

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS (NCTM) PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS

1. Numbers and operations
 - A. Understand numbers, ways of representing numbers, relationships among numbers and number systems
 - B. Understand meanings of operations and how they relate to one another
 - C. Compute fluently and make reasonable estimates
2. Algebra
 - A. Understand patterns, relations, and functions
 - B. Represent and analyze mathematical situations and structures using algebraic symbols
 - C. Use mathematical models to represent and understand quantitative relationships
 - D. Analyze change in various contexts
3. Geometry
 - A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
 - B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems
 - C. Apply transformations and use symmetry to analyze mathematical situations
 - D. Use visualization, spatial reasoning and geometric modeling to solve problems
4. Measurement
 - A. Understand measurable attributes of objects and the units, systems and processes of measurement
 - B. Apply appropriate techniques, tools and formulas to determine measurements
5. Data analysis and probability
 - A. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them
 - B. Select and use appropriate statistical methods to analyze data
 - C. Develop and evaluate inferences and predictions that are based on data
 - D. Understand and apply basic concepts of probability
6. Problem solving
 - A. Build new mathematical knowledge through problem solving
 - B. Solve problems that arise in mathematics and in other contexts
 - C. Apply and adapt a variety of appropriate strategies to solve problems
 - D. Monitor and reflect on the process of mathematical problem solving
7. Reasoning and proof
 - A. Recognize reasoning and proof as fundamental aspects of mathematics
 - B. Make and investigate mathematical conjectures
 - C. Develop and evaluate mathematical arguments and proofs
 - D. Select and use various types of reasoning and methods of proof
8. Communication
 - A. Organize and consolidate mathematical thinking through communication
 - B. Communicate mathematical thinking coherently and clearly to peers, teachers and others
 - C. Analyze and evaluate the mathematical thinking and strategies of others

D. Use the language of mathematics to express mathematical ideas precisely

9. Connections

- A. Recognize and use connections among mathematical ideas
- B. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole
- C. Recognize and apply mathematics in contexts outside of mathematics

10. Representation

- A. Create and use representations to organize, record, and communicate mathematical ideas
- B. Select, apply, and translate among mathematical representations to solve problems
- C. Use representations to model and interpret physical, social and mathematical phenomena

Reprinted with permission from *Principles and Standards for School Mathematics*, copyright 2000 by the National Council of Teachers of Mathematics (NCTM). All rights reserved.



NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS (NCTM) PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS																																								
Event	1A	1B	1C	2A	2B	2C	2D	3A	3B	3C	3D	4A	4B	5A	5B	5C	5D	6A	6B	6C	6D	7A	7B	7C	7D	8A	8B	8C	8D	9A	9B	9C	10A	10B	10C					
Agriculture and Biotechnology Issues												X	X					X	X						X	X										X				
Career Prep																																								
Challenging Technology Issues																										X	X													
Chapter Team																																								
Communication Challenge												X	X																											
Construction Challenge												X	X													X	X													
Digital Photography																																								
Dragster								X	X		X	X	X													X	X													
Electronic Gaming											X	X	X													X	X													
Engineering Structure								X	X		X	X	X													X	X													
Environmental Focus								X	X		X	X	X													X	X													
Flight											X	X	X													X	X													
Global Manufacturing												X	X																											
Go Green Manufacturing												X	X																											
Graphic Design								X	X		X	X	X																											
Inventions and Innovations																																								
Leadership Strategies																																								
Lights, Camera, Action																																								
Medical Technology Issues								X	X			X	X													X	X													
Multimedia Production																										X	X													
Prepared Speech																																								
Problem Solving																																								
Robot TOBOR								X	X		X	X	X																											
System Control Technology								X	X		X	X	X													X	X													
Tech Bowl								X	X		X	X	X														X	X												
Technical Drawing								X	X		X	X	X																											
Techno Talk																																								
Transportation Challenge								X	X		X	X	X													X	X													
TSA Cup: Marine Design																										X	X													
Website Design																																								
Write Now! Technical Writing																																								
ZAP IT! Electrical Applications																																								