

National Education Standards

The activities set forth in this curriculum supplement address national standards for science and mathematics, and the universals of technology for technology education. The matrices that follow specifically identify the standards by activity. The standards for science and mathematics in grades 4–8 and 9–12 have been combined.



Universals of Technology

International Technology Education Association, 1996*

Class Project
Tensile Strength Test Stand
Impact Resistance Tester
Abrasion Tester
Different Gravity
Meteoroids and Space Debris
Keeping Your Cool
Absorption and Radiation
Getting the Right Fit
O—How Much?
Keeping the Pressure On
Bending Under Pressure

Technological Processes

- Technological design
- Developing and Producing Technological Systems
- Utilizing and Managing Technological Systems
- Assessing the Impact and Consequences of Technological Systems

✓	✓	✓	✓			✓		✓	✓	✓	✓
✓	✓	✓	✓			✓				✓	✓
✓				✓	✓	✓	✓	✓	✓	✓	✓

Technological Knowledge

- Technological Concepts and Principles
- Nature and Listing of Technology
- Linkages

✓										✓	✓
✓	✓	✓	✓			✓					
✓				✓		✓			✓	✓	✓

Technological Contexts

- Informational Systems
- Physical Systems
- Biological and Chemical Systems

✓	✓	✓	✓								
✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
✓					✓	✓			✓		

*The Standards for Technology Education are still under development



National Science Education Standards

National Research Council, 1996
Grades 4–12



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Science as Inquiry

- Abilities Necessary to do Scientific Inquiry

✓	✓	✓	✓		✓		✓		✓				
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Physical Science

- Properties and Changes of Properties in Matter
- Motions and Forces
- Transfer of Energy
- Interactions of Energy and Matter

✓	✓	✓	✓		✓								
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✓	✓	✓	✓	✓							✓	✓	
✓	✓	✓	✓		✓	✓	✓						
✓	✓	✓	✓		✓	✓	✓				✓	✓	

Life Science

- Structure and Function in Living Systems

✓										✓			
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Earth and Space Science

- Earth in the Solar System

✓													
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Science and Technology

- Abilities of Technological Design
- Understanding about Science and Technology

✓	✓	✓	✓								✓	✓	
✓	✓	✓	✓				✓	✓			✓	✓	

Science in Personal and Social Perspectives

- Populations, Resources, and Environments
- Risks and Benefits
- Natural and Human-Induced Hazards

✓													
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✓		✓			✓								
✓		✓			✓								



National Mathematics Standards

National Council of Teachers of Mathematics, 1989

Grades 4–12



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Mathematics as Problem Solving
 Mathematics as Communication
 Mathematics as Reasoning
 Mathematical Connection
 Computation and Estimation
 Algebra
 Geometry
 Measurement

✓	✓	✓	✓		✓		✓	✓	✓		✓
✓	✓	✓	✓		✓		✓	✓	✓		✓
✓	✓	✓									
✓	✓	✓			✓			✓			
✓	✓	✓					✓		✓		
✓	✓	✓					✓	✓			✓
✓	✓	✓	✓				✓	✓	✓		

