



*TIMSS is a well-established assessment that has been providing internationally comparative data about students' achievement in mathematics and science at the fourth and eighth grades every four years since 1995. TIMSS 2015 is the sixth assessment in the series, providing 20 years of trends. TIMSS also provides extensive information about home and school environments to improve teaching and learning in mathematics.*



TIMSS and TIMSS Numeracy are projects of IEA (International Association for the Evaluation of Educational Achievement). Headquartered in Amsterdam,

IEA has been conducting international comparative studies of student educational achievement since 1959. IEA pioneered studies relating cross-national achievement to the different methods for teaching and learning used across the globe so that countries may learn about effective educational approaches from each other.



TIMSS and TIMSS Numeracy are directed by the TIMSS & PIRLS International Study Center at Boston College. TIMSS together with PIRLS, which assesses reading, comprise IEA's core cycle

of studies designed to provide participating countries with regular information about achievement in three fundamental subjects—mathematics, science, and reading.



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# TIMSS Numeracy 2015

**Trends in International  
Mathematics and Science  
Study**

*TIMSS Numeracy:  
Ensuring Every Child Counts*



**TIMSS & PIRLS**  
International Study Center  
Lynch School of Education, Boston College

# TIMSS 2015

## Measuring Numeracy Outcomes

To measure learning outcomes in numeracy for a broad range of countries, IEA offers several options

for matching the *TIMSS* mathematics assessment to a country's educational development in primary school.

### *TIMSS* at Grade 4

*TIMSS* has been conducting international assessments of mathematics at the fourth grade since 1995. The assessments are based on a comprehensive framework that specifies in some detail the mathematics content and problem-solving strategies to be assessed.

### *TIMSS* at Grade 5 or 6

In some countries, students are more likely to have developed the mathematics competencies necessary for success on *TIMSS* by the fifth or sixth grade. For these countries, participation in *TIMSS* at a higher grade will provide detailed information about students' strengths and weaknesses in mathematics in an international context.

### *TIMSS Numeracy* at Grade 4, 5, or 6

*TIMSS Numeracy* is being introduced in 2015 to assess fundamental mathematical knowledge, procedures, and problem-solving strategies that are prerequisites for success on *TIMSS*. *TIMSS Numeracy* asks students to answer questions and work problems similar to *TIMSS*, except with easier numbers and more straightforward procedures. *TIMSS Numeracy* is designed to assess mathematics at the end of the primary school cycle (4th, 5th, or 6th grades) for countries where most children are still developing fundamental mathematics skills.



# TIMSS Numeracy 2015

Introducing IEA's new *TIMSS Numeracy* assessment—  
A less difficult version of the *TIMSS* fourth grade  
mathematics assessment that concentrates on  
measuring children's numeracy learning outcomes.

### Whole Numbers

- Demonstrate knowledge of place value, including recognizing and writing whole numbers.
- Compare and order whole numbers, and identify odd and even numbers.
- Compute with whole numbers (+, −, ×, ÷).
- Solve word problems with whole numbers.

### Fractions

- Recognize simple fractions (halves, thirds, quarters, sixths, and eighths) as parts of unit wholes or collections.
- Represent fractions using words, numbers, or models.

### Geometric Shapes and Measures

- Identify and compare common geometric figures according to shape and properties (lines, angles, and basic two- and three-dimensional shapes).
- Measure and estimate lengths.

### Data Display

- Read data from tables, bar graphs, and pictographs; and solve simple problems.

### Benefits of Participating in *TIMSS/TIMSS Numeracy*

Participating in *TIMSS* or *TIMSS Numeracy* provides important information for policy makers about improving the quality of education. The assessment results, disseminated via reports and the Internet, provide the data necessary for monitoring and improving the health of a country's education system.

### Participating countries can:

- Establish achievement goals for educational improvement.
- Monitor progress toward these goals in a global context.

Evidence of weak learning outcomes can spur educational reform in curriculum and teacher education, with subsequent assessments being effective monitors of changes in the educational system.

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Ensuring Every Child Counts*