

Exhibit 45. The ten topics most commonly taught in grade 8 mathematics and science. The exhibited lists show differences in what are operationally the de facto "basics" among the U.S., Germany, and Japan. [This exhibit lists the ten most commonly taught mathematics topics and the ten most commonly taught science topics as reported by grade 8 teachers surveyed on how they spent their instructional time. Further international data are not yet available for release.]

MATH

U.S.	Japan	Germany
Other Numbers & Number Concepts	Geometry: Congruence & Similarity	Equations & Formulas
Number Theory & Counting	Data Representation & Analysis	Perimeter, Area, Volume
Perimeter, Area, Volume	Patterns, Relations, & Functions	2-D Geometry
Estimation & Number Sense	2-D Geometry	3-D geometry & Vectors
Percentages	Proportionality Problems	Measurement: Units
2-D Geometry	Other Content	Geometry: Congruence & Similarity
Proportionality Concepts	Estimation & Number Sense	Proportionality Problems
Proportionality Problems	Proportionality Concepts	Percentages
Properties of Common & Decimal Fractions	Measurement: Estimation & Error	Patterns, Relations, & Functions
Fractions	Equations & Formulas	Other Numbers & Number Concepts

SCIENCE

U.S.	Japan	Germany
Nature of Science	Human Diversity	Environmental & Resource Issues
Structure of Matter	Human Life Processes & Systems	Nature of Science
Matter	Chemical Transformations	Energy & Physical Processes
Science, Technology, Mathematics	Structure of Matter	History of Science & Tech.
Physical Transformations	Life Processes & Systems	Heat, Temperature, Wave & Sound
Environmental & Resource Issues	Matter	Interactions of Living Things
Energy & Physical Processes	Energy & Physical Processes	Structure of Matter
Chemical Transformations	Earth Processes	Diversity, Org, & Struc. of Living Things
Heat, Temperature, Wave & Sound	Atmosphere	Life Processes & Systems
History of Science & Tech.	Environmental & Resource Issues	Matter