

**Exhibit 29. Number of periods grade 8 mathematics teachers covered specific topics.** Grade 8 mathematics teachers surveyed in Germany, Japan, and the U.S. indicated for the most part that they taught a few periods of almost every topic listed. [We asked teachers to report within specified ranges the number of periods that they had devoted to specific mathematics topics. We surveyed teachers from both grades of Population 2. We obtained the topics used for our survey by combining more specific topics from the TIMSS' mathematics framework to yield a list of familiar topics broadly appropriate to these grade levels. The instrument given teachers to gather these data provided brief descriptions of each topic. We use four different icons here to show which ranges of intended content coverage grade 8 teachers reported on average for each of the countries.]

	Average Number of Periods				
	Grade 8				
	Germany	Japan	U.S. - Regular	U.S. - Pre-Alg.	U.S. - Alg.
Whole Numbers	○	○	○	○	○
Fractions & Decimals	◐	○	●	●	◐
Other Numbers and Number Concepts	○	○	○	○	○
Number Theory and Counting	○	○	○	○	○
Estimation and Number Sense	○	○	○	○	○
Measurement Units	○	○	○	○	○
Perimeter, Area and Volume	○	○	○	○	○
Measurement Estimation and Error	○	○	○	○	○
2-D Geometry	○	◐	○	○	○
Geometry Transformations	○	○	○	○	○
Congruence and Similarity	○	●	○	○	○
3-D Geometry, Vectors, Constructions	○	○	○	○	○
Proportionality Concepts	○	○	○	○	○
Proportionality Problems	○	○	○	○	○
Slope and Trigonometry	○	○	○	○	○
Linear Interpolation and Extrapolation	○	○	○	○	○
Patterns, Relations, and Functions	○	◐	○	○	○
Equations and Formulas	●	●	○	○	◐
Data Representation and Analysis	○	○	○	○	○
Uncertainty and Probability	○	○	○	○	○
Sets and Logic	○	○	○	○	○
Other Content	○	○	○	○	○

Legend: ○ = <1 period  
 ○ = 1 - 13 periods  
 ◐ = 14 -19 periods  
 ● = >19 periods