

Presentation #65, Kloosterman and Creager
How Good Are U.S. Students in Math? Fact and Fiction
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Access to Power Point Slides

<http://ceep.indiana.edu/ImplicationsFromNAEP/index.html>

Using the NAEP Questions Tool

The most comprehensive source of released assessment items is the National Assessment of Educational Progress (NAEP). Currently, there are 390 items at grade 4, 440 items at grade 8, and 223 items at grade 12. In addition to searching for items by content area (algebra, geometry, etc.) it is possible to search by key word (e.g., variable, graph), problem type (multiple choice, short constructed response, extended constructed response), ability (conceptual understanding, procedural knowledge, problem solving) or complexity (low, medium, high). Items categorized as extended constructed response, problem solving, or medium or high complexity tend to have relatively high cognitive demand and are thus good for discourse and problem solving in small- or large-group settings. Features of the NAEP Questions Tool include options to select and print items and the percent of students in the nation or an individual state who correctly answered each item. Items can be accessed as follows:

1. From the NAEP Website (<http://www.nationsreportcard.gov/>), click on Data Tools (top center).
2. Click on “try questions” under Questions Tool.
3. Click on “Questions Tool”.
4. Click on “Search NAEP Questions”, “Try NAEP Questions”, “Select a Preformatted Test”, or “Make a Customized Test”. “Search NAEP Questions” is best for finding and printing a set of items at a specific difficulty level or on a specific topic. The “Try NAEP Questions” option randomly selects items at one grade level and presents them online.
5. From the “Search NAEP Questions” screen, select grade level, content area, item type, and so forth (if desired). After selections are made, click “OK”. The system tends to be a little slow, but question descriptions will appear.
6. Highlight an item you wish to see and then click “Show Question”. To print multiple items, click on the boxes next to the items and then click on “Download” or “Publish Test Online”. The keyword search also appears on this page.
7. To get national results on an item, click on “Performance Data”. To get state results on an item, you must start from the Performance Data screen and click on “Table”, “Report Options”, and then select the state(s) you want.

TIMSS and PISA Items

In contrast to NAEP, there is no online tool for searching and printing TIMSS or PISA items. The following are places where it is possible to download documents containing items. All sources allow use of items for noncommercial purposes so it is acceptable to copy and paste the items you wish to use into a handout, power point slide, or other type of document. As explained below, only some of these documents include data on student performance on the items in each document.

Source of TIMSS Items

TIMSS Assessment Items. <https://nces.ed.gov/timss/educators.asp>

This is the most complete TIMSS item site in that it has links to pdf documents with released items for each grade level and assessment year. In addition to the actual items, the documents include performance on each item by country. The site includes a “Dare to Compare” option that allows the user to generate online “tests” of randomly selected NAEP and TIMSS multiple-choice items. Once answers are inputted into Dare to Compare, the user clicks on “Show Me The Answers” and the correct answers are shown. The user can click on a link that shows performance on the item for a national sample (NAEP items) or an international sample (TIMSS items).

Sources of PISA Items

1. *PISA Released Paper-Based Items and Scoring Guides.* Washington, DC: National Center for Education Statistics.

<http://nces.ed.gov/surveys/pisa/educators.asp>

This site has links to items and scoring guides for the 2000, 2003, 2006, and 2012 assessments (no mathematics items were released after the 2009 assessment). The scoring guides include the OECD average percent correct and the US average percent correct for each item. The items and scoring can be downloaded in pdf or WORD format. The advantage of the WORD format is that it is easy to past into a handout or any other type of document. The 2012 financial literacy items and scoring guide can also be downloaded from this site but there are no data on performance on these items (many of the financial literacy items require mathematics skills).

2. *Take The Test: Sample Questions from OECD’s PISA Assessments.* Paris: Organization for Economic Co-operation and Development.

<http://www.oecd.org/edu/school/programmeforinternationalstudentassessmentpisa/pisatakethetestsamplequestionsfromoecdspisaassessments.htm>

This site has links to a pdf with 50 units (sets of tasks) in mathematics as well as reading and science tasks and other PISA background documents. The units are from the 2000, 2003, and 2006 assessments and performance data by country is included in an appendix.

<http://www.oecd.org/pisa/pisaproducts/Take%20the%20test%20e%20book.pdf>

3. *Test Questions: Mathematics 2012*. Paris: Organization for Economic Co-operation and Development.
<http://www.oecd.org/pisa/pisaproducts/>

This site has links to test questions and a wide variety of other PISA documents and reports. The link to test questions leads to 28 units released from the 2006 and 2012 assessments (the 2006 items are different from those the *Take the Test* document). Each unit comes with a scoring guide but there is no data on student performance. The document with the 2012 items can be downloaded directly from

<http://www.oecd.org/pisa/pisaproducts/pisa2012-2006-rel-items-maths-ENG.pdf>

4. *PISA Sample Computer Based Items*. Washington, DC: National Center for Education Statistics.
http://nces.ed.gov/surveys/pisa/items_cba.asp

This site has links to sample computer based test questions in WORD, pdf, and html (computer based) formats. Scoring keys are provided but there are no performance data.

5. *Explore PISA 2012 Mathematics, Problem Solving, and Financial Literacy Test Questions*. Paris, Organization for Economic Co-Operation and Development.
<http://www.oecd.org/pisa/test/>

This site has a sample of mathematics, problem solving, and financial literacy questions along with answer keys for each. PISA has six performance levels and there is a question that is typical of each performance level for each topic. The percentage of students scoring at or above each performance level on PISA overall is provided, but not the percentage getting each item correct.