

UNITED STATES VS. INTERNATIONAL STANDARDS

William H. Schmidt, a professor of education at Michigan State University, has analyzed the math content taught in six high-performing countries, as judged by their showing on the Trends in International Mathematics and Science Study, or TIMSS. He has found that those countries tended to cover fewer math topics, in greater depth, than did a random sampling of 21 U.S. states, which tended to repeat the same topics, year after year, with very little depth being added each time the topic was covered again. This chart is based on a composite of the math content covered at each grade by at least two-thirds of the top-achieving countries and two-thirds of the states sampled.

International key

- Intended* by all of the top-achieving countries
- Intended by all but one of the top-achieving countries
- Intended by 4 out of 6 top-achieving countries

National key

- Intended by 100% of the 21 states sampled
- Intended by 83% of 21 states
- Intended by 67% of 21 states

* "Intended" content is the math that individual nations and states expect teachers to teach, as spelled out in their standards and other education policies.

MATH TOPIC		GRADE LEVEL TAUGHT								
		1	2	3	4	5	6	7	8	
Top-Achieving Countries	Whole-Number Operations	■	■	■	■	■				
	Fractions			□	■	■	■			
	Decimals				■	■	■			
	Properties of Fractions and Decimals					■	■			
	Congruence and Similarity									■
U.S. State Average of 21 States	Whole-Number Operations	■	■	■	■	■	□	□		
	Fractions	□	■	■	■	■	■	□	□	□
	Decimals			□	■	■	■	□	□	□
	Properties of Fractions and Decimals							□	□	□
	Congruence and Similarity						□	■	■	□

Within the United States, students are likely to encounter specific math topics at very different points—and repeat them again and again—as illustrated by four states not listed by name in Schmidt's study.

Sample of Four U.S. States		1	2	3	4	5	6	7	8
State A	Whole-Number Operations	✓	✓	✓	✓	✓	✓	✓	✓
	Fractions	✓	✓	✓	✓	✓			
	Decimals	✓	✓	✓	✓	✓			
	Properties of Fractions and Decimals	✓	✓	✓	✓	✓			
	Congruence and Similarity								
State B	Whole-Number Operations	✓	✓	✓	✓	✓	✓	✓	✓
	Fractions	✓	✓	✓	✓	✓	✓	✓	✓
	Decimals	✓	✓	✓	✓	✓	✓	✓	✓
	Properties of Fractions and Decimals					✓	✓	✓	✓
	Congruence and Similarity								
State C	Whole-Number Operations	✓	✓	✓	✓	✓			
	Fractions	✓	✓	✓	✓	✓	✓	✓	✓
	Decimals						✓	✓	✓
	Properties of Fractions and Decimals							✓	✓
	Congruence and Similarity						✓	✓	✓
State D	Whole-Number Operations	✓	✓	✓	✓	✓	✓		
	Fractions	✓	✓	✓	✓	✓	✓	✓	✓
	Decimals			✓	✓	✓	✓	✓	✓
	Properties of Fractions and Decimals								
	Congruence and Similarity		✓			✓	✓	✓	✓