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.

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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.

Introducing IEA’s new TIMSS Numeracy assessment—A less difficult version of the TIMSS fourth grade mathematics assessment that concentrations 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.

TIMSS Numeracy: Ensuring Every Child Counts