## Other information collected by TIMSS

TIMSS is more than an assessment of student knowledge in mathematics and science. TIMSS also considers the context in which learning occurs. Students, teachers, and schools are asked about a variety of aspects of the environments in which content is taught, learned, practiced, and applied. In this way, TIMSS provides each country with a rich source of information on the factors influencing mathematics and science achievement.

## Participating countries and other education systems in TIMSS 2019

**North and South America**
Canada
Chile
United States

**Europe**
Albania
Austria
Azerbaijan
Belarus
Belgium (Fl.)
Belgium (Fr.)
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
England
Finland
France
Georgia
Germany
Hungary
Ireland
Italy
Kosovo
Lithuania
Macedonia
Malta
Montenegro
Netherlands
Northern Ireland
Norway
Poland
Portugal
Russian Federation
Serbia
Slovak Republic
Spain
Sweden
Turkey

**Asia and Middle East**
Armenia
Bahrain
Chinese Taipei
Hong Kong SAR
Iran, Islamic Rep. of
Israel
Japan
Jordan
Kazakhstan
Korea, Rep. of
Kuwait
Macao SAR
Malaysia
Oman
Pakistan
Philippines
Qatar
Singapore
Thailand
United Arab Emirates

**Africa**
Botswana
Egypt
Morocco
South Africa

**Oceania**
Australia
New Zealand

## Benchmarking participants

Abu Dhabi, UAE
Dubai, UAE
Moscow City, Russian Federation
Ningbo City, China
Ontario, Canada
Quebec, Canada

NCES is authorized to conduct TIMSS under the Education Sciences Reform Act of 2002 (ESRA 2002, 20 U.S.C. §9543). Information collected will help the U.S. Department of Education's ongoing efforts to benchmark student achievement in the United States. Participation is voluntary. All of the information you provide may only be used for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151). The U.S. Office of Management and Budget has approved the data collection under OMB# 1850-0695 (Expires 12/31/2019). Individual responses will be combined with those from other participants to produce summary statistics and reports.

**For questions about the TIMSS 2018 field test, contact the toll-free TIMSS information hotline at 855-445-5604 or email TIMSS@westat.com.**

# Trends in International Mathematics and Science Study (TIMSS)

## 2018 Field Test

NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

## What is TIMSS?

The Trends in International Mathematics and Science Study (TIMSS) is an international assessment and research project designed to measure trends in mathematics and science achievement at the fourth- and eighth-grade levels as well as school and teacher practices related to instruction. Since 1995, TIMSS has been administered every 4 years. TIMSS 2019, the seventh study in the series, will involve students from more than 60 countries, including the United States. Prior to the 2019 TIMSS administration all countries, including the United States, will participate in a digitally based field test in 2018.

TIMSS is sponsored by the International Association for the Evaluation of Educational Achievement (IEA) and conducted in the United States by the National Center for Education Statistics (NCES), the U.S. Department of Education.

## Why is TIMSS important?

TIMSS provides a unique opportunity to compare U.S. students' math and science knowledge and skills at the fourth- and eighth-grade levels with that of their peers in countries around the world. TIMSS complements what we learn from national assessments by identifying the strengths and weaknesses of student performance relative to students around the world. The results inform national discussions about education as well as international competitiveness.

TIMSS provides valuable benchmark information on how U.S. students compare to students around the world, allows educators and policymakers to examine other educational systems for practices that could have application to the United States, and contributes to ongoing discussions of ways to improve the quality of education of all students.

## What type of assessment is TIMSS?

In 2019, for the first time TIMSS will be a digitally based assessment administered on supplied tablets. The assessment contains a mix of questions; some require students to select appropriate responses, while others require that students solve problems and provide written answers. The TIMSS mathematics and science assessment is developed through an international process involving input from U.S. and international experts in mathematics, science, and measurement. In a final step, the assessment is endorsed as suitable by all participating countries. Examples of released TIMSS items are available at http://nces.ed.gov/timss/educators.asp.

## How does the United States compare internationally? Results from TIMSS 2015

### Mathematics

- U.S. fourth-graders' average score in mathematics was 539, which was higher than the average scores of students in 34 education systems and lower than the average scores of students in 10 education systems. U.S. fourth-grade students have, on average, shown long-term improvement on the TIMSS mathematics assessments. At the fourth grade, U.S. students' average mathematics scores increased from 1995, 2003, and 2007 to 2015. The average mathematics score in 2015, however, was not measurably different from the most recent assessment in 2011. Over 20 years, U.S. fourth-graders' average mathematics score increased from 518 points in 1995 to 539 points in 2015.
- U.S. eighth-graders' average score in mathematics was 518, which was higher than the average scores of students in 24 education systems and lower than the average scores of students in 8 education systems. At the eighth grade, U.S. students' average mathematics scores increased from all prior time points (1995, 1999, 2003, 2007 and 2011) to 2015. Over 20 years, U.S. eighth-graders' mathematics scores increased from 492 points in 1995 to 518 points in 2015.

### Science

- U.S. fourth-graders' average score in science was 546, which was higher than the average scores of students in 38 education systems and lower than the average scores of students in 7 education systems. U.S. fourth-grade students have shown improvement on the TIMSS science assessments over some time periods: average scores in 2015 were higher than in 2003 and 2007. However, there was no measurable difference between the average science score in 2015 and the average science score in 1995 or 2011. The apparent difference between the average score in 1995 and in 2015 (542 vs. 546 points) was not statistically significant.
- U.S. eighth-graders' average score in science was 530, which was higher than the average scores of students in 26 education systems and lower than the average scores of students in 7 education systems. At the eighth grade, U.S. students' average science scores increased from 1995, 1999, and 2007 to 2015, but there were no measurable differences from 2003 or the most recent time point (2011) to 2015. Over 20 years, U.S. eighth-graders' science scores increased from 513 points in 1995 to 530 points in 2015.

*Findings from TIMSS 2015 are available at https://nces.ed.gov/timss/timss2015/findings.asp.*