

Blaine County School District No. 61

Technology Education

2005 Curriculum
Information Packet

QUALITY SCHOOLS

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TECHNOLOGY EDUCATION CURRICULUM 2005

Foreword

During the 2003-2005 school years, a very dedicated 11 member curriculum committee edited and revised the Blaine County School District Technology Education curriculum. Their mission was to not only ensure our curriculum was aligned with the Idaho State Standards, but to craft a curriculum that represented the best thinking on what technology education should incorporate.

This curriculum is meant to raise the standards of Technology Education instruction by providing an outline that systematically matches what standards and critical concepts are learned with the appropriate course offerings.

Blaine County School district requires teachers to use the curriculum guide as a framework to plan their units and lessons. The strategies and methods for accomplishing these curriculum goals are building responsibilities. It is each building's responsibility to ensure that their program of instruction follows the framework to teach the critical concepts.

I commend each person on the team for the hours of time spent in preparing this framework. This document, when implemented by quality teachers, utilizing effective instructional practices, assures that students of Blaine County Schools will be provided a quality technology education programs.

Dr. Mary Gervase
Assistant Superintendent
& Curriculum Director

TECHNOLOGY EDUCATION CURRICULUM COMMITTEE MEMBERS

- Milynda Carlson, Carey School
- Krista Jones, Bellevue Elementary School
- Chris Nelson, Hailey Elementary School
- Brad Thode, Wood River Middle School
- Terry Thode, Hemingway Elementary School
- Doug Walrath, Wood River Middle School

Blaine County School District Belief Statement

WE BELIEVE THAT

- 1. All students are able to learn when given sufficient time and appropriate support.**
- 2. All students are able to acquire both critical learning and higher thinking skills.**
- 3. Self-esteem and success are interrelated.**
- 4. Our role is that of student advocate.**
- 5. Opportunities for learning should be kept open.**
- 6. An individual's unique skills and talents need to be nurtured.**
- 7. Students will learn best that which is relevant and meaningful to them.**
- 8. Schools can manage the variables within the school setting that influence student success.**
- 9. Desired student outcomes can best be achieved through supportive interaction among home, school and community.**
- 10. Clearly defined expectations, set on high but achievable level, foster student success.**
- 11. An individual's worth is separate from his or her performance.**
- 12. Professional behaviors and classroom practices should be based on what we want for students, these belief statements, and best knowledge.**

Blaine County School District Educational Philosophy

The philosophy of the Blaine County School District Board of Trustees is one of total commitment to educational excellence. The board continually seeks curriculum and staff improvement based on reliable research, sound principles of child development and proven teaching practices. The Board believes that it is the duty of the school organization to serve the community by providing a comprehensive educational program, and it pledges that each school will offer students the opportunity for maximum growth potential in a climate of mutual trust and respect. The Board also recognizes that home and community have tremendous influence, and the development of students' moral conduct, self esteem and academic achievement is a shared responsibility. With parental support, a positive school experience should guarantee that each student receives a quality education and is prepared to meet the future as a well-adjusted, productive member of society. The Board has defined its vision of what a quality education should encompass by adopting a set of goals established by a committee of school personnel and community members. By constantly working toward these goals, it will be ensured that each student has every opportunity to acquire academic knowledge, life skills, principles of good citizenship and democratic ideals. The Board of Trustees dedicates the efforts and resources of the Blaine County School District to fulfilling these commitments to its students and community.

TECHNOLOGY EDUCATION VISION STATEMENT

As an integral part of our basic K-8 education, Technology Education explores occupational and career possibilities through an integrated approach to technology. Technology Education provides a vital link in the technology/science/society triangle to assist students with understanding, living, and working in our advanced technology/information era. Its interdisciplinary nature provides a focal point and forum for cross-curricular activities that help students to comprehend and apply, in a relevant way, mathematics, the natural sciences, and humanities. Therefore, a holistic approach is employed in Technology Education that actively involves students in their own learning. Activities in the classroom-laboratory are designed to develop knowledge, skills, and attitudes regarding technology and its impacts on society.

Emphasis is given to nurturing skills in:

- communications
- social interactions
- problem solving
- critical thinking
- manipulative proficiency
- entrepreneurship
- leadership

Students use current technology and problem solving methodology as they work on assignments in information processing, design, development, invention, and evaluation procedures. Personal and social growth is fostered through interaction with other students. The ultimate goal of Technology Education is to help develop citizens of the 21st century who are technologically literate and excited about learning.

“Students in K - 5th Grades have a Technology Education class weekly. At the middle school, all 6th grade students are required to take Technology Education for 12 weeks. After the required 6th grade class, "Tech" elective classes in 7th and 8th grade include: 7th / 8th Tech, NASA Tech, Publications (Yearbook), Engineering, and Advanced Tech. All of the Technology Education classes offer students a 'survey' of careers in technology-related fields such as: power energy, transportation, aerospace, exploration, communication, manufacturing, and construction.”

At the high school level, students have the option to build upon their K-8 Technology Education curriculum, by selecting a career academy in Trades & Industry to 'specialize' in. These areas include Residential Construction, Architectural & Mechanical Design, and Information Technology. This specialization at the high school level is rigorously academic and includes utilization of equipment specifically related to the industry.

At Carey School, high school students can enroll in a general Technology Education course as well as the Residential Construction Academy. Additionally, students do have the option of traveling to Wood River High School to enroll in the other Academy courses not offered at Carey.

Technology Education Curriculum Outline Grades K-5

I. NATURE OF TECHNOLOGY

- A. Characteristics And Scope Of Technology
 - 1. Natural world and human-made world
 - a. Natural vs. synthetic materials
 - b. Fossil fuels vs. alternative energy
 - 2. People and technology
 - a. Product ecology / recycling
 - b. Human impacts
- B. Core Concepts Of Technology
 - 1. Systems model
 - a. Input
 - b. Process
 - c. Output
 - d. Feedback
 - 2. Resources
 - a. Renewable
 - b. Non-renewable
- C. Technology Connections
 - 1. Technology's relationship to other fields
 - a. Math connections
 - b. Science connections
 - c. Language arts connections
 - 2. Interaction of systems / correlation topics
 - a. Engineering
 - b. Science/Math/Language Arts real world applications in technology

II. TECHNOLOGY AND SOCIETY

- A. Cultural, Social, Economic, And Political Effects Of Technology
 - 1. Beneficial or detrimental- Overall Picture
 - 2. Ethical issues
 - a. Environmental (K-2)
 - b. Copyright, Biotechnologies (3-5)
 - 3. Influences on society
 - 4. Attitudes towards technological development
- B. Effects Of Technology On History
 - 1. Conservation
 - 2. Environmental vs. economic concerns
 - a. Energy
 - b. Transportation
- C. Influences Of Technology On History
 - 1. Development driven by social and cultural priorities
 - 2. Factors affecting designs and demands of technologies
 - 3. Evolution of technology

III. DESIGN

A. Attributes Of Design

1. Definition and purpose of design
2. The design process
3. Modeling, testing, evaluating, and modifying
 - a. Orthographic projection- side view (K-2), three views (3-5)
 - b. Sketching and labeling (K-2)
4. Computer modeling

B. Applying Problem Solving Steps

1. Asking questions and making observations
2. Invention and innovation
3. Research and development
4. Experimentation
5. Troubleshooting
6. Evaluation

IV. ABILITIES FOR A TECHNOLOGICAL WORLD

A. Apply The Design Engineering Process

1. Collect information about a problem
 - a. Research ideas using all available resources
 - b. Brainstorming - Organize ideas, manage time and resources in the solution of complex problems
2. Identify criteria and constraints
3. Build a product or system
4. Solve problems through the design process
5. Test and evaluate solutions
6. Communicate ideas to others

B. Use And Maintenance

1. Use information to see how things work
2. Recognize and use common symbols
 - a. (K-2) road signs, safety signs, recycle
 - b. (3-5) universal electronic symbols
3. Follow step-by-step instructions
4. Use tools correctly and safely to diagnose, adjust, and repair
5. Operate and maintain systems
6. Document and communicate processes and procedures

C. Assess The Impact Of Products And Systems

1. Collect information about everyday products
2. Design and use instruments to collect data
3. Use collected data to identify trends
4. Interpret and evaluate accuracy of data
5. Synthesize data to draw conclusions
6. Employ assessment techniques
 - a. Portfolios
 - b. Video
 - c. Computer
 - d. Team and Individual
7. Design forecasting techniques

V. DESIGNED WORLD

A. Medical Technology Systems

1. Vaccines and medicine
2. Sanitation processes -(3-5) mimicking nature
3. Advances and innovations in medical technologies
4. Development of devices to repair or replace body parts
5. Awareness about genetic engineering and therapeutics (3-5)
6. Biochemistry

B. Agricultural and Related Biotechnology Systems

1. Agricultural products, tools, equipment, and systems
2. Technological advances in agriculture
3. Development of refrigeration, freezing, dehydration, preservation, and irradiation
4. Artificial ecosystems-design and management
5. Biotechnology
 - a. Aquaculture
 - b. Hydroponics
6. Conservation

C. Energy and Power Technology Systems

1. Power systems - integrate with science
 - a. Definition of energy and power
 - b. Various forms of energy and their sources
 - c. Electronics and their components
2. Efficiency and conservation

D. Information and Communication Technology Systems

1. The purpose of information and communication
2. Information sources and processing -Internet (3-5)
3. Communication systems- Encode, transmit, and receive information
4. Symbols
5. Factors influencing design

E. Transportation Technologies

1. Transportation systems and use
2. Individuals and goods
3. Design and operation of transportation systems
4. Positive and negative impacts of transportation systems
5. Interrelationships-Big picture

F. Manufacturing Technologies

1. Manufacturing systems - assembly line technology
2. Manufacturing goods
3. Manufacturing processes
4. Design of products
5. Materials use
6. Marketing products
7. Automation
 - a. Robotics
 - b. Programmable logic controllers

- G. Construction Technologies
 - 1. Construction designs
 - 2. Structures and their purposes
 - 3. Buildings systems and subsystems
 - 4. Foundations
 - 5. Construction processes and procedures
 - 6. Infrastructure
 - 7. Maintenance, alterations, and renovation
 - 8. Materials
- H. Human factors engineering
 - 1. Ergonomics
 - 2. Anthropometry

VI. SAFETY

- A. Hand tool safety
 - 1. Common hand tools
 - 2. Specialized hand tools
- B. Machine safety
 - 1. Materials processing equipment
 - 2. Fastening, forming & molding equipment
 - 3. Electrical safety
- C. Technology Equipment safety
 - 1. Laser
 - 2. Robot
 - 3. Wind tunnel
 - 4. Flight simulator

VII. Measurement

- A. Linear measurement
 - 1. English/metric units of length
 - a. Measure accurately to the nearest 1/4 inch (3-5), 1 inch (K-2), 1mm
 - b. Draw and design to scale using a grid
 - 2. Math integration
 - a. Fractions (3-5)
 - b. Reducing (3-5)
- B. Electrical measurement
 - 1. Measure volts, amps, ohms
 - 2. Use measurement tools appropriately
- C. Sound measurement
 - 1. Measure decibel levels
 - 2. Use measurement tools appropriately
 - 3. Science integration - sound waves, electromagnetic spectrum
- D. Force measurement
 - 1. Identify forces - science integration (K-2)
 - 2. Measure forces - math integration
 - 3. Use measurement tools appropriately
- E. Other measurement tools / techniques

VIII. Materials Processing

- A. CNC, CAD, CAM
- B. Forming and Molding processes
- C. Fastening processes
- D. Machining and cutting processes
- E. Coating and finishing processes

IX. Media Production / Editing

- A. Audio
 - 1. Script writing
 - 2. Radio broadcasting
- B. Video
 - 1. Linear editing
 - 2. Non-linear editing
- C. Computer-related
 - 1. Web page design (3-5)
 - 2. Animation
 - *Introduced as part of the editing process-application skills will be taught in computer classes

X. Future Technologies

- A. Aerospace technology
 - 1. Introduction to Microgravity
 - a. Crystal growth
 - b. Combustion
 - c. Drop tower experiments
 - d. Others
 - 2. Space transportation
 - 3. Aerospace simulation
 - a. Flight Simulator/Helicopter Simulator
 - b. Basic space station knowledge
 - c. Others
- B. Emerging technologies
 - 1. Nanotechnology
 - a. Microscopic
 - 2. Experimental materials and applications
 - a. Introduction to superconductors - science extensions
 - b. Introduction to ferrofluids - science extensions

XI. Career exploration (infused throughout curriculum)

Technology Education Curriculum Outline Grades 6-8

I. NATURE OF TECHNOLOGY

- A. Characteristics And Scope Of Technology
 - 1. Natural world and human-made world
 - a. Natural vs. synthetic materials
 - b. Fossil fuels vs. alternative energy
 - 2. People and technology
 - a. Product ecology / recycling
 - b. Human impacts
- B. Core Concepts Of Technology
 - 1. Systems model
 - a. Input
 - b. Process
 - c. Output
 - d. Feedback
 - 2. Resources
 - a. Renewable
 - b. Non-renewable
- C. Technology Connections
 - 1. Technology's relationship to other fields
 - a. Math connections
 - b. Science connections
 - c. Language arts connections
 - 2. Interaction of systems / correlation topics
 - a. Engineering
 - b. Science/Math/Language Arts real world applications in technology

II. TECHNOLOGY AND SOCIETY

- A. Cultural, Social, Economic, And Political Effects Of Technology
 - 1. Beneficial or detrimental - overall Picture
 - 2. Ethical issues
 - 3. Influences on society
 - 4. Attitudes towards technological development
- B. Effects Of Technology On History
 - 1. Conservation
 - 2. Environmental vs. economic concerns
- C. Influences Of Technology On History
 - 1. Development driven by social and cultural priorities
 - 2. Factors affecting designs and demands of technologies
 - 3. Evolution of technology

III. DESIGN

A. Attributes Of Design

1. Definition and purpose of design
2. The design process
3. Modeling, testing, evaluating, and modifying
 - a. Vision in three dimensions
 - b. Orthographic projection
 - c. Pictorial sketching
4. Computer modeling

B. Applying Problem Solving Steps

1. Asking questions and making observations
2. Invention and innovation
3. Research and development
4. Experimentation
5. Troubleshooting
6. Evaluation

IV. ABILITIES FOR A TECHNOLOGICAL WORLD

A. Apply The Design Engineering Process

1. Collect information about a problem
2. Identify criteria and constraints
3. Build a product or system
4. Solve problems through the design process
5. Test and evaluate solutions
6. Communicate ideas to others
7. Research ideas using all available sources
8. Organize ideas, manage time and resources in the solution of complex problems

B. Use And Maintenance

1. Use information to see how things work
2. Recognize and use common symbols
3. Follow step-by-step instructions
4. Use tools correctly and safely to diagnose, adjust, and repair
5. Operate and maintain systems
6. Document and communicate processes and procedures

C. Assess The Impact Of Products And Systems

1. Collect information about everyday products
2. Design and use instruments to collect data
3. Use collected data to identify trends
4. Interpret and evaluate accuracy of data
5. Synthesize data to draw conclusions
6. Employ assessment techniques
7. Design forecasting techniques

V. DESIGNED WORLD

A. Medical Technology Systems

1. Vaccines and medicine
2. Sanitation processes
3. Advances and innovations in medical technologies

4. Development of devices to repair or replace body parts
 5. Awareness about genetic engineering and therapeutics
 6. Biochemistry
- B. Agricultural and Related Biotechnology Systems
1. Agricultural products, tools, equipment, and systems
 2. Technological advances in agriculture
 3. Development of refrigeration, freezing, dehydration, preservation, and irradiation
 4. Artificial ecosystems-design and management
 5. Biotechnology
 - a. Aquaculture
 - b. Distillation/fermentation processes
 6. Conservation
- C. Energy and Power Technology Systems
1. Definition of energy and power
 2. Various forms of energy and their sources
 3. Power systems
 4. Efficiency and conservation
- D. Information and Communication Technology Systems
1. The purpose of information and communication
 2. Information sources and processing -
 3. Communication systems- Encode, transmit, and receive information
 4. Symbols
 5. Factors influencing design
- E. Transportation Technologies
1. Transportation systems and use
 2. Individuals and goods
 3. Design and operation of transportation systems
 4. Positive and negative impacts of transportation systems
 5. Interrelationships
- F. Manufacturing Technologies
1. Manufacturing systems
 2. Manufacturing goods
 3. Manufacturing processes
 4. Design of products
 5. Materials use
 6. Chemical technologies
 7. Marketing products
 8. Automation
 - a. Robotics
 - b. Programmable logic controllers
- G. Construction Technologies
1. Construction designs
 2. Structures and their purposes
 3. Buildings systems and subsystems
 4. Foundations
 5. Construction processes and procedures
 6. Infrastructure
 7. Maintenance, alterations, and renovation
 8. Materials

- H. Human factors engineering
 - 1. Ergonomics
 - 2. Anthropometry

VI. SAFETY

- A. Hand tool safety
 - 1. Common hand tools
 - 2. Specialized hand tools
- B. Machine safety
 - 1. Materials processing equipment
 - 2. Fastening, forming & molding equipment
 - 3. Electrical safety
- C. Technology Equipment safety
 - 1. Laser
 - 2. Robot
 - 3. Wind tunnel
 - 4. Flight simulator

VII. Measurement

- A. Linear measurement
 - 1. English/metric units of length
 - a. Measure accurately to the nearest 1/16 inch, 1mm
 - b. Draw and design to scale
 - 2. Math integration
 - a. Fractions
 - b. Reducing
- B. Electrical measurement
 - 1. Measure volts, amps, ohms
 - 2. Use measurement tools appropriately
- C. Sound measurement
 - 1. Measure decibel levels
 - 2. Use measurement tools appropriately
- D. Force measurement
 - 1. Measure forces - math integration
 - 2. Use measurement tools appropriately
 - 3. Apply vector graphics to a real problem
- E. Other measurement tools / techniques

VIII. Materials Processing

- A. CNC, CAD, CAM
- B. Forming and Molding processes
- C. Fastening processes
- D. Machining and cutting processes
- E. Coating and finishing processes

IX. Media Production / Editing

- A. Audio

1. Script writing
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- B. Video
1. Linear editing
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- C. Computer-related
1. Web page design
 2. Animation

X. Future Technologies

- A. Aerospace technology
1. Microgravity
 - a. Crystal growth
 - b. Combustion
 - c. Drop tower experiments
 - d. Others
 2. Space transportation
 3. Aerospace simulation
 - a. Flight Simulator
 - b. Helicopter Simulator
 - c. Space station knowledge
 - d. Others
- B. Emerging technologies
1. Nanotechnology
 2. Experimental materials and applications
 - a. Superconductors
 - b. Ferrofluids

XI. Career exploration (infused throughout curriculum)

Compendium of Major Topics for National Technology Content Standards

Nature of Technology	Benchmarks Topics Grades K-2	Benchmarks Topics Grades 3-5	Benchmarks Topics Grades 6-8
Characteristics and Scope of Technology	<ul style="list-style-type: none"> Natural world and human-made world People and technology 	<ul style="list-style-type: none"> Things found in nature and in the human-made world Tools, materials, and skills Creative thinking 	<ul style="list-style-type: none"> Usefulness of technology Development of technology Human creativity and motivation Product demand
Core Concepts of Technology	<ul style="list-style-type: none"> Systems Resources Processes 	<ul style="list-style-type: none"> Systems Resources Requirements Processes 	<ul style="list-style-type: none"> Systems Resources Requirements Trade-offs Processes Controls
Relationships Among Technologies and the Connections Between Technology and Other Fields	<ul style="list-style-type: none"> Connections between technology and other subjects 	<ul style="list-style-type: none"> Technologies integrated Relationships between technology and other fields of study 	<ul style="list-style-type: none"> Interaction of systems Interrelation of technological environments Knowledge from other fields of study and technology
Technology and Society			
Cultural, Social, Economic, and Political Effects of Technology	<ul style="list-style-type: none"> Helpful or harmful 	<ul style="list-style-type: none"> Good and bad effects Unintended consequences 	<ul style="list-style-type: none"> Attitudes toward development and use Impacts and consequences Ethical issues Influences on economy, politics and culture
Effects of Technology on the Environment	<ul style="list-style-type: none"> Reuse and/or recycling of materials 	<ul style="list-style-type: none"> Recycling and disposal of waste Affects environment in good and bad ways 	<ul style="list-style-type: none"> Management of waste Technologies repair damage Environmental vs. economic concerns
Role of Society in the Development and Use of Technology	<ul style="list-style-type: none"> Needs and wants of individuals 	<ul style="list-style-type: none"> Changing needs and wants Expansion or limitation of development 	<ul style="list-style-type: none"> Development driven by demands, values, and interests Inventions and innovations Social and cultural priorities Acceptance and use of products and systems
Influences of Technology on History	<ul style="list-style-type: none"> Ways people have lived and worked 	<ul style="list-style-type: none"> Tools for food, clothing, and protection 	<ul style="list-style-type: none"> Processes of inventions and innovations Specialization of labor Evolution of techniques, measurement, and resources Technological and scientific knowledge
Design			
Attributes of Design	<ul style="list-style-type: none"> Everyone can design Design is a creative process 	<ul style="list-style-type: none"> Definitions of design Requirements of design 	<ul style="list-style-type: none"> Design leads to useful products and systems There is no perfect design Requirements
Engineering Design	<ul style="list-style-type: none"> Engineering design process Expressing design ideas to others 	<ul style="list-style-type: none"> Engineering design process Creativity and considering all ideas Models 	<ul style="list-style-type: none"> Interactive Brainstorming Modeling, testing, evaluating, and modifying

Compendium of Major Topics for National Technology Content Standards

Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving	<ul style="list-style-type: none"> • Asking questions and making observations • All products need to be maintained 	<ul style="list-style-type: none"> • Troubleshooting • Invention and innovation • Experimentation 	<ul style="list-style-type: none"> • Troubleshooting • Invention and innovation • Experimentation
Abilities for a Technological World			
Apply the Design Process	<ul style="list-style-type: none"> • Solve problems through design • Build something • Investigate how things are made 	<ul style="list-style-type: none"> • Collecting information • Visualize a solution • Test and evaluate solutions • Improve a design 	<ul style="list-style-type: none"> • Apply design process • Identify criteria and constraints • Model a solution to a problem • Test and evaluate • Make a product or system
Use and Maintain Technological Products and Systems	<ul style="list-style-type: none"> • Discover how things work • Use tools correctly and safely • Recognize and use everyday symbols 	<ul style="list-style-type: none"> • Follow step-by-step instructions • Select and safely use tools • Use computers to access and organize information • Use common symbols 	<ul style="list-style-type: none"> • Use information to see how things work • Safely use tools to diagnose, adjust, and repair • Use computers and calculators • Operate systems
Assess the Impact of Products and Systems	<ul style="list-style-type: none"> • Collect information about everyday products • Determine the qualities of a product 	<ul style="list-style-type: none"> • Use information to identify patterns • Assess the influence of technology • Examine trade-offs 	<ul style="list-style-type: none"> • Design and use instruments to collect data • Use collected data to find trends • Identify trends • Interpret and evaluate accuracy of information
Designed World			
Medical Technologies	<ul style="list-style-type: none"> • Vaccinations • Medicine • Products to take care of people and their belongings 	<ul style="list-style-type: none"> • Vaccines and medicine • Development of devices to repair or replace certain parts of the body • Use of products and systems to inform 	<ul style="list-style-type: none"> • Advances and innovations in medical technologies • Sanitation processes • Immunology • Awareness about genetic engineering
Agricultural and Related Biotechnologies	<ul style="list-style-type: none"> • Technologies in agriculture • Tools and materials for use in ecosystems 	<ul style="list-style-type: none"> • Artificial ecosystems • Agriculture wastes • Processes in agriculture 	<ul style="list-style-type: none"> • Technological advances in agriculture • Specialized equipment and practices • Biotechnology and agriculture • Artificial ecosystems and management • Development of refrigeration, freezing, dehydration, preservation, and irradiation
Energy and Power Technologies	<ul style="list-style-type: none"> • Energy comes in many forms • Energy should not be wasted 	<ul style="list-style-type: none"> • Energy comes in different forms • Tools, machines, products, and systems use energy to do work 	<ul style="list-style-type: none"> • Energy is the capacity to do work • Energy can be used to do work using many processes • Power is the rate at which energy is converted from one form to another • Power systems • Efficiency and conservation

Compendium of Major Topics for National Technology Content Standards

Information and Communication Technologies	<ul style="list-style-type: none"> • Information • Communication • Symbols 	<ul style="list-style-type: none"> • Processing information • Many sources of information • Communication • Symbols 	<ul style="list-style-type: none"> • Information and communication systems • Communication systems encode, transmit, and receive information • Factors influencing the design of a message • Language of technology
Transportation Technologies	<ul style="list-style-type: none"> • Transportation system • Individuals and goods • Care of transportation products and systems 	<ul style="list-style-type: none"> • Transportation system use • Transportation systems and subsystems 	<ul style="list-style-type: none"> • Design and operation of transportation systems • Subsystems of transportation system
Manufacturing Technologies	<ul style="list-style-type: none"> • Manufacturing systems • Design of products 	<ul style="list-style-type: none"> • Natural materials • Manufacturing processes • Consumption of goods • Chemical technologies 	<ul style="list-style-type: none"> • Manufacturing systems • Manufacturing goods • Manufacturing processes • Chemical technologies • Materials use • Marketing products
Construction Technologies	<ul style="list-style-type: none"> • Different types of buildings • How parts of buildings fit 	<ul style="list-style-type: none"> • Modern communities • Structures • Systems used 	<ul style="list-style-type: none"> • Construction designs • Foundations • Purpose of structures • Buildings systems and sub-systems