	511 (3.3)	513 (3.3)	512 (3.3)	513 (3.3)
Abu Dhabi, UAE	441 (2.2)	441 (2.3)	440 (2.2)	440 (2.2)	441 (2.3)	441 (2.2)	438 (2.2)	441 (2.2)	441 (2.2)	440 (2.3)	440 (2.2)
Number of Items (Score Points)*	171 (183)	157 (168)	152 (164)	148 (160)	124 (135)	164 (176)	137 (145)	151 (160)	151 (162)	163 (175)	164 (176)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Portugal	Hungary	Turkey (5)	Germany	Sweden	Poland	Australia	Azerbaijan	Bulgaria	Italy
Singapore	625 (3.9)	625 (3.9)	621 (3.8)	626 (3.9)	616 (3.8)	616 (3.8)	627 (3.9)	624 (4.1)	626 (3.9)	620 (3.9)	623 (3.8)
Hong Kong SAR	602 (3.3)	602 (3.3)	600 (3.3)	602 (3.4)	598 (3.3)	598 (3.4)	601 (3.3)	600 (3.8)	601 (3.3)	600 (3.4)	601 (3.3)
Korea, Rep. of	600 (2.2)	600 (2.2)	597 (2.2)	598 (2.3)	597 (2.2)	595 (2.2)	600 (2.2)	601 (2.2)	601 (2.2)	594 (2.2)	601 (2.2)
Chinese Taipei	599 (1.9)	599 (1.9)	595 (1.9)	601 (2.0)	594 (2.0)	591 (2.0)	600 (1.9)	592 (2.4)	599 (1.9)	592 (2.0)	598 (1.9)
Japan	593 (1.8)	593 (1.8)	592 (1.7)	590 (1.7)	589 (1.7)	588 (1.7)	594 (1.8)	590 (2.0)	593 (1.8)	589 (1.7)	595 (1.7)
Russian Federation	567 (3.3)	567 (3.3)	570 (3.4)	566 (3.3)	571 (3.4)	569 (3.4)	566 (3.3)	566 (3.6)	567 (3.3)	577 (3.4)	568 (3.3)
Northern Ireland	566 (2.7)	566 (2.7)	565 (2.7)	568 (2.8)	563 (2.8)	565 (2.8)	565 (2.7)	567 (3.2)	566 (2.8)	564 (2.7)	565 (2.7)
England	556 (3.0)	556 (3.0)	554 (3.0)	556 (3.1)	552 (2.9)	553 (2.9)	556 (3.0)	552 (3.3)	556 (3.0)	553 (3.0)	555 (2.9)
Ireland	548 (2.5)	548 (2.5)	547 (2.5)	550 (2.5)	544 (2.5)	546 (2.5)	548 (2.5)	544 (2.5)	549 (2.5)	544 (2.5)	547 (2.5)
Latvia	546 (2.6)	546 (2.6)	549 (2.7)	545 (2.6)	550 (2.7)	550 (2.6)	546 (2.6)	554 (2.8)	546 (2.6)	555 (2.8)	547 (2.6)
Norway (5)	543 (2.2)	543 (2.2)	542 (2.2)	541 (2.2)	541 (2.2)	544 (2.2)	543 (2.2)	547 (2.2)	543 (2.2)	540 (2.2)	543 (2.2)
Lithuania	542 (2.8)	542 (2.8)	544 (2.8)	540 (2.8)	544 (2.8)	544 (2.8)	542 (2.7)	542 (3.0)	542 (2.8)	548 (2.9)	542 (2.7)
Austria	539 (2.0)	539 (2.0)	539 (2.1)	540 (2.0)	545 (2.0)	542 (2.1)	538 (2.0)	539 (2.0)	539 (2.0)	541 (2.1)	540 (2.0)
Netherlands	538 (2.2)	538 (2.2)	537 (2.2)	535 (2.2)	538 (2.3)	540 (2.4)	538 (2.2)	540 (2.6)	537 (2.2)	539 (2.3)	538 (2.2)
United States	535 (2.5)	535 (2.5)	534 (2.5)	536 (2.6)	530 (2.5)	531 (2.5)	535 (2.5)	530 (2.4)	535 (2.5)	531 (2.5)	533 (2.5)
Czech Republic	533 (2.5)	533 (2.5)	535 (2.6)	532 (2.5)	537 (2.6)	536 (2.6)	532 (2.5)	532 (2.6)	533 (2.5)	534 (2.6)	533 (2.6)
Belgium (Flemish)	532 (1.9)	532 (1.9)	529 (1.9)	532 (2.0)	529 (1.9)	529 (1.9)	533 (1.9)	539 (1.9)	532 (1.9)	527 (1.9)	532 (1.9)
Cyprus	532 (2.9)	532 (2.9)	531 (2.8)	533 (2.9)	528 (2.8)	531 (2.9)	532 (2.9)	533 (2.8)	532 (2.9)	528 (2.8)	531 (2.9)
Finland	532 (2.3)	532 (2.3)	529 (2.3)	529 (2.4)	528 (2.3)	532 (2.4)	532 (2.3)	533 (2.3)	532 (2.3)	527 (2.3)	532 (2.3)
Denmark	525 (1.9)	525 (1.9)	523 (1.9)	523 (2.0)	523 (1.9)	526 (1.9)	525 (1.9)	529 (2.1)	524 (1.9)	522 (1.9)	525 (1.9)
Portugal	525 (2.6)	525 (2.6)	523 (2.6)	527 (2.7)	524 (2.6)	522 (2.6)	525 (2.6)	519 (2.7)	525 (2.6)	522 (2.6)	525 (2.6)
Hungary	523 (2.6)	523 (2.6)	526 (2.7)	523 (2.6)	527 (2.7)	526 (2.7)	523 (2.6)	528 (2.8)	523 (2.6)	527 (2.7)	524 (2.7)
Turkey (5)	523 (4.4)	523 (4.4)	523 (4.4)	525 (4.5)	520 (4.4)	517 (4.4)	524 (4.4)	523 (4.2)	523 (4.4)	521 (4.4)	522 (4.4)
Germany	521 (2.3)	521 (2.3)	521 (2.3)	520 (2.3)	528 (2.4)	525 (2.4)	521 (2.3)	528 (2.3)	521 (2.3)	524 (2.4)	522 (2.3)
Sweden	521 (2.8)	521 (2.8)	522 (2.8)	518 (2.8)	522 (2.9)	525 (2.8)	521 (2.8)	528 (2.9)	521 (2.8)	524 (2.8)	522 (2.8)
Poland	520 (2.7)	520 (2.7)	520 (2.7)	522 (2.7)	522 (2.7)	523 (2.7)	521 (2.7)	522 (2.8)	520 (2.7)	521 (2.7)	521 (2.7)
Australia	516 (2.8)	516 (2.8)	516 (2.8)	514 (2.8)	514 (2.8)	517 (2.8)	516 (2.8)	521 (2.8)	516 (2.8)	515 (2.8)	516 (2.8)
Azerbaijan	515 (2.7)	515 (2.7)	519 (2.8)	516 (2.7)	521 (2.8)	518 (2.8)	515 (2.7)	514 (2.9)	516 (2.7)	524 (2.9)	515 (2.8)
Bulgaria	515 (4.3)	515 (4.3)	518 (4.5)	518 (4.2)	518 (4.7)	515 (4.6)	514 (4.3)	524 (4.1)	515 (4.3)	526 (4.6)	515 (4.4)
Italy	515 (2.4)	515 (2.4)	513 (2.4)	517 (2.4)	514 (2.5)	513 (2.5)	515 (2.4)	517 (2.6)	515 (2.4)	513 (2.5)	515 (2.4)
Canada	512 (1.9)	512 (1.9)	512 (1.9)	510 (1.9)	510 (1.9)	512 (1.9)	512 (1.9)	512 (1.9)	512 (1.9)	509 (1.9)	512 (1.9)
Kazakhstan	512 (2.5)	512 (2.5)	512 (2.6)	513 (2.5)	515 (2.6)	512 (2.6)	512 (2.5)	516 (2.7)	512 (2.5)	517 (2.6)	511 (2.5)
Slovak Republic	510 (3.5)	510 (3.5)	511 (3.5)	508 (3.4)	513 (3.6)	514 (3.6)	509 (3.5)	511 (3.8)	510 (3.5)	513 (3.6)	510 (3.5)
Croatia	509 (2.2)	509 (2.2)	511 (2.2)	509 (2.1)	513 (2.2)	509 (2.1)	509 (2.2)	509 (2.2)	509 (2.2)	514 (2.2)	510 (2.2)
Malta	509 (1.4)	509 (1.4)	508 (1.5)	511 (1.4)	510 (1.4)	510 (1.5)	508 (1.5)	506 (1.7)	509 (1.5)	508 (1.5)	509 (1.4)
Serbia	508 (3.2)	508 (3.2)	510 (3.3)	509 (3.1)	514 (3.3)	510 (3.3)	508 (3.2)	512 (3.3)	508 (3.2)	515 (3.3)	508 (3.2)
Spain	502 (2.1)	502 (2.1)	502 (2.1)	504 (2.2)	501 (2.2)	500 (2.2)	503 (2.1)	498 (2.5)	503 (2.1)	501 (2.2)	503 (2.2)
Armenia	498 (2.5)	498 (2.5)	498 (2.6)	501 (2.5)	501 (2.6)	498 (2.6)	497 (2.6)	500 (2.4)	498 (2.5)	501 (2.6)	497 (2.6)
New Zealand	487 (2.6)	487 (2.6)	488 (2.6)	485 (2.6)	484 (2.7)	489 (2.7)	487 (2.6)	489 (2.9)	487 (2.6)	487 (2.6)	488 (2.6)
France	485 (3.0)	485 (3.0)	484 (3.0)	486 (3.0)	485 (3.0)	483 (3.0)	485 (3.0)	487 (3.0)	485 (3.0)	482 (3.0)	485 (3.0)
Georgia	482 (3.7)	482 (3.7)	483 (3.7)	484 (3.6)	486 (3.7)	483 (3.6)	482 (3.6)	484 (3.5)	482 (3.7)	486 (3.8)	481 (3.7)
United Arab Emirates	481 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)	478 (1.7)	480 (1.7)	482 (1.7)	482 (1.8)	482 (1.7)	480 (1.7)	480 (1.7)
Bahrain	480 (2.6)	480 (2.6)	479 (2.6)	481 (2.6)	478 (2.6)	478 (2.6)	480 (2.7)	476 (2.7)	480 (2.6)	476 (2.6)	479 (2.6)
Qatar	449 (3.4)	449 (3.4)	449 (3.4)	450 (3.4)	446 (3.4)	448 (3.3)	450 (3.4)	444 (3.4)	450 (3.4)	447 (3.4)	448 (3.4)
Iran, Islamic Rep. of	443 (3.9)	443 (3.9)	442 (3.9)	448 (3.8)	437 (3.9)	440 (3.8)	444 (3.8)	450 (3.8)	443 (3.8)	440 (3.8)	443 (3.8)
Chile	441 (2.7)	441 (2.7)	442 (2.7)	437 (2.8)	439 (2.7)	443 (2.7)	441 (2.7)	448 (2.7)	442 (2.7)	441 (2.7)	441 (2.7)
Oman	431 (3.7)	431 (3.7)	431 (3.7)	433 (3.7)	429 (3.6)	431 (3.7)	430 (3.7)	437 (3.6)	431 (3.7)	430 (3.6)	430 (3.7)
International Average	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	524 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Benchmarking Participants											
Moscow City, Russian Fed.	593 (2.2)	593 (2.2)	599 (2.3)	591 (2.2)	599 (2.3)	599 (2.4)	592 (2.2)	598 (2.6)	592 (2.2)	608 (2.5)	595 (2.3)
Dubai, UAE	544 (1.6)	544 (1.6)	543 (1.6)	544 (1.6)	540 (1.6)	541 (1.6)	544 (1.7)	541 (1.8)	544 (1.6)	541 (1.6)	543 (1.7)
Quebec, Canada	532 (2.3)	532 (2.3)	531 (2.3)	531 (2.3)	529 (2.3)	530 (2.4)	532 (2.3)	532 (2.3)	532 (2.3)	526 (2.4)	533 (2.3)
Madrid, Spain	518 (2.2)	518 (2.2)	517 (2.1)	521 (2.2)	517 (2.1)	516 (2.1)	519 (2.2)	511 (2.3)	518 (2.2)	516 (2.1)	519 (2.1)
Ontario, Canada	512 (3.3)	512 (3.3)	513 (3.4)	510 (3.4)	511 (3.3)	513 (3.4)	512 (3.3)	513 (3.2)	512 (3.3)	509 (3.3)	512 (3.3)
Abu Dhabi, UAE	441 (2.2)	441 (2.2)	440 (2.2)	440 (2.2)	438 (2.3)	440 (2.2)	441 (2.2)	444 (2.4)	441 (2.2)	440 (2.2)	440 (2.2)
Number of Items (Score Points)*	171 (183)	171 (183)	155 (167)	145 (153)	132 (143)	131 (142)	163 (174)	59 (65)	169 (181)	133 (143)	162 (174)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Canada	Kazakhstan	Slovak Republic	Croatia	Malta	Serbia	Spain	Armenia	New Zealand	France
Singapore	625 (3.9)	618 (3.8)	626 (4.0)	613 (3.8)	621 (3.9)	623 (3.9)	626 (3.9)	622 (3.9)	625 (3.9)	622 (3.7)	623 (3.9)
Hong Kong SAR	602 (3.3)	603 (3.4)	601 (3.4)	596 (3.4)	598 (3.4)	602 (3.4)	601 (3.5)	600 (3.3)	601 (3.4)	601 (3.5)	600 (3.3)
Korea, Rep. of	600 (2.2)	600 (2.2)	597 (2.2)	593 (2.2)	596 (2.2)	596 (2.2)	596 (2.3)	603 (2.2)	599 (2.2)	599 (2.1)	601 (2.2)
Chinese Taipei	599 (1.9)	595 (2.0)	596 (2.0)	589 (2.0)	598 (2.0)	595 (2.0)	597 (2.0)	599 (1.9)	597 (1.9)	596 (2.1)	599 (1.9)
Japan	593 (1.8)	593 (1.7)	589 (1.8)	587 (1.7)	590 (1.8)	588 (1.8)	589 (1.7)	596 (1.7)	592 (1.8)	590 (1.8)	595 (1.7)
Russian Federation	567 (3.3)	565 (3.3)	569 (3.4)	574 (3.3)	576 (3.4)	569 (3.3)	571 (3.4)	566 (3.3)	568 (3.4)	566 (3.4)	569 (3.4)
Northern Ireland	566 (2.7)	567 (2.7)	566 (2.9)	565 (2.8)	562 (2.9)	568 (2.8)	565 (2.8)	565 (2.7)	566 (2.7)	567 (2.8)	564 (2.7)
England	556 (3.0)	556 (3.0)	553 (3.1)	552 (2.9)	549 (3.1)	556 (3.0)	554 (3.0)	554 (3.0)	556 (3.0)	557 (3.0)	554 (2.9)
Ireland	548 (2.5)	548 (2.5)	549 (2.5)	544 (2.5)	544 (2.5)	548 (2.5)	547 (2.5)	548 (2.5)	548 (2.5)	547 (2.5)	547 (2.5)
Latvia	546 (2.6)	546 (2.6)	548 (2.7)	554 (2.7)	552 (2.7)	550 (2.6)	549 (2.7)	546 (2.6)	547 (2.6)	547 (2.6)	548 (2.6)
Norway (5)	543 (2.2)	547 (2.2)	541 (2.2)	542 (2.3)	540 (2.2)	543 (2.2)	540 (2.2)	541 (2.2)	543 (2.2)	544 (2.2)	543 (2.2)
Lithuania	542 (2.8)	542 (2.8)	542 (2.8)	547 (2.9)	544 (2.9)	545 (2.8)	542 (2.8)	542 (2.7)	542 (2.8)	541 (2.7)	543 (2.8)
Austria	539 (2.0)	539 (2.0)	541 (2.0)	542 (2.1)	544 (2.0)	540 (2.0)	543 (2.0)	537 (2.0)	539 (2.1)	540 (2.1)	540 (2.1)
Netherlands	538 (2.2)	542 (2.3)	535 (2.2)	543 (2.4)	534 (2.3)	539 (2.2)	536 (2.2)	538 (2.2)	537 (2.2)	537 (2.2)	538 (2.2)
United States	535 (2.5)	534 (2.5)	535 (2.6)	529 (2.4)	530 (2.6)	535 (2.5)	536 (2.5)	533 (2.5)	536 (2.5)	534 (2.5)	533 (2.5)
Czech Republic	533 (2.5)	533 (2.6)	535 (2.5)	537 (2.6)	542 (2.6)	533 (2.6)	535 (2.5)	533 (2.5)	533 (2.5)	532 (2.6)	536 (2.6)
Belgium (Flemish)	532 (1.9)	530 (2.0)	530 (1.9)	527 (1.9)	531 (1.9)	530 (1.9)	531 (1.9)	532 (1.9)	531 (1.9)	532 (1.9)	533 (1.9)
Cyprus	532 (2.9)	530 (3.0)	533 (2.8)	528 (2.9)	530 (2.8)	532 (2.9)	532 (2.8)	531 (2.9)	532 (2.9)	531 (2.8)	531 (2.8)
Finland	532 (2.3)	534 (2.4)	530 (2.3)	531 (2.3)	528 (2.3)	532 (2.3)	529 (2.3)	531 (2.4)	531 (2.3)	532 (2.4)	532 (2.3)
Denmark	525 (1.9)	529 (2.0)	522 (2.0)	523 (1.9)	522 (2.0)	524 (1.9)	520 (2.0)	523 (1.9)	524 (1.9)	527 (2.0)	525 (2.0)
Portugal	525 (2.6)	524 (2.5)	523 (2.6)	521 (2.6)	522 (2.7)	525 (2.6)	524 (2.7)	524 (2.6)	525 (2.6)	527 (2.6)	525 (2.6)
Hungary	523 (2.6)	521 (2.7)	526 (2.6)	528 (2.7)	532 (2.6)	524 (2.6)	527 (2.6)	523 (2.6)	524 (2.7)	523 (2.6)	526 (2.7)
Turkey (5)	523 (4.4)	517 (4.5)	524 (4.4)	516 (4.4)	525 (4.3)	520 (4.4)	526 (4.4)	523 (4.4)	523 (4.4)	523 (4.4)	522 (4.5)
Germany	521 (2.3)	522 (2.3)	521 (2.3)	528 (2.4)	528 (2.3)	522 (2.3)	524 (2.3)	521 (2.3)	521 (2.3)	522 (2.4)	523 (2.3)
Sweden	521 (2.8)	524 (2.8)	520 (2.8)	527 (2.9)	521 (2.9)	523 (2.8)	520 (2.8)	519 (2.8)	522 (2.8)	522 (2.8)	522 (2.8)
Poland	520 (2.7)	521 (2.7)	521 (2.7)	524 (2.7)	520 (2.7)	521 (2.7)	520 (2.7)	521 (2.7)	520 (2.7)	521 (2.7)	521 (2.7)
Australia	516 (2.8)	519 (2.8)	515 (2.8)	516 (2.8)	508 (2.8)	517 (2.8)	513 (2.8)	515 (2.8)	516 (2.8)	518 (2.8)	515 (2.8)
Azerbaijan	515 (2.7)	511 (2.8)	519 (2.8)	522 (2.9)	525 (2.9)	518 (2.8)	521 (2.9)	514 (2.7)	517 (2.8)	515 (2.8)	517 (2.8)
Bulgaria	515 (4.3)	507 (4.5)	519 (4.2)	519 (4.5)	528 (4.3)	517 (4.2)	522 (4.3)	514 (4.3)	516 (4.4)	515 (4.4)	518 (4.4)
Italy	515 (2.4)	511 (2.5)	515 (2.4)	509 (2.5)	515 (2.5)	514 (2.4)	516 (2.5)	514 (2.4)	515 (2.4)	518 (2.5)	516 (2.5)
Canada	512 (1.9)	514 (1.9)	510 (1.9)	510 (1.9)	506 (1.9)	511 (1.9)	509 (1.9)	511 (1.9)	512 (1.9)	513 (1.9)	511 (1.9)
Kazakhstan	512 (2.5)	508 (2.6)	515 (2.5)	516 (2.6)	523 (2.6)	512 (2.5)	516 (2.6)	512 (2.5)	512 (2.5)	509 (2.6)	513 (2.6)
Slovak Republic	510 (3.5)	511 (3.5)	510 (3.5)	518 (3.6)	516 (3.5)	511 (3.5)	512 (3.5)	509 (3.5)	510 (3.5)	509 (3.6)	512 (3.5)
Croatia	509 (2.2)	502 (2.3)	511 (2.1)	511 (2.2)	520 (2.2)	508 (2.1)	514 (2.2)	510 (2.2)	509 (2.2)	508 (2.2)	512 (2.2)
Malta	509 (1.4)	510 (1.5)	508 (1.5)	510 (1.5)	506 (1.5)	512 (1.5)	508 (1.5)	508 (1.5)	509 (1.5)	511 (1.5)	509 (1.4)
Serbia	508 (3.2)	504 (3.2)	511 (3.2)	515 (3.3)	518 (3.2)	509 (3.2)	514 (3.3)	508 (3.2)	508 (3.2)	507 (3.2)	510 (3.2)
Spain	502 (2.1)	500 (2.2)	501 (2.2)	497 (2.2)	500 (2.3)	502 (2.2)	503 (2.2)	504 (2.2)	503 (2.1)	505 (2.2)	504 (2.2)
Armenia	498 (2.5)	491 (2.6)	503 (2.5)	500 (2.5)	509 (2.4)	499 (2.5)	505 (2.4)	495 (2.6)	498 (2.6)	496 (2.6)	499 (2.6)
New Zealand	487 (2.6)	491 (2.7)	485 (2.6)	488 (2.7)	479 (2.7)	489 (2.6)	483 (2.7)	487 (2.6)	488 (2.6)	489 (2.6)	486 (2.6)
France	485 (3.0)	484 (3.0)	484 (3.0)	481 (3.0)	485 (3.0)	484 (3.0)	483 (3.0)	486 (3.0)	485 (3.0)	487 (3.0)	486 (3.0)
Georgia	482 (3.7)	477 (3.7)	487 (3.5)	487 (3.7)	493 (3.6)	483 (3.6)	488 (3.7)	481 (3.7)	482 (3.7)	479 (3.6)	482 (3.7)
United Arab Emirates	481 (1.7)	480 (1.7)	482 (1.7)	478 (1.7)	479 (1.7)	481 (1.7)	482 (1.7)	480 (1.7)	482 (1.7)	482 (1.7)	480 (1.7)
Bahrain	480 (2.6)	480 (2.6)	479 (2.6)	475 (2.6)	476 (2.6)	478 (2.7)	480 (2.6)	479 (2.6)	480 (2.6)	479 (2.7)	477 (2.6)
Qatar	449 (3.4)	449 (3.5)	449 (3.4)	446 (3.4)	445 (3.3)	449 (3.4)	451 (3.3)	447 (3.4)	450 (3.4)	452 (3.4)	448 (3.4)
Iran, Islamic Rep. of	443 (3.9)	444 (3.9)	445 (3.9)	436 (3.8)	440 (3.9)	442 (3.8)	443 (3.9)	443 (3.8)	442 (3.8)	446 (3.8)	442 (3.8)
Chile	441 (2.7)	444 (2.7)	442 (2.7)	441 (2.7)	439 (2.7)	443 (2.7)	438 (2.7)	441 (2.7)	442 (2.7)	446 (2.7)	441 (2.7)
Oman	431 (3.7)	432 (3.6)	430 (3.8)	430 (3.5)	428 (3.7)	431 (3.7)	429 (3.7)	431 (3.7)	431 (3.7)	432 (3.6)	430 (3.6)
International Average	523 (0.4)	522 (0.4)	523 (0.4)	523 (0.4)	524 (0.4)	523 (0.4)	524 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Benchmarking Participants											
Moscow City, Russian Fed.	593 (2.2)	593 (2.3)	595 (2.3)	604 (2.4)	601 (2.4)	597 (2.3)	599 (2.4)	592 (2.2)	595 (2.3)	593 (2.3)	597 (2.3)
Dubai, UAE	544 (1.6)	543 (1.7)	544 (1.6)	539 (1.6)	540 (1.7)	543 (1.7)	543 (1.7)	542 (1.6)	544 (1.6)	544 (1.7)	543 (1.6)
Quebec, Canada	532 (2.3)	533 (2.3)	529 (2.4)	527 (2.4)	527 (2.4)	530 (2.3)	530 (2.4)	533 (2.3)	532 (2.3)	533 (2.4)	532 (2.3)
Madrid, Spain	518 (2.2)	516 (2.2)	516 (2.2)	513 (2.1)	516 (2.2)	517 (2.2)	519 (2.1)	520 (2.2)	518 (2.1)	521 (2.2)	519 (2.2)
Ontario, Canada	512 (3.3)	515 (3.4)	512 (3.3)	510 (3.3)	505 (3.4)	512 (3.3)	509 (3.4)	511 (3.3)	513 (3.3)	513 (3.3)	511 (3.3)
Abu Dhabi, UAE	441 (2.2)	439 (2.3)	441 (2.3)	439 (2.3)	439 (2.3)	441 (2.2)	441 (2.3)	439 (2.3)	441 (2.2)	442 (2.2)	440 (2.2)
Number of Items (Score Points)*	171 (183)	125 (137)	142 (153)	119 (130)	127 (136)	147 (157)	132 (141)	154 (166)	164 (176)	119 (127)	161 (172)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Georgia	United Arab Emirates	Bahrain	Qatar	Iran, Islamic Rep. of	Chile	Oman
Singapore	625 (3.9)	619 (3.9)	625 (3.9)	626 (3.9)	629 (3.9)	626 (3.9)	626 (3.9)	624 (3.9)
Hong Kong SAR	602 (3.3)	601 (3.4)	602 (3.3)	601 (3.3)	602 (3.3)	602 (3.4)	602 (3.4)	603 (3.5)
Korea, Rep. of	600 (2.2)	596 (2.2)	600 (2.2)	600 (2.2)	600 (2.2)	600 (2.2)	600 (2.2)	596 (2.3)
Chinese Taipei	599 (1.9)	595 (2.0)	599 (1.9)	599 (1.9)	601 (2.0)	601 (1.9)	597 (2.0)	594 (2.1)
Japan	593 (1.8)	590 (1.7)	593 (1.8)	593 (1.8)	591 (1.8)	594 (1.8)	591 (1.7)	587 (1.8)
Russian Federation	567 (3.3)	573 (3.4)	567 (3.3)	567 (3.3)	566 (3.3)	567 (3.3)	567 (3.3)	565 (3.4)
Northern Ireland	566 (2.7)	566 (2.8)	566 (2.7)	566 (2.7)	568 (2.8)	565 (2.8)	566 (2.7)	569 (2.7)
England	556 (3.0)	553 (3.0)	556 (3.0)	556 (3.0)	558 (3.0)	555 (3.0)	557 (3.0)	557 (3.0)
Ireland	548 (2.5)	546 (2.5)	548 (2.5)	548 (2.5)	550 (2.5)	548 (2.5)	548 (2.5)	548 (2.5)
Latvia	546 (2.6)	551 (2.7)	546 (2.6)	546 (2.6)	546 (2.6)	546 (2.6)	547 (2.6)	548 (2.6)
Norway (5)	543 (2.2)	541 (2.2)	543 (2.2)	543 (2.2)	543 (2.3)	542 (2.2)	545 (2.2)	545 (2.2)
Lithuania	542 (2.8)	546 (2.8)	542 (2.8)	542 (2.8)	541 (2.7)	542 (2.8)	542 (2.8)	542 (2.9)
Austria	539 (2.0)	543 (2.1)	539 (2.0)	539 (2.0)	539 (2.1)	538 (2.1)	539 (2.0)	540 (2.1)
Netherlands	538 (2.2)	539 (2.3)	538 (2.2)	537 (2.2)	536 (2.2)	537 (2.2)	541 (2.2)	542 (2.4)
United States	535 (2.5)	534 (2.5)	535 (2.5)	535 (2.5)	536 (2.6)	536 (2.5)	535 (2.5)	534 (2.5)
Czech Republic	533 (2.5)	534 (2.5)	533 (2.5)	533 (2.5)	532 (2.6)	532 (2.5)	531 (2.5)	531 (2.5)
Belgium (Flemish)	532 (1.9)	529 (1.9)	532 (1.9)	532 (1.9)	532 (2.0)	531 (1.9)	533 (1.9)	532 (1.9)
Cyprus	532 (2.9)	530 (2.8)	532 (2.9)	532 (2.9)	533 (2.9)	531 (2.9)	532 (2.9)	533 (2.9)
Finland	532 (2.3)	529 (2.3)	532 (2.3)	532 (2.3)	531 (2.4)	530 (2.4)	534 (2.4)	535 (2.4)
Denmark	525 (1.9)	522 (2.0)	525 (1.9)	524 (1.9)	524 (1.9)	524 (1.9)	526 (1.9)	527 (1.9)
Portugal	525 (2.6)	523 (2.7)	525 (2.6)	525 (2.6)	527 (2.6)	524 (2.7)	525 (2.6)	524 (2.7)
Hungary	523 (2.6)	527 (2.7)	523 (2.6)	523 (2.6)	523 (2.6)	523 (2.6)	523 (2.7)	522 (2.6)
Turkey (5)	523 (4.4)	520 (4.4)	523 (4.4)	523 (4.4)	524 (4.4)	525 (4.4)	521 (4.4)	519 (4.4)
Germany	521 (2.3)	524 (2.4)	521 (2.3)	521 (2.3)	520 (2.3)	519 (2.3)	521 (2.3)	523 (2.3)
Sweden	521 (2.8)	522 (2.9)	521 (2.8)	521 (2.8)	521 (2.8)	520 (2.8)	523 (2.8)	524 (2.7)
Poland	520 (2.7)	520 (2.8)	520 (2.7)	520 (2.7)	520 (2.6)	520 (2.7)	520 (2.7)	522 (2.7)
Australia	516 (2.8)	515 (2.8)	516 (2.8)	516 (2.8)	515 (2.8)	515 (2.8)	518 (2.8)	521 (2.8)
Azerbaijan	515 (2.7)	522 (2.8)	515 (2.7)	515 (2.7)	517 (2.7)	515 (2.8)	515 (2.8)	515 (2.8)
Bulgaria	515 (4.3)	522 (4.3)	515 (4.3)	515 (4.3)	516 (4.2)	514 (4.3)	514 (4.3)	512 (4.3)
Italy	515 (2.4)	514 (2.5)	515 (2.4)	515 (2.4)	515 (2.4)	514 (2.5)	514 (2.4)	512 (2.5)
Canada	512 (1.9)	510 (1.9)	512 (1.9)	512 (1.9)	511 (1.9)	512 (1.9)	512 (1.9)	513 (1.8)
Kazakhstan	512 (2.5)	515 (2.6)	512 (2.5)	512 (2.5)	512 (2.5)	513 (2.5)	510 (2.5)	507 (2.6)
Slovak Republic	510 (3.5)	512 (3.6)	510 (3.5)	510 (3.5)	509 (3.5)	508 (3.5)	510 (3.5)	511 (3.5)
Croatia	509 (2.2)	512 (2.1)	509 (2.2)	509 (2.2)	509 (2.1)	509 (2.2)	506 (2.2)	503 (2.3)
Malta	509 (1.4)	508 (1.5)	509 (1.4)	509 (1.4)	512 (1.5)	507 (1.5)	510 (1.5)	514 (1.5)
Serbia	508 (3.2)	513 (3.2)	508 (3.2)	508 (3.2)	509 (3.2)	508 (3.2)	505 (3.2)	504 (3.3)
Spain	502 (2.1)	502 (2.2)	502 (2.1)	503 (2.1)	504 (2.2)	503 (2.1)	501 (2.2)	498 (2.2)
Armenia	498 (2.5)	501 (2.5)	498 (2.5)	498 (2.5)	500 (2.5)	497 (2.6)	497 (2.5)	495 (2.6)
New Zealand	487 (2.6)	486 (2.7)	487 (2.6)	487 (2.6)	486 (2.7)	487 (2.6)	489 (2.6)	492 (2.7)
France	485 (3.0)	483 (3.0)	485 (3.0)	485 (3.0)	485 (3.0)	485 (3.0)	484 (3.0)	482 (3.0)
Georgia	482 (3.7)	486 (3.8)	482 (3.7)	482 (3.7)	481 (3.7)	482 (3.7)	480 (3.7)	478 (3.7)
United Arab Emirates	481 (1.7)	479 (1.7)	481 (1.7)	482 (1.7)	482 (1.7)	482 (1.7)	482 (1.7)	481 (1.7)
Bahrain	480 (2.6)	477 (2.6)	480 (2.6)	480 (2.6)	481 (2.6)	480 (2.6)	480 (2.6)	479 (2.7)
Qatar	449 (3.4)	447 (3.5)	449 (3.4)	450 (3.4)	451 (3.4)	450 (3.4)	449 (3.4)	449 (3.5)
Iran, Islamic Rep. of	443 (3.9)	440 (3.8)	443 (3.9)	443 (3.9)	445 (3.9)	445 (3.9)	443 (3.8)	444 (3.9)
Chile	441 (2.7)	441 (2.7)	441 (2.7)	442 (2.7)	438 (2.8)	442 (2.7)	442 (2.7)	441 (2.8)
Oman	431 (3.7)	429 (3.6)	431 (3.7)	431 (3.7)	433 (3.7)	432 (3.7)	431 (3.7)	434 (3.6)
International Average	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Benchmarking Participants								
Moscow City, Russian Fed.	593 (2.2)	603 (2.4)	593 (2.2)	592 (2.2)	592 (2.3)	593 (2.2)	593 (2.3)	594 (2.4)
Dubai, UAE	544 (1.6)	542 (1.6)	544 (1.6)	544 (1.6)	545 (1.7)	544 (1.6)	544 (1.7)	543 (1.7)
Quebec, Canada	532 (2.3)	529 (2.4)	532 (2.3)	532 (2.3)	533 (2.3)	532 (2.3)	532 (2.3)	530 (2.4)
Madrid, Spain	518 (2.2)	517 (2.2)	518 (2.2)	519 (2.1)	521 (2.2)	519 (2.1)	517 (2.1)	515 (2.2)
Ontario, Canada	512 (3.3)	511 (3.3)	512 (3.3)	512 (3.3)	511 (3.4)	512 (3.3)	512 (3.3)	515 (3.2)
Abu Dhabi, UAE	441 (2.2)	439 (2.3)	441 (2.2)	441 (2.2)	441 (2.2)	441 (2.2)	441 (2.2)	440 (2.3)
Number of Items (Score Points)*	171 (183)	132 (141)	171 (183)	169 (181)	145 (155)	153 (163)	151 (162)	123 (133)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.
 () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Bencharking Participants	Moscow City, Russian Fed.	Dubai, UAE	Quebec, Canada	Madrid, Spain	Ontario, Canada	Abu Dhabi, UAE
Singapore	625 (3.9)		623 (3.9)	625 (3.9)	623 (3.9)	622 (3.9)	620 (3.8)	625 (3.9)
Hong Kong SAR	602 (3.3)		601 (3.4)	602 (3.3)	601 (3.3)	600 (3.3)	602 (3.3)	602 (3.3)
Korea, Rep. of	600 (2.2)		594 (2.2)	600 (2.2)	602 (2.2)	603 (2.2)	599 (2.2)	600 (2.2)
Chinese Taipei	599 (1.9)		596 (2.0)	599 (1.9)	598 (2.0)	599 (1.9)	596 (2.0)	599 (1.9)
Japan	593 (1.8)		588 (1.7)	593 (1.8)	593 (1.8)	596 (1.7)	593 (1.7)	593 (1.8)
Russian Federation	567 (3.3)		571 (3.3)	567 (3.3)	566 (3.3)	566 (3.3)	566 (3.3)	567 (3.3)
Northern Ireland	566 (2.7)		568 (2.8)	566 (2.7)	566 (2.7)	565 (2.7)	566 (2.7)	566 (2.7)
England	556 (3.0)		556 (3.0)	556 (3.0)	557 (2.9)	554 (3.0)	555 (3.0)	556 (3.0)
Ireland	548 (2.5)		550 (2.5)	548 (2.5)	548 (2.5)	548 (2.5)	548 (2.5)	548 (2.5)
Latvia	546 (2.6)		550 (2.6)	546 (2.6)	546 (2.6)	546 (2.6)	546 (2.6)	546 (2.6)
Norway (5)	543 (2.2)		541 (2.2)	543 (2.2)	545 (2.2)	541 (2.2)	545 (2.2)	543 (2.2)
Lithuania	542 (2.8)		544 (2.8)	542 (2.8)	540 (2.7)	542 (2.7)	543 (2.8)	542 (2.8)
Austria	539 (2.0)		541 (2.1)	539 (2.0)	539 (2.0)	537 (2.0)	539 (2.0)	539 (2.0)
Netherlands	538 (2.2)		537 (2.2)	538 (2.2)	537 (2.2)	538 (2.2)	542 (2.3)	538 (2.2)
United States	535 (2.5)		535 (2.6)	535 (2.5)	534 (2.5)	533 (2.5)	533 (2.5)	535 (2.5)
Czech Republic	533 (2.5)		532 (2.6)	533 (2.5)	532 (2.6)	533 (2.5)	534 (2.5)	533 (2.5)
Belgium (Flemish)	532 (1.9)		528 (1.9)	532 (1.9)	533 (1.9)	532 (1.9)	531 (1.9)	532 (1.9)
Cyprus	532 (2.9)		532 (2.9)	532 (2.9)	532 (2.9)	531 (2.9)	530 (2.9)	532 (2.9)
Finland	532 (2.3)		530 (2.3)	532 (2.3)	532 (2.4)	531 (2.4)	534 (2.4)	532 (2.3)
Denmark	525 (1.9)		523 (1.9)	525 (1.9)	526 (1.9)	523 (1.9)	528 (2.0)	525 (1.9)
Portugal	525 (2.6)		525 (2.7)	525 (2.6)	526 (2.6)	524 (2.6)	523 (2.6)	525 (2.6)
Hungary	523 (2.6)		525 (2.6)	523 (2.6)	523 (2.7)	523 (2.6)	521 (2.7)	523 (2.6)
Turkey (5)	523 (4.4)		521 (4.5)	523 (4.4)	522 (4.4)	523 (4.4)	518 (4.5)	523 (4.4)
Germany	521 (2.3)		522 (2.3)	521 (2.3)	521 (2.3)	521 (2.3)	522 (2.3)	521 (2.3)
Sweden	521 (2.8)		522 (2.8)	521 (2.8)	522 (2.8)	519 (2.8)	523 (2.8)	521 (2.8)
Poland	520 (2.7)		519 (2.7)	520 (2.7)	520 (2.7)	521 (2.7)	522 (2.6)	520 (2.7)
Australia	516 (2.8)		515 (2.7)	516 (2.8)	517 (2.8)	515 (2.8)	518 (2.8)	516 (2.8)
Azerbaijan	515 (2.7)		519 (2.8)	515 (2.7)	513 (2.8)	514 (2.7)	514 (2.8)	515 (2.7)
Bulgaria	515 (4.3)		520 (4.3)	515 (4.3)	513 (4.3)	514 (4.3)	510 (4.5)	515 (4.3)
Italy	515 (2.4)		515 (2.4)	515 (2.4)	515 (2.4)	514 (2.4)	511 (2.5)	515 (2.4)
Canada	512 (1.9)		511 (1.9)	512 (1.9)	514 (1.9)	511 (1.9)	512 (1.9)	512 (1.9)
Kazakhstan	512 (2.5)		514 (2.6)	512 (2.5)	509 (2.5)	512 (2.5)	510 (2.5)	512 (2.5)
Slovak Republic	510 (3.5)		511 (3.5)	510 (3.5)	509 (3.5)	509 (3.5)	511 (3.5)	510 (3.5)
Croatia	509 (2.2)		509 (2.1)	509 (2.2)	508 (2.2)	510 (2.2)	503 (2.3)	509 (2.2)
Malta	509 (1.4)		510 (1.5)	509 (1.4)	512 (1.4)	508 (1.5)	510 (1.5)	509 (1.4)
Serbia	508 (3.2)		512 (3.2)	508 (3.2)	505 (3.2)	508 (3.2)	506 (3.2)	508 (3.2)
Spain	502 (2.1)		503 (2.1)	502 (2.1)	503 (2.2)	504 (2.2)	500 (2.2)	502 (2.1)
Armenia	498 (2.5)		501 (2.5)	498 (2.5)	495 (2.6)	495 (2.6)	494 (2.6)	498 (2.5)
New Zealand	487 (2.6)		487 (2.6)	487 (2.6)	487 (2.6)	487 (2.6)	490 (2.7)	487 (2.6)
France	485 (3.0)		483 (3.0)	485 (3.0)	486 (3.0)	486 (3.0)	484 (3.0)	485 (3.0)
Georgia	482 (3.7)		484 (3.8)	482 (3.7)	479 (3.7)	481 (3.7)	479 (3.7)	482 (3.7)
United Arab Emirates	481 (1.7)		481 (1.7)	481 (1.7)	481 (1.7)	480 (1.7)	480 (1.8)	481 (1.7)
Bahrain	480 (2.6)		480 (2.7)	480 (2.6)	480 (2.6)	479 (2.6)	480 (2.6)	480 (2.6)
Qatar	449 (3.4)		449 (3.4)	449 (3.4)	450 (3.4)	447 (3.4)	448 (3.4)	449 (3.4)
Iran, Islamic Rep. of	443 (3.9)		443 (3.8)	443 (3.9)	442 (3.9)	443 (3.8)	445 (3.9)	443 (3.9)
Chile	441 (2.7)		441 (2.7)	441 (2.7)	442 (2.7)	441 (2.7)	443 (2.7)	441 (2.7)
Oman	431 (3.7)		431 (3.7)	431 (3.7)	433 (3.6)	431 (3.7)	431 (3.7)	431 (3.7)
International Average	523 (0.4)		523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)	523 (0.4)
Bencharking Participants								
Moscow City, Russian Fed.	593 (2.2)		599 (2.3)	593 (2.2)	592 (2.3)	592 (2.2)	593 (2.2)	593 (2.2)
Dubai, UAE	544 (1.6)		543 (1.6)	544 (1.6)	544 (1.7)	542 (1.6)	543 (1.7)	544 (1.6)
Quebec, Canada	532 (2.3)		530 (2.3)	532 (2.3)	535 (2.3)	533 (2.3)	531 (2.3)	532 (2.3)
Madrid, Spain	518 (2.2)		519 (2.1)	518 (2.2)	519 (2.2)	520 (2.2)	516 (2.1)	518 (2.2)
Ontario, Canada	512 (3.3)		511 (3.4)	512 (3.3)	514 (3.4)	511 (3.3)	513 (3.4)	512 (3.3)
Abu Dhabi, UAE	441 (2.2)		440 (2.2)	441 (2.2)	441 (2.2)	439 (2.3)	439 (2.3)	441 (2.2)
Number of Items (Score Points)*	171 (183)		142 (152)	171 (183)	147 (159)	154 (166)	135 (147)	171 (183)

* The number of items and score points are based on the number of items included in scaling the fourth grade mathematics achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.
 () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.1: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

Less Difficult Mathematics

(Continued)

Country	Average Mathematics Scale Score based on All Items	Albania	North Macedonia	Montenegro	Bosnia and Herzegovina	Kosovo	Saudi Arabia	Kuwait	Morocco	South Africa (5)	Pakistan	Philippines
Albania	494 (3.4)	495 (3.4)	494 (3.4)	492 (3.4)	492 (3.4)	494 (3.4)	494 (3.4)	494 (3.4)	492 (3.4)	494 (3.4)	494 (3.4)	494 (3.4)
North Macedonia	472 (5.3)	472 (5.3)	472 (5.3)	472 (5.2)	471 (5.1)	471 (5.2)	471 (5.3)	472 (5.3)	471 (5.1)	472 (5.3)	472 (5.3)	472 (5.3)
Montenegro	453 (2.0)	453 (2.0)	453 (2.0)	458 (2.0)	463 (2.0)	456 (2.0)	453 (2.0)	453 (1.9)	461 (1.9)	453 (2.0)	453 (1.9)	453 (2.0)
Bosnia and Herzegovina	452 (2.4)	451 (2.4)	452 (2.4)	455 (2.4)	462 (2.4)	453 (2.4)	451 (2.4)	452 (2.4)	463 (2.4)	451 (2.4)	454 (2.4)	452 (2.4)
Kosovo	444 (3.0)	444 (3.0)	444 (3.0)	445 (2.9)	446 (2.9)	445 (3.0)	443 (3.0)	445 (3.0)	447 (2.9)	444 (3.0)	445 (3.0)	444 (3.0)
Saudi Arabia	398 (3.6)	398 (3.5)	398 (3.6)	397 (3.5)	395 (3.5)	397 (3.6)	399 (3.5)	398 (3.5)	393 (3.5)	398 (3.5)	397 (3.5)	398 (3.6)
Kuwait	383 (4.7)	383 (4.7)	383 (4.7)	383 (4.6)	384 (4.5)	383 (4.7)	384 (4.7)	383 (4.7)	384 (4.6)	383 (4.7)	382 (4.7)	383 (4.7)
Morocco	383 (4.3)	383 (4.3)	383 (4.3)	382 (4.3)	384 (4.2)	384 (4.3)	383 (4.3)	383 (4.3)	388 (4.1)	383 (4.2)	382 (4.3)	383 (4.3)
South Africa (5)	374 (3.6)	373 (3.6)	374 (3.6)	373 (3.6)	368 (3.6)	373 (3.6)	373 (3.6)	373 (3.6)	367 (3.6)	375 (3.6)	371 (3.6)	374 (3.6)
Pakistan	328 (12.0)	327 (11.9)	328 (12.0)	329 (11.8)	337 (11.6)	328 (11.8)	330 (12.1)	328 (12.0)	337 (11.7)	328 (11.9)	333 (12.1)	328 (12.0)
Philippines	297 (6.4)	297 (6.3)	297 (6.4)	298 (6.3)	297 (6.1)	297 (6.3)	297 (6.4)	296 (6.4)	296 (6.2)	297 (6.3)	298 (6.2)	297 (6.4)
International Average	407 (1.6)	407 (1.6)	407 (1.6)	408 (1.6)	409 (1.5)	407 (1.6)	407 (1.6)	407 (1.6)	409 (1.6)	407 (1.6)	407 (1.6)	407 (1.6)
Number of Items (Score Points)**	177 (190)	173 (186)	177 (190)	140 (151)	123 (130)	160 (172)	156 (166)	172 (184)	129 (134)	155 (167)	150 (158)	177 (190)

** The number of items and score points are based on the number of items included in scaling the fourth grade less difficult mathematics achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

Read down the column under a country name to compare achievement scores based on the items identified by that country. Scores on the diagonal are countries' achievement scores based on the test items they identified.

Country	Average Science Scale Score based on All Items	Singapore	Korea, Rep. of	Russian Federation	Japan	Chinese Taipei	Finland	Latvia	Norway (5)	United States	Lithuania
Singapore	595 (3.4)	675 (4.1)	601 (3.4)	595 (3.7)	619 (3.6)	608 (3.6)	591 (3.5)	598 (3.4)	594 (3.4)	598 (3.4)	594 (3.4)
Korea, Rep. of	588 (2.1)	577 (2.4)	604 (2.2)	576 (2.4)	595 (2.4)	599 (2.3)	578 (2.2)	588 (2.1)	589 (2.1)	588 (2.1)	587 (2.1)
Russian Federation	567 (3.0)	569 (3.2)	563 (3.2)	562 (3.1)	564 (3.0)	565 (3.1)	561 (3.0)	567 (3.0)	567 (3.0)	568 (3.0)	567 (3.0)
Japan	562 (1.8)	578 (2.3)	578 (1.8)	552 (2.2)	592 (2.2)	578 (2.0)	556 (1.9)	564 (1.7)	560 (1.8)	562 (1.7)	561 (1.8)
Chinese Taipei	558 (1.8)	547 (2.0)	558 (1.8)	542 (1.9)	571 (1.9)	582 (2.0)	551 (1.8)	556 (1.8)	555 (1.8)	559 (1.7)	559 (1.7)
Finland	555 (2.6)	540 (3.2)	549 (2.9)	552 (3.0)	538 (3.2)	549 (3.0)	555 (2.6)	554 (2.6)	555 (2.6)	555 (2.6)	554 (2.6)
Latvia	542 (2.4)	551 (2.5)	542 (2.4)	546 (2.6)	548 (2.5)	549 (2.4)	540 (2.5)	542 (2.4)	541 (2.4)	541 (2.3)	541 (2.4)
Norway (5)	539 (2.2)	526 (2.6)	534 (2.3)	537 (2.5)	516 (2.6)	528 (2.3)	536 (2.2)	539 (2.2)	541 (2.2)	540 (2.2)	540 (2.2)
United States	539 (2.7)	527 (3.0)	534 (2.9)	536 (3.0)	529 (3.1)	534 (3.0)	538 (2.9)	537 (2.8)	539 (2.7)	541 (2.8)	539 (2.7)
Lithuania	538 (2.8)	534 (2.8)	532 (2.4)	535 (2.8)	544 (2.7)	540 (2.6)	536 (2.6)	539 (2.5)	537 (2.4)	540 (2.5)	537 (2.5)
England	537 (2.7)	535 (3.2)	534 (2.7)	535 (3.0)	532 (3.2)	536 (3.0)	538 (2.7)	535 (2.7)	537 (2.7)	537 (2.7)	536 (2.7)
Sweden	537 (3.3)	525 (3.6)	531 (3.5)	543 (3.8)	527 (3.6)	531 (3.4)	538 (3.5)	537 (3.3)	538 (3.3)	537 (3.4)	537 (3.3)
Czech Republic	534 (2.6)	520 (3.9)	532 (3.2)	535 (3.5)	529 (3.8)	529 (3.5)	532 (2.9)	534 (2.6)	534 (2.6)	535 (2.6)	533 (2.6)
Australia	533 (2.4)	532 (2.2)	527 (2.3)	531 (2.3)	522 (2.3)	534 (2.4)	535 (2.4)	530 (2.4)	533 (2.4)	533 (2.4)	533 (2.4)
Hong Kong SAR	531 (3.3)	539 (4.0)	529 (3.7)	536 (3.9)	527 (4.2)	523 (3.9)	530 (3.4)	530 (3.4)	528 (3.3)	530 (3.4)	530 (3.4)
Poland	531 (2.6)	523 (3.4)	534 (2.8)	536 (3.1)	522 (3.2)	522 (3.0)	531 (2.7)	532 (2.6)	531 (2.6)	530 (2.6)	532 (2.6)
Hungary	529 (2.7)	525 (3.3)	531 (2.9)	529 (3.1)	526 (3.2)	523 (3.0)	529 (2.9)	529 (2.7)	531 (2.7)	531 (2.7)	529 (2.7)
Ireland	528 (3.2)	524 (3.0)	528 (3.4)	528 (3.3)	516 (3.0)	526 (2.9)	529 (3.1)	527 (3.2)	528 (3.2)	528 (3.3)	529 (3.2)
Turkey (5)	526 (4.2)	540 (4.6)	528 (4.4)	528 (4.3)	540 (4.7)	540 (4.6)	529 (4.3)	525 (4.3)	527 (4.2)	527 (4.2)	527 (4.3)
Croatia	524 (2.2)	526 (3.0)	527 (2.6)	525 (2.8)	535 (2.9)	525 (2.7)	521 (2.4)	525 (2.2)	524 (2.2)	525 (2.2)	525 (2.2)
Canada	523 (1.9)	514 (1.8)	518 (1.9)	519 (1.9)	508 (1.9)	519 (1.9)	522 (1.8)	522 (1.9)	524 (1.9)	524 (1.9)	523 (1.9)
Austria	522 (2.6)	512 (2.9)	522 (2.9)	513 (2.8)	516 (3.0)	521 (2.9)	516 (2.6)	522 (2.6)	523 (2.6)	524 (2.6)	523 (2.6)
Denmark	522 (2.4)	503 (2.8)	517 (2.7)	518 (2.8)	499 (2.8)	513 (2.5)	520 (2.4)	521 (2.4)	523 (2.4)	521 (2.4)	522 (2.4)
Bulgaria	521 (4.9)	516 (4.9)	518 (4.6)	521 (4.9)	516 (5.4)	511 (5.1)	525 (4.7)	521 (4.8)	521 (4.8)	519 (5.0)	522 (4.9)
Slovak Republic	521 (3.7)	519 (4.0)	517 (3.8)	516 (3.9)	520 (4.1)	523 (4.0)	517 (3.7)	520 (3.6)	517 (3.7)	519 (3.7)	520 (3.7)
Germany	518 (2.2)	508 (2.4)	513 (2.4)	515 (2.3)	512 (2.5)	522 (2.5)	515 (2.2)	518 (2.2)	518 (2.1)	519 (2.2)	520 (2.2)
Netherlands	518 (2.9)	504 (3.6)	511 (3.3)	504 (3.6)	502 (3.4)	519 (3.2)	514 (3.1)	516 (2.9)	518 (2.9)	519 (2.9)	520 (2.9)
Northern Ireland	518 (2.3)	512 (3.1)	513 (2.6)	518 (3.0)	501 (3.1)	509 (2.9)	520 (2.6)	517 (2.3)	519 (2.3)	519 (2.3)	517 (2.3)
Serbia	517 (3.5)	527 (3.7)	523 (3.6)	513 (3.7)	524 (3.9)	511 (3.6)	515 (3.5)	520 (3.6)	517 (3.5)	519 (3.5)	517 (3.5)
Cyprus	511 (3.0)	515 (3.3)	514 (3.0)	510 (3.2)	519 (3.5)	521 (3.4)	512 (3.0)	512 (3.0)	512 (3.0)	512 (3.0)	513 (3.0)
Spain	511 (2.0)	498 (2.3)	508 (2.1)	511 (2.1)	502 (2.3)	501 (2.1)	512 (2.1)	513 (2.0)	511 (2.0)	510 (2.0)	511 (2.0)
Italy	510 (3.0)	498 (3.4)	511 (3.3)	510 (3.5)	505 (3.8)	497 (3.6)	511 (3.2)	510 (3.0)	509 (3.0)	510 (3.1)	508 (3.0)
Portugal	504 (2.6)	496 (3.4)	502 (3.0)	511 (3.2)	505 (3.4)	503 (3.1)	505 (2.8)	505 (2.6)	504 (2.6)	504 (2.6)	506 (2.6)
New Zealand	503 (2.3)	494 (2.5)	498 (2.4)	504 (2.5)	491 (2.5)	501 (2.4)	505 (2.3)	502 (2.3)	503 (2.3)	503 (2.3)	502 (2.3)
Belgium (Flemish)	501 (2.1)	491 (2.5)	498 (2.3)	491 (2.6)	494 (2.5)	504 (2.3)	498 (2.2)	499 (2.1)	499 (2.1)	501 (2.1)	503 (2.1)
Malta	496 (1.3)	498 (1.5)	492 (1.3)	497 (1.3)	493 (1.4)	502 (1.3)	498 (1.3)	496 (1.3)	495 (1.3)	494 (1.3)	496 (1.3)
Kazakhstan	494 (3.1)	503 (3.4)	492 (3.3)	489 (3.4)	508 (3.3)	500 (3.3)	490 (3.0)	493 (3.1)	494 (3.1)	496 (3.1)	493 (3.1)
Bahrain	493 (3.4)	505 (3.8)	490 (3.6)	494 (3.8)	497 (3.6)	497 (3.8)	491 (3.5)	492 (3.4)	493 (3.5)	490 (3.5)	493 (3.5)
Albania	489 (3.5)	502 (3.7)	494 (3.4)	487 (3.5)	496 (3.5)	494 (3.6)	486 (3.4)	491 (3.5)	488 (3.5)	488 (3.5)	488 (3.5)
France	488 (3.0)	470 (3.1)	480 (3.0)	484 (3.1)	473 (3.1)	476 (3.2)	490 (3.0)	488 (3.0)	487 (2.9)	487 (2.9)	488 (3.0)
United Arab Emirates	473 (2.1)	485 (2.2)	469 (2.2)	472 (2.2)	480 (2.3)	469 (2.3)	471 (2.1)	472 (2.1)	471 (2.1)	470 (2.1)	473 (2.0)
Chile	469 (2.6)	464 (2.8)	470 (2.5)	467 (2.6)	464 (2.8)	460 (2.7)	470 (2.5)	469 (2.5)	472 (2.6)	470 (2.6)	468 (2.6)
Armenia	466 (3.4)	477 (3.7)	467 (3.6)	474 (3.6)	461 (4.0)	455 (3.8)	470 (3.5)	466 (3.5)	471 (3.4)	466 (3.4)	466 (3.5)
Bosnia and Herzegovina	459 (2.9)	463 (3.0)	465 (3.0)	470 (2.7)	454 (2.9)	453 (2.9)	464 (2.8)	462 (2.9)	460 (3.0)	462 (2.9)	459 (3.0)
Georgia	454 (3.9)	448 (4.3)	451 (4.2)	453 (4.3)	448 (4.7)	450 (4.1)	456 (4.2)	454 (4.0)	455 (4.0)	456 (3.9)	454 (4.0)
Montenegro	453 (2.5)	461 (3.4)	462 (2.9)	462 (3.2)	457 (3.4)	446 (3.2)	462 (2.6)	456 (2.5)	455 (2.5)	456 (2.5)	454 (2.5)
Qatar	449 (3.9)	459 (4.0)	447 (4.1)	455 (4.3)	452 (3.9)	449 (4.3)	451 (3.9)	450 (3.9)	449 (4.0)	449 (3.9)	450 (3.9)
Iran, Islamic Rep. of	441 (4.1)	448 (4.4)	441 (4.2)	440 (4.1)	442 (4.6)	446 (4.5)	437 (4.0)	441 (4.1)	441 (4.2)	440 (4.1)	440 (4.1)
Oman	435 (4.1)	452 (4.0)	434 (3.9)	440 (3.9)	450 (4.0)	441 (4.2)	434 (4.0)	437 (4.0)	433 (4.1)	433 (4.1)	435 (4.1)
Azerbaijan	427 (3.3)	445 (3.2)	432 (3.3)	444 (3.2)	427 (3.4)	424 (3.3)	434 (3.2)	428 (3.3)	428 (3.3)	427 (3.3)	427 (3.3)
North Macedonia	426 (6.2)	434 (6.8)	433 (6.0)	423 (6.0)	439 (6.3)	432 (6.7)	423 (6.0)	426 (6.1)	426 (6.3)	426 (6.2)	425 (6.3)
Kosovo	413 (3.7)	414 (4.4)	412 (4.0)	414 (4.1)	415 (4.3)	416 (4.1)	408 (3.9)	413 (3.7)	413 (3.7)	414 (3.7)	412 (3.7)
Saudi Arabia	402 (4.1)	406 (4.5)	402 (4.3)	395 (4.3)	405 (4.4)	405 (4.4)	402 (4.1)	400 (4.1)	402 (4.1)	401 (4.0)	402 (4.0)
Kuwait	392 (6.1)	387 (6.7)	389 (6.1)	393 (6.4)	397 (6.4)	389 (6.5)	396 (6.3)	391 (6.1)	389 (6.2)	392 (6.1)	392 (6.0)
Morocco	374 (5.8)	384 (5.6)	369 (6.0)	372 (5.6)	383 (6.1)	368 (6.2)	369 (5.8)	377 (5.8)	371 (5.9)	373 (5.9)	374 (5.9)
South Africa (5)	324 (4.9)	323 (4.9)	316 (5.0)	329 (5.0)	325 (4.7)	324 (4.9)	333 (4.8)	325 (4.9)	319 (5.0)	319 (5.0)	322 (5.0)
Pakistan	290 (13.4)	311 (13.6)	299 (12.4)	297 (13.3)	303 (13.6)	290 (14.7)	296 (13.7)	291 (13.3)	289 (13.2)	284 (13.1)	291 (13.6)
Philippines	249 (7.5)	267 (7.9)	244 (7.6)	242 (8.0)	269 (7.7)	247 (7.9)	252 (7.7)	253 (7.4)	237 (7.8)	242 (7.6)	246 (7.6)
International Average	491 (0.5)	492 (0.5)	490 (0.5)	490 (0.5)	490 (0.5)	490 (0.5)	490 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants											
Moscow City, Russian Fed.	595 (2.2)	595 (3.2)	588 (2.7)	593 (2.8)	590 (3.1)	587 (2.7)	590 (2.5)	594 (2.3)	595 (2.3)	595 (2.3)	594 (2.2)
Dubai, UAE	545 (1.7)	557 (1.9)	542 (1.9)	542 (1.9)	550 (1.9)	548 (2.0)	542 (1.7)	543 (1.7)	543 (1.8)	542 (1.8)	544 (1.7)
Ontario, Canada	524 (3.2)	516 (3.0)	520 (3.1)	521 (3.2)	507 (3.0)	520 (3.3)	524 (3.1)	522 (3.1)	525 (3.1)	526 (3.1)	524 (3.2)
Madrid, Spain	523 (2.0)	512 (2.5)	519 (2.1)	521 (2.4)	512 (2.4)	512 (2.2)	524 (2.1)	524 (2.0)	522 (2.0)	522 (2.0)	522 (2.0)
Quebec, Canada	522 (2.5)	508 (3.2)	511 (2.9)	515 (3.0)	506 (3.2)	515 (2.9)	519 (2.6)	521 (2.6)	523 (2.6)	523 (2.6)	522 (2.6)
Abu Dhabi, UAE	418 (2.8)	432 (3.3)	414 (3.1)	417 (3.2)	428 (3.3)	411 (3.2)	418 (2.9)	417 (2.8)	416 (2.8)	415 (2.8)	419 (2.7)
Number of Items (Score Points)*	169 (174)	42 (43)	64 (65)	52 (53)	46 (46)	64 (64)	97 (99)	153 (158)	143 (146)	144 (149)	154 (158)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	England	Sweden	Czech Republic	Australia	Hong Kong SAR	Poland	Hungary	Ireland	Turkey (5)	Croatia
Singapore	595 (3.4)	595 (3.4)	598 (3.4)	591 (3.6)	608 (3.4)	604 (3.7)	598 (3.7)	595 (3.4)	596 (3.4)	599 (3.6)	591 (3.7)
Korea, Rep. of	588 (2.1)	588 (2.1)	588 (2.1)	584 (2.2)	581 (2.2)	589 (2.3)	583 (2.2)	586 (2.1)	586 (2.1)	589 (2.2)	589 (2.2)
Russian Federation	567 (3.0)	567 (3.0)	566 (3.1)	566 (3.0)	569 (3.0)	566 (3.2)	568 (2.9)	568 (3.0)	567 (3.0)	567 (3.0)	562 (2.9)
Japan	562 (1.8)	562 (1.8)	563 (1.8)	554 (1.9)	567 (1.9)	559 (1.9)	559 (1.9)	562 (1.8)	561 (1.8)	559 (1.8)	559 (2.0)
Chinese Taipei	558 (1.8)	558 (1.8)	559 (1.8)	554 (1.8)	557 (1.8)	547 (1.8)	551 (1.8)	557 (1.7)	558 (1.8)	560 (1.9)	557 (1.8)
Finland	555 (2.6)	555 (2.6)	555 (2.6)	556 (2.7)	553 (2.8)	555 (2.7)	556 (2.7)	555 (2.6)	554 (2.6)	552 (2.7)	558 (2.7)
Latvia	542 (2.4)	542 (2.4)	544 (2.3)	535 (2.4)	541 (2.3)	535 (2.5)	538 (2.5)	542 (2.3)	542 (2.3)	542 (2.4)	537 (2.5)
Norway (5)	539 (2.2)	539 (2.2)	538 (2.2)	541 (2.2)	540 (2.3)	542 (2.2)	537 (2.3)	540 (2.2)	536 (2.2)	536 (2.2)	540 (2.2)
United States	539 (2.7)	539 (2.7)	538 (2.8)	541 (2.8)	540 (2.9)	536 (2.9)	539 (2.8)	539 (2.8)	537 (2.8)	537 (2.8)	536 (2.9)
Lithuania	538 (2.5)	538 (2.5)	537 (2.5)	535 (2.5)	539 (2.4)	529 (2.6)	536 (2.6)	538 (2.5)	538 (2.5)	538 (2.5)	536 (2.6)
England	537 (2.7)	537 (2.7)	538 (2.8)	537 (2.8)	538 (2.9)	534 (2.9)	538 (2.8)	538 (2.7)	537 (2.8)	536 (2.9)	537 (2.8)
Sweden	537 (3.3)	537 (3.3)	539 (3.3)	542 (3.5)	539 (3.4)	537 (3.6)	539 (3.5)	537 (3.3)	535 (3.3)	536 (3.4)	542 (3.5)
Czech Republic	534 (2.6)	534 (2.6)	533 (2.8)	536 (2.9)	537 (2.9)	530 (3.1)	532 (3.0)	534 (2.6)	534 (2.7)	533 (2.8)	530 (3.1)
Australia	533 (2.4)	533 (2.4)	534 (2.5)	533 (2.4)	533 (2.5)	532 (2.4)	533 (2.4)	533 (2.4)	533 (2.5)	530 (2.4)	533 (2.5)
Hong Kong SAR	531 (3.3)	531 (3.4)	536 (3.4)	531 (3.5)	528 (3.7)	537 (3.8)	527 (3.7)	530 (3.3)	530 (3.4)	526 (3.5)	531 (3.6)
Poland	531 (2.6)	531 (2.6)	530 (2.7)	535 (2.7)	533 (2.8)	533 (2.9)	535 (2.8)	531 (2.6)	531 (2.6)	532 (2.7)	529 (2.8)
Hungary	529 (2.7)	529 (2.7)	530 (2.7)	536 (2.7)	530 (2.8)	530 (2.7)	534 (2.8)	532 (2.7)	528 (2.7)	530 (2.8)	533 (2.8)
Ireland	528 (3.2)	528 (3.2)	526 (3.1)	527 (3.3)	526 (3.0)	526 (3.1)	526 (3.2)	528 (3.2)	527 (3.2)	528 (3.1)	529 (3.1)
Turkey (5)	526 (4.2)	526 (4.2)	530 (4.3)	524 (4.2)	533 (4.2)	530 (4.3)	527 (4.3)	526 (4.2)	525 (4.2)	539 (4.4)	526 (4.3)
Croatia	524 (2.2)	524 (2.2)	524 (2.3)	526 (2.3)	523 (2.4)	525 (2.5)	527 (2.4)	523 (2.2)	526 (2.2)	525 (2.3)	525 (2.5)
Canada	523 (1.9)	523 (1.9)	523 (1.9)	525 (1.9)	525 (1.9)	521 (1.9)	526 (1.9)	523 (1.9)	522 (1.9)	523 (1.9)	524 (1.9)
Austria	522 (2.6)	522 (2.6)	522 (2.7)	523 (2.7)	523 (2.7)	519 (2.7)	519 (2.7)	524 (2.6)	524 (2.6)	521 (2.7)	515 (2.7)
Denmark	522 (2.4)	522 (2.4)	521 (2.4)	526 (2.5)	517 (2.6)	520 (2.5)	520 (2.5)	523 (2.4)	521 (2.4)	519 (2.4)	521 (2.5)
Bulgaria	521 (4.9)	521 (4.9)	522 (4.8)	525 (4.9)	521 (4.9)	524 (4.8)	526 (4.8)	521 (4.8)	525 (5.0)	522 (5.1)	523 (4.5)
Slovak Republic	521 (3.7)	521 (3.7)	521 (3.6)	519 (3.6)	525 (3.7)	514 (3.5)	515 (3.7)	522 (3.7)	522 (3.8)	523 (3.8)	513 (3.6)
Germany	518 (2.2)	518 (2.2)	521 (2.2)	521 (2.2)	517 (2.2)	522 (2.2)	521 (2.2)	519 (2.2)	522 (2.2)	516 (2.2)	523 (2.2)
Netherlands	518 (2.9)	518 (2.9)	519 (3.0)	512 (3.0)	517 (3.1)	514 (3.1)	516 (3.2)	518 (2.9)	520 (3.0)	515 (3.0)	516 (3.2)
Northern Ireland	518 (2.3)	518 (2.3)	517 (2.4)	518 (2.5)	516 (2.6)	517 (2.7)	517 (2.6)	519 (2.3)	518 (2.4)	515 (2.5)	518 (2.7)
Serbia	517 (3.5)	517 (3.5)	516 (3.4)	519 (3.6)	520 (3.5)	521 (3.6)	521 (3.5)	519 (3.5)	521 (3.6)	518 (3.5)	515 (3.6)
Cyprus	511 (3.0)	511 (3.0)	514 (3.1)	513 (3.1)	512 (3.1)	508 (3.1)	517 (3.0)	513 (3.1)	511 (3.1)	517 (3.1)	515 (3.0)
Spain	511 (2.0)	511 (2.0)	510 (2.0)	515 (2.0)	509 (2.2)	512 (2.1)	512 (2.0)	511 (2.0)	509 (2.0)	513 (2.1)	511 (2.1)
Italy	510 (3.0)	510 (3.0)	511 (3.1)	519 (3.2)	509 (3.2)	512 (3.2)	516 (3.2)	509 (3.0)	510 (3.1)	511 (3.1)	517 (3.2)
Portugal	504 (2.6)	504 (2.6)	504 (2.6)	511 (2.7)	501 (2.9)	504 (2.9)	507 (2.8)	504 (2.6)	506 (2.6)	507 (2.7)	508 (2.8)
New Zealand	503 (2.3)	503 (2.3)	501 (2.3)	503 (2.3)	500 (2.4)	503 (2.3)	501 (2.3)	503 (2.3)	501 (2.3)	501 (2.3)	503 (2.4)
Belgium (Flemish)	501 (2.1)	501 (2.1)	500 (2.2)	495 (2.3)	500 (2.2)	498 (2.4)	497 (2.3)	501 (2.1)	503 (2.1)	498 (2.2)	499 (2.3)
Malta	496 (1.3)	496 (1.3)	498 (1.2)	496 (1.3)	494 (1.2)	497 (1.2)	496 (1.3)	496 (1.3)	494 (1.3)	497 (1.3)	496 (1.2)
Kazakhstan	494 (3.1)	494 (3.1)	492 (3.1)	484 (3.2)	499 (3.1)	491 (3.2)	489 (3.1)	494 (3.1)	493 (3.0)	494 (3.1)	484 (3.2)
Bahrain	493 (3.4)	493 (3.4)	494 (3.5)	493 (3.5)	493 (3.5)	496 (3.6)	495 (3.5)	492 (3.5)	491 (3.5)	499 (3.6)	492 (3.6)
Albania	489 (3.5)	489 (3.5)	489 (3.5)	489 (3.4)	488 (3.6)	492 (3.4)	489 (3.4)	490 (3.5)	487 (3.4)	490 (3.5)	493 (3.5)
France	488 (3.0)	488 (3.0)	486 (3.0)	492 (3.0)	483 (3.1)	490 (2.9)	491 (2.9)	486 (2.9)	486 (3.0)	488 (3.0)	489 (3.0)
United Arab Emirates	473 (2.1)	473 (2.1)	476 (2.1)	470 (2.1)	476 (2.1)	472 (2.2)	469 (2.1)	470 (2.1)	472 (2.1)	474 (2.1)	468 (2.1)
Chile	469 (2.6)	469 (2.6)	470 (2.6)	477 (2.5)	471 (2.6)	467 (2.4)	472 (2.6)	471 (2.6)	467 (2.5)	470 (2.6)	473 (2.5)
Armenia	466 (3.4)	466 (3.4)	467 (3.5)	468 (3.6)	473 (3.6)	470 (3.6)	475 (3.6)	467 (3.5)	466 (3.4)	465 (3.5)	474 (3.7)
Bosnia and Herzegovina	459 (2.9)	459 (2.9)	457 (3.0)	464 (2.9)	461 (3.0)	467 (2.8)	468 (2.9)	460 (2.9)	461 (3.0)	460 (2.9)	465 (2.9)
Georgia	454 (3.9)	454 (3.9)	454 (3.9)	456 (4.0)	455 (4.1)	456 (4.2)	457 (4.2)	453 (3.9)	453 (4.0)	458 (4.1)	456 (4.2)
Montenegro	453 (2.5)	453 (2.5)	456 (2.6)	462 (2.6)	455 (2.8)	465 (2.9)	463 (2.8)	455 (2.5)	456 (2.5)	453 (2.6)	459 (2.9)
Qatar	449 (3.9)	449 (3.9)	451 (3.9)	450 (3.9)	451 (3.9)	456 (4.0)	451 (3.9)	447 (4.0)	449 (3.8)	451 (4.1)	449 (4.0)
Iran, Islamic Rep. of	441 (4.1)	441 (4.1)	442 (4.1)	437 (4.0)	438 (4.0)	442 (3.9)	438 (3.9)	440 (4.1)	445 (4.1)	441 (4.2)	442 (3.9)
Oman	435 (4.1)	435 (4.1)	437 (4.1)	434 (4.0)	442 (4.0)	434 (4.0)	434 (3.9)	434 (4.0)	435 (4.1)	438 (4.1)	432 (3.9)
Azerbaijan	427 (3.3)	427 (3.3)	431 (3.3)	429 (3.3)	429 (3.2)	435 (3.2)	426 (3.4)	429 (3.3)	429 (3.3)	431 (3.3)	431 (3.3)
North Macedonia	426 (6.2)	426 (6.2)	425 (6.2)	422 (5.9)	426 (6.4)	421 (6.1)	423 (5.9)	428 (6.2)	427 (6.1)	429 (6.5)	422 (6.0)
Kosovo	413 (3.7)	413 (3.7)	412 (3.8)	406 (3.9)	412 (3.9)	414 (3.9)	408 (3.9)	413 (3.8)	413 (3.7)	410 (3.9)	411 (3.9)
Saudi Arabia	402 (4.1)	402 (4.1)	401 (4.1)	401 (4.1)	402 (4.1)	400 (4.3)	398 (4.0)	402 (4.1)	401 (4.1)	408 (4.2)	393 (4.2)
Kuwait	392 (6.1)	392 (6.1)	391 (6.2)	394 (6.1)	391 (6.3)	394 (6.3)	393 (6.1)	389 (6.1)	392 (6.0)	390 (6.3)	392 (6.1)
Morocco	374 (5.8)	374 (5.8)	377 (5.8)	374 (5.8)	382 (5.9)	375 (5.9)	375 (5.7)	373 (5.9)	376 (5.8)	374 (5.9)	372 (5.7)
South Africa (5)	324 (4.9)	324 (4.9)	326 (4.8)	325 (4.9)	326 (4.9)	333 (4.9)	333 (4.7)	321 (5.0)	321 (4.8)	321 (5.0)	339 (4.6)
Pakistan	290 (13.4)	290 (13.4)	297 (13.3)	288 (12.9)	297 (13.2)	293 (13.6)	294 (13.7)	291 (13.2)	291 (13.2)	286 (14.1)	294 (13.0)
Philippines	249 (7.5)	249 (7.5)	255 (7.4)	248 (7.6)	254 (7.5)	241 (7.9)	256 (7.4)	243 (7.7)	252 (7.5)	241 (8.0)	259 (7.3)
International Average	491 (0.5)	491 (0.5)	492 (0.5)	491 (0.5)	492 (0.5)	491 (0.5)	492 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants											
Moscow City, Russian Fed.	595 (2.2)	595 (2.2)	593 (2.3)	593 (2.4)	599 (2.5)	590 (2.6)	592 (2.4)	595 (2.3)	594 (2.3)	596 (2.4)	589 (2.4)
Dubai, UAE	545 (1.7)	544 (1.7)	548 (1.8)	540 (1.7)	547 (1.8)	544 (1.8)	539 (1.8)	542 (1.7)	543 (1.7)	548 (1.8)	538 (1.8)
Ontario, Canada	524 (3.2)	524 (3.2)	524 (3.2)	527 (3.2)	527 (3.2)	523 (3.2)	529 (3.2)	525 (3.1)	524 (3.2)	523 (3.3)	525 (3.2)
Madrid, Spain	523 (2.0)	523 (2.0)	522 (2.0)	525 (2.0)	521 (2.2)	521 (2.2)	523 (2.1)	523 (2.0)	520 (2.0)	526 (2.0)	521 (2.2)
Quebec, Canada	522 (2.5)	522 (2.5)	521 (2.6)	523 (2.7)	522 (2.8)	518 (2.8)	524 (2.7)	521 (2.6)	520 (2.6)	523 (2.6)	523 (2.8)
Abu Dhabi, UAE	418 (2.8)	418 (2.7)	421 (2.8)	416 (2.8)	423 (2.9)	415 (3.0)	416 (2.9)	416 (2.7)	417 (2.7)	416 (2.9)	415 (3.0)
Number of Items (Score Points)*	169 (174)	169 (174)	128 (131)	99 (103)	91 (92)	73 (76)	85 (88)	146 (149)	136 (139)	106 (110)	79 (81)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	Canada	Austria	Denmark	Bulgaria	Slovak Republic	Germany	Netherlands	Northern Ireland	Serbia	Cyprus
Singapore	595 (3.4)	593 (3.4)	596 (3.4)	591 (3.4)	594 (3.5)	595 (3.4)	594 (3.4)	601 (3.4)	596 (3.4)	599 (3.5)	598 (3.4)
Korea, Rep. of	588 (2.1)	589 (2.2)	588 (2.1)	588 (2.2)	584 (2.2)	588 (2.1)	587 (2.1)	583 (2.1)	581 (2.1)	588 (2.2)	581 (2.2)
Russian Federation	567 (3.0)	565 (3.0)	567 (3.0)	566 (3.0)	568 (3.0)	566 (3.0)	566 (3.0)	569 (3.0)	566 (2.9)	571 (2.9)	566 (2.9)
Japan	562 (1.8)	560 (1.9)	562 (1.7)	563 (1.8)	557 (1.8)	561 (1.8)	566 (1.7)	564 (1.8)	558 (1.8)	562 (1.8)	561 (1.9)
Chinese Taipei	558 (1.8)	561 (1.9)	558 (1.7)	559 (1.8)	555 (1.8)	559 (1.8)	558 (1.7)	557 (1.8)	560 (1.8)	557 (1.8)	555 (1.9)
Finland	555 (2.6)	555 (2.8)	554 (2.6)	554 (2.6)	554 (2.6)	554 (2.6)	555 (2.6)	552 (2.6)	554 (2.6)	551 (2.6)	551 (2.7)
Latvia	542 (2.4)	544 (2.3)	541 (2.3)	541 (2.4)	541 (2.4)	543 (2.4)	543 (2.4)	542 (2.4)	539 (2.4)	543 (2.4)	546 (2.4)
Norway (5)	539 (2.2)	536 (2.3)	539 (2.2)	541 (2.2)	541 (2.2)	539 (2.2)	539 (2.2)	536 (2.3)	536 (2.2)	536 (2.3)	531 (2.2)
United States	539 (2.7)	538 (2.8)	539 (2.8)	539 (2.7)	539 (2.8)	538 (2.8)	538 (2.8)	537 (2.8)	541 (2.8)	536 (2.8)	534 (2.8)
Lithuania	538 (2.5)	542 (2.5)	538 (2.5)	536 (2.5)	537 (2.5)	538 (2.5)	540 (2.5)	542 (2.6)	539 (2.5)	541 (2.5)	539 (2.5)
England	537 (2.7)	537 (2.8)	538 (2.7)	537 (2.7)	537 (2.7)	538 (2.7)	537 (2.7)	535 (2.8)	539 (2.7)	535 (2.8)	535 (2.8)
Sweden	537 (3.3)	537 (3.5)	537 (3.3)	537 (3.3)	536 (3.3)	537 (3.3)	539 (3.3)	536 (3.4)	536 (3.4)	535 (3.4)	537 (3.5)
Czech Republic	534 (2.6)	536 (2.9)	534 (2.6)	535 (2.6)	534 (2.6)	532 (2.6)	535 (2.6)	535 (2.7)	534 (2.7)	535 (2.7)	535 (2.7)
Australia	533 (2.4)	533 (2.5)	534 (2.5)	532 (2.4)	533 (2.4)	534 (2.4)	532 (2.4)	531 (2.4)	535 (2.5)	530 (2.5)	531 (2.4)
Hong Kong SAR	531 (3.3)	529 (3.4)	531 (3.4)	530 (3.3)	529 (3.4)	531 (3.3)	532 (3.3)	530 (3.4)	531 (3.4)	528 (3.4)	530 (3.4)
Poland	531 (2.6)	530 (2.7)	530 (2.6)	532 (2.6)	533 (2.6)	530 (2.6)	532 (2.6)	532 (2.7)	532 (2.7)	531 (2.7)	530 (2.7)
Hungary	529 (2.7)	532 (2.8)	529 (2.7)	530 (2.7)	531 (2.6)	528 (2.7)	530 (2.7)	531 (2.7)	528 (2.7)	528 (2.7)	528 (2.8)
Ireland	528 (3.2)	526 (3.4)	528 (3.2)	528 (3.2)	527 (3.2)	528 (3.1)	529 (3.2)	526 (3.2)	528 (3.2)	525 (3.2)	524 (3.3)
Turkey (5)	526 (4.2)	528 (4.3)	526 (4.2)	525 (4.2)	525 (4.3)	527 (4.2)	525 (4.3)	524 (4.3)	526 (4.3)	529 (4.2)	527 (4.4)
Croatia	524 (2.2)	525 (2.4)	525 (2.2)	523 (2.2)	526 (2.2)	523 (2.2)	525 (2.2)	527 (2.2)	525 (2.3)	524 (2.2)	523 (2.3)
Canada	523 (1.9)	524 (1.9)	523 (1.9)	523 (1.9)	524 (1.9)	522 (1.9)	523 (1.9)	522 (1.9)	524 (1.9)	522 (2.0)	518 (1.9)
Austria	522 (2.6)	517 (2.6)	523 (2.6)	523 (2.6)	523 (2.6)	521 (2.6)	523 (2.6)	522 (2.7)	521 (2.6)	521 (2.6)	518 (2.7)
Denmark	522 (2.4)	520 (2.5)	522 (2.3)	524 (2.4)	521 (2.4)	521 (2.4)	522 (2.4)	518 (2.5)	519 (2.4)	519 (2.4)	518 (2.5)
Bulgaria	521 (4.9)	526 (4.9)	521 (5.0)	520 (4.8)	528 (5.1)	521 (5.0)	521 (4.8)	523 (4.9)	524 (5.1)	522 (5.1)	523 (4.9)
Slovak Republic	521 (3.7)	523 (3.7)	520 (3.7)	522 (3.7)	523 (3.7)	520 (3.7)	520 (3.7)	521 (3.7)	520 (3.7)	519 (3.6)	521 (3.7)
Germany	518 (2.2)	515 (2.3)	521 (2.3)	518 (2.2)	519 (2.2)	519 (2.2)	519 (2.2)	519 (2.2)	521 (2.2)	520 (2.3)	518 (2.2)
Netherlands	518 (2.9)	514 (3.0)	519 (2.9)	521 (2.9)	517 (2.9)	518 (2.9)	518 (3.0)	515 (3.0)	518 (2.9)	518 (2.9)	513 (2.9)
Northern Ireland	518 (2.3)	518 (2.5)	519 (2.3)	518 (2.3)	520 (2.4)	519 (2.4)	519 (2.3)	516 (2.4)	521 (2.4)	516 (2.4)	515 (2.5)
Serbia	517 (3.5)	521 (3.4)	519 (3.5)	515 (3.5)	520 (3.6)	517 (3.5)	519 (3.5)	525 (3.5)	520 (3.6)	522 (3.6)	521 (3.6)
Cyprus	511 (3.0)	515 (3.2)	511 (3.0)	512 (3.0)	511 (3.1)	511 (3.1)	511 (3.0)	511 (3.2)	513 (3.1)	512 (3.1)	513 (3.2)
Spain	511 (2.0)	511 (2.0)	510 (2.0)	511 (2.0)	512 (2.0)	511 (2.0)	511 (2.0)	511 (2.1)	511 (2.0)	510 (2.0)	511 (2.1)
Italy	510 (3.0)	514 (3.3)	511 (3.0)	508 (3.0)	514 (3.1)	511 (3.0)	509 (3.0)	512 (3.1)	511 (3.1)	512 (3.1)	512 (3.1)
Portugal	504 (2.6)	508 (2.7)	503 (2.6)	505 (2.6)	506 (2.6)	505 (2.6)	505 (2.6)	507 (2.7)	505 (2.7)	504 (2.6)	505 (2.7)
New Zealand	503 (2.3)	504 (2.4)	503 (2.3)	503 (2.3)	504 (2.3)	502 (2.3)	502 (2.3)	500 (2.4)	504 (2.3)	500 (2.3)	499 (2.4)
Belgium (Flemish)	501 (2.1)	499 (2.2)	502 (2.1)	503 (2.1)	501 (2.1)	500 (2.1)	502 (2.1)	499 (2.2)	501 (2.2)	501 (2.2)	497 (2.2)
Malta	496 (1.3)	495 (1.3)	496 (1.3)	496 (1.2)	495 (1.3)	497 (1.3)	496 (1.3)	494 (1.3)	497 (1.3)	495 (1.3)	493 (1.3)
Kazakhstan	494 (3.1)	490 (3.0)	493 (3.1)	492 (3.1)	493 (3.1)	495 (3.1)	493 (3.1)	494 (3.2)	492 (3.0)	497 (3.1)	495 (3.2)
Bahrain	493 (3.4)	493 (3.5)	492 (3.4)	491 (3.4)	494 (3.5)	494 (3.4)	494 (3.4)	494 (3.5)	494 (3.5)	496 (3.5)	494 (3.6)
Albania	489 (3.5)	491 (3.6)	490 (3.5)	489 (3.5)	489 (3.4)	490 (3.5)	489 (3.5)	491 (3.4)	486 (3.4)	490 (3.4)	491 (3.6)
France	488 (3.0)	486 (3.0)	488 (3.0)	487 (3.0)	489 (2.9)	487 (2.9)	490 (2.9)	487 (2.9)	489 (3.0)	486 (2.9)	480 (3.0)
United Arab Emirates	473 (2.1)	468 (2.1)	471 (2.1)	470 (2.1)	473 (2.1)	474 (2.0)	472 (2.1)	472 (2.1)	473 (2.1)	472 (2.1)	472 (2.1)
Chile	469 (2.6)	469 (2.7)	469 (2.6)	470 (2.5)	471 (2.5)	469 (2.6)	468 (2.5)	469 (2.5)	469 (2.6)	467 (2.6)	470 (2.6)
Armenia	466 (3.4)	471 (3.4)	465 (3.4)	466 (3.4)	467 (3.5)	467 (3.4)	466 (3.4)	467 (3.5)	462 (3.5)	467 (3.5)	467 (3.5)
Bosnia and Herzegovina	459 (2.9)	464 (2.8)	460 (2.9)	459 (2.9)	462 (3.0)	457 (3.0)	460 (2.9)	464 (2.9)	460 (2.9)	462 (2.9)	459 (2.9)
Georgia	454 (3.9)	456 (4.0)	455 (3.9)	456 (3.9)	455 (4.0)	454 (3.9)	454 (3.9)	454 (4.0)	455 (4.0)	455 (4.0)	452 (3.9)
Montenegro	453 (2.5)	459 (2.6)	455 (2.5)	453 (2.5)	457 (2.6)	454 (2.5)	455 (2.5)	460 (2.6)	457 (2.6)	455 (2.6)	457 (2.6)
Qatar	449 (3.9)	445 (4.0)	449 (3.9)	448 (4.0)	450 (3.9)	451 (3.9)	448 (3.9)	450 (3.8)	451 (3.9)	450 (3.8)	447 (3.9)
Iran, Islamic Rep. of	441 (4.1)	440 (4.2)	441 (4.1)	437 (4.1)	440 (4.1)	442 (4.2)	443 (4.1)	445 (4.2)	441 (4.2)	443 (4.2)	444 (4.2)
Oman	435 (4.1)	438 (4.0)	435 (4.1)	435 (4.0)	434 (4.2)	436 (4.1)	434 (4.1)	438 (4.0)	437 (4.2)	437 (4.1)	439 (4.1)
Azerbaijan	427 (3.3)	434 (3.2)	427 (3.2)	426 (3.3)	428 (3.3)	428 (3.3)	429 (3.3)	429 (3.3)	428 (3.3)	429 (3.3)	421 (3.3)
North Macedonia	426 (6.2)	430 (6.0)	426 (6.2)	426 (6.2)	425 (6.3)	426 (6.3)	427 (6.1)	430 (6.2)	424 (6.1)	427 (6.2)	429 (6.3)
Kosovo	413 (3.7)	408 (3.8)	413 (3.7)	412 (3.7)	413 (3.7)	414 (3.7)	413 (3.7)	413 (3.8)	411 (3.7)	413 (3.7)	408 (3.9)
Saudi Arabia	402 (4.1)	399 (4.1)	402 (4.1)	400 (4.1)	403 (4.1)	403 (4.1)	398 (4.1)	400 (4.1)	404 (4.1)	403 (4.1)	404 (4.2)
Kuwait	392 (6.1)	392 (6.1)	392 (6.1)	392 (6.0)	393 (6.1)	393 (6.2)	389 (6.1)	394 (6.0)	394 (6.1)	392 (6.1)	396 (6.2)
Morocco	374 (5.8)	373 (5.7)	374 (5.8)	372 (5.8)	374 (5.9)	376 (5.8)	375 (5.8)	375 (5.8)	375 (5.8)	377 (5.9)	375 (5.9)
South Africa (5)	324 (4.9)	322 (4.8)	324 (4.9)	321 (4.9)	323 (5.0)	326 (4.9)	324 (4.9)	326 (4.9)	325 (5.0)	325 (4.9)	320 (4.9)
Pakistan	290 (13.4)	295 (13.0)	289 (13.4)	289 (13.4)	287 (13.6)	293 (13.5)	291 (13.1)	291 (13.2)	286 (13.3)	289 (13.6)	292 (13.3)
Philippines	249 (7.5)	249 (7.6)	249 (7.5)	245 (7.6)	249 (7.6)	252 (7.6)	248 (7.5)	256 (7.4)	250 (7.5)	247 (7.6)	254 (7.6)
International Average	491 (0.5)	491 (0.5)	491 (0.5)	490 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	490 (0.5)
Benchmarking Participants											
Moscow City, Russian Fed.	595 (2.2)	595 (2.4)	593 (2.3)	594 (2.2)	596 (2.3)	593 (2.3)	595 (2.3)	597 (2.4)	592 (2.3)	597 (2.3)	595 (2.4)
Dubai, UAE	545 (1.7)	540 (1.8)	543 (1.7)	542 (1.7)	545 (1.7)	545 (1.7)	542 (1.7)	543 (1.8)	545 (1.8)	543 (1.8)	543 (1.8)
Ontario, Canada	524 (3.2)	526 (3.2)	525 (3.2)	524 (3.1)	525 (3.2)	523 (3.2)	523 (3.1)	523 (3.1)	526 (3.2)	524 (3.3)	519 (3.2)
Madrid, Spain	523 (2.0)	522 (2.0)	521 (2.0)	523 (2.0)	523 (2.0)	523 (2.0)	522 (1.9)	522 (2.1)	521 (2.0)	521 (2.0)	522 (2.1)
Quebec, Canada	522 (2.5)	521 (2.7)	522 (2.6)	522 (2.5)	523 (2.6)	521 (2.6)	522 (2.5)	521 (2.6)	522 (2.5)	520 (2.6)	516 (2.7)
Abu Dhabi, UAE	418 (2.8)	413 (2.9)	417 (2.8)	415 (2.8)	418 (2.8)	419 (2.7)	417 (2.8)	418 (2.8)	418 (2.8)	417 (2.8)	417 (2.8)
Number of Items (Score Points)*	169 (174)	102 (104)	159 (164)	155 (159)	140 (145)	159 (163)	157 (161)	128 (133)	135 (139)	125 (130)	111 (113)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	Spain	Italy	Portugal	New Zealand	Belgium (Flemish)	Malta	Kazakhstan	Bahrain	Albania	France
Singapore	595 (3.4)	589 (3.5)	595 (3.4)	595 (3.4)	600 (3.5)	597 (3.6)	600 (3.4)	597 (3.5)	595 (3.4)	599 (3.5)	595 (3.4)
Korea, Rep. of	588 (2.1)	584 (2.1)	586 (2.2)	588 (2.1)	586 (2.2)	583 (2.3)	576 (2.2)	587 (2.2)	588 (2.1)	587 (2.1)	581 (2.1)
Russian Federation	567 (3.0)	567 (3.0)	568 (3.0)	567 (3.0)	568 (2.9)	569 (3.0)	569 (3.0)	569 (3.0)	567 (3.0)	569 (3.0)	566 (3.0)
Japan	562 (1.8)	553 (1.8)	561 (1.8)	562 (1.8)	564 (1.8)	561 (2.0)	560 (1.8)	557 (1.9)	562 (1.8)	560 (1.8)	558 (1.9)
Chinese Taipei	558 (1.8)	554 (1.8)	554 (1.8)	558 (1.8)	556 (1.8)	549 (1.9)	553 (1.9)	554 (1.8)	558 (1.8)	557 (1.8)	555 (1.7)
Finland	555 (2.6)	555 (2.6)	555 (2.6)	555 (2.6)	552 (2.8)	559 (2.8)	552 (2.7)	556 (2.6)	555 (2.6)	554 (2.6)	556 (2.6)
Latvia	542 (2.4)	540 (2.5)	539 (2.4)	542 (2.4)	545 (2.5)	541 (2.4)	547 (2.5)	539 (2.4)	542 (2.4)	541 (2.4)	542 (2.4)
Norway (5)	539 (2.2)	540 (2.2)	540 (2.2)	539 (2.2)	536 (2.2)	539 (2.3)	539 (2.3)	540 (2.2)	539 (2.2)	539 (2.2)	536 (2.2)
United States	539 (2.7)	541 (2.8)	539 (2.8)	539 (2.7)	539 (2.9)	538 (2.9)	539 (2.8)	540 (2.8)	539 (2.7)	538 (2.8)	536 (2.8)
Lithuania	538 (2.5)	536 (2.5)	535 (2.4)	538 (2.5)	537 (2.5)	541 (2.5)	542 (2.6)	537 (2.5)	538 (2.5)	538 (2.5)	541 (2.5)
England	537 (2.7)	539 (2.7)	537 (2.7)	537 (2.7)	535 (2.8)	533 (2.8)	540 (2.7)	538 (2.8)	537 (2.7)	537 (2.7)	537 (2.7)
Sweden	537 (3.3)	540 (3.4)	538 (3.4)	537 (3.3)	534 (3.4)	537 (3.4)	539 (3.6)	542 (3.3)	537 (3.3)	535 (3.3)	540 (3.3)
Czech Republic	534 (2.6)	535 (2.7)	536 (2.7)	534 (2.6)	534 (2.8)	532 (3.1)	539 (2.9)	535 (2.7)	534 (2.6)	532 (2.6)	534 (2.7)
Australia	533 (2.4)	536 (2.4)	532 (2.4)	533 (2.4)	533 (2.5)	534 (2.3)	532 (2.4)	535 (2.4)	533 (2.4)	533 (2.4)	533 (2.4)
Hong Kong SAR	531 (3.3)	531 (3.4)	529 (3.4)	531 (3.3)	524 (3.4)	528 (3.8)	530 (3.5)	530 (3.5)	531 (3.3)	529 (3.4)	530 (3.4)
Poland	531 (2.6)	534 (2.6)	534 (2.6)	531 (2.6)	529 (2.7)	533 (2.8)	535 (2.8)	531 (2.7)	531 (2.7)	532 (2.6)	531 (2.6)
Hungary	529 (2.7)	533 (2.7)	532 (2.7)	529 (2.7)	528 (2.7)	537 (2.9)	526 (2.8)	531 (2.7)	529 (2.7)	530 (2.6)	531 (2.7)
Ireland	528 (3.2)	529 (3.3)	528 (3.3)	528 (3.2)	527 (3.3)	527 (3.4)	528 (3.1)	528 (3.2)	528 (3.2)	527 (3.2)	526 (3.1)
Turkey (5)	526 (4.2)	525 (4.2)	523 (4.2)	526 (4.2)	527 (4.4)	523 (4.3)	526 (4.5)	522 (4.2)	526 (4.2)	525 (4.2)	524 (4.3)
Croatia	524 (2.4)	523 (2.3)	526 (2.2)	524 (2.2)	526 (2.4)	529 (2.4)	520 (2.5)	524 (2.3)	524 (2.2)	525 (2.2)	523 (2.3)
Canada	523 (1.9)	526 (1.8)	524 (1.9)	523 (1.9)	523 (1.9)	523 (1.8)	525 (1.9)	525 (1.8)	523 (1.9)	524 (1.9)	523 (1.9)
Austria	522 (2.6)	522 (2.6)	523 (2.6)	522 (2.6)	519 (2.7)	521 (2.7)	520 (2.6)	520 (2.6)	522 (2.6)	522 (2.6)	521 (2.6)
Denmark	522 (2.4)	523 (2.4)	523 (2.4)	522 (2.4)	519 (2.5)	521 (2.6)	519 (2.5)	524 (2.4)	522 (2.4)	521 (2.4)	522 (2.4)
Bulgaria	521 (4.9)	523 (5.0)	525 (4.8)	521 (4.9)	519 (4.9)	531 (4.7)	521 (5.1)	521 (4.7)	521 (4.9)	522 (5.0)	524 (4.9)
Slovak Republic	521 (3.7)	521 (3.8)	521 (3.7)	521 (3.7)	522 (3.7)	520 (3.7)	527 (3.8)	519 (3.7)	521 (3.7)	520 (3.6)	518 (3.7)
Germany	518 (2.2)	518 (2.2)	520 (2.2)	518 (2.2)	518 (2.2)	522 (2.4)	517 (2.3)	520 (2.2)	518 (2.2)	522 (2.2)	521 (2.2)
Netherlands	518 (2.9)	517 (2.9)	516 (2.9)	518 (2.9)	516 (3.0)	512 (3.2)	519 (2.9)	513 (2.9)	518 (2.9)	518 (2.9)	517 (3.0)
Northern Ireland	518 (2.3)	522 (2.4)	519 (2.3)	518 (2.3)	517 (2.5)	521 (2.6)	519 (2.5)	519 (2.4)	518 (2.3)	519 (2.3)	518 (2.4)
Serbia	517 (3.5)	514 (3.4)	522 (3.6)	517 (3.5)	520 (3.7)	523 (3.4)	520 (3.6)	517 (3.5)	517 (3.5)	521 (3.6)	519 (3.5)
Cyprus	511 (3.0)	511 (3.0)	510 (3.1)	511 (3.0)	514 (3.2)	514 (3.2)	508 (3.3)	511 (3.1)	511 (3.0)	512 (3.1)	511 (3.1)
Spain	511 (2.0)	514 (2.0)	511 (2.0)	511 (2.0)	508 (2.1)	507 (2.1)	511 (2.0)	512 (2.0)	511 (2.0)	510 (2.0)	515 (2.0)
Italy	510 (3.0)	514 (3.1)	513 (3.0)	510 (3.0)	508 (3.1)	515 (3.2)	510 (3.2)	514 (3.1)	510 (3.0)	512 (3.0)	514 (3.0)
Portugal	504 (2.6)	506 (2.6)	504 (2.6)	504 (2.6)	505 (2.7)	509 (2.8)	505 (2.8)	508 (2.6)	504 (2.6)	504 (2.6)	507 (2.6)
New Zealand	503 (2.3)	506 (2.3)	503 (2.3)	503 (2.3)	502 (2.4)	505 (2.3)	505 (2.4)	506 (2.3)	503 (2.3)	502 (2.3)	503 (2.3)
Belgium (Flemish)	501 (2.1)	500 (2.2)	500 (2.1)	501 (2.1)	499 (2.2)	498 (2.3)	502 (2.2)	496 (2.2)	501 (2.1)	501 (2.1)	500 (2.1)
Malta	496 (1.3)	496 (1.3)	494 (1.3)	496 (1.3)	495 (1.3)	493 (1.2)	500 (1.3)	495 (1.3)	496 (1.3)	496 (1.3)	496 (1.3)
Kazakhstan	494 (3.1)	489 (3.1)	492 (3.1)	494 (3.1)	497 (3.1)	492 (3.2)	495 (3.0)	492 (3.2)	494 (3.1)	492 (3.1)	493 (3.1)
Bahrain	493 (3.4)	492 (3.4)	491 (3.5)	493 (3.4)	494 (3.6)	493 (3.5)	494 (3.6)	492 (3.4)	493 (3.4)	493 (3.4)	493 (3.4)
Albania	489 (3.5)	487 (3.4)	492 (3.4)	489 (3.5)	490 (3.4)	491 (3.4)	490 (3.5)	492 (3.4)	489 (3.5)	489 (3.4)	491 (3.5)
France	488 (3.0)	491 (3.0)	486 (2.9)	488 (3.0)	482 (2.9)	486 (3.0)	486 (3.0)	489 (3.0)	488 (3.0)	488 (2.9)	492 (3.0)
United Arab Emirates	473 (2.1)	471 (2.0)	471 (2.1)	473 (2.1)	469 (2.1)	470 (2.1)	472 (2.1)	471 (2.1)	471 (2.1)	471 (2.1)	472 (2.0)
Chile	469 (2.6)	475 (2.6)	473 (2.5)	469 (2.6)	468 (2.6)	475 (2.5)	472 (2.5)	475 (2.5)	469 (2.6)	469 (2.6)	471 (2.6)
Armenia	466 (3.4)	467 (3.5)	467 (3.5)	466 (3.4)	466 (3.6)	474 (3.6)	465 (3.6)	473 (3.5)	466 (3.4)	466 (3.5)	468 (3.6)
Bosnia and Herzegovina	459 (2.9)	462 (2.8)	463 (2.9)	459 (2.9)	460 (3.0)	466 (2.9)	460 (3.0)	465 (2.9)	459 (2.9)	461 (2.9)	461 (2.9)
Georgia	454 (3.9)	458 (4.0)	454 (4.0)	454 (3.9)	453 (4.0)	459 (4.2)	450 (4.1)	457 (4.0)	454 (3.9)	455 (3.9)	455 (4.0)
Montenegro	453 (2.5)	458 (2.5)	459 (2.6)	453 (2.5)	458 (2.6)	465 (2.9)	450 (2.8)	460 (2.5)	453 (2.5)	457 (2.5)	460 (2.5)
Qatar	449 (3.9)	451 (4.0)	450 (3.9)	449 (3.9)	447 (4.0)	446 (3.9)	449 (3.9)	449 (4.1)	449 (3.9)	449 (3.9)	449 (3.8)
Iran, Islamic Rep. of	441 (4.1)	437 (4.0)	439 (4.0)	441 (4.1)	441 (4.3)	435 (4.1)	442 (4.2)	439 (4.0)	441 (4.1)	442 (4.1)	440 (4.1)
Oman	435 (4.1)	432 (4.0)	435 (4.0)	435 (4.1)	437 (4.0)	433 (4.0)	437 (4.1)	432 (4.0)	435 (4.1)	436 (4.1)	435 (4.0)
Azerbaijan	427 (3.3)	429 (3.3)	429 (3.3)	427 (3.3)	431 (3.2)	433 (3.4)	430 (3.4)	431 (3.2)	427 (3.3)	426 (3.3)	428 (3.3)
North Macedonia	426 (6.2)	423 (6.1)	425 (6.0)	426 (6.2)	428 (6.5)	431 (5.7)	427 (6.5)	423 (6.0)	426 (6.2)	427 (6.2)	426 (6.2)
Kosovo	413 (3.7)	412 (3.7)	411 (3.7)	413 (3.7)	416 (3.9)	415 (4.0)	408 (4.0)	413 (3.8)	413 (3.7)	413 (3.7)	414 (3.8)
Saudi Arabia	402 (4.1)	404 (4.0)	402 (4.0)	402 (4.1)	401 (4.1)	404 (4.1)	401 (4.2)	401 (4.1)	402 (4.1)	402 (4.1)	399 (4.1)
Kuwait	392 (6.1)	394 (6.1)	391 (6.0)	392 (6.1)	391 (6.2)	389 (6.3)	393 (6.1)	392 (6.1)	392 (6.1)	392 (6.0)	392 (6.2)
Morocco	374 (5.8)	370 (5.8)	372 (5.9)	374 (5.8)	375 (6.0)	375 (6.0)	367 (5.7)	369 (5.8)	374 (5.8)	375 (5.9)	376 (5.8)
South Africa (5)	324 (4.9)	325 (5.0)	322 (4.9)	324 (4.9)	320 (5.1)	321 (5.0)	324 (5.0)	327 (5.0)	324 (4.9)	325 (4.9)	330 (4.9)
Pakistan	290 (13.4)	289 (13.4)	288 (12.9)	290 (13.4)	287 (13.3)	288 (13.9)	286 (13.8)	291 (13.3)	290 (13.4)	289 (13.5)	291 (13.3)
Philippines	249 (7.5)	246 (7.7)	250 (7.5)	249 (7.5)	243 (7.6)	251 (7.5)	258 (7.6)	252 (7.5)	249 (7.5)	250 (7.5)	257 (7.4)
International Average	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	490 (0.5)	492 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants											
Moscow City, Russian Fed.	595 (2.2)	595 (2.3)	593 (2.3)	595 (2.2)	595 (2.5)	592 (2.6)	600 (2.5)	595 (2.4)	595 (2.2)	595 (2.3)	594 (2.3)
Dubai, UAE	545 (1.7)	542 (1.7)	542 (1.7)	545 (1.7)	542 (1.8)	538 (1.8)	547 (1.8)	542 (1.7)	544 (1.7)	543 (1.7)	542 (1.7)
Ontario, Canada	524 (3.2)	528 (3.0)	526 (3.2)	524 (3.2)	524 (3.2)	524 (3.0)	526 (3.1)	526 (3.0)	524 (3.2)	525 (3.2)	522 (3.1)
Madrid, Spain	523 (2.0)	525 (2.0)	522 (2.0)	523 (2.0)	520 (2.2)	517 (2.2)	524 (2.1)	523 (2.0)	523 (2.0)	521 (2.0)	526 (2.0)
Quebec, Canada	522 (2.5)	524 (2.6)	521 (2.6)	522 (2.5)	520 (2.7)	521 (2.8)	523 (2.7)	523 (2.6)	522 (2.5)	522 (2.6)	524 (2.5)
Abu Dhabi, UAE	418 (2.8)	417 (2.8)	417 (2.8)	418 (2.8)	414 (2.9)	416 (3.0)	417 (2.9)	417 (2.8)	418 (2.7)	417 (2.8)	418 (2.8)
Number of Items (Score Points)*	169 (174)	136 (140)	131 (135)	169 (174)	105 (109)	69 (72)	100 (104)	120 (124)	168 (173)	146 (151)	135 (139)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	United Arab Emirates	Chile	Armenia	Bosnia and Herzegovina	Georgia	Montenegro	Qatar	Iran, Islamic Rep. of	Oman	Azerbaijan
Singapore	595 (3.4)	595 (3.4)	597 (3.4)	597 (3.4)	591 (3.5)	599 (3.4)	595 (3.4)	618 (3.5)	601 (3.4)	607 (3.5)	590 (3.5)
Korea, Rep. of	588 (2.1)	588 (2.1)	586 (2.2)	588 (2.1)	581 (2.2)	588 (2.1)	584 (2.2)	582 (2.2)	583 (2.2)	587 (2.1)	578 (2.2)
Russian Federation	567 (3.0)	567 (3.0)	568 (3.0)	568 (3.0)	570 (3.0)	567 (3.0)	568 (3.0)	568 (3.1)	569 (3.1)	568 (3.0)	564 (3.0)
Japan	562 (1.8)	562 (1.8)	560 (1.8)	562 (1.8)	554 (1.9)	566 (1.8)	556 (1.8)	567 (1.8)	560 (1.9)	567 (1.7)	553 (1.9)
Chinese Taipei	558 (1.8)	558 (1.8)	556 (1.8)	557 (1.8)	549 (1.8)	559 (1.8)	553 (1.8)	543 (1.8)	558 (1.8)	554 (1.8)	551 (1.8)
Finland	555 (2.6)	555 (2.6)	555 (2.6)	554 (2.6)	558 (2.7)	554 (2.7)	557 (2.6)	555 (2.7)	552 (2.7)	552 (2.6)	558 (2.7)
Latvia	542 (2.4)	542 (2.4)	543 (2.4)	542 (2.4)	538 (2.5)	543 (2.3)	539 (2.5)	547 (2.5)	544 (2.4)	543 (2.4)	539 (2.5)
Norway (5)	539 (2.2)	539 (2.2)	539 (2.2)	539 (2.2)	544 (2.2)	542 (2.3)	539 (2.2)	541 (2.3)	533 (2.3)	536 (2.2)	544 (2.3)
United States	539 (2.7)	539 (2.7)	540 (2.7)	540 (2.7)	542 (2.8)	538 (2.8)	538 (2.8)	541 (2.8)	536 (2.9)	536 (2.7)	543 (2.8)
Lithuania	538 (2.5)	538 (2.5)	537 (2.5)	537 (2.5)	534 (2.5)	538 (2.5)	537 (2.5)	535 (2.5)	540 (2.7)	540 (2.6)	535 (2.5)
England	537 (2.7)	537 (2.7)	541 (2.7)	538 (2.7)	536 (2.8)	536 (2.8)	535 (2.7)	539 (2.8)	535 (2.8)	537 (2.7)	538 (2.7)
Sweden	537 (3.3)	537 (3.3)	538 (3.3)	538 (3.3)	538 (3.5)	538 (3.4)	539 (3.3)	536 (3.4)	536 (3.5)	534 (3.3)	544 (3.5)
Czech Republic	534 (2.6)	534 (2.6)	536 (2.6)	534 (2.6)	538 (2.8)	534 (2.9)	533 (2.7)	528 (3.0)	533 (2.8)	531 (2.7)	534 (2.9)
Australia	533 (2.4)	533 (2.4)	535 (2.4)	533 (2.4)	533 (2.3)	535 (2.5)	534 (2.4)	538 (2.4)	531 (2.4)	533 (2.4)	537 (2.4)
Hong Kong SAR	531 (3.3)	531 (3.3)	530 (3.4)	532 (3.4)	527 (3.5)	535 (3.5)	532 (3.4)	532 (3.6)	531 (3.4)	525 (3.6)	534 (3.4)
Poland	531 (2.6)	531 (2.6)	533 (2.6)	532 (2.6)	535 (2.6)	529 (2.7)	531 (2.7)	532 (2.9)	530 (2.7)	529 (2.7)	532 (2.6)
Hungary	529 (2.7)	529 (2.7)	531 (2.7)	531 (2.7)	534 (2.8)	532 (2.7)	532 (2.7)	529 (2.8)	529 (2.8)	528 (2.7)	532 (2.8)
Ireland	528 (3.2)	528 (3.2)	529 (3.2)	528 (3.1)	529 (3.2)	527 (3.3)	527 (3.2)	531 (3.2)	525 (3.1)	527 (3.1)	530 (3.3)
Turkey (5)	526 (4.2)	526 (4.2)	525 (4.2)	527 (4.2)	525 (4.3)	529 (4.4)	524 (4.2)	528 (4.3)	534 (4.4)	531 (4.3)	522 (4.2)
Croatia	524 (2.2)	524 (2.2)	523 (2.2)	524 (2.2)	524 (2.4)	528 (2.2)	525 (2.3)	525 (2.4)	521 (2.4)	524 (2.2)	521 (2.4)
Canada	523 (1.9)	523 (1.9)	524 (1.9)	524 (1.9)	526 (1.8)	521 (1.8)	523 (1.8)	525 (1.8)	520 (1.9)	522 (1.9)	526 (1.9)
Austria	522 (2.6)	522 (2.6)	522 (2.6)	522 (2.6)	521 (2.6)	522 (2.7)	521 (2.6)	522 (2.7)	518 (2.7)	521 (2.6)	522 (2.6)
Denmark	522 (2.4)	522 (2.4)	522 (2.4)	522 (2.4)	527 (2.5)	521 (2.5)	523 (2.4)	520 (2.6)	518 (2.5)	518 (2.4)	527 (2.5)
Bulgaria	521 (4.9)	521 (4.9)	521 (4.8)	520 (4.9)	525 (4.6)	519 (4.7)	522 (4.8)	518 (4.8)	520 (5.0)	517 (5.0)	524 (4.8)
Slovak Republic	521 (3.7)	521 (3.7)	524 (3.7)	521 (3.7)	521 (3.7)	522 (3.7)	517 (3.7)	515 (3.6)	522 (3.7)	520 (3.7)	519 (3.7)
Germany	518 (2.2)	518 (2.2)	519 (2.2)	518 (2.2)	518 (2.2)	520 (2.3)	521 (2.2)	518 (2.2)	517 (2.4)	521 (2.2)	520 (2.2)
Netherlands	518 (2.9)	518 (2.9)	516 (2.9)	517 (2.9)	518 (3.1)	517 (3.0)	517 (3.0)	518 (3.1)	514 (3.0)	516 (2.9)	515 (3.0)
Northern Ireland	518 (2.3)	518 (2.3)	520 (2.3)	519 (2.3)	517 (2.5)	517 (2.5)	519 (2.4)	521 (2.5)	514 (2.5)	517 (2.4)	522 (2.5)
Serbia	517 (3.5)	517 (3.5)	517 (3.5)	517 (3.5)	516 (3.5)	519 (3.5)	521 (3.6)	519 (3.5)	514 (3.6)	519 (3.6)	515 (3.5)
Cyprus	511 (3.0)	511 (3.0)	511 (3.0)	512 (3.1)	513 (3.1)	512 (3.0)	512 (3.0)	514 (3.0)	512 (3.2)	515 (3.1)	512 (3.1)
Spain	511 (2.0)	511 (2.0)	511 (2.0)	512 (2.0)	512 (2.0)	511 (2.0)	511 (2.0)	508 (2.0)	511 (2.1)	506 (2.0)	516 (2.0)
Italy	510 (3.0)	510 (3.0)	511 (3.0)	509 (3.0)	510 (3.2)	510 (3.2)	512 (3.1)	507 (3.2)	507 (3.1)	509 (3.1)	514 (3.2)
Portugal	504 (2.6)	504 (2.6)	503 (2.6)	503 (2.6)	508 (2.7)	509 (2.8)	505 (2.6)	504 (2.8)	505 (2.7)	503 (2.6)	508 (2.8)
New Zealand	503 (2.3)	503 (2.3)	505 (2.3)	503 (2.3)	506 (2.3)	503 (2.4)	504 (2.3)	505 (2.3)	499 (2.4)	503 (2.3)	507 (2.3)
Belgium (Flemish)	501 (2.1)	501 (2.1)	498 (2.1)	499 (2.1)	499 (2.2)	502 (2.2)	498 (2.2)	501 (2.2)	498 (2.2)	501 (2.2)	499 (2.2)
Malta	496 (1.3)	496 (1.3)	496 (1.2)	496 (1.3)	497 (1.3)	495 (1.3)	495 (1.3)	500 (1.3)	497 (1.3)	498 (1.3)	498 (1.2)
Kazakhstan	494 (3.1)	494 (3.1)	493 (3.1)	493 (3.1)	492 (3.1)	497 (3.1)	491 (3.1)	492 (3.1)	497 (3.2)	496 (3.1)	486 (3.1)
Bahrain	493 (3.4)	493 (3.4)	493 (3.5)	494 (3.4)	493 (3.6)	493 (3.5)	493 (3.5)	494 (3.6)	499 (3.5)	493 (3.6)	492 (3.5)
Albania	489 (3.5)	489 (3.5)	489 (3.5)	490 (3.5)	490 (3.4)	490 (3.4)	492 (3.4)	490 (3.5)	489 (3.5)	491 (3.4)	487 (3.5)
France	488 (3.0)	488 (3.0)	486 (3.0)	488 (2.9)	490 (3.0)	486 (3.0)	490 (2.9)	486 (2.9)	479 (3.0)	487 (2.9)	491 (3.0)
United Arab Emirates	473 (2.1)	473 (2.1)	471 (2.1)	473 (2.0)	471 (2.1)	471 (2.1)	471 (2.0)	472 (2.1)	477 (2.0)	471 (2.2)	472 (2.0)
Chile	469 (2.6)	469 (2.6)	472 (2.6)	470 (2.6)	474 (2.5)	471 (2.5)	472 (2.5)	472 (2.6)	469 (2.6)	467 (2.6)	474 (2.5)
Armenia	466 (3.4)	466 (3.4)	467 (3.4)	465 (3.5)	473 (3.5)	469 (3.6)	472 (3.5)	472 (3.5)	466 (3.5)	467 (3.5)	472 (3.5)
Bosnia and Herzegovina	459 (2.9)	459 (2.9)	462 (2.9)	459 (2.9)	465 (2.8)	462 (2.9)	464 (2.9)	465 (3.0)	457 (2.9)	461 (3.0)	464 (2.9)
Georgia	454 (3.9)	454 (3.9)	453 (3.9)	455 (4.0)	457 (4.1)	459 (4.0)	456 (4.0)	452 (4.0)	452 (4.0)	456 (4.0)	455 (4.0)
Montenegro	453 (2.5)	453 (2.5)	453 (2.5)	454 (2.5)	461 (2.7)	458 (2.7)	462 (2.6)	459 (2.8)	452 (2.6)	456 (2.6)	459 (2.6)
Qatar	449 (3.9)	449 (3.9)	449 (3.9)	450 (4.0)	449 (4.1)	449 (4.1)	451 (3.9)	453 (4.0)	452 (3.9)	450 (4.0)	451 (4.0)
Iran, Islamic Rep. of	441 (4.1)	441 (4.1)	439 (4.1)	441 (4.1)	438 (4.0)	444 (4.1)	439 (4.0)	438 (4.1)	446 (4.3)	441 (4.3)	433 (3.9)
Oman	435 (4.1)	435 (4.1)	434 (4.1)	435 (4.0)	435 (3.9)	437 (4.0)	434 (4.0)	436 (3.9)	442 (4.1)	435 (4.0)	435 (3.9)
Azerbaijan	427 (3.3)	427 (3.3)	428 (3.3)	426 (3.3)	432 (3.3)	436 (3.3)	432 (3.3)	432 (3.3)	428 (3.3)	430 (3.3)	428 (3.2)
North Macedonia	426 (6.2)	426 (6.2)	427 (6.2)	425 (6.2)	421 (6.0)	428 (6.1)	424 (5.9)	427 (6.1)	425 (6.5)	429 (6.2)	423 (5.9)
Kosovo	413 (3.7)	413 (3.7)	411 (3.8)	413 (3.7)	411 (3.8)	417 (3.8)	411 (3.7)	411 (3.9)	411 (3.8)	414 (3.9)	408 (3.9)
Saudi Arabia	402 (4.1)	402 (4.1)	403 (4.1)	402 (4.1)	401 (4.1)	398 (4.2)	399 (4.1)	396 (4.1)	405 (4.1)	404 (4.1)	398 (4.1)
Kuwait	392 (6.1)	392 (6.1)	391 (6.1)	392 (6.1)	395 (6.1)	389 (6.2)	392 (6.1)	388 (6.2)	397 (6.1)	388 (6.2)	396 (6.1)
Morocco	374 (5.8)	374 (5.8)	371 (5.8)	374 (5.8)	370 (5.8)	368 (6.0)	373 (5.7)	369 (5.7)	377 (5.9)	372 (5.9)	370 (5.7)
South Africa (5)	324 (4.9)	324 (4.9)	322 (5.0)	325 (4.9)	326 (5.0)	319 (5.1)	329 (4.9)	323 (5.1)	326 (5.0)	321 (5.1)	328 (4.9)
Pakistan	290 (13.4)	290 (13.4)	292 (13.4)	289 (13.4)	291 (13.5)	293 (12.7)	292 (13.2)	289 (13.8)	291 (13.7)	286 (14.1)	293 (13.1)
Philippines	249 (7.5)	249 (7.5)	249 (7.6)	251 (7.5)	246 (7.6)	241 (7.8)	254 (7.4)	247 (7.8)	258 (7.7)	246 (7.6)	250 (7.6)
International Average	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	492 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants											
Moscow City, Russian Fed.	595 (2.2)	595 (2.2)	596 (2.3)	596 (2.3)	595 (2.4)	592 (2.4)	593 (2.3)	594 (2.6)	601 (2.4)	594 (2.3)	593 (2.4)
Dubai, UAE	545 (1.7)	545 (1.7)	544 (1.7)	545 (1.7)	541 (1.7)	544 (1.7)	541 (1.7)	544 (1.8)	548 (1.8)	546 (1.8)	541 (1.7)
Ontario, Canada	524 (3.2)	524 (3.2)	526 (3.1)	526 (3.1)	529 (3.1)	522 (3.0)	525 (3.0)	527 (3.0)	521 (3.2)	522 (3.1)	528 (3.1)
Madrid, Spain	523 (2.0)	523 (2.0)	524 (2.0)	524 (2.0)	523 (2.0)	523 (2.1)	522 (2.0)	520 (2.2)	523 (2.1)	518 (2.0)	527 (2.1)
Quebec, Canada	522 (2.5)	522 (2.5)	521 (2.5)	522 (2.5)	522 (2.6)	521 (2.6)	521 (2.6)	520 (2.7)	517 (2.6)	521 (2.6)	526 (2.6)
Abu Dhabi, UAE	418 (2.8)	418 (2.8)	417 (2.8)	418 (2.8)	417 (2.9)	415 (2.9)	418 (2.8)	418 (2.9)	423 (2.8)	414 (2.9)	419 (2.8)
Number of Items (Score Points)*	169 (174)	169 (174)	147 (151)	157 (162)	100 (104)	99 (102)	124 (128)	91 (94)	118 (122)	129 (133)	105 (109)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

SOURCE: IEA's Trends in International Mathematics and Science Study TIMSS 2019
Downloaded from <http://timss2019.org/download>

Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	North Macedonia	Kosovo	Saudi Arabia	Kuwait	Morocco	South Africa (5)	Pakistan	Philippines
Singapore	595 (3.4)	595 (3.4)	595 (3.4)	595 (3.4)	598 (3.5)	602 (3.5)	591 (3.4)	598 (3.4)	595 (3.4)
Korea, Rep. of	588 (2.1)	588 (2.1)	588 (2.1)	587 (2.1)	589 (2.2)	581 (2.1)	584 (2.2)	589 (2.1)	588 (2.1)
Russian Federation	567 (3.0)	567 (3.0)	567 (3.0)	565 (3.1)	567 (3.1)	567 (3.0)	565 (3.1)	567 (3.1)	567 (3.0)
Japan	562 (1.8)	562 (1.8)	562 (1.8)	558 (1.8)	559 (1.9)	561 (1.8)	560 (1.9)	564 (1.8)	562 (1.8)
Chinese Taipei	558 (1.8)	558 (1.8)	558 (1.8)	556 (1.8)	560 (1.8)	549 (1.8)	553 (1.8)	558 (1.8)	558 (1.8)
Finland	555 (2.6)	555 (2.6)	555 (2.6)	550 (2.6)	553 (2.7)	554 (2.7)	554 (2.7)	554 (2.7)	555 (2.6)
Latvia	542 (2.4)	542 (2.4)	542 (2.4)	541 (2.3)	540 (2.4)	539 (2.3)	537 (2.4)	545 (2.3)	542 (2.4)
Norway (5)	539 (2.2)	539 (2.2)	539 (2.2)	535 (2.1)	537 (2.3)	536 (2.2)	536 (2.3)	538 (2.2)	539 (2.2)
United States	539 (2.7)	539 (2.7)	539 (2.7)	538 (2.8)	540 (2.7)	541 (2.8)	539 (2.8)	536 (2.7)	539 (2.7)
Lithuania	538 (2.5)	538 (2.5)	538 (2.5)	536 (2.5)	537 (2.6)	539 (2.5)	541 (2.6)	538 (2.5)	538 (2.5)
England	537 (2.7)	537 (2.7)	537 (2.7)	538 (2.7)	533 (2.7)	536 (2.7)	531 (2.9)	537 (2.7)	537 (2.7)
Sweden	537 (3.3)	537 (3.3)	537 (3.3)	533 (3.3)	538 (3.4)	537 (3.4)	540 (3.5)	536 (3.3)	537 (3.3)
Czech Republic	534 (2.6)	534 (2.6)	534 (2.6)	534 (2.7)	534 (2.7)	534 (2.8)	537 (2.8)	532 (2.6)	534 (2.6)
Australia	533 (2.4)	533 (2.4)	533 (2.4)	533 (2.4)	534 (2.4)	536 (2.4)	530 (2.4)	532 (2.4)	533 (2.4)
Hong Kong SAR	531 (3.3)	531 (3.3)	531 (3.3)	530 (3.4)	530 (3.5)	529 (3.5)	532 (3.5)	530 (3.4)	531 (3.3)
Poland	531 (2.6)	531 (2.6)	531 (2.6)	531 (2.7)	532 (2.7)	533 (2.7)	533 (2.7)	529 (2.6)	531 (2.6)
Hungary	529 (2.7)	529 (2.7)	529 (2.7)	526 (2.7)	527 (2.7)	528 (2.7)	527 (2.8)	530 (2.7)	529 (2.7)
Ireland	528 (3.2)	528 (3.2)	528 (3.2)	526 (3.1)	528 (3.2)	523 (3.2)	523 (3.1)	529 (3.1)	528 (3.2)
Turkey (5)	526 (4.2)	526 (4.2)	526 (4.2)	526 (4.3)	526 (4.3)	525 (4.4)	526 (4.3)	531 (4.3)	526 (4.2)
Croatia	524 (2.2)	524 (2.2)	524 (2.2)	524 (2.3)	522 (2.3)	526 (2.3)	526 (2.4)	526 (2.2)	524 (2.2)
Canada	523 (1.9)	523 (1.9)	523 (1.9)	521 (1.9)	522 (1.9)	524 (1.8)	521 (1.8)	522 (1.9)	523 (1.9)
Austria	522 (2.6)	522 (2.6)	522 (2.6)	521 (2.6)	520 (2.6)	523 (2.6)	519 (2.7)	522 (2.6)	522 (2.6)
Denmark	522 (2.4)	522 (2.4)	522 (2.4)	519 (2.4)	521 (2.4)	520 (2.4)	520 (2.5)	520 (2.4)	522 (2.4)
Bulgaria	521 (4.9)	521 (4.9)	521 (4.9)	523 (5.0)	520 (5.1)	525 (5.0)	529 (5.0)	519 (5.0)	521 (4.9)
Slovak Republic	521 (3.7)	521 (3.7)	521 (3.7)	522 (3.7)	519 (3.7)	518 (3.8)	519 (3.8)	520 (3.7)	521 (3.7)
Germany	518 (2.2)	518 (2.2)	518 (2.2)	517 (2.2)	518 (2.3)	522 (2.2)	517 (2.2)	518 (2.2)	518 (2.2)
Netherlands	518 (2.9)	518 (2.9)	518 (2.9)	516 (2.9)	518 (2.9)	513 (3.0)	510 (3.0)	519 (2.9)	518 (2.9)
Northern Ireland	518 (2.3)	518 (2.3)	518 (2.3)	517 (2.4)	518 (2.4)	516 (2.4)	512 (2.5)	518 (2.3)	518 (2.3)
Serbia	517 (3.5)	517 (3.5)	517 (3.5)	516 (3.6)	516 (3.5)	523 (3.7)	521 (3.5)	518 (3.5)	517 (3.5)
Cyprus	511 (3.0)	511 (3.0)	511 (3.0)	512 (3.2)	511 (3.1)	516 (3.1)	510 (3.3)	512 (3.0)	511 (3.0)
Spain	511 (2.0)	511 (2.0)	511 (2.0)	510 (2.0)	514 (2.0)	513 (2.0)	515 (2.1)	511 (2.0)	511 (2.0)
Italy	510 (3.0)	510 (3.0)	510 (3.0)	512 (3.1)	510 (3.1)	511 (3.2)	514 (3.1)	508 (3.0)	510 (3.0)
Portugal	504 (2.6)	504 (2.6)	504 (2.6)	503 (2.7)	505 (2.7)	508 (2.7)	511 (2.7)	503 (2.6)	504 (2.6)
New Zealand	503 (2.3)	503 (2.3)	503 (2.3)	502 (2.3)	503 (2.3)	503 (2.3)	500 (2.4)	502 (2.3)	503 (2.3)
Belgium (Flemish)	501 (2.1)	501 (2.1)	501 (2.1)	499 (2.1)	500 (2.2)	498 (2.2)	491 (2.3)	501 (2.1)	501 (2.1)
Malta	496 (1.3)	496 (1.3)	496 (1.3)	496 (1.3)	496 (1.3)	498 (1.3)	496 (1.2)	496 (1.3)	496 (1.3)
Kazakhstan	494 (3.1)	494 (3.1)	494 (3.1)	494 (3.1)	490 (3.1)	495 (3.1)	499 (3.1)	497 (3.1)	494 (3.1)
Bahrain	493 (3.4)	493 (3.4)	493 (3.4)	495 (3.4)	496 (3.4)	493 (3.5)	500 (3.4)	491 (3.5)	493 (3.4)
Albania	489 (3.5)	489 (3.5)	489 (3.5)	490 (3.5)	490 (3.6)	488 (3.3)	496 (3.5)	490 (3.5)	489 (3.5)
France	488 (3.0)	488 (3.0)	488 (3.0)	487 (3.0)	486 (3.0)	493 (2.9)	490 (3.0)	487 (2.9)	488 (3.0)
United Arab Emirates	473 (2.1)	473 (2.1)	473 (2.1)	475 (2.1)	475 (2.0)	471 (2.1)	480 (2.0)	472 (2.1)	473 (2.1)
Chile	469 (2.6)	469 (2.6)	469 (2.6)	469 (2.6)	472 (2.5)	472 (2.5)	473 (2.5)	466 (2.6)	469 (2.6)
Armenia	466 (3.4)	466 (3.4)	466 (3.4)	463 (3.5)	463 (3.4)	470 (3.5)	474 (3.6)	467 (3.5)	466 (3.4)
Bosnia and Herzegovina	459 (2.9)	459 (2.9)	459 (2.9)	458 (3.0)	459 (2.9)	465 (2.9)	462 (3.0)	459 (3.0)	459 (2.9)
Georgia	454 (3.9)	454 (3.9)	454 (3.9)	453 (4.0)	453 (3.9)	458 (4.1)	455 (4.1)	455 (3.9)	454 (3.9)
Montenegro	453 (2.5)	453 (2.5)	453 (2.5)	455 (2.6)	455 (2.6)	465 (2.7)	464 (2.7)	454 (2.5)	453 (2.5)
Qatar	449 (3.9)	449 (3.9)	449 (3.9)	451 (4.0)	452 (3.9)	450 (3.9)	455 (3.7)	450 (4.1)	449 (3.9)
Iran, Islamic Rep. of	441 (4.1)	441 (4.1)	441 (4.1)	440 (4.2)	440 (4.1)	440 (4.2)	447 (4.0)	442 (4.2)	441 (4.1)
Oman	435 (4.1)	435 (4.1)	435 (4.1)	438 (4.2)	439 (4.0)	437 (4.0)	446 (4.1)	434 (4.0)	435 (4.1)
Azerbaijan	427 (3.3)	427 (3.3)	427 (3.3)	428 (3.2)	425 (3.3)	429 (3.3)	432 (3.2)	429 (3.3)	427 (3.3)
North Macedonia	426 (6.2)	426 (6.2)	426 (6.2)	427 (6.4)	423 (6.2)	427 (5.9)	429 (6.1)	427 (6.2)	426 (6.2)
Kosovo	413 (3.7)	413 (3.7)	413 (3.7)	413 (3.8)	408 (3.8)	411 (3.9)	413 (4.0)	415 (3.7)	413 (3.7)
Saudi Arabia	402 (4.1)	402 (4.1)	402 (4.1)	405 (4.2)	406 (4.1)	401 (4.2)	407 (4.3)	400 (4.1)	402 (4.1)
Kuwait	392 (6.1)	392 (6.1)	392 (6.1)	394 (6.2)	397 (6.1)	393 (6.2)	402 (6.3)	390 (6.2)	392 (6.1)
Morocco	374 (5.8)	374 (5.8)	374 (5.8)	373 (6.0)	371 (5.8)	379 (5.9)	383 (5.8)	371 (5.9)	374 (5.8)
South Africa (5)	324 (4.9)	324 (4.9)	324 (4.9)	323 (5.0)	325 (5.0)	325 (5.0)	332 (4.9)	318 (5.0)	324 (4.9)
Pakistan	290 (13.4)	290 (13.4)	290 (13.4)	290 (13.5)	288 (13.4)	290 (13.3)	295 (13.8)	291 (13.2)	290 (13.4)
Philippines	249 (7.5)	249 (7.5)	249 (7.5)	249 (7.6)	251 (7.6)	250 (7.8)	262 (7.5)	244 (7.6)	249 (7.5)
International Average	491 (0.5)	491 (0.5)	491 (0.5)	490 (0.5)	491 (0.5)	492 (0.5)	493 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants									
Moscow City, Russian Fed.	595 (2.2)	595 (2.2)	595 (2.2)	593 (2.3)	595 (2.3)	593 (2.5)	597 (2.4)	592 (2.3)	595 (2.2)
Dubai, UAE	545 (1.7)	545 (1.7)	545 (1.7)	549 (1.8)	546 (1.7)	541 (1.8)	548 (1.7)	546 (1.7)	545 (1.7)
Ontario, Canada	524 (3.2)	524 (3.2)	524 (3.2)	522 (3.2)	523 (3.1)	525 (3.0)	521 (3.1)	522 (3.1)	524 (3.2)
Madrid, Spain	523 (2.0)	523 (2.0)	523 (2.0)	520 (2.0)	524 (2.0)	522 (2.1)	523 (2.1)	523 (2.0)	523 (2.0)
Quebec, Canada	522 (2.5)	522 (2.5)	522 (2.5)	520 (2.6)	519 (2.6)	524 (2.6)	521 (2.7)	521 (2.5)	522 (2.5)
Abu Dhabi, UAE	418 (2.8)	418 (2.8)	418 (2.8)	418 (2.8)	421 (2.8)	418 (2.8)	427 (2.9)	416 (2.8)	418 (2.8)
Number of Items (Score Points)*	169 (174)	168 (173)	168 (173)	132 (136)	126 (131)	107 (110)	105 (108)	150 (154)	168 (173)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

SOURCE: IEA's Trends in International Mathematics and Science Study TIMSS 2019
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Exhibit C.2: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	Benchmarking Participants	Benchmarking Participants					
			Moscow City, Russian Fed.	Dubai, UAE	Ontario, Canada	Madrid, Spain	Quebec, Canada	Abu Dhabi, UAE
Singapore	595 (3.4)		590 (3.5)	595 (3.4)	593 (3.4)	589 (3.5)	591 (3.4)	595 (3.4)
Korea, Rep. of	588 (2.1)		584 (2.2)	588 (2.1)	589 (2.2)	584 (2.1)	585 (2.2)	588 (2.1)
Russian Federation	567 (3.0)		567 (3.0)	567 (3.0)	565 (3.0)	567 (3.0)	567 (3.0)	567 (3.0)
Japan	562 (1.8)		556 (1.9)	562 (1.8)	559 (1.8)	553 (1.8)	561 (1.9)	562 (1.8)
Chinese Taipei	558 (1.8)		556 (1.8)	558 (1.8)	559 (1.9)	554 (1.8)	556 (1.8)	558 (1.8)
Finland	555 (2.6)		557 (2.7)	555 (2.6)	556 (2.7)	555 (2.6)	553 (2.7)	555 (2.6)
Latvia	542 (2.4)		540 (2.4)	542 (2.4)	542 (2.4)	540 (2.5)	544 (2.3)	542 (2.4)
Norway (5)	539 (2.2)		541 (2.2)	539 (2.2)	539 (2.2)	540 (2.2)	536 (2.3)	539 (2.2)
United States	539 (2.7)		541 (2.8)	539 (2.7)	542 (2.8)	541 (2.8)	535 (2.8)	539 (2.7)
Lithuania	538 (2.5)		532 (2.5)	538 (2.5)	538 (2.5)	536 (2.5)	540 (2.5)	538 (2.5)
England	537 (2.7)		540 (2.8)	537 (2.7)	538 (2.7)	539 (2.7)	537 (2.8)	537 (2.7)
Sweden	537 (3.3)		542 (3.4)	537 (3.3)	537 (3.4)	540 (3.4)	539 (3.4)	537 (3.3)
Czech Republic	534 (2.6)		535 (2.8)	534 (2.6)	535 (2.8)	535 (2.7)	539 (2.8)	534 (2.6)
Australia	533 (2.4)		535 (2.4)	533 (2.4)	534 (2.4)	536 (2.4)	531 (2.4)	533 (2.4)
Hong Kong SAR	531 (3.3)		533 (3.4)	531 (3.3)	531 (3.4)	531 (3.4)	530 (3.5)	531 (3.3)
Poland	531 (2.6)		535 (2.7)	531 (2.6)	532 (2.7)	534 (2.6)	533 (2.7)	531 (2.6)
Hungary	529 (2.7)		533 (2.7)	529 (2.7)	530 (2.8)	533 (2.7)	535 (2.8)	529 (2.7)
Ireland	528 (3.2)		528 (3.2)	528 (3.2)	529 (3.3)	529 (3.3)	524 (3.2)	528 (3.2)
Turkey (5)	526 (4.2)		524 (4.2)	526 (4.2)	526 (4.2)	525 (4.2)	531 (4.3)	526 (4.2)
Croatia	524 (2.2)		523 (2.2)	524 (2.2)	523 (2.3)	523 (2.3)	524 (2.4)	524 (2.2)
Canada	523 (1.9)		525 (1.9)	523 (1.9)	525 (1.9)	526 (1.8)	523 (1.9)	523 (1.9)
Austria	522 (2.6)		521 (2.6)	522 (2.6)	520 (2.6)	522 (2.6)	519 (2.6)	522 (2.6)
Denmark	522 (2.4)		525 (2.4)	522 (2.4)	524 (2.4)	523 (2.4)	519 (2.5)	522 (2.4)
Bulgaria	521 (4.9)		524 (4.7)	521 (4.9)	524 (5.0)	523 (5.0)	523 (4.9)	521 (4.9)
Slovak Republic	521 (3.7)		521 (3.6)	521 (3.7)	521 (3.7)	521 (3.8)	525 (3.7)	521 (3.7)
Germany	518 (2.2)		519 (2.2)	518 (2.2)	515 (2.2)	518 (2.2)	516 (2.3)	518 (2.2)
Netherlands	518 (2.9)		514 (3.0)	518 (2.9)	516 (2.9)	517 (2.9)	514 (3.1)	518 (2.9)
Northern Ireland	518 (2.3)		520 (2.4)	518 (2.3)	520 (2.4)	522 (2.4)	515 (2.5)	518 (2.3)
Serbia	517 (3.5)		515 (3.5)	517 (3.5)	517 (3.5)	514 (3.4)	520 (3.4)	517 (3.5)
Cyprus	511 (3.0)		511 (3.0)	511 (3.0)	516 (3.1)	511 (3.0)	511 (3.0)	511 (3.0)
Spain	511 (2.0)		514 (2.0)	511 (2.0)	511 (2.0)	514 (2.0)	511 (2.0)	511 (2.0)
Italy	510 (3.0)		513 (3.1)	510 (3.0)	512 (3.1)	514 (3.1)	513 (3.2)	510 (3.0)
Portugal	504 (2.6)		507 (2.7)	504 (2.6)	505 (2.7)	506 (2.6)	506 (2.7)	504 (2.6)
New Zealand	503 (2.3)		505 (2.3)	503 (2.3)	505 (2.3)	506 (2.3)	501 (2.4)	503 (2.3)
Belgium (Flemish)	501 (2.1)		497 (2.2)	501 (2.1)	500 (2.2)	500 (2.2)	499 (2.2)	501 (2.1)
Malta	496 (1.3)		496 (1.2)	496 (1.3)	497 (1.3)	496 (1.3)	492 (1.3)	496 (1.3)
Kazakhstan	494 (3.1)		489 (3.1)	494 (3.1)	489 (3.1)	489 (3.1)	495 (3.0)	494 (3.1)
Bahrain	493 (3.4)		492 (3.5)	493 (3.4)	492 (3.5)	492 (3.4)	493 (3.5)	493 (3.4)
Albania	489 (3.5)		488 (3.5)	489 (3.5)	488 (3.6)	487 (3.4)	490 (3.5)	489 (3.5)
France	488 (3.0)		490 (3.0)	488 (3.0)	488 (3.0)	491 (3.0)	484 (3.0)	488 (3.0)
United Arab Emirates	473 (2.1)		473 (2.0)	473 (2.1)	472 (2.1)	471 (2.0)	469 (2.1)	473 (2.1)
Chile	469 (2.6)		474 (2.5)	469 (2.6)	472 (2.6)	475 (2.6)	470 (2.6)	469 (2.6)
Armenia	466 (3.4)		471 (3.4)	466 (3.4)	467 (3.4)	467 (3.5)	476 (3.4)	466 (3.4)
Bosnia and Herzegovina	459 (2.9)		461 (2.9)	459 (2.9)	461 (2.9)	462 (2.8)	463 (2.9)	459 (2.9)
Georgia	454 (3.9)		454 (4.0)	454 (3.9)	453 (4.0)	458 (4.0)	460 (4.0)	454 (3.9)
Montenegro	453 (2.5)		456 (2.6)	453 (2.5)	456 (2.6)	458 (2.5)	457 (2.6)	453 (2.5)
Qatar	449 (3.9)		450 (4.0)	449 (3.9)	450 (3.9)	451 (4.0)	445 (4.0)	449 (3.9)
Iran, Islamic Rep. of	441 (4.1)		435 (3.9)	441 (4.1)	437 (4.1)	437 (4.0)	442 (4.2)	441 (4.1)
Oman	435 (4.1)		435 (4.0)	435 (4.1)	437 (4.0)	432 (4.0)	436 (4.0)	435 (4.1)
Azerbaijan	427 (3.3)		429 (3.2)	427 (3.3)	428 (3.2)	429 (3.3)	436 (3.3)	427 (3.3)
North Macedonia	426 (6.2)		424 (6.0)	426 (6.2)	427 (6.1)	423 (6.1)	428 (5.9)	426 (6.2)
Kosovo	413 (3.7)		408 (3.8)	413 (3.7)	409 (3.8)	412 (3.7)	410 (3.8)	413 (3.7)
Saudi Arabia	402 (4.1)		401 (4.0)	402 (4.1)	405 (4.1)	404 (4.0)	398 (4.1)	402 (4.1)
Kuwait	392 (6.1)		395 (6.1)	392 (6.1)	396 (6.1)	394 (6.1)	389 (6.1)	392 (6.1)
Morocco	374 (5.8)		374 (5.7)	374 (5.8)	371 (5.7)	370 (5.8)	375 (5.6)	374 (5.8)
South Africa (5)	324 (4.9)		327 (4.9)	324 (4.9)	326 (4.9)	325 (5.0)	323 (4.9)	324 (4.9)
Pakistan	290 (13.4)		295 (12.9)	290 (13.4)	291 (13.4)	289 (13.4)	296 (13.0)	290 (13.4)
Philippines	249 (7.5)		256 (7.5)	249 (7.5)	249 (7.5)	246 (7.7)	252 (7.7)	249 (7.5)
International Average	491 (0.5)		491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)	491 (0.5)
Benchmarking Participants								
Moscow City, Russian Fed.	595 (2.2)		594 (2.4)	595 (2.2)	594 (2.3)	595 (2.3)	597 (2.4)	595 (2.2)
Dubai, UAE	545 (1.7)		543 (1.7)	545 (1.7)	543 (1.8)	542 (1.7)	540 (1.8)	545 (1.7)
Ontario, Canada	524 (3.2)		526 (3.1)	524 (3.2)	528 (3.2)	528 (3.0)	524 (3.2)	524 (3.2)
Madrid, Spain	523 (2.0)		526 (2.0)	523 (2.0)	521 (2.0)	525 (2.0)	523 (2.0)	523 (2.0)
Quebec, Canada	522 (2.5)		523 (2.6)	522 (2.5)	520 (2.7)	524 (2.6)	522 (2.6)	522 (2.5)
Abu Dhabi, UAE	418 (2.8)		420 (2.8)	418 (2.8)	417 (2.8)	417 (2.8)	414 (2.9)	418 (2.8)
Number of Items (Score Points)*	169 (174)		125 (129)	169 (174)	126 (129)	136 (140)	107 (110)	169 (174)

* The number of items and score points are based on the number of items included in scaling the fourth grade science achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.
() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.3: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

Read down the column under a country name to compare achievement scores based on the items identified by that country. Scores on the diagonal are countries' achievement scores based on the test items they identified.

Country	Average Mathematics Scale Score based on All Items	Singapore	Chinese Taipei	Korea, Rep. of	Japan	Hong Kong SAR	Russian Federation	Ireland	Lithuania	Israel	Australia
Singapore	616 (4.0)	617 (4.0)	616 (4.0)	615 (3.9)	615 (3.9)	617 (4.0)	617 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)
Chinese Taipei	612 (2.7)	613 (2.7)	617 (2.8)	613 (2.7)	611 (2.7)	615 (2.8)	615 (2.8)	613 (2.7)	615 (2.8)	613 (2.7)	612 (2.7)
Korea, Rep. of	607 (2.8)	608 (2.8)	606 (2.8)	610 (2.8)	607 (2.8)	606 (2.8)	607 (2.8)	605 (2.8)	603 (2.8)	607 (2.8)	605 (2.8)
Japan	594 (2.7)	593 (2.7)	593 (2.7)	595 (2.7)	599 (2.8)	593 (2.7)	592 (2.7)	595 (2.8)	591 (2.7)	594 (2.7)	594 (2.8)
Hong Kong SAR	578 (4.1)	578 (4.0)	581 (4.1)	578 (4.0)	577 (4.0)	583 (4.1)	579 (4.0)	578 (4.1)	580 (4.1)	578 (4.0)	578 (4.1)
Russian Federation	543 (4.5)	544 (4.5)	546 (4.5)	543 (4.5)	540 (4.5)	546 (4.5)	548 (4.6)	543 (4.5)	545 (4.5)	544 (4.5)	542 (4.5)
Ireland	524 (2.6)	524 (2.6)	523 (2.7)	526 (2.6)	526 (2.6)	524 (2.7)	525 (2.7)	524 (2.7)	524 (2.7)	524 (2.6)	525 (2.7)
Lithuania	520 (2.9)	520 (2.9)	522 (3.0)	520 (2.9)	521 (2.9)	522 (3.0)	522 (3.0)	521 (3.0)	523 (3.0)	520 (2.9)	521 (3.0)
Israel	519 (4.3)	520 (4.3)	519 (4.3)	520 (4.2)	520 (4.2)	519 (4.2)	520 (4.3)	519 (4.0)	518 (4.3)	520 (4.3)	519 (4.2)
Australia	517 (3.8)	516 (3.8)	515 (3.8)	517 (3.7)	519 (3.7)	516 (3.8)	515 (3.8)	518 (3.8)	517 (3.8)	517 (3.8)	518 (3.8)
Hungary	517 (2.9)	515 (2.9)	517 (3.0)	516 (2.9)	518 (2.9)	517 (2.9)	517 (3.0)	517 (2.9)	518 (3.0)	516 (2.9)	517 (2.9)
England	515 (5.3)	514 (5.3)	512 (5.3)	515 (5.2)	518 (5.2)	515 (5.3)	513 (5.3)	516 (5.3)	515 (5.3)	515 (5.3)	516 (5.3)
United States	515 (4.8)	515 (4.7)	514 (4.7)	515 (4.7)	515 (4.7)	514 (4.6)	515 (4.9)	515 (4.8)	514 (4.7)	516 (4.8)	515 (4.8)
Finland	509 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)	511 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)
Norway (9)	503 (2.4)	503 (2.4)	501 (2.4)	504 (2.4)	506 (2.4)	503 (2.4)	502 (2.4)	503 (2.4)	502 (2.5)	503 (2.4)	504 (2.4)
Sweden	503 (2.5)	503 (2.5)	502 (2.5)	504 (2.6)	506 (2.6)	504 (2.6)	502 (2.5)	503 (2.6)	502 (2.5)	503 (2.6)	504 (2.6)
Cyprus	501 (1.6)	501 (1.6)	501 (1.6)	500 (1.6)	501 (1.6)	501 (1.6)	503 (1.6)	502 (1.6)	501 (1.6)	501 (1.6)	502 (1.6)
Portugal	500 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)	500 (3.1)	502 (3.2)	500 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)	500 (3.2)
Italy	497 (2.7)	498 (2.7)	498 (2.7)	496 (2.7)	497 (2.7)	498 (2.8)	497 (2.8)	498 (2.7)	498 (2.8)	497 (2.7)	498 (2.7)
Turkey	496 (4.3)	496 (4.3)	495 (4.3)	496 (4.2)	495 (4.3)	495 (4.3)	495 (4.3)	496 (4.3)	494 (4.3)	496 (4.3)	496 (4.3)
Kazakhstan	488 (3.3)	488 (3.3)	491 (3.4)	487 (3.2)	485 (3.3)	490 (3.3)	491 (3.4)	487 (3.3)	489 (3.3)	488 (3.3)	486 (3.2)
France	483 (2.5)	481 (2.5)	482 (2.5)	482 (2.5)	484 (2.4)	483 (2.5)	480 (2.5)	483 (2.5)	481 (2.5)	483 (2.5)	482 (2.5)
New Zealand	482 (3.4)	480 (3.4)	480 (3.4)	481 (3.4)	484 (3.4)	480 (3.4)	479 (3.4)	482 (3.4)	481 (3.4)	482 (3.4)	482 (3.4)
Bahrain	481 (1.7)	479 (1.8)	479 (1.7)	480 (1.7)	482 (1.7)	481 (1.7)	478 (1.7)	481 (1.7)	480 (1.7)	481 (1.7)	480 (1.7)
Romania	479 (4.3)	480 (4.3)	482 (4.3)	479 (4.2)	477 (4.1)	481 (4.3)	482 (4.3)	479 (4.2)	479 (4.3)	479 (4.3)	478 (4.2)
United Arab Emirates	473 (1.9)	474 (1.9)	474 (1.9)	473 (1.8)	473 (1.8)	474 (1.9)	474 (1.9)	474 (1.8)	473 (1.9)	474 (1.9)	473 (1.8)
Georgia	461 (4.3)	462 (4.3)	465 (4.3)	463 (4.3)	460 (4.3)	464 (4.3)	466 (4.3)	462 (4.3)	463 (4.3)	462 (4.4)	461 (4.3)
Malaysia	461 (3.2)	461 (3.1)	461 (3.2)	461 (3.1)	462 (3.1)	461 (3.1)	461 (3.2)	461 (3.2)	461 (3.2)	460 (3.2)	461 (3.2)
Iran, Islamic Rep. of	446 (3.7)	445 (3.7)	446 (3.8)	445 (3.7)	446 (3.7)	446 (3.8)	446 (3.7)	447 (3.7)	446 (3.8)	447 (3.7)	447 (3.8)
Qatar	443 (4.0)	445 (3.9)	443 (3.9)	443 (4.0)	443 (4.1)	445 (3.9)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.1)	443 (4.0)
Chile	441 (2.8)	441 (2.8)	441 (2.9)	440 (2.8)	442 (2.8)	442 (2.8)	440 (2.9)	441 (2.8)	441 (2.9)	441 (2.8)	442 (2.8)
Lebanon	429 (2.9)	430 (2.9)	434 (2.9)	430 (2.9)	428 (2.9)	434 (2.9)	434 (2.9)	429 (2.9)	431 (2.9)	428 (3.0)	428 (2.9)
Jordan	420 (4.3)	421 (4.3)	422 (4.3)	419 (4.2)	417 (4.2)	420 (4.2)	421 (4.3)	421 (4.2)	420 (4.2)	420 (4.3)	420 (4.2)
Egypt	413 (5.2)	414 (5.2)	414 (5.2)	414 (5.2)	411 (5.1)	415 (5.1)	414 (5.2)	412 (5.2)	412 (5.2)	414 (5.2)	412 (5.2)
Oman	411 (2.8)	410 (2.8)	412 (2.8)	410 (2.7)	410 (2.7)	411 (2.8)	409 (2.8)	410 (2.7)	410 (2.8)	410 (2.7)	409 (2.8)
Kuwait	403 (5.0)	402 (5.0)	400 (5.1)	400 (5.0)	402 (4.9)	401 (5.0)	400 (5.0)	402 (4.9)	402 (5.0)	403 (5.0)	402 (5.0)
Saudi Arabia	394 (2.5)	395 (2.5)	390 (2.6)	393 (2.6)	395 (2.6)	391 (2.6)	392 (2.6)	394 (2.5)	391 (2.6)	395 (2.5)	392 (2.6)
South Africa (9)	389 (2.3)	391 (2.3)	391 (2.3)	391 (2.2)	390 (2.2)	392 (2.2)	391 (2.3)	389 (2.3)	391 (2.3)	390 (2.3)	389 (2.3)
Morocco	388 (2.3)	387 (2.3)	390 (2.3)	390 (2.2)	388 (2.3)	391 (2.3)	387 (2.4)	387 (2.3)	389 (2.3)	387 (2.3)	387 (2.3)
International Average	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.5)	489 (0.5)	490 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	575 (4.2)	576 (4.2)	577 (4.2)	574 (4.1)	572 (4.1)	576 (4.2)	580 (4.3)	575 (4.1)	577 (4.1)	575 (4.2)	574 (4.1)
Quebec, Canada	543 (3.7)	543 (3.6)	542 (3.7)	544 (3.7)	545 (3.7)	544 (3.7)	542 (3.7)	543 (3.7)	543 (3.7)	543 (3.7)	544 (3.7)
Dubai, UAE	537 (2.0)	537 (2.0)	536 (2.0)	536 (2.0)	536 (2.1)	536 (2.1)	536 (2.1)	537 (2.0)	536 (2.1)	537 (2.0)	536 (2.0)
Ontario, Canada	530 (4.3)	529 (4.3)	528 (4.3)	528 (4.2)	532 (4.2)	529 (4.3)	526 (4.3)	530 (4.3)	530 (4.3)	530 (4.2)	531 (4.2)
Western Cape, RSA (9)	441 (4.4)	442 (4.4)	443 (4.4)	442 (4.4)	441 (4.4)	443 (4.4)	442 (4.5)	441 (4.4)	443 (4.4)	441 (4.4)	441 (4.4)
Abu Dhabi, UAE	436 (2.9)	437 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	437 (2.9)	436 (2.9)	436 (2.9)	435 (2.9)	436 (2.9)	436 (2.9)
Gauteng, RSA (9)	421 (3.0)	421 (3.0)	422 (3.0)	421 (2.9)	421 (2.9)	422 (3.0)	421 (3.0)	420 (3.0)	422 (3.0)	421 (3.0)	421 (3.0)
Number of Items (Score Points)*	206 (217)	198 (209)	185 (195)	185 (194)	177 (186)	177 (187)	170 (180)	200 (211)	183 (194)	200 (211)	188 (198)

* The number of items and score points are based on the number of items included in scaling the eighth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.3: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Hungary	England	United States	Finland	Norway (9)	Sweden	Cyprus	Portugal	Italy	Turkey
Singapore	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	614 (3.9)	614 (4.0)	618 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)
Chinese Taipei	612 (2.7)	612 (2.7)	612 (2.7)	612 (2.7)	612 (2.7)	611 (2.7)	611 (2.7)	613 (2.8)	614 (2.8)	611 (2.7)	612 (2.7)
Korea, Rep. of	607 (2.8)	607 (2.8)	606 (2.8)	607 (2.8)	607 (2.8)	605 (2.8)	604 (2.8)	609 (2.8)	605 (2.8)	605 (2.8)	606 (2.8)
Japan	594 (2.7)	594 (2.7)	593 (2.7)	594 (2.7)	593 (2.7)	592 (2.7)	592 (2.8)	591 (2.8)	593 (2.7)	593 (2.7)	593 (2.7)
Hong Kong SAR	578 (4.1)	578 (4.1)	578 (4.1)	578 (4.1)	578 (4.1)	577 (4.1)	578 (4.1)	577 (4.1)	580 (4.1)	579 (4.1)	578 (4.1)
Russian Federation	543 (4.5)	543 (4.5)	543 (4.5)	544 (4.6)	543 (4.6)	541 (4.5)	541 (4.4)	544 (4.6)	545 (4.5)	543 (4.5)	543 (4.6)
Ireland	524 (2.6)	524 (2.6)	524 (2.7)	524 (2.6)	524 (2.7)	525 (2.7)	525 (2.7)	523 (2.7)	523 (2.7)	525 (2.7)	524 (2.7)
Lithuania	520 (2.9)	520 (2.9)	521 (2.9)	520 (2.9)	521 (2.9)	521 (3.0)	522 (3.0)	519 (3.0)	522 (3.0)	521 (3.0)	521 (3.0)
Israel	519 (4.3)	519 (4.3)	519 (4.3)	519 (4.3)	520 (4.3)	519 (4.3)	518 (4.2)	523 (4.3)	518 (4.2)	518 (4.2)	520 (4.3)
Australia	517 (3.8)	517 (3.8)	518 (3.8)	517 (3.8)	518 (3.8)	519 (3.8)	519 (3.8)	517 (3.8)	516 (3.8)	518 (3.8)	518 (3.8)
Hungary	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	516 (2.9)	515 (3.0)	518 (3.0)	518 (2.9)	517 (2.9)
England	515 (5.3)	515 (5.3)	515 (5.3)	515 (5.3)	515 (5.3)	516 (5.3)	515 (5.3)	515 (5.2)	514 (5.3)	516 (5.3)	516 (5.2)
United States	515 (4.8)	515 (4.8)	515 (4.8)	515 (4.8)	516 (4.8)	516 (4.8)	514 (4.7)	516 (4.8)	514 (4.7)	515 (4.8)	515 (4.7)
Finland	509 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)
Norway (9)	503 (2.4)	503 (2.4)	503 (2.4)	503 (2.4)	504 (2.5)	504 (2.5)	504 (2.4)	502 (2.4)	503 (2.4)	504 (2.4)	504 (2.4)
Sweden	503 (2.5)	503 (2.5)	502 (2.6)	503 (2.6)	503 (2.6)	504 (2.6)	504 (2.6)	503 (2.6)	503 (2.6)	503 (2.6)	503 (2.6)
Cyprus	501 (1.6)	501 (1.6)	501 (1.6)	501 (1.6)	501 (1.7)	501 (1.6)	500 (1.6)	507 (1.6)	501 (1.6)	501 (1.6)	501 (1.6)
Portugal	500 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	497 (3.3)	501 (3.2)	501 (3.2)	501 (3.2)
Italy	497 (2.7)	497 (2.7)	498 (2.7)	498 (2.7)	498 (2.8)	498 (2.7)	498 (2.8)	500 (2.8)	498 (2.8)	498 (2.8)	498 (2.8)
Turkey	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	495 (4.3)	494 (4.3)	498 (4.4)	494 (4.3)	494 (4.3)	496 (4.3)
Kazakhstan	488 (3.3)	488 (3.3)	488 (3.3)	488 (3.3)	487 (3.3)	486 (3.3)	486 (3.2)	488 (3.4)	490 (3.3)	487 (3.3)	488 (3.3)
France	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	484 (2.5)	478 (2.5)	482 (2.5)	483 (2.5)	483 (2.5)
New Zealand	482 (3.4)	482 (3.4)	481 (3.4)	482 (3.4)	482 (3.4)	483 (3.4)	483 (3.4)	480 (3.4)	480 (3.4)	482 (3.4)	481 (3.4)
Bahrain	481 (1.7)	481 (1.7)	482 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)	480 (1.7)	480 (1.6)	482 (1.7)	481 (1.7)	481 (1.7)
Romania	479 (4.3)	479 (4.3)	479 (4.2)	479 (4.3)	478 (4.3)	478 (4.2)	476 (4.2)	483 (4.3)	480 (4.3)	477 (4.2)	479 (4.3)
United Arab Emirates	473 (1.9)	473 (1.9)	473 (1.8)	473 (1.9)	473 (1.8)	473 (1.8)	472 (1.8)	475 (1.9)	474 (1.9)	472 (1.9)	473 (1.9)
Georgia	461 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)	461 (4.4)	461 (4.3)	460 (4.3)	468 (4.3)	463 (4.4)	461 (4.3)	461 (4.3)
Malaysia	461 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	462 (3.2)	460 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)
Iran, Islamic Rep. of	446 (3.7)	446 (3.7)	446 (3.7)	446 (3.7)	447 (3.8)	447 (3.7)	447 (3.8)	447 (3.7)	446 (3.8)	447 (3.8)	447 (3.8)
Qatar	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	445 (4.1)	443 (4.0)	442 (4.0)	444 (4.0)
Chile	441 (2.8)	441 (2.8)	441 (2.8)	441 (2.8)	441 (2.8)	441 (2.8)	441 (2.8)	442 (2.9)	440 (2.9)	441 (2.8)	441 (2.8)
Lebanon	429 (2.9)	429 (2.9)	430 (2.9)	429 (2.9)	429 (2.9)	428 (2.9)	426 (2.9)	433 (3.0)	433 (2.9)	430 (2.9)	430 (2.9)
Jordan	420 (4.3)	420 (4.3)	419 (4.3)	420 (4.3)	420 (4.2)	420 (4.2)	419 (4.1)	419 (4.2)	421 (4.3)	419 (4.2)	419 (4.3)
Egypt	413 (5.2)	413 (5.2)	413 (5.2)	413 (5.2)	412 (5.2)	412 (5.2)	411 (5.2)	417 (5.3)	414 (5.2)	412 (5.2)	412 (5.2)
Oman	411 (2.8)	411 (2.8)	411 (2.8)	411 (2.8)	410 (2.8)	410 (2.8)	410 (2.8)	410 (2.9)	412 (2.8)	410 (2.8)	411 (2.8)
Kuwait	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (4.9)	399 (5.2)	403 (5.0)	402 (5.0)	402 (5.0)
Saudi Arabia	394 (2.5)	394 (2.5)	393 (2.6)	394 (2.5)	393 (2.5)	394 (2.6)	394 (2.6)	393 (2.7)	393 (2.6)	391 (2.6)	393 (2.5)
South Africa (9)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.2)	389 (2.4)	391 (2.3)	389 (2.3)	390 (2.3)
Morocco	388 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)	387 (2.2)	389 (2.3)	385 (2.3)	390 (2.3)	388 (2.3)	388 (2.3)
International Average	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	575 (4.2)	575 (4.2)	575 (4.1)	575 (4.2)	575 (4.2)	574 (4.1)	574 (4.1)	576 (4.3)	576 (4.2)	575 (4.1)	575 (4.2)
Quebec, Canada	543 (3.7)	543 (3.7)	544 (3.7)	543 (3.7)	544 (3.7)	544 (3.7)	545 (3.8)	542 (3.7)	543 (3.8)	545 (3.7)	544 (3.7)
Dubai, UAE	537 (2.0)	537 (2.0)	536 (2.0)	537 (2.0)	537 (2.0)	536 (2.0)	535 (2.0)	538 (2.1)	536 (2.0)	536 (2.0)	536 (2.0)
Ontario, Canada	530 (4.3)	530 (4.3)	530 (4.3)	530 (4.3)	530 (4.2)	531 (4.3)	531 (4.2)	526 (4.3)	530 (4.3)	531 (4.3)	530 (4.3)
Western Cape, RSA (9)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	442 (4.6)	442 (4.4)	441 (4.4)	442 (4.4)
Abu Dhabi, UAE	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	435 (2.9)	439 (3.0)	436 (2.9)	435 (2.9)	436 (2.9)
Gauteng, RSA (9)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	420 (2.9)	422 (3.0)	422 (3.0)	420 (3.0)	421 (3.0)
Number of Items (Score Points)*	206 (217)	206 (217)	202 (213)	206 (217)	198 (209)	193 (204)	177 (187)	140 (148)	187 (198)	194 (204)	197 (208)

* The number of items and score points are based on the number of items included in scaling the eighth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.3: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Kazakhstan	France	New Zealand	Bahrain	Romania	United Arab Emirates	Georgia	Malaysia	Iran, Islamic Rep. of	Qatar
Singapore	616 (4.0)	616 (4.0)	616 (4.0)	613 (3.9)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	617 (4.0)
Chinese Taipei	612 (2.7)	612 (2.7)	613 (2.7)	611 (2.7)	612 (2.7)	612 (2.7)	612 (2.7)	615 (2.8)	613 (2.7)	615 (2.8)	613 (2.8)
Korea, Rep. of	607 (2.8)	607 (2.8)	604 (2.8)	603 (2.8)	607 (2.8)	607 (2.8)	607 (2.8)	607 (2.8)	607 (2.8)	604 (2.7)	607 (2.8)
Japan	594 (2.7)	594 (2.7)	593 (2.8)	592 (2.8)	594 (2.7)	594 (2.7)	594 (2.7)	594 (2.8)	594 (2.7)	591 (2.7)	593 (2.8)
Hong Kong SAR	578 (4.1)	578 (4.1)	579 (4.1)	575 (4.1)	578 (4.1)	578 (4.1)	578 (4.1)	578 (4.0)	578 (4.1)	580 (4.2)	579 (4.1)
Russian Federation	543 (4.5)	543 (4.5)	543 (4.5)	540 (4.4)	543 (4.5)	543 (4.5)	543 (4.5)	545 (4.5)	543 (4.5)	544 (4.4)	545 (4.6)
Ireland	524 (2.6)	524 (2.6)	524 (2.7)	526 (2.7)	524 (2.6)	524 (2.6)	524 (2.6)	525 (2.7)	524 (2.6)	525 (2.7)	526 (2.7)
Lithuania	520 (2.9)	520 (2.9)	521 (3.0)	521 (3.0)	520 (2.9)	520 (2.9)	520 (2.9)	521 (3.0)	520 (2.9)	522 (3.0)	522 (3.0)
Israel	519 (4.3)	519 (4.3)	518 (4.2)	517 (4.2)	519 (4.3)	519 (4.3)	519 (4.3)	519 (4.3)	519 (4.3)	518 (4.2)	519 (4.3)
Australia	517 (3.8)	517 (3.8)	518 (3.8)	520 (3.8)	517 (3.8)	517 (3.8)	517 (3.8)	517 (3.8)	517 (3.8)	518 (3.8)	518 (3.8)
Hungary	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	518 (2.9)	517 (2.9)	516 (2.9)	518 (2.9)
England	515 (5.3)	515 (5.3)	515 (5.2)	517 (5.3)	515 (5.3)	515 (5.3)	515 (5.3)	514 (5.2)	515 (5.3)	515 (5.3)	516 (5.2)
United States	515 (4.8)	515 (4.8)	514 (4.7)	514 (4.8)	515 (4.8)	515 (4.8)	515 (4.8)	516 (4.8)	515 (4.8)	513 (4.7)	517 (4.8)
Finland	509 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)
Norway (9)	503 (2.4)	503 (2.4)	503 (2.4)	505 (2.4)	503 (2.4)	503 (2.4)	503 (2.4)	503 (2.4)	503 (2.4)	503 (2.4)	504 (2.4)
Sweden	503 (2.5)	503 (2.5)	503 (2.5)	504 (2.6)	503 (2.5)	503 (2.5)	503 (2.5)	502 (2.5)	503 (2.5)	504 (2.5)	502 (2.5)
Cyprus	501 (1.6)	501 (1.6)	502 (1.6)	499 (1.7)	501 (1.6)	501 (1.6)	501 (1.6)	502 (1.6)	501 (1.6)	502 (1.6)	502 (1.6)
Portugal	500 (3.2)	500 (3.2)	501 (3.2)	501 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)
Italy	497 (2.7)	497 (2.7)	498 (2.7)	498 (2.8)	497 (2.7)	497 (2.7)	497 (2.7)	497 (2.7)	498 (2.7)	499 (2.8)	498 (2.8)
Turkey	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	495 (4.3)
Kazakhstan	488 (3.3)	488 (3.3)	487 (3.3)	484 (3.3)	488 (3.3)	488 (3.3)	488 (3.3)	490 (3.4)	488 (3.3)	486 (3.3)	488 (3.3)
France	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	482 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)
New Zealand	482 (3.4)	482 (3.4)	482 (3.4)	484 (3.4)	482 (3.4)	482 (3.4)	482 (3.4)	481 (3.4)	482 (3.4)	482 (3.3)	481 (3.4)
Bahrain	481 (1.7)	481 (1.7)	481 (1.7)	481 (1.6)	481 (1.7)	481 (1.7)	481 (1.7)	479 (1.7)	481 (1.7)	480 (1.7)	480 (1.7)
Romania	479 (4.3)	479 (4.3)	479 (4.3)	476 (4.2)	479 (4.3)	479 (4.3)	479 (4.3)	481 (4.3)	479 (4.3)	479 (4.2)	480 (4.3)
United Arab Emirates	473 (1.9)	473 (1.9)	473 (1.9)	472 (1.8)	473 (1.9)	473 (1.9)	473 (1.9)	474 (1.8)	473 (1.9)	473 (1.9)	474 (1.8)
Georgia	461 (4.3)	461 (4.3)	462 (4.3)	460 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)	463 (4.3)	461 (4.3)	463 (4.3)	462 (4.4)
Malaysia	461 (3.2)	461 (3.2)	461 (3.2)	462 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	462 (3.1)	461 (3.2)	461 (3.2)	461 (3.2)
Iran, Islamic Rep. of	446 (3.7)	446 (3.7)	447 (3.8)	448 (3.8)	446 (3.7)	446 (3.7)	446 (3.7)	443 (3.7)	446 (3.7)	448 (3.8)	441 (3.8)
Qatar	443 (4.0)	443 (4.0)	444 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (3.9)	443 (4.0)	443 (4.0)	443 (4.0)
Chile	441 (2.8)	441 (2.8)	441 (2.8)	442 (2.8)	441 (2.8)	441 (2.8)	441 (2.8)	440 (2.9)	441 (2.8)	442 (2.8)	440 (2.9)
Lebanon	429 (2.9)	429 (2.9)	430 (2.9)	423 (3.0)	429 (2.9)	429 (2.9)	429 (2.9)	431 (2.9)	429 (2.9)	431 (2.9)	432 (2.9)
Jordan	420 (4.3)	420 (4.3)	420 (4.2)	418 (4.1)	420 (4.3)	420 (4.3)	420 (4.3)	419 (4.3)	420 (4.3)	419 (4.2)	417 (4.2)
Egypt	413 (5.2)	413 (5.2)	413 (5.2)	409 (5.2)	413 (5.2)	413 (5.2)	413 (5.2)	414 (5.2)	413 (5.2)	412 (5.2)	414 (5.2)
Oman	411 (2.8)	411 (2.8)	410 (2.7)	410 (2.8)	411 (2.8)	411 (2.8)	411 (2.8)	410 (2.8)	411 (2.8)	410 (2.8)	411 (2.8)
Kuwait	403 (5.0)	403 (5.0)	402 (5.0)	402 (4.9)	403 (5.0)	403 (5.0)	403 (5.0)	402 (5.0)	403 (5.0)	400 (5.0)	403 (5.1)
Saudi Arabia	394 (2.5)	394 (2.5)	394 (2.6)	394 (2.5)	394 (2.5)	394 (2.5)	394 (2.5)	393 (2.5)	394 (2.5)	391 (2.6)	395 (2.5)
South Africa (9)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	389 (2.3)	390 (2.3)	389 (2.3)	388 (2.3)	387 (2.3)
Morocco	388 (2.3)	388 (2.3)	388 (2.3)	387 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)	389 (2.3)	388 (2.3)	389 (2.3)	390 (2.3)
International Average	489 (0.6)	489 (0.6)	489 (0.6)	488 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	575 (4.2)	575 (4.2)	576 (4.1)	573 (4.1)	575 (4.2)	575 (4.2)	575 (4.2)	577 (4.2)	575 (4.2)	575 (4.1)	577 (4.2)
Quebec, Canada	543 (3.7)	543 (3.7)	544 (3.7)	545 (3.8)	543 (3.7)	543 (3.7)	543 (3.7)	542 (3.6)	543 (3.7)	545 (3.7)	545 (3.7)
Dubai, UAE	537 (2.0)	537 (2.0)	536 (2.0)	536 (2.1)	537 (2.0)	537 (2.0)	537 (2.0)	536 (2.0)	536 (2.0)	536 (2.0)	537 (2.0)
Ontario, Canada	530 (4.3)	530 (4.3)	530 (4.3)	533 (4.3)	530 (4.3)	530 (4.3)	530 (4.3)	528 (4.2)	530 (4.3)	530 (4.3)	529 (4.3)
Western Cape, RSA (9)	441 (4.4)	441 (4.4)	441 (4.4)	442 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	442 (4.4)	441 (4.4)	441 (4.4)	439 (4.5)
Abu Dhabi, UAE	436 (2.9)	436 (2.9)	436 (2.9)	434 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	437 (2.9)	436 (2.9)	435 (2.9)	437 (2.9)
Gauteng, RSA (9)	421 (3.0)	421 (3.0)	420 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	420 (3.0)	419 (3.0)
Number of Items (Score Points)*	206 (217)	206 (217)	196 (207)	177 (187)	206 (217)	206 (217)	206 (217)	186 (195)	205 (216)	184 (194)	186 (197)

* The number of items and score points are based on the number of items included in scaling the eighth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.3: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Chile	Lebanon	Jordan	Egypt	Oman	Kuwait	Saudi Arabia	South Africa (9)	Morocco
Singapore	616 (4.0)	618 (4.0)	618 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)	617 (4.0)
Chinese Taipei	612 (2.7)	613 (2.8)	617 (2.8)	613 (2.7)	613 (2.7)	614 (2.8)	614 (2.8)	612 (2.7)	613 (2.7)	618 (2.8)
Korea, Rep. of	607 (2.8)	604 (2.7)	608 (2.8)	607 (2.8)	607 (2.8)	606 (2.8)	606 (2.8)	607 (2.8)	605 (2.8)	609 (2.8)
Japan	594 (2.7)	594 (2.7)	590 (2.7)	594 (2.7)	594 (2.7)	592 (2.7)	591 (2.7)	594 (2.7)	592 (2.7)	593 (2.7)
Hong Kong SAR	578 (4.1)	580 (4.1)	582 (4.1)	579 (4.1)	578 (4.1)	580 (4.1)	580 (4.2)	578 (4.1)	579 (4.1)	582 (4.0)
Russian Federation	543 (4.5)	544 (4.5)	549 (4.6)	544 (4.6)	543 (4.6)	544 (4.5)	543 (4.6)	543 (4.5)	543 (4.5)	548 (4.6)
Ireland	524 (2.6)	525 (2.7)	525 (2.7)	524 (2.7)	524 (2.7)	524 (2.7)	523 (2.7)	524 (2.6)	524 (2.6)	523 (2.7)
Lithuania	520 (2.9)	522 (3.0)	523 (3.0)	520 (2.9)	520 (2.9)	521 (3.0)	522 (3.0)	521 (2.9)	521 (3.0)	522 (3.0)
Israel	519 (4.3)	520 (4.2)	519 (4.2)	519 (4.3)	519 (4.2)	518 (4.2)	518 (4.2)	519 (4.3)	519 (4.2)	520 (4.2)
Australia	517 (3.8)	517 (3.8)	515 (3.8)	517 (3.8)	517 (3.8)	517 (3.8)	518 (3.7)	518 (3.8)	518 (3.8)	515 (3.8)
Hungary	517 (2.9)	518 (3.0)	518 (3.0)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	517 (2.9)	516 (3.0)	518 (3.0)
England	515 (5.3)	515 (5.3)	514 (5.2)	515 (5.3)	515 (5.2)	515 (5.3)	515 (5.2)	515 (5.2)	515 (5.3)	514 (5.2)
United States	515 (4.8)	515 (4.8)	516 (4.7)	515 (4.8)	515 (4.8)	514 (4.7)	515 (4.7)	516 (4.8)	514 (4.7)	516 (4.7)
Finland	509 (2.6)	509 (2.6)	511 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	510 (2.6)
Norway (9)	503 (2.4)	504 (2.5)	503 (2.3)	503 (2.4)	503 (2.4)	503 (2.4)	504 (2.4)	503 (2.4)	504 (2.4)	503 (2.4)
Sweden	503 (2.5)	503 (2.5)	502 (2.5)	503 (2.6)	503 (2.5)	502 (2.6)	502 (2.6)	502 (2.6)	503 (2.6)	501 (2.5)
Cyprus	501 (1.6)	501 (1.6)	502 (1.6)	501 (1.6)	501 (1.6)	501 (1.6)	502 (1.6)	501 (1.6)	501 (1.6)	502 (1.6)
Portugal	500 (3.2)	501 (3.2)	500 (3.3)	500 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)
Italy	497 (2.7)	497 (2.8)	499 (2.8)	497 (2.7)	497 (2.7)	498 (2.7)	498 (2.8)	497 (2.7)	498 (2.8)	498 (2.8)
Turkey	496 (4.3)	494 (4.4)	494 (4.4)	495 (4.3)	496 (4.3)	495 (4.3)	497 (4.3)	496 (4.3)	496 (4.3)	495 (4.3)
Kazakhstan	488 (3.3)	487 (3.3)	492 (3.4)	488 (3.3)	488 (3.3)	488 (3.3)	488 (3.2)	487 (3.3)	487 (3.3)	491 (3.4)
France	483 (2.5)	482 (2.5)	481 (2.6)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	483 (2.5)	482 (2.5)	480 (2.5)
New Zealand	482 (3.4)	481 (3.5)	478 (3.5)	482 (3.4)	482 (3.4)	482 (3.4)	481 (3.4)	482 (3.4)	482 (3.4)	478 (3.4)
Bahrain	481 (1.7)	480 (1.7)	480 (1.6)	481 (1.7)	481 (1.7)	481 (1.7)	480 (1.7)	481 (1.7)	481 (1.7)	483 (1.7)
Romania	479 (4.3)	478 (4.2)	483 (4.3)	479 (4.3)	479 (4.3)	479 (4.3)	481 (4.3)	479 (4.3)	478 (4.2)	482 (4.3)
United Arab Emirates	473 (1.9)	474 (1.9)	474 (1.9)	473 (1.9)	474 (1.9)	473 (1.8)	473 (1.8)	474 (1.9)	473 (1.8)	476 (1.8)
Georgia	461 (4.3)	461 (4.4)	466 (4.4)	461 (4.3)	461 (4.3)	461 (4.3)	462 (4.3)	461 (4.3)	461 (4.3)	467 (4.4)
Malaysia	461 (3.2)	464 (3.2)	462 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	460 (3.2)	461 (3.2)	461 (3.2)	462 (3.1)
Iran, Islamic Rep. of	446 (3.7)	448 (3.8)	441 (4.0)	446 (3.7)	446 (3.7)	446 (3.8)	443 (3.9)	446 (3.7)	447 (3.8)	443 (3.9)
Qatar	443 (4.0)	445 (4.0)	444 (3.9)	443 (4.0)	444 (4.0)	444 (4.0)	444 (4.0)	443 (4.0)	443 (4.0)	445 (3.9)
Chile	441 (2.8)	440 (2.9)	440 (2.9)	441 (2.8)	441 (2.8)	441 (2.8)	440 (2.9)	441 (2.8)	440 (2.8)	441 (2.9)
Lebanon	429 (2.9)	433 (2.9)	439 (2.9)	429 (2.9)	429 (2.9)	430 (2.9)	431 (2.9)	428 (2.9)	428 (2.9)	436 (2.9)
Jordan	420 (4.3)	419 (4.2)	418 (4.2)	420 (4.3)	420 (4.3)	420 (4.2)	417 (4.2)	420 (4.3)	419 (4.2)	420 (4.3)
Egypt	413 (5.2)	413 (5.1)	418 (5.1)	413 (5.2)	413 (5.2)	412 (5.2)	414 (5.1)	412 (5.2)	413 (5.2)	417 (5.2)
Oman	411 (2.8)	410 (2.8)	411 (2.8)	411 (2.8)	411 (2.7)	411 (2.8)	410 (2.8)	410 (2.8)	410 (2.8)	413 (2.7)
Kuwait	403 (5.0)	403 (4.9)	402 (5.1)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.1)
Saudi Arabia	394 (2.5)	392 (2.5)	391 (2.6)	394 (2.5)	394 (2.5)	393 (2.5)	394 (2.6)	393 (2.6)	394 (2.5)	392 (2.6)
South Africa (9)	389 (2.3)	392 (2.3)	388 (2.3)	389 (2.3)	389 (2.3)	390 (2.3)	386 (2.3)	390 (2.3)	390 (2.3)	389 (2.3)
Morocco	388 (2.3)	388 (2.3)	392 (2.3)	388 (2.3)	388 (2.3)	389 (2.3)	389 (2.3)	388 (2.3)	388 (2.3)	390 (2.3)
International Average	489 (0.6)	489 (0.6)	490 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	490 (0.6)
Benchmarking Participants										
Moscow City, Russian Fed.	575 (4.2)	575 (4.2)	580 (4.2)	576 (4.2)	575 (4.2)	576 (4.1)	577 (4.1)	575 (4.2)	575 (4.1)	578 (4.2)
Quebec, Canada	543 (3.7)	544 (3.7)	545 (3.7)	543 (3.7)	543 (3.7)	544 (3.7)	546 (3.7)	544 (3.7)	544 (3.7)	543 (3.6)
Dubai, UAE	537 (2.0)	536 (2.1)	536 (2.1)	537 (2.0)	537 (2.0)	536 (2.0)	536 (2.0)	537 (2.0)	536 (2.0)	537 (2.0)
Ontario, Canada	530 (4.3)	531 (4.2)	527 (4.3)	530 (4.3)	530 (4.3)	530 (4.3)	529 (4.3)	530 (4.3)	530 (4.3)	528 (4.2)
Western Cape, RSA (9)	441 (4.4)	443 (4.4)	440 (4.5)	441 (4.4)	441 (4.4)	442 (4.4)	438 (4.5)	441 (4.4)	441 (4.4)	440 (4.5)
Abu Dhabi, UAE	436 (2.9)	436 (2.9)	438 (2.8)	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)	439 (2.8)
Gauteng, RSA (9)	421 (3.0)	422 (3.0)	420 (3.0)	421 (3.0)	421 (3.0)	421 (3.0)	418 (3.0)	421 (3.0)	420 (3.0)	420 (3.0)
Number of Items (Score Points)*	206 (217)	174 (185)	162 (172)	205 (216)	206 (217)	198 (209)	186 (197)	201 (211)	194 (205)	169 (179)

* The number of items and score points are based on the number of items included in scaling the eighth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.3: Average Scale Scores for the Mathematics Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Mathematics Scale Score based on All Items	Benchmarking Participants	Moscow City, Russian Fed.	Quebec, Canada	Dubai, UAE	Ontario, Canada	Western Cape, RSA (9)	Abu Dhabi, UAE	Gauteng, RSA (9)
Singapore	616 (4.0)		617 (4.0)	615 (4.0)	616 (4.0)	615 (4.0)	616 (4.0)	616 (4.0)	616 (4.0)
Chinese Taipei	612 (2.7)		613 (2.7)	613 (2.7)	612 (2.7)	613 (2.7)	613 (2.7)	612 (2.7)	613 (2.7)
Korea, Rep. of	607 (2.8)		607 (2.8)	606 (2.8)	607 (2.8)	605 (2.7)	605 (2.8)	607 (2.8)	605 (2.8)
Japan	594 (2.7)		594 (2.7)	593 (2.7)	594 (2.7)	592 (2.7)	592 (2.7)	594 (2.7)	592 (2.7)
Hong Kong SAR	578 (4.1)		578 (4.0)	579 (4.1)	578 (4.1)	579 (4.2)	579 (4.1)	578 (4.1)	579 (4.1)
Russian Federation	543 (4.5)		545 (4.6)	543 (4.5)	543 (4.5)	542 (4.5)	543 (4.5)	543 (4.5)	543 (4.5)
Ireland	524 (2.6)		524 (2.6)	525 (2.7)	524 (2.6)	525 (2.7)	524 (2.7)	524 (2.6)	524 (2.7)
Lithuania	520 (2.9)		520 (3.0)	522 (2.9)	520 (2.9)	521 (3.0)	521 (3.0)	520 (2.9)	521 (3.0)
Israel	519 (4.3)		520 (4.3)	519 (4.2)	519 (4.3)	518 (4.2)	519 (4.2)	519 (4.3)	519 (4.2)
Australia	517 (3.8)		516 (3.8)	518 (3.8)	517 (3.8)	518 (3.8)	518 (3.8)	517 (3.8)	518 (3.8)
Hungary	517 (2.9)		517 (2.9)	518 (2.9)	517 (2.9)	516 (2.9)	516 (3.0)	517 (2.9)	516 (3.0)
England	515 (5.3)		514 (5.3)	516 (5.2)	515 (5.3)	516 (5.3)	515 (5.3)	515 (5.3)	515 (5.3)
United States	515 (4.8)		515 (4.8)	514 (4.7)	515 (4.8)	514 (4.7)	514 (4.7)	515 (4.8)	514 (4.7)
Finland	509 (2.6)		509 (2.6)	511 (2.6)	509 (2.6)	510 (2.6)	509 (2.6)	509 (2.6)	509 (2.6)
Norway (9)	503 (2.4)		502 (2.4)	505 (2.4)	503 (2.4)	504 (2.4)	504 (2.4)	503 (2.4)	504 (2.4)
Sweden	503 (2.5)		503 (2.5)	505 (2.6)	503 (2.5)	503 (2.6)	503 (2.6)	503 (2.5)	503 (2.6)
Cyprus	501 (1.6)		501 (1.6)	501 (1.6)	501 (1.6)	500 (1.6)	501 (1.6)	501 (1.6)	501 (1.6)
Portugal	500 (3.2)		500 (3.2)	501 (3.2)	500 (3.2)	501 (3.2)	500 (3.2)	500 (3.2)	500 (3.2)
Italy	497 (2.7)		498 (2.7)	498 (2.7)	497 (2.7)	498 (2.8)	498 (2.8)	497 (2.7)	498 (2.8)
Turkey	496 (4.3)		495 (4.3)	495 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)	496 (4.3)
Kazakhstan	488 (3.3)		489 (3.3)	486 (3.2)	488 (3.3)	486 (3.2)	487 (3.3)	488 (3.3)	487 (3.3)
France	483 (2.5)		482 (2.5)	484 (2.5)	483 (2.5)	483 (2.5)	482 (2.5)	483 (2.5)	482 (2.5)
New Zealand	482 (3.4)		481 (3.4)	482 (3.4)	482 (3.4)	483 (3.4)	482 (3.4)	482 (3.4)	482 (3.4)
Bahrain	481 (1.7)		480 (1.7)	480 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)	481 (1.7)
Romania	479 (4.3)		480 (4.3)	477 (4.2)	479 (4.3)	478 (4.2)	478 (4.2)	479 (4.3)	478 (4.2)
United Arab Emirates	473 (1.9)		474 (1.9)	473 (1.8)	473 (1.9)	473 (1.9)	473 (1.8)	473 (1.9)	473 (1.8)
Georgia	461 (4.3)		462 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)	461 (4.3)
Malaysia	461 (3.2)		461 (3.2)	461 (3.1)	461 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)	461 (3.2)
Iran, Islamic Rep. of	446 (3.7)		446 (3.7)	447 (3.8)	446 (3.7)	447 (3.8)	447 (3.8)	446 (3.7)	447 (3.8)
Qatar	443 (4.0)		444 (4.0)	445 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)	443 (4.0)
Chile	441 (2.8)		440 (2.9)	442 (2.8)	441 (2.8)	441 (2.8)	440 (2.8)	441 (2.8)	440 (2.8)
Lebanon	429 (2.9)		431 (2.9)	430 (2.9)	429 (2.9)	427 (2.9)	428 (2.9)	429 (2.9)	428 (2.9)
Jordan	420 (4.3)		421 (4.3)	419 (4.1)	420 (4.3)	420 (4.2)	419 (4.2)	420 (4.3)	419 (4.2)
Egypt	413 (5.2)		414 (5.2)	414 (5.1)	413 (5.2)	412 (5.2)	413 (5.2)	413 (5.2)	413 (5.2)
Oman	411 (2.8)		410 (2.8)	411 (2.8)	411 (2.8)	410 (2.8)	410 (2.8)	411 (2.8)	410 (2.8)
Kuwait	403 (5.0)		402 (5.0)	401 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)	403 (5.0)
Saudi Arabia	394 (2.5)		394 (2.5)	391 (2.6)	394 (2.5)	394 (2.5)	394 (2.5)	394 (2.5)	394 (2.5)
South Africa (9)	389 (2.3)		390 (2.3)	388 (2.3)	389 (2.3)	389 (2.3)	390 (2.3)	389 (2.3)	390 (2.3)
Morocco	388 (2.3)		388 (2.3)	389 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)	388 (2.3)
International Average	489 (0.6)		489 (0.6)	489 (0.5)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)	489 (0.6)
Benchmarking Participants									
Moscow City, Russian Fed.	575 (4.2)		577 (4.2)	575 (4.1)	575 (4.2)	574 (4.1)	575 (4.1)	575 (4.2)	575 (4.1)
Quebec, Canada	543 (3.7)		543 (3.7)	546 (3.7)	543 (3.7)	544 (3.7)	544 (3.7)	543 (3.7)	544 (3.7)
Dubai, UAE	537 (2.0)		537 (2.0)	536 (2.1)	537 (2.0)	536 (2.0)	536 (2.0)	537 (2.0)	536 (2.0)
Ontario, Canada	530 (4.3)		529 (4.2)	530 (4.2)	530 (4.3)	531 (4.3)	530 (4.3)	530 (4.3)	530 (4.3)
Western Cape, RSA (9)	441 (4.4)		442 (4.4)	440 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)	441 (4.4)
Abu Dhabi, UAE	436 (2.9)		436 (2.9)	437 (2.8)	436 (2.9)	435 (2.9)	436 (2.9)	436 (2.9)	436 (2.9)
Gauteng, RSA (9)	421 (3.0)		421 (3.0)	419 (3.0)	421 (3.0)	420 (3.0)	420 (3.0)	421 (3.0)	420 (3.0)
Number of Items (Score Points)*	206 (217)		195 (206)	177 (186)	206 (217)	191 (202)	194 (205)	206 (217)	194 (205)

* The number of items and score points are based on the number of items included in scaling the eighth grade mathematics achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.4: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

Read down the column under a country name to compare achievement scores based on the items identified by that country. Scores on the diagonal are countries' achievement scores based on the test items they identified.

Country	Average Science Scale Score based on All Items	Singapore	Chinese Taipei	Japan	Korea, Rep. of	Finland	Russian Federation	Lithuania	Hungary	Australia	Ireland
Singapore	608 (3.9)	621 (4.1)	612 (4.0)	614 (4.0)	613 (4.0)	607 (3.9)	606 (3.9)	606 (3.9)	608 (3.9)	611 (3.9)	607 (4.0)
Chinese Taipei	574 (1.9)	571 (2.0)	578 (2.0)	574 (2.0)	575 (2.0)	572 (1.9)	571 (1.9)	572 (1.9)	574 (1.9)	569 (1.9)	572 (2.0)
Japan	570 (2.1)	568 (2.2)	570 (2.2)	584 (2.1)	571 (2.2)	568 (2.1)	571 (2.1)	571 (2.1)	570 (2.1)	569 (2.1)	571 (2.2)
Korea, Rep. of	561 (2.1)	557 (2.2)	558 (2.1)	558 (2.2)	562 (2.2)	560 (2.1)	562 (2.1)	562 (2.1)	561 (2.1)	562 (2.2)	561 (2.2)
Finland	543 (3.1)	538 (3.3)	542 (3.2)	538 (3.1)	542 (3.2)	543 (3.2)	541 (3.1)	542 (3.1)	543 (3.2)	539 (3.2)	542 (3.2)
Russian Federation	543 (4.2)	541 (4.2)	543 (4.4)	541 (4.6)	542 (4.2)	542 (4.2)	543 (4.3)	544 (4.3)	542 (4.2)	544 (4.2)	539 (4.3)
Lithuania	534 (3.0)	530 (3.1)	534 (3.0)	532 (3.1)	533 (3.0)	533 (3.0)	534 (3.0)	535 (3.0)	534 (3.0)	533 (3.0)	534 (3.1)
Hungary	530 (2.6)	527 (2.6)	530 (2.7)	528 (2.6)	530 (2.6)	528 (2.6)	529 (2.6)	530 (2.6)	530 (2.6)	530 (2.5)	525 (2.7)
Australia	528 (3.2)	524 (3.2)	527 (3.2)	524 (3.3)	526 (3.2)	530 (3.2)	530 (3.2)	530 (3.2)	530 (3.2)	533 (3.2)	527 (3.3)
Ireland	523 (2.9)	517 (3.1)	522 (2.9)	517 (3.0)	523 (2.9)	524 (3.0)	524 (3.0)	524 (3.0)	523 (2.9)	523 (2.9)	526 (2.9)
United States	522 (4.7)	518 (4.5)	522 (4.6)	516 (4.4)	520 (4.6)	524 (4.6)	524 (4.7)	524 (4.7)	522 (4.7)	525 (4.7)	518 (4.8)
Sweden	521 (3.2)	517 (3.3)	520 (3.2)	517 (3.1)	523 (3.2)	522 (3.2)	520 (3.2)	520 (3.2)	522 (3.2)	519 (3.2)	522 (3.2)
Portugal	519 (2.9)	518 (3.0)	518 (2.9)	513 (2.9)	519 (2.9)	520 (2.9)	519 (2.9)	519 (2.9)	519 (2.9)	519 (2.9)	518 (3.0)
England	517 (4.8)	514 (4.8)	517 (4.8)	515 (4.8)	516 (4.8)	517 (4.8)	516 (4.8)	517 (4.9)	517 (4.8)	515 (4.8)	518 (5.0)
Turkey	515 (3.7)	517 (3.9)	516 (3.7)	510 (3.7)	512 (3.8)	517 (3.7)	515 (3.7)	514 (3.7)	515 (3.7)	516 (3.6)	519 (4.0)
Israel	513 (4.2)	517 (4.3)	513 (4.2)	514 (4.2)	514 (4.3)	514 (4.2)	514 (4.3)	514 (4.2)	513 (4.2)	515 (4.3)	514 (4.3)
Hong Kong SAR	504 (5.2)	502 (5.2)	503 (5.3)	507 (4.9)	505 (5.2)	504 (5.2)	501 (5.2)	501 (5.2)	504 (5.2)	503 (5.2)	501 (5.1)
Italy	500 (2.6)	494 (2.5)	501 (2.5)	497 (2.5)	499 (2.6)	499 (2.6)	501 (2.6)	501 (2.6)	500 (2.6)	502 (2.6)	495 (2.5)
New Zealand	499 (3.5)	494 (3.5)	497 (3.5)	489 (3.5)	498 (3.5)	502 (3.5)	500 (3.5)	500 (3.5)	499 (3.5)	500 (3.5)	497 (3.5)
Norway (9)	495 (3.1)	490 (3.2)	495 (3.1)	492 (3.1)	496 (3.1)	496 (3.2)	495 (3.1)	494 (3.1)	495 (3.1)	495 (3.1)	497 (3.2)
France	489 (2.7)	486 (2.7)	485 (2.7)	484 (2.8)	489 (2.7)	489 (2.7)	489 (2.7)	490 (2.7)	489 (2.7)	493 (2.7)	484 (2.8)
Bahrain	486 (1.9)	489 (2.0)	487 (1.9)	486 (2.1)	487 (1.9)	487 (1.9)	487 (1.9)	486 (2.0)	486 (1.9)	487 (1.9)	486 (2.0)
Cyprus	484 (1.9)	486 (1.9)	483 (2.0)	489 (1.9)	486 (1.9)	483 (1.9)	484 (1.9)	486 (1.9)	484 (1.9)	486 (1.9)	487 (1.9)
Kazakhstan	478 (3.1)	480 (3.1)	480 (3.1)	473 (3.3)	480 (3.1)	478 (3.1)	478 (3.1)	478 (3.1)	478 (3.1)	477 (3.0)	479 (3.0)
Qatar	475 (4.4)	481 (4.4)	476 (4.3)	482 (4.3)	478 (4.4)	473 (4.4)	474 (4.4)	474 (4.3)	475 (4.4)	476 (4.4)	475 (4.4)
United Arab Emirates	473 (2.2)	475 (2.3)	475 (2.2)	480 (2.2)	475 (2.2)	473 (2.2)	474 (2.2)	472 (2.2)	473 (2.2)	474 (2.2)	473 (2.2)
Romania	470 (4.2)	466 (4.4)	471 (4.2)	469 (4.2)	472 (4.2)	469 (4.2)	470 (4.2)	471 (4.2)	470 (4.2)	468 (4.2)	466 (4.2)
Chile	462 (2.9)	458 (2.9)	461 (2.8)	455 (2.8)	460 (2.9)	461 (2.9)	463 (2.9)	464 (2.9)	462 (2.9)	462 (2.9)	460 (3.0)
Malaysia	460 (3.5)	464 (3.6)	459 (3.5)	459 (3.5)	464 (3.5)	463 (3.5)	460 (3.5)	459 (3.5)	460 (3.5)	461 (3.5)	458 (3.5)
Oman	457 (2.9)	460 (2.9)	458 (2.9)	463 (2.9)	459 (2.9)	458 (2.9)	457 (2.9)	456 (2.9)	457 (2.9)	459 (2.9)	457 (2.8)
Jordan	452 (4.7)	457 (4.8)	453 (4.7)	453 (4.6)	450 (4.7)	452 (4.6)	451 (4.6)	452 (4.6)	452 (4.6)	452 (4.6)	446 (4.8)
Iran, Islamic Rep. of	449 (3.6)	449 (3.7)	449 (3.6)	447 (3.7)	445 (3.6)	450 (3.5)	448 (3.6)	448 (3.5)	449 (3.6)	451 (3.6)	446 (3.6)
Georgia	447 (3.9)	447 (4.1)	446 (3.9)	450 (4.1)	449 (4.0)	444 (4.0)	446 (3.9)	448 (3.9)	447 (3.9)	450 (3.9)	443 (3.9)
Kuwait	444 (5.7)	447 (5.6)	445 (5.6)	447 (5.5)	444 (5.6)	443 (5.6)	444 (5.6)	444 (5.6)	444 (5.6)	444 (5.4)	444 (5.6)
Saudi Arabia	431 (2.6)	432 (2.7)	430 (2.7)	430 (2.9)	430 (2.7)	431 (2.6)	431 (2.6)	432 (2.6)	432 (2.6)	432 (2.7)	432 (2.6)
Morocco	394 (2.7)	398 (2.8)	396 (2.6)	400 (2.7)	396 (2.6)	394 (2.7)	394 (2.7)	394 (2.7)	394 (2.6)	397 (2.6)	390 (2.7)
Egypt	389 (5.4)	393 (5.5)	389 (5.5)	401 (5.2)	394 (5.5)	388 (5.5)	390 (5.4)	390 (5.4)	389 (5.5)	391 (5.2)	393 (5.4)
Lebanon	377 (4.6)	385 (4.8)	382 (4.6)	390 (4.6)	382 (4.6)	375 (4.8)	378 (4.6)	377 (4.7)	377 (4.6)	377 (4.8)	385 (4.6)
South Africa (9)	370 (3.1)	374 (3.1)	370 (3.1)	380 (3.1)	372 (3.1)	373 (3.1)	370 (3.1)	369 (3.1)	370 (3.1)	367 (3.2)	377 (3.1)
International Average	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	491 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	489 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	567 (2.9)	564 (2.9)	565 (2.9)	562 (3.0)	566 (2.9)	566 (3.0)	566 (3.0)	569 (3.0)	566 (2.9)	568 (3.0)	564 (3.0)
Dubai, UAE	548 (2.0)	550 (2.1)	550 (2.0)	550 (2.1)	548 (2.0)	548 (2.0)	548 (2.0)	547 (2.0)	548 (2.0)	547 (2.1)	549 (2.1)
Quebec, Canada	537 (3.6)	533 (3.6)	536 (3.6)	533 (3.4)	535 (3.5)	539 (3.7)	537 (3.6)	537 (3.6)	537 (3.6)	540 (3.5)	537 (3.7)
Ontario, Canada	522 (3.0)	518 (3.1)	523 (3.1)	515 (3.3)	520 (3.0)	523 (3.0)	523 (3.0)	523 (3.0)	522 (3.0)	526 (3.0)	520 (3.0)
Western Cape, RSA (9)	439 (5.1)	441 (5.2)	439 (5.1)	442 (5.3)	438 (5.2)	442 (5.1)	438 (5.2)	438 (5.1)	439 (5.1)	437 (5.3)	443 (5.2)
Gauteng, RSA (9)	422 (3.9)	425 (3.9)	422 (3.9)	428 (4.0)	424 (3.9)	425 (3.8)	422 (3.9)	421 (3.9)	422 (3.9)	420 (3.9)	428 (3.8)
Abu Dhabi, UAE	420 (3.6)	421 (3.7)	422 (3.6)	428 (3.6)	422 (3.6)	420 (3.6)	421 (3.6)	420 (3.6)	420 (3.6)	423 (3.6)	421 (3.7)
Number of Items (Score Points)*	211 (233)	138 (154)	174 (195)	95 (109)	159 (177)	198 (216)	193 (215)	197 (219)	208 (230)	157 (175)	148 (163)

* The number of items and score points are based on the number of items included in scaling the eighth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.4: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	United States	Sweden	Portugal	England	Turkey	Israel	Hong Kong SAR	Italy	New Zealand	Norway (9)
Singapore	608 (3.9)	605 (3.8)	606 (3.9)	607 (3.9)	609 (3.9)	611 (4.0)	609 (4.0)	615 (4.0)	607 (3.9)	608 (3.9)	607 (4.0)
Chinese Taipei	574 (1.9)	571 (1.9)	574 (1.9)	575 (2.0)	574 (1.9)	571 (1.9)	572 (2.0)	570 (1.9)	574 (2.0)	571 (1.9)	574 (1.9)
Japan	570 (2.1)	571 (2.1)	570 (2.1)	569 (2.1)	569 (2.1)	571 (2.2)	565 (2.2)	570 (2.1)	569 (2.1)	566 (2.2)	570 (2.1)
Korea, Rep. of	561 (2.1)	562 (2.2)	562 (2.1)	560 (2.1)	560 (2.1)	561 (2.2)	562 (2.3)	563 (2.2)	561 (2.1)	559 (2.2)	559 (2.1)
Finland	543 (3.1)	542 (3.1)	544 (3.2)	542 (3.2)	541 (3.1)	541 (3.2)	537 (3.2)	542 (3.2)	542 (3.1)	543 (3.2)	543 (3.2)
Russian Federation	543 (4.2)	541 (4.3)	543 (4.2)	544 (4.3)	542 (4.3)	541 (4.3)	543 (4.4)	538 (4.2)	543 (4.2)	541 (4.3)	541 (4.2)
Lithuania	534 (3.0)	534 (3.0)	534 (3.0)	534 (3.0)	534 (3.0)	534 (3.0)	533 (3.2)	533 (3.0)	534 (3.0)	534 (3.0)	536 (3.0)
Hungary	530 (2.6)	529 (2.6)	529 (2.6)	530 (2.6)	530 (2.6)	528 (2.7)	526 (2.7)	529 (2.6)	530 (2.6)	531 (2.6)	529 (2.6)
Australia	528 (3.2)	530 (3.2)	528 (3.1)	528 (3.1)	528 (3.2)	528 (3.2)	528 (3.4)	529 (3.1)	528 (3.2)	529 (3.2)	530 (3.1)
Ireland	523 (2.9)	523 (3.0)	522 (2.9)	523 (3.0)	523 (3.0)	523 (3.0)	519 (3.1)	524 (3.0)	523 (2.9)	523 (3.0)	525 (3.0)
United States	522 (4.7)	524 (4.7)	522 (4.7)	524 (4.6)	522 (4.6)	521 (4.6)	521 (4.7)	519 (4.6)	522 (4.6)	522 (4.7)	524 (4.7)
Sweden	521 (3.2)	521 (3.2)	522 (3.2)	522 (3.2)	521 (3.2)	521 (3.2)	513 (3.3)	525 (3.2)	521 (3.2)	522 (3.2)	523 (3.2)
Portugal	519 (2.9)	519 (2.9)	520 (2.9)	526 (3.0)	517 (2.9)	518 (2.9)	516 (3.0)	520 (2.9)	519 (2.9)	518 (2.9)	523 (2.9)
England	517 (4.8)	517 (4.8)	516 (4.9)	517 (4.8)	518 (4.9)	516 (4.9)	516 (4.8)	516 (4.8)	516 (4.8)	516 (4.9)	518 (4.8)
Turkey	515 (3.7)	513 (3.6)	515 (3.7)	516 (3.7)	517 (3.8)	519 (3.8)	516 (3.7)	517 (3.7)	516 (3.7)	517 (3.8)	514 (3.7)
Israel	513 (4.2)	514 (4.2)	513 (4.2)	513 (4.1)	513 (4.2)	516 (4.3)	517 (4.4)	515 (4.2)	513 (4.2)	516 (4.2)	514 (4.2)
Hong Kong SAR	504 (5.2)	502 (5.2)	505 (5.2)	501 (5.3)	505 (5.1)	504 (5.1)	499 (5.2)	508 (5.3)	503 (5.2)	504 (5.2)	503 (5.2)
Italy	500 (2.6)	501 (2.6)	501 (2.6)	502 (2.5)	500 (2.6)	499 (2.6)	497 (2.6)	500 (2.6)	500 (2.6)	501 (2.5)	503 (2.6)
New Zealand	499 (3.5)	500 (3.5)	499 (3.5)	500 (3.4)	499 (3.5)	498 (3.5)	493 (3.6)	501 (3.5)	498 (3.5)	501 (3.5)	501 (3.4)
Norway (9)	495 (3.1)	495 (3.1)	497 (3.1)	495 (3.1)	496 (3.1)	496 (3.2)	489 (3.2)	494 (3.1)	495 (3.1)	497 (3.2)	499 (3.1)
France	489 (2.7)	491 (2.7)	489 (2.7)	488 (2.7)	488 (2.7)	487 (2.7)	482 (2.8)	492 (2.7)	488 (2.7)	489 (2.7)	491 (2.7)
Bahrain	486 (1.9)	486 (1.9)	485 (2.0)	487 (2.0)	486 (1.9)	488 (2.0)	493 (2.0)	486 (2.0)	486 (1.9)	486 (1.9)	487 (1.9)
Cyprus	484 (1.9)	484 (1.9)	484 (1.9)	485 (1.9)	485 (1.9)	487 (1.9)	483 (1.9)	488 (1.9)	483 (1.9)	485 (1.9)	484 (2.0)
Kazakhstan	478 (3.1)	475 (3.0)	478 (3.1)	478 (3.1)	477 (3.1)	478 (3.1)	476 (3.1)	475 (3.1)	478 (3.1)	478 (3.0)	476 (3.1)
Qatar	475 (4.4)	475 (4.4)	474 (4.4)	476 (4.4)	475 (4.4)	476 (4.3)	480 (4.5)	476 (4.4)	475 (4.3)	474 (4.4)	476 (4.4)
United Arab Emirates	473 (2.2)	473 (2.2)	472 (2.2)	473 (2.2)	474 (2.2)	475 (2.2)	477 (2.3)	471 (2.2)	473 (2.2)	473 (2.2)	474 (2.2)
Romania	470 (4.2)	470 (4.1)	470 (4.1)	471 (4.2)	469 (4.2)	468 (4.2)	465 (4.2)	469 (4.2)	470 (4.2)	469 (4.2)	469 (4.2)
Chile	462 (2.9)	462 (2.9)	462 (2.9)	463 (2.9)	461 (2.9)	461 (2.9)	464 (3.0)	460 (2.8)	462 (2.9)	459 (2.8)	464 (2.9)
Malaysia	460 (3.5)	461 (3.5)	462 (3.5)	459 (3.6)	460 (3.5)	460 (3.6)	453 (3.5)	462 (3.5)	460 (3.5)	461 (3.5)	457 (3.5)
Oman	457 (2.9)	459 (2.9)	457 (2.9)	461 (2.9)	456 (2.9)	458 (2.9)	462 (2.9)	459 (2.9)	458 (2.9)	457 (2.9)	459 (2.9)
Jordan	452 (4.7)	454 (4.6)	452 (4.6)	453 (4.7)	451 (4.7)	451 (4.7)	455 (4.7)	452 (4.6)	453 (4.7)	453 (4.7)	450 (4.7)
Iran, Islamic Rep. of	449 (3.6)	449 (3.5)	450 (3.5)	448 (3.5)	448 (3.6)	448 (3.6)	452 (3.6)	447 (3.6)	449 (3.6)	450 (3.7)	446 (3.6)
Georgia	447 (3.9)	446 (3.9)	447 (3.9)	446 (4.0)	447 (3.9)	446 (3.9)	444 (4.2)	446 (3.9)	447 (3.9)	446 (4.0)	445 (3.9)
Kuwait	444 (5.7)	444 (5.5)	443 (5.6)	445 (5.6)	445 (5.6)	446 (5.5)	447 (5.7)	445 (5.4)	444 (5.7)	446 (5.6)	445 (5.6)
Saudi Arabia	431 (2.6)	434 (2.6)	432 (2.6)	434 (2.6)	430 (2.6)	431 (2.6)	439 (2.8)	430 (2.6)	432 (2.6)	432 (2.6)	433 (2.6)
Morocco	394 (2.7)	395 (2.6)	396 (2.6)	391 (2.6)	396 (2.6)	393 (2.7)	392 (2.8)	394 (2.7)	394 (2.7)	393 (2.7)	395 (2.6)
Egypt	389 (5.4)	390 (5.4)	388 (5.4)	388 (5.4)	391 (5.4)	391 (5.5)	395 (5.4)	392 (5.3)	390 (5.4)	391 (5.4)	387 (5.4)
Lebanon	377 (4.6)	373 (4.7)	375 (4.7)	377 (4.7)	381 (4.6)	384 (4.6)	381 (4.7)	374 (4.8)	376 (4.7)	379 (4.6)	377 (4.7)
South Africa (9)	370 (3.1)	367 (3.1)	369 (3.1)	369 (3.1)	372 (3.1)	373 (3.1)	376 (3.2)	371 (3.1)	370 (3.1)	371 (3.1)	369 (3.1)
International Average	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	489 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	567 (2.9)	568 (3.0)	567 (2.9)	566 (3.0)	567 (2.9)	564 (3.0)	565 (3.1)	563 (2.9)	566 (3.0)	566 (2.9)	565 (2.9)
Dubai, UAE	548 (2.0)	548 (2.0)	547 (2.0)	549 (2.0)	548 (2.0)	550 (2.0)	553 (2.0)	545 (2.1)	548 (2.0)	548 (2.1)	549 (2.0)
Quebec, Canada	537 (3.6)	535 (3.6)	537 (3.6)	539 (3.7)	536 (3.6)	536 (3.6)	535 (3.6)	536 (3.5)	536 (3.6)	537 (3.6)	539 (3.6)
Ontario, Canada	522 (3.0)	523 (3.0)	522 (3.0)	524 (3.0)	520 (3.0)	521 (3.0)	519 (3.3)	524 (3.0)	521 (3.0)	521 (3.0)	524 (3.0)
Western Cape, RSA (9)	439 (5.1)	438 (5.1)	439 (5.1)	438 (5.2)	440 (5.1)	440 (5.2)	440 (5.3)	440 (5.2)	439 (5.1)	441 (5.2)	439 (5.2)
Gauteng, RSA (9)	422 (3.9)	420 (3.9)	421 (3.9)	422 (3.9)	423 (3.9)	424 (3.9)	427 (4.0)	423 (3.9)	422 (3.9)	423 (3.9)	422 (3.9)
Abu Dhabi, UAE	420 (3.6)	420 (3.6)	419 (3.6)	419 (3.7)	421 (3.6)	423 (3.6)	423 (3.7)	419 (3.6)	420 (3.6)	420 (3.6)	421 (3.6)
Number of Items (Score Points)*	211 (233)	186 (206)	201 (221)	175 (195)	194 (215)	171 (189)	131 (149)	150 (166)	204 (226)	171 (189)	181 (202)

* The number of items and score points are based on the number of items included in scaling the eighth grade science achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit C.4: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	France	Bahrain	Cyprus	Kazakhstan	Qatar	United Arab Emirates	Romania	Chile	Malaysia	Oman
Singapore	608 (3.9)	613 (4.1)	608 (3.9)	610 (3.9)	608 (3.9)	610 (3.9)	608 (3.9)	608 (3.9)	607 (3.9)	608 (3.9)	606 (3.9)
Chinese Taipei	574 (1.9)	577 (2.1)	574 (1.9)	576 (2.0)	574 (1.9)	575 (1.9)	574 (1.9)	574 (1.9)	573 (1.9)	574 (1.9)	573 (1.9)
Japan	570 (2.1)	565 (2.2)	570 (2.1)	574 (2.2)	570 (2.1)	570 (2.2)	570 (2.1)	570 (2.1)	570 (2.1)	569 (2.1)	570 (2.2)
Korea, Rep. of	561 (2.1)	560 (2.2)	561 (2.1)	558 (2.1)	561 (2.1)	561 (2.2)	561 (2.1)	561 (2.1)	560 (2.1)	561 (2.1)	561 (2.1)
Finland	543 (3.1)	541 (3.2)	543 (3.1)	547 (3.2)	543 (3.1)	541 (3.2)	543 (3.1)	543 (3.1)	542 (3.1)	542 (3.1)	543 (3.1)
Russian Federation	543 (4.2)	538 (4.4)	543 (4.2)	539 (4.4)	543 (4.2)	541 (4.3)	543 (4.2)	543 (4.2)	542 (4.3)	543 (4.2)	542 (4.2)
Lithuania	534 (3.0)	537 (3.0)	534 (3.0)	536 (3.2)	534 (3.0)	533 (3.0)	534 (3.0)	534 (3.0)	534 (3.0)	534 (3.0)	533 (3.0)
Hungary	530 (2.6)	530 (2.7)	530 (2.6)	531 (2.7)	530 (2.6)	530 (2.6)	530 (2.6)	530 (2.6)	529 (2.6)	530 (2.6)	529 (2.6)
Australia	528 (3.2)	526 (3.2)	528 (3.2)	528 (3.3)	528 (3.2)	527 (3.3)	528 (3.2)	528 (3.2)	529 (3.2)	528 (3.2)	529 (3.2)
Ireland	523 (2.9)	522 (3.1)	523 (2.9)	522 (2.9)	523 (2.9)	521 (3.0)	523 (2.9)	523 (2.9)	522 (2.9)	523 (2.9)	523 (2.9)
United States	522 (4.7)	520 (4.6)	522 (4.7)	520 (4.8)	522 (4.7)	521 (4.6)	522 (4.7)	522 (4.7)	523 (4.7)	522 (4.7)	522 (4.7)
Sweden	521 (3.2)	524 (3.3)	521 (3.2)	520 (3.2)	521 (3.2)	520 (3.2)	521 (3.2)	521 (3.2)	520 (3.2)	521 (3.2)	522 (3.2)
Portugal	519 (2.9)	524 (3.2)	519 (2.9)	521 (3.0)	519 (2.9)	518 (2.9)	519 (2.9)	519 (2.9)	518 (2.9)	518 (2.9)	519 (2.9)
England	517 (4.8)	514 (4.8)	517 (4.8)	522 (4.9)	517 (4.8)	516 (4.9)	517 (4.8)	517 (4.8)	516 (4.8)	517 (4.9)	516 (4.8)
Turkey	515 (3.7)	522 (4.0)	515 (3.7)	504 (3.6)	515 (3.7)	517 (3.7)	515 (3.7)	515 (3.7)	515 (3.7)	516 (3.7)	516 (3.7)
Israel	513 (4.2)	519 (4.3)	513 (4.2)	512 (4.3)	513 (4.2)	514 (4.2)	513 (4.2)	513 (4.2)	514 (4.2)	514 (4.2)	513 (4.2)
Hong Kong SAR	504 (5.2)	506 (5.1)	504 (5.2)	502 (5.4)	504 (5.2)	503 (5.1)	504 (5.2)	504 (5.2)	502 (5.2)	503 (5.2)	504 (5.2)
Italy	500 (2.6)	497 (2.6)	500 (2.6)	509 (2.6)	500 (2.6)	497 (2.6)	500 (2.6)	500 (2.6)	500 (2.6)	500 (2.6)	499 (2.6)
New Zealand	499 (3.5)	494 (3.6)	499 (3.5)	495 (3.4)	499 (3.5)	496 (3.5)	499 (3.5)	499 (3.5)	499 (3.5)	499 (3.5)	499 (3.5)
Norway (9)	495 (3.1)	494 (3.3)	495 (3.1)	497 (3.2)	495 (3.1)	493 (3.1)	495 (3.1)	495 (3.1)	494 (3.1)	495 (3.1)	496 (3.1)
France	489 (2.7)	491 (2.8)	489 (2.7)	487 (2.9)	489 (2.7)	486 (2.7)	489 (2.7)	489 (2.7)	488 (2.7)	488 (2.7)	489 (2.7)
Bahrain	486 (1.9)	488 (2.0)	486 (1.9)	491 (2.0)	486 (1.9)	487 (2.0)	486 (1.9)	486 (1.9)	486 (1.9)	486 (1.9)	486 (1.9)
Cyprus	484 (1.9)	486 (1.9)	484 (1.9)	496 (2.0)	484 (1.9)	484 (1.9)	484 (1.9)	484 (1.9)	483 (1.9)	484 (1.9)	483 (1.9)
Kazakhstan	478 (3.1)	476 (3.1)	478 (3.1)	471 (3.2)	478 (3.1)	478 (3.1)	478 (3.1)	478 (3.1)	479 (3.0)	478 (3.1)	477 (3.0)
Qatar	475 (4.4)	478 (4.4)	475 (4.4)	481 (4.5)	475 (4.4)	476 (4.4)	475 (4.4)	475 (4.4)	474 (4.4)	475 (4.4)	475 (4.4)
United Arab Emirates	473 (2.2)	475 (2.2)	473 (2.2)	480 (2.3)	473 (2.2)	474 (2.2)	473 (2.2)	473 (2.2)	473 (2.2)	473 (2.2)	472 (2.2)
Romania	470 (4.2)	466 (4.2)	470 (4.2)	474 (4.1)	470 (4.2)	469 (4.2)	470 (4.2)	470 (4.2)	470 (4.2)	470 (4.2)	469 (4.2)
Chile	462 (2.9)	461 (2.9)	462 (2.9)	467 (3.1)	462 (2.9)	460 (2.9)	462 (2.9)	462 (2.9)	462 (2.9)	462 (2.9)	462 (2.9)
Malaysia	460 (3.5)	464 (3.6)	460 (3.5)	457 (3.7)	460 (3.5)	459 (3.5)	460 (3.5)	460 (3.5)	460 (3.5)	460 (3.5)	461 (3.5)
Oman	457 (2.9)	458 (2.8)	457 (2.9)	462 (3.0)	457 (2.9)	461 (2.9)	457 (2.9)	457 (2.9)	457 (2.9)	457 (2.9)	458 (2.9)
Jordan	452 (4.7)	453 (4.7)	452 (4.7)	450 (4.7)	452 (4.7)	453 (4.6)	452 (4.7)	452 (4.7)	453 (4.7)	452 (4.7)	452 (4.6)
Iran, Islamic Rep. of	449 (3.6)	446 (3.8)	449 (3.6)	445 (3.5)	449 (3.6)	448 (3.6)	449 (3.6)	449 (3.6)	449 (3.6)	449 (3.6)	448 (3.6)
Georgia	447 (3.9)	442 (4.2)	447 (3.9)	444 (4.2)	447 (3.9)	448 (3.9)	447 (3.9)	447 (3.9)	447 (3.9)	447 (3.9)	446 (3.9)
Kuwait	444 (5.7)	445 (5.5)	444 (5.7)	446 (5.7)	444 (5.7)	445 (5.6)	444 (5.7)	444 (5.7)	444 (5.7)	445 (5.7)	444 (5.6)
Saudi Arabia	431 (2.6)	436 (2.8)	431 (2.6)	436 (2.9)	431 (2.6)	431 (2.6)	431 (2.6)	431 (2.6)	432 (2.6)	432 (2.6)	432 (2.6)
Morocco	394 (2.7)	398 (2.7)	394 (2.7)	389 (2.6)	394 (2.7)	397 (2.6)	394 (2.7)	394 (2.7)	395 (2.6)	394 (2.7)	395 (2.6)
Egypt	389 (5.4)	394 (5.4)	389 (5.4)	390 (5.4)	389 (5.4)	391 (5.5)	389 (5.4)	389 (5.4)	390 (5.5)	389 (5.5)	390 (5.4)
Lebanon	377 (4.6)	387 (4.6)	377 (4.6)	384 (4.6)	377 (4.6)	380 (4.6)	377 (4.6)	377 (4.6)	377 (4.7)	377 (4.7)	375 (4.7)
South Africa (9)	370 (3.1)	365 (3.3)	370 (3.1)	370 (3.2)	370 (3.1)	370 (3.1)	370 (3.1)	370 (3.1)	369 (3.1)	370 (3.1)	371 (3.1)
International Average	490 (0.6)	491 (0.6)	490 (0.6)	491 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)
Benchmarking Participants											
Moscow City, Russian Fed.	567 (2.9)	562 (3.1)	567 (2.9)	566 (3.2)	567 (2.9)	564 (3.0)	567 (2.9)	567 (2.9)	568 (2.9)	567 (2.9)	566 (2.9)
Dubai, UAE	548 (2.0)	550 (2.1)	548 (2.0)	554 (2.1)	548 (2.0)	549 (2.0)	548 (2.0)	548 (2.0)	548 (2.0)	548 (2.0)	547 (2.0)
Quebec, Canada	537 (3.6)	536 (3.7)	537 (3.6)	534 (3.6)	537 (3.6)	535 (3.6)	537 (3.6)	537 (3.6)	535 (3.6)	537 (3.6)	537 (3.6)
Ontario, Canada	522 (3.0)	517 (3.2)	522 (3.0)	521 (3.2)	522 (3.0)	521 (3.1)	522 (3.0)	522 (3.0)	522 (3.0)	522 (3.0)	522 (3.0)
Western Cape, RSA (9)	439 (5.1)	433 (5.5)	439 (5.1)	435 (5.5)	439 (5.1)	439 (5.2)	439 (5.1)	439 (5.1)	439 (5.1)	439 (5.1)	440 (5.1)
Gauteng, RSA (9)	422 (3.9)	418 (4.1)	422 (3.9)	421 (4.0)	422 (3.9)	423 (3.9)	422 (3.9)	422 (3.9)	421 (3.9)	422 (3.9)	423 (3.8)
Abu Dhabi, UAE	420 (3.6)	423 (3.7)	420 (3.6)	425 (3.8)	420 (3.6)	421 (3.6)	420 (3.6)	420 (3.6)	420 (3.6)	420 (3.6)	419 (3.6)
Number of Items (Score Points)*	211 (233)	121 (131)	211 (233)	96 (110)	211 (233)	181 (201)	211 (233)	211 (233)	199 (220)	209 (231)	202 (224)

* The number of items and score points are based on the number of items included in scaling the eighth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.4: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	Jordan	Iran, Islamic Rep. of	Georgia	Kuwait	Saudi Arabia	Morocco	Egypt	Lebanon	South Africa (9)
Singapore	608 (3.9)	608 (3.9)	612 (4.0)	603 (3.9)	609 (4.0)	608 (3.9)	607 (4.0)	608 (3.9)	616 (4.0)	610 (3.9)
Chinese Taipei	574 (1.9)	573 (1.9)	573 (1.9)	570 (1.9)	574 (1.9)	572 (1.9)	572 (1.9)	577 (1.9)	576 (2.0)	575 (1.9)
Japan	570 (2.1)	569 (2.1)	565 (2.1)	568 (2.1)	569 (2.1)	568 (2.2)	573 (2.2)	568 (2.1)	571 (2.2)	571 (2.1)
Korea, Rep. of	561 (2.1)	561 (2.1)	559 (2.2)	559 (2.2)	559 (2.2)	559 (2.2)	561 (2.2)	559 (2.3)	556 (2.1)	560 (2.1)
Finland	543 (3.1)	542 (3.1)	540 (3.2)	543 (3.2)	540 (3.2)	542 (3.1)	542 (3.2)	542 (3.2)	538 (3.2)	541 (3.1)
Russian Federation	543 (4.2)	543 (4.2)	542 (4.3)	544 (4.2)	540 (4.3)	543 (4.3)	545 (4.2)	542 (4.3)	540 (4.4)	543 (4.3)
Lithuania	534 (3.0)	534 (3.0)	534 (3.1)	535 (3.0)	533 (3.0)	533 (3.0)	534 (3.0)	532 (3.1)	531 (3.1)	533 (3.0)
Hungary	530 (2.6)	530 (2.6)	529 (2.6)	533 (2.6)	530 (2.7)	530 (2.6)	529 (2.6)	530 (2.5)	528 (2.7)	529 (2.6)
Australia	528 (3.2)	528 (3.2)	527 (3.3)	528 (3.2)	526 (3.2)	527 (3.2)	528 (3.2)	525 (3.3)	525 (3.2)	529 (3.2)
Ireland	523 (2.9)	522 (3.0)	523 (3.1)	523 (2.9)	522 (3.0)	522 (3.0)	520 (3.0)	519 (3.0)	520 (3.1)	523 (3.0)
United States	522 (4.7)	522 (4.6)	521 (4.7)	520 (4.7)	519 (4.6)	520 (4.8)	522 (4.7)	521 (4.7)	520 (4.6)	522 (4.6)
Sweden	521 (3.2)	522 (3.2)	520 (3.2)	521 (3.3)	520 (3.2)	521 (3.2)	522 (3.1)	517 (3.2)	518 (3.2)	521 (3.2)
Portugal	519 (2.9)	518 (2.9)	517 (2.9)	518 (2.9)	517 (2.9)	517 (2.9)	519 (2.9)	519 (2.8)	522 (3.0)	519 (2.9)
England	517 (4.8)	515 (4.9)	517 (4.9)	513 (5.0)	518 (4.9)	517 (4.8)	513 (4.8)	514 (4.8)	518 (4.8)	517 (4.9)
Turkey	515 (3.7)	516 (3.7)	516 (3.8)	516 (3.8)	517 (3.8)	515 (3.8)	514 (3.7)	514 (3.9)	516 (3.9)	517 (3.8)
Israel	513 (4.2)	515 (4.2)	514 (4.3)	512 (4.3)	514 (4.3)	512 (4.3)	515 (4.3)	514 (4.2)	517 (4.3)	514 (4.2)
Hong Kong SAR	504 (5.2)	503 (5.2)	503 (5.3)	502 (5.2)	503 (5.2)	503 (5.1)	503 (5.1)	502 (5.1)	509 (5.2)	504 (5.1)
Italy	500 (2.6)	500 (2.6)	500 (2.5)	499 (2.6)	500 (2.5)	500 (2.6)	500 (2.6)	497 (2.5)	501 (2.5)	500 (2.6)
New Zealand	499 (3.5)	498 (3.5)	497 (3.5)	498 (3.6)	495 (3.5)	496 (3.5)	498 (3.5)	491 (3.6)	494 (3.6)	498 (3.5)
Norway (9)	495 (3.1)	494 (3.1)	493 (3.1)	499 (3.2)	493 (3.1)	494 (3.1)	497 (3.1)	493 (3.1)	491 (3.2)	494 (3.1)
France	489 (2.7)	489 (2.7)	485 (2.7)	489 (2.7)	485 (2.7)	488 (2.7)	489 (2.8)	485 (2.7)	486 (2.7)	487 (2.7)
Bahrain	486 (1.9)	487 (1.9)	486 (2.0)	484 (1.9)	485 (2.0)	486 (1.9)	487 (2.0)	488 (2.0)	489 (2.0)	487 (1.9)
Cyprus	484 (1.9)	485 (1.9)	485 (2.0)	483 (1.9)	484 (1.9)	482 (1.9)	486 (1.9)	484 (1.9)	487 (1.9)	484 (1.9)
Kazakhstan	478 (3.1)	480 (3.0)	477 (3.1)	481 (3.1)	475 (3.1)	479 (3.1)	479 (3.1)	477 (3.2)	477 (3.2)	479 (3.1)
Qatar	475 (4.4)	475 (4.3)	475 (4.5)	473 (4.4)	477 (4.4)	476 (4.4)	476 (4.3)	479 (4.4)	483 (4.5)	476 (4.4)
United Arab Emirates	473 (2.2)	474 (2.2)	474 (2.3)	471 (2.2)	474 (2.3)	474 (2.2)	475 (2.2)	477 (2.3)	479 (2.3)	474 (2.2)
Romania	470 (4.2)	469 (4.2)	469 (4.2)	469 (4.2)	469 (4.2)	471 (4.2)	470 (4.1)	469 (4.2)	468 (4.2)	471 (4.2)
Chile	462 (2.9)	462 (2.9)	462 (2.9)	461 (2.9)	461 (2.9)	461 (2.9)	463 (2.9)	456 (2.9)	457 (2.9)	463 (2.9)
Malaysia	460 (3.5)	461 (3.5)	460 (3.6)	459 (3.5)	461 (3.5)	458 (3.6)	464 (3.5)	462 (3.6)	463 (3.6)	460 (3.5)
Oman	457 (2.9)	458 (2.9)	458 (2.9)	455 (2.9)	457 (2.9)	457 (2.9)	461 (2.9)	459 (2.9)	460 (3.0)	457 (2.9)
Jordan	452 (4.7)	453 (4.7)	452 (4.7)	452 (4.6)	453 (4.8)	453 (4.6)	453 (4.6)	454 (4.7)	455 (4.7)	452 (4.7)
Iran, Islamic Rep. of	449 (3.6)	450 (3.6)	452 (3.7)	450 (3.6)	448 (3.7)	449 (3.6)	448 (3.6)	448 (3.8)	446 (3.7)	446 (3.6)
Georgia	447 (3.9)	448 (3.9)	445 (4.0)	447 (3.9)	448 (3.9)	447 (4.0)	447 (4.0)	445 (4.1)	452 (3.9)	447 (3.9)
Kuwait	444 (5.7)	445 (5.6)	446 (5.6)	444 (5.6)	447 (5.7)	445 (5.7)	445 (5.5)	448 (5.4)	447 (5.6)	445 (5.7)
Saudi Arabia	431 (2.6)	431 (2.6)	431 (2.6)	431 (2.6)	432 (2.6)	432 (2.7)	433 (2.6)	436 (2.7)	435 (2.8)	429 (2.6)
Morocco	394 (2.7)	396 (2.6)	394 (2.7)	395 (2.7)	394 (2.7)	395 (2.6)	399 (2.6)	397 (2.7)	400 (2.6)	395 (2.6)
Egypt	389 (5.4)	392 (5.5)	391 (5.5)	389 (5.4)	392 (5.5)	390 (5.4)	394 (5.3)	396 (5.5)	393 (5.6)	390 (5.5)
Lebanon	377 (4.6)	379 (4.6)	378 (4.7)	379 (4.6)	379 (4.7)	381 (4.6)	381 (4.6)	383 (4.7)	394 (4.6)	381 (4.6)
South Africa (9)	370 (3.1)	369 (3.1)	373 (3.1)	367 (3.1)	373 (3.1)	369 (3.2)	372 (3.1)	372 (3.2)	371 (3.2)	371 (3.1)
International Average	490 (0.6)	490 (0.6)	490 (0.6)	489 (0.6)	490 (0.6)	490 (0.6)	491 (0.6)	490 (0.6)	491 (0.6)	490 (0.6)
Benchmarking Participants										
Moscow City, Russian Fed.	567 (2.9)	567 (2.9)	564 (3.0)	567 (3.0)	565 (2.9)	566 (2.9)	568 (3.0)	564 (3.0)	559 (3.1)	566 (3.0)
Dubai, UAE	548 (2.0)	548 (2.0)	550 (2.0)	545 (2.1)	550 (2.1)	549 (2.0)	548 (2.0)	552 (2.0)	553 (2.1)	549 (2.0)
Quebec, Canada	537 (3.6)	537 (3.5)	537 (3.6)	538 (3.7)	534 (3.6)	534 (3.6)	536 (3.6)	537 (3.6)	533 (3.6)	537 (3.6)
Ontario, Canada	522 (3.0)	521 (3.0)	520 (3.1)	519 (3.1)	518 (3.1)	520 (3.1)	522 (3.0)	516 (3.1)	517 (3.2)	522 (3.0)
Western Cape, RSA (9)	439 (5.1)	439 (5.2)	441 (5.1)	439 (5.2)	441 (5.2)	439 (5.2)	438 (5.1)	440 (5.3)	439 (5.3)	439 (5.2)
Gauteng, RSA (9)	422 (3.9)	422 (3.9)	424 (3.9)	419 (3.9)	424 (3.9)	422 (3.9)	424 (3.8)	425 (4.0)	424 (4.0)	423 (3.9)
Abu Dhabi, UAE	420 (3.6)	421 (3.6)	420 (3.7)	419 (3.6)	421 (3.7)	422 (3.6)	423 (3.6)	423 (3.7)	426 (3.7)	421 (3.6)
Number of Items (Score Points)*	211 (233)	199 (219)	177 (197)	177 (193)	178 (198)	191 (211)	168 (184)	138 (152)	123 (139)	193 (214)

* The number of items and score points are based on the number of items included in scaling the eighth grade science achievement data.

See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling.

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

Exhibit C.4: Average Scale Scores for the Science Test-Curriculum Matching Analysis

Results based on a subset of items specifically identified by each country as addressing its curriculum

(Continued)

Country	Average Science Scale Score based on All Items	Benchmarking Participants	Moscow City, Russian Fed.	Dubai, UAE	Quebec, Canada	Ontario, Canada	Western Cape, RSA (9)	Gauteng, RSA (9)	Abu Dhabi, UAE
Singapore	608 (3.9)		607 (3.9)	608 (3.9)	604 (3.7)	607 (3.8)	610 (3.9)	610 (3.9)	608 (3.9)
Chinese Taipei	574 (1.9)		571 (1.9)	574 (1.9)	567 (1.9)	571 (1.9)	575 (1.9)	575 (1.9)	574 (1.9)
Japan	570 (2.1)		571 (2.1)	570 (2.1)	573 (2.1)	571 (2.1)	571 (2.1)	571 (2.1)	570 (2.1)
Korea, Rep. of	561 (2.1)		561 (2.1)	561 (2.1)	559 (2.1)	563 (2.2)	560 (2.1)	560 (2.1)	561 (2.1)
Finland	543 (3.1)		541 (3.1)	543 (3.1)	540 (3.1)	541 (3.1)	541 (3.1)	541 (3.1)	543 (3.1)
Russian Federation	543 (4.2)		543 (4.2)	543 (4.2)	542 (4.4)	541 (4.2)	543 (4.3)	543 (4.3)	543 (4.2)
Lithuania	534 (3.0)		534 (3.0)	534 (3.0)	534 (3.1)	533 (3.0)	533 (3.0)	533 (3.0)	534 (3.0)
Hungary	530 (2.6)		529 (2.6)	530 (2.6)	524 (2.6)	529 (2.6)	529 (2.6)	529 (2.6)	530 (2.6)
Australia	528 (3.2)		529 (3.2)	528 (3.2)	533 (3.2)	531 (3.1)	529 (3.2)	529 (3.2)	528 (3.2)
Ireland	523 (2.9)		523 (2.9)	523 (2.9)	525 (3.0)	524 (2.9)	523 (3.0)	523 (3.0)	523 (2.9)
United States	522 (4.7)		523 (4.7)	522 (4.7)	527 (4.6)	525 (4.7)	522 (4.6)	522 (4.6)	522 (4.7)
Sweden	521 (3.2)		521 (3.2)	521 (3.2)	519 (3.3)	521 (3.2)	521 (3.2)	521 (3.2)	521 (3.2)
Portugal	519 (2.9)		518 (2.9)	519 (2.9)	526 (2.9)	520 (2.9)	519 (2.9)	519 (2.9)	519 (2.9)
England	517 (4.8)		517 (4.8)	517 (4.8)	518 (4.9)	515 (4.7)	517 (4.9)	517 (4.9)	517 (4.8)
Turkey	515 (3.7)		515 (3.7)	515 (3.7)	515 (3.7)	515 (3.6)	517 (3.8)	517 (3.8)	515 (3.7)
Israel	513 (4.2)		514 (4.2)	513 (4.2)	514 (4.3)	513 (4.2)	514 (4.2)	514 (4.2)	513 (4.2)
Hong Kong SAR	504 (5.2)		502 (5.2)	504 (5.2)	501 (5.1)	507 (5.2)	504 (5.1)	504 (5.1)	504 (5.2)
Italy	500 (2.6)		500 (2.6)	500 (2.6)	503 (2.6)	500 (2.6)	500 (2.6)	500 (2.6)	500 (2.6)
New Zealand	499 (3.5)		499 (3.5)	499 (3.5)	501 (3.5)	502 (3.5)	498 (3.5)	498 (3.5)	499 (3.5)
Norway (9)	495 (3.1)		495 (3.1)	495 (3.1)	496 (3.2)	495 (3.1)	494 (3.1)	494 (3.1)	495 (3.1)
France	489 (2.7)		488 (2.7)	489 (2.7)	493 (2.8)	493 (2.7)	487 (2.7)	487 (2.7)	489 (2.7)
Bahrain	486 (1.9)		487 (1.9)	486 (1.9)	489 (2.0)	488 (2.0)	487 (1.9)	487 (1.9)	486 (1.9)
Cyprus	484 (1.9)		483 (1.9)	484 (1.9)	487 (2.0)	484 (1.9)	484 (1.9)	484 (1.9)	484 (1.9)
Kazakhstan	478 (3.1)		478 (3.1)	478 (3.1)	471 (3.1)	476 (3.0)	479 (3.1)	479 (3.1)	478 (3.1)
Qatar	475 (4.4)		475 (4.4)	475 (4.4)	476 (4.4)	474 (4.4)	476 (4.4)	476 (4.4)	475 (4.4)
United Arab Emirates	473 (2.2)		473 (2.2)	473 (2.2)	475 (2.2)	472 (2.2)	474 (2.2)	474 (2.2)	473 (2.2)
Romania	470 (4.2)		470 (4.2)	470 (4.2)	464 (4.3)	469 (4.2)	471 (4.2)	471 (4.2)	470 (4.2)
Chile	462 (2.9)		463 (2.9)	462 (2.9)	461 (2.8)	463 (2.9)	463 (2.9)	463 (2.9)	462 (2.9)
Malaysia	460 (3.5)		460 (3.5)	460 (3.5)	456 (3.6)	464 (3.5)	460 (3.5)	460 (3.5)	460 (3.5)
Oman	457 (2.9)		457 (2.9)	457 (2.9)	460 (2.9)	459 (2.9)	457 (2.9)	457 (2.9)	457 (2.9)
Jordan	452 (4.7)		451 (4.6)	452 (4.7)	452 (4.6)	451 (4.6)	452 (4.7)	452 (4.7)	452 (4.7)
Iran, Islamic Rep. of	449 (3.6)		449 (3.6)	449 (3.6)	448 (3.6)	447 (3.6)	446 (3.6)	446 (3.6)	449 (3.6)
Georgia	447 (3.9)		446 (3.9)	447 (3.9)	446 (4.0)	444 (4.0)	447 (3.9)	447 (3.9)	447 (3.9)
Kuwait	444 (5.7)		444 (5.6)	444 (5.7)	445 (5.4)	443 (5.5)	445 (5.7)	445 (5.7)	444 (5.7)
Saudi Arabia	431 (2.6)		431 (2.6)	431 (2.6)	436 (2.7)	435 (2.6)	429 (2.6)	429 (2.6)	431 (2.6)
Morocco	394 (2.7)		393 (2.7)	394 (2.7)	394 (2.7)	393 (2.7)	395 (2.6)	395 (2.6)	394 (2.7)
Egypt	389 (5.4)		390 (5.4)	389 (5.4)	387 (5.3)	389 (5.3)	390 (5.5)	390 (5.5)	389 (5.4)
Lebanon	377 (4.6)		378 (4.6)	377 (4.6)	372 (5.0)	366 (4.9)	381 (4.6)	381 (4.6)	377 (4.6)
South Africa (9)	370 (3.1)		371 (3.1)	370 (3.1)	370 (3.2)	369 (3.1)	371 (3.1)	371 (3.1)	370 (3.1)
International Average	490 (0.6)		490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)	490 (0.6)
Benchmarking Participants									
Moscow City, Russian Fed.	567 (2.9)		565 (3.0)	567 (2.9)	566 (3.2)	566 (3.0)	566 (3.0)	566 (3.0)	567 (2.9)
Dubai, UAE	548 (2.0)		548 (2.0)	548 (2.0)	549 (2.1)	546 (2.0)	549 (2.0)	549 (2.0)	548 (2.0)
Quebec, Canada	537 (3.6)		536 (3.6)	537 (3.6)	546 (3.6)	537 (3.6)	537 (3.6)	537 (3.6)	537 (3.6)
Ontario, Canada	522 (3.0)		522 (3.0)	522 (3.0)	525 (3.1)	527 (3.0)	522 (3.0)	522 (3.0)	522 (3.0)
Western Cape, RSA (9)	439 (5.1)		440 (5.1)	439 (5.1)	441 (5.4)	439 (5.1)	439 (5.2)	439 (5.2)	439 (5.1)
Gauteng, RSA (9)	422 (3.9)		423 (3.9)	422 (3.9)	424 (4.0)	421 (3.9)	423 (3.9)	423 (3.9)	422 (3.9)
Abu Dhabi, UAE	420 (3.6)		420 (3.6)	420 (3.6)	422 (3.6)	418 (3.6)	421 (3.6)	421 (3.6)	420 (3.6)
Number of Items (Score Points)*	211 (233)		198 (220)	211 (233)	113 (125)	176 (196)	193 (214)	193 (214)	211 (233)

* The number of items and score points are based on the number of items included in scaling the eighth grade science achievement data. See Chapter 10 in *Methods and Procedures: TIMSS 2019 Technical Report* for information about items deleted or recoded for scaling. () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.