

HAMPTON BOROUGH PUBLIC SCHOOL

**INFORMATION LITERACY, TECHNOLOGY, AND LIBRARY STUDIES
CURRICULUM GUIDE**

KINDERGARTEN THROUGH EIGHTH GRADE

**Board of Education Approval: April 16, 2013
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HAMPTON BOROUGH PUBLIC SCHOOL
INFORMATION LITERACY, TECHNOLOGY, AND LIBRARY STUDIES
CURRICULUM GUIDE
K-8

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AFFIRMATIVE ACTION STATEMENT

It is the policy of the Board of Education to provide equal employment and educational opportunities regardless of race, color, creed, religion, sex, ancestry, national origin, place of residence, social or economic condition, or non-applicable handicap.

Affirmative Action Office:

Alice Burtnick
c/o Hampton School
32-41 South Street
Hampton, NJ 08827
(908) 537-4101

ADAPTATIONS FOR SPECIAL EDUCATION STATEMENT

Although this curriculum guide has been developed for general education delivery, the knowledge, skills, attitudes, and behaviors identified are appropriate for the special education pupils in Hampton Public School. Modifications necessary to accommodate the educational needs of individual pupil's handicaps will be described in the Individualized Educational Program (IEP). They are on file at:

Office of Special Services
c/o Hampton School
32-41 South Street
Hampton, NJ 08827
(908) 537-4101

PURPOSE/RATIONALE

Hampton School's students live and learn in a world in which information and technological sources are expanding at an ever increasing rate. In order to prepare for their futures, students must learn to navigate and manage the information sources at their disposal. Through the preparation of a curriculum that combines literacies in technology, information, media, communication, and information-seeking, the Hampton School Community seeks to effectively prepare our students to meet the challenges faced by the learners of the 21st Century.

Using a curriculum based on expert research provided by the International Society for Technology in Education, the International Technology Education Association, The Partnership for 21st Century Skills, the American Association of School Librarians, and all strands of the New Jersey Core Curriculum Content Standards, Hampton School is committed to providing our students with the skills, attitudes, and instruction required to successfully function in a 21st Century workforce.

The acquisition of library and technological skills occurs primarily in the elementary level classes (K-5). Students are exposed to technological tools, basic concepts involving use and access, as well as basic information and database searching. Technological and information skills are imparted while reinforcing curricular concepts.

In the middle school, students work on projects that have been co-planned with subject level teachers. Most work is independent as students apply technological skills in pursuit of a particular objective. Technology skills are taught as needed and completely integrated into the content specific curriculum.

**INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS
AND PERFORMANCE INDICATORS FOR STUDENTS**

1. **Creativity and Innovation:** Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:
 - a. Apply existing knowledge to generate new ideas, products, or processes.
 - b. Create original works as a means of personal or group expression.
 - c. Use models and simulations to explore complex systems and issues.
 - d. Identify trends and forecast possibilities.
2. **Communication and Collaboration:** Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:
 - a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
 - b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
 - c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
 - d. Contribute to project teams to produce original works or solve problems.
3. **Research and Information Fluency:** Students apply digital tools to gather, evaluate and use information. Students:
 - a. Plan strategies to guide inquiry.
 - b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
 - c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
 - d. Process data and report results.
4. **Critical Thinking, Problem Solving, and Decision Making:** Students use critical thinking skills to plan and conduct research, manage projects, solve problems, make informed decisions using appropriate digital tools and resources. Students:
 - a. Identify and define authentic problems and significant questions for investigation.
 - b. Plan and manage activities to develop a solution or complete a project.
 - c. Collect and analyze data to identify solutions and/or make informed decisions.
 - d. Use multiple processes and diverse perspectives to explore alternative solutions.
5. **Digital Citizenship:** Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:
 - a. Advocate and practice safe, legal, and responsible use of information and technology.
 - b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
 - c. Demonstrate personal responsibility for lifelong learning.
 - d. Exhibit leadership for digital citizenship.
6. **Technology Operations and Concepts:** Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:
 - a. Understand and use technology systems.
 - b. Select and use applications effectively and productively.
 - c. Troubleshoot systems and applications.
 - d. Transfer current knowledge to learning of new technologies.

**INTERNATIONAL TECHNOLOGY EDUCATION ASSOCIATION (ITEA)
STANDARDS FOR TECHNOLOGICAL LITERACY (2007, 3RD ed.)**

THE NATURE OF TECHNOLOGY

1. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY

Students in grades K-2 should learn that:

- A. The natural world and human-made world are different.
- B. All people use tools and techniques to help them do things.

Students in grades 3-5 should learn that:

- C. Things that are found in nature differ from things that are human made in how they are produced and used.
- D. Tools, materials, and skills are used to make things and carry out tasks.
- E. Creative thinking and economic and cultural influences shape technological development.

Students in grades 6-8 should learn that:

- F. New products and systems can be developed to solve problems or to help do things that could not be done without the help of technology.
- G. The development of technology is a human activity and is the result of individual or collective needs and the ability to be creative.
- H. Technology is closely linked to creativity, which has resulted in innovation.
- I. Corporations can often create demand for a product by bringing it onto the market and advertising it.

2. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY

Students in grades K-2 should learn that:

- A. Some systems are found in nature and some are made by humans.
- B. Systems have parts or components that work together to accomplish a goal.
- C. Tools are simple objects that help humans complete tasks.
- D. Different materials are used in making things.
- E. People plan in order to get things done.

Students in grades 3-5 should learn that:

- F. A subsystem is a system that operates as part of another system..
- G. When parts of a system are missing, it may not work as planned
- H. Resources are the things needed to get a job done, such as tools and machines, materials, information, energy, people, capital, and time.
- I. Tools are used to design, make, use, and assess technology.
- J. Materials have many different properties.
- K. Tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing.
- L. Requirements are the limits to designing or making a product or system.

Students in grades 6-8 should learn that:

- M. Technological systems include input, processes, output, and, at times, feedback.
- N. Systems thinking involves considering how every part relates to others.
- O. An open-loop system has no feedback path and requires human intervention, while a closed-loop system uses feedback.

I=Introduce

D=Develop

M=Master

- P. Technological systems can be connected to one another.
- Q. Malfunctions of any part of a system may affect the function and quality of the system.
- R. Requirements are the parameters placed on the development of a product or system.
- S. Trade-off is a decision process recognizing the need for careful compromises among competing factors.
- T. Different technologies involve different sets of priorities.
- U. Maintenance is the process of inspecting and servicing a product or system on a regular basis in order for it to continue functioning properly, to extend its life, or to upgrade its capability.
- V. Controls are mechanisms or particular steps that people perform using information about the system that causes systems to change.

3 STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTIONS BETWEEN TECHNOLOGY AND OTHER FIELDS OF STUDY

Students in grades K-2 should learn that:

- A. The study of technology uses many of the same ideas and skills as other subjects.

Students in grades 3-5 should learn that:

- B. Technologies are often combined.
- C. Various relationships exist between technology and other fields of study.

Students in grades 6-8 should learn that:

- D. Technological systems often interact with one another.
- E. A product, system, or environment developed for one setting may be applied to another setting.
- F. Knowledge gained from other fields of study has a direct effect on the development of technological products and systems.

TECHNOLOGY AND SOCIETY

4. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY

Students in grades K-2 should learn that:

- A. The use of tools and machines can be helpful or harmful.

Students in grades 3-5 should learn that:

- B. When using technology, results can be good or bad.
- C. The use of technology can have unintended consequences.

Students in grades 6-8 should learn that:

- D. The use of technology affects humans in various ways, including their safety, comfort, choices, and attitudes about technology's development and use.

5. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT

Students in grades K-2 should learn that:

- A. Some materials can be reused and/or recycled.

Students in grades 3-5 should learn that:

- B. Waste must be appropriately recycled or disposed of to prevent unnecessary harm to the environment.
- C. The use of technology affects the environment in good and bad ways.

Students in grades 6-8 should learn that:

- D. The management of waste produced by technological systems is an important societal issue.

I=Introduce

D=Develop

M=Master

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- E. Technologies can be used to repair damage caused by natural disasters and to break down waste from the use of various products and systems.
- F. Decisions to develop and use technologies often put environmental and economic concerns in direct competition with one another.

6. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE ROLE OF SOCIETY IN THE DEVELOPMENT AND USE OF TECHNOLOGY

Students in grades K-2 should learn that:

- A. Products are made to meet individual needs and wants.

Students in grades 3-5 should learn that:

- B. Because people's needs and wants change, new technologies are developed, and old ones are improved to meet those changes.
- C. Individual, family, community, and economic concerns may expand or limit the development of technologies.

Students in grades 6-8 should learn that:

- D. Throughout history, new technologies have resulted from the demands, values, and interests of individuals, businesses, industries, and societies.
- E. The use of inventions and innovations has led to changes in society and the creation of new needs and wants.
- F. Social and cultural priorities and values are reflected in technological devices.
- G. Meeting societal expectations is the driving force behind the acceptance and use of products and systems.

7. STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY AND LOTS OF OTHER STUFF

Students in grades K-2 should learn that:

- A. The way people live and work has changed throughout history because of technology.

Students in grades 3-5 should learn that:

- B. People have made tools to provide food, to make clothing, and to protect themselves.

Students in grades 6-8 should learn that:

- C. Many inventions and innovations have evolved by using slow and methodical processes of tests and refinements.
- D. The specialization of function has been at the heart of many technological improvements.
- E. The design and construction of structures for service or convenience have evolved from the development of techniques for measurement, controlling systems, and the understanding of spatial relationships.
- F. In the past, an invention or innovation was not usually developed with the knowledge of science.

DESIGN

8 STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN

Students in grades K-2 should learn that:

- A. Everyone can design solutions to a problem.
- B. Design is a creative process.

Students in grades 3-5 should learn that:

- C. The design process is a purposeful method of planning practical solutions to problems.

I=Introduce

D=Develop

M=Master

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- D. Requirements for a design include such factors as the desired elements and features of a product or system or the limits that are placed on the design.

Students in grades 6-8 should learn that:

- E. Design is a creative planning process that leads to useful products and systems.
- F. There is no perfect design.
- G. Requirements for a design are made up of criteria and constraints.

9 STUDENTS WILL DEVELOP AN UNDERSTANDING OF ENGINEERING DESIGN

Students in grades K-2 should learn that:

- A. The engineering design process includes identifying a problem, looking for ideas, developing solutions, and sharing solutions with others
- B. Expressing ideas to others verbally and through sketches and models is an important part of the design process.

Students in grades 3-5 should learn that:

- C. The engineering design process involves defining a problem, generating ideas, selecting a solution, testing the solution, making the item, evaluating it, and presenting the results.
- D. When designing an object, it is important to be creative and consider all ideas.
- E. Models are used to communicate and test design ideas and processes.

Students in grades 6-8 should learn that:

- F. Design involves a set of steps, which can be performed in different sequences and repeated as needed.
- G. Brainstorming is a group problem-solving design process in which each person in the group presents his or her ideas in an open forum..
- H. Modeling, testing, evaluating, and modifying are used to transform ideas into practical solutions.

10 STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND THE EXPERIMENTATION IN PROBLEM SOLVING.

Students in grades K-2 should learn that:

- A. Asking questions and making observations helps a person to figure out how things work
- B. All products and systems are subject to failure. Many products and systems, however, can be fixed.

Students in grades 3-5 should learn that:

- C. Troubleshooting is a way of finding out why something does not work so that it can be fixed.
- D. Invention and innovation are creative ways to turn ideas into real things.
- E. The process of experimentation, which is common in science, can also be used to solve technological problems.

Students in grades 6-8 should learn that:

- F. Troubleshooting is a problem solving method used to identify the cause of a malfunction in a technological system.
- G. Invention is a process of turning ideas and imagination into devices and systems. Innovation is the process of modifying an existing product or system to improve it.
- H. Some technological problems are best solved through experimentation.

ABILITIES FOR A TECHNOLOGICAL WORLD

11. STUDENTS WILL DEVELOP THE ABILITIES TO APPLY THE DESIGN PROCESS

Students in grades K-2 should be able to:

***I*=Introduce**

***D*=Develop**

***M*=Master**

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- A. Brainstorm people's needs and wants and pick some problems that can be solved through the design process.
- B. Build or construct an object using the design process.
- C. Investigate how things are made and how they can be improved.

Students in grades 3-5 should be able to:

- D. Identify and collect information about everyday problems that can be solved by technology, and generate ideas and requirements for solving a problem.
- E. The process of designing involves presenting some possible solutions in visual form and then selecting the best solutions from many.
- F. Test and evaluate the solutions for the design problem.
- G. Improve the design solutions.

Students in grades 6-8 should be able to:

- H. Apply a design process to solve problems in and beyond the laboratory-classroom.
- I. Specify criteria and constraints for the design.
- J. Make two-dimensional and three-dimensional representations of the designed solution.
- K. Test and evaluate the design in relation to pre-established requirements, such as criteria and constraints, and refine as needed.
- L. Make a product or system and document the solution.

12 STUDENTS WILL DEVELOP THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.

Students in grades K-2 should be able to:

- A. Discover how things work.
- B. Use hand tools correctly and safely and name them correctly.
- C. Recognize and use everyday symbols.

Students in grades 3-5 should be able to:

- D. Follow step-by-step directions to assemble a product.
- E. Select and safely use tools, products, and systems for specific tasks.
- F. Use computers to access and organize information.
- G. Use common symbols, such as numbers and words, to communicate key ideas.

Students in grades 6-8 should be able to:

- H. Use information provided in manuals, protocols, or by experienced people to see and understand how things work.
- I. Use tools, materials, and machines safely to diagnose, adjust, and repair systems.
- J. Use computers and calculators in various applications.
- K. Operate and maintain systems in order to achieve a given purpose.

13 STUDENTS WILL DEVELOP THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.

Students in grades K-2 should be able to:

- A. Collect information about everyday products and systems by asking questions.
- B. Determine if the human use of a product or system creates positive or negative results

Students in grades 3-5 should be able to:

- C. Compare, contrast, and classify collected information in order to identify patterns.

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- D. Investigate and assess the influence of a specific technology on the individual, family, community, and environment.
- E. Examine the trade-offs of using a product or system and decide when it could be used.

Students in grades 6-8 should be able to:

- F. Design and use instruments to gather data.
- G. Use data collected to analyze and interpret trends in order to identify the positive or negative effects of a technology.
- H. Identify trends and monitor potential consequences of a technological development.
- I. Interpret and evaluate the accuracy of the information obtained and determine if it is useful.

THE DESIGNED WORLD

14 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MEDICAL TECHNOLOGIES

Students in grades K-2 should learn that:

- A. Vaccinations protect people from getting certain diseases.
- B. Medicine helps people who are sick get better.
- C. There are many products designed specifically to help people take care of themselves.

Students in grades 3-5 should learn that:

- D. Vaccines are designed to prevent diseases from spreading; medicines are designed to relieve symptoms and stop diseases from developing..
- E. Technological advances have made it possible to create new devices, to repair or replace certain parts of the body, and to provide a means for mobility.
- F. Many tools and devices have been designed to help provide clues about health and to provide a safe environment.

Students in grades 6-8 should learn that:

- G. Advances and innovations in medical technologies are used to improve health care.
- H. Sanitation processes used in the disposal of medical products help to protect people from harmful organisms and disease, and shape the ethics of medical safety.
- I. The vaccines developed for use in immunization requires specialized technologies to support environments in which sufficient amounts of vaccines are produced.
- J. Genetic engineering involves modifying the structure of DNA to produce novel genetic make-ups.

15 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE AGRICULTURAL AND RELATED BIOTECHNOLOGIES

Students in grades K-2 should learn that:

- A. The use of technologies in agriculture makes it possible for food to be available year round and to conserve resources.
- B. There are many different tools necessary to control and make up the parts of an ecosystem.

Students in grades 3-5 should learn that:

- C. Artificial ecosystems are human-made environments that are designed to function as a unit and are comprised of humans, plants, and animals.
- D. Most agricultural waste can be recycled
- E. Many processes used in agriculture require different procedures, products, or systems.

Students in grades 6-8 should learn that:

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- F. Technological advances in agriculture directly affect the time and number of people required to produce food for a large population.
- G. A wide range of specialized equipment and practices is used to improve the production of food, fiber, fuel, and other useful products, and in the care of animals.
- H. Biotechnology applies the principles of biology to create commercial products or processes.
- I. Artificial ecosystems are human-made complexes that replicate some aspects of the natural environment.
- J. The development of refrigeration, freezing, dehydration, preservation, and irradiation provide long-term storage of food and reduce the health risks caused by tainted food.

16 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE ENERGY AND POWER TECHNOLOGIES

Students in grades K-2 should learn that:

- A. Energy comes in many forms.
- B. Energy should not be wasted.

Students in grades 3-5 should learn that:

- C. Energy comes in different forms.
- D. Tools, machines, products, and systems use energy in order to do work.

Students in grades 6-8 should learn that:

- E. Energy is the capacity to do work.
- F. Energy can be used to do work, using many processes.
- G. Power is the rate at which energy is converted from one form to another or transferred from one place to another, or the rate at which work is done.
- H. Power systems are used to drive and provide propulsion to other technological products and systems.
- I. Much of the energy used in our environment is not used efficiently.

17 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE INFORMATION AND COMMUNICATION TECHNOLOGIES

Students in grades K-2 should learn that:

- A. Information is data that has been organized.
- B. Technology enables people to communicate by sending and receiving information over a distance.
- C. People use symbols when they communicate by technology.

Students in grades 3-5 should learn that:

- D. The processing of information through the use of technology can be used to help humans make decisions and solve problems.
- E. Information can be acquired and sent through a variety of technological sources, including print and electronic media.
- F. Communication technology is the transfer of messages among people and/or machines over distances through the use of technology.
- G. Letters, characters, icons, and signs are symbols that represent ideas, quantities, elements, and operations.

Students in grades 6-8 should learn that:

- H. Information and communication systems allow information to be transferred from human to human, human to machine, and machine to human.
- I. Communication systems are made up of a source, encoder, transmitter, receiver, decoder, and destination.

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- J. The design of a message is influenced by such factors as the intended audience, medium, purpose, and nature of the message.
- K. The use of symbols, measurements, and drawings promotes clear communication by providing a common language to express ideas.

18 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE TRANSPORTATION TECHNOLOGIES

Students in grades K-2 should learn that:

- A. A transportation system has many parts that work together to help people travel.
- B. Vehicles move people or goods from one place to another in water, air or space, and on land.
- C. Transportation vehicles need to be cared for to prolong their use.

Students in grades 3-5 should learn that:

- D. The use of transportation allows people and goods to be moved from place to place.
- E. A transportation system may lose efficiency or fail if one part is missing or malfunctioning or if a subsystem is not working.

Students in grades 6-8 should learn that:

- F. Transporting people and goods involves a combination of individuals and vehicles.
- G. Transportation vehicles are made up of subsystems, such as structural, propulsion, suspension, guidance, control, and support that must function together for a system to work effectively.
- H. Governmental regulations often influence the design and operation of transportation systems.
- I. Processes, such as receiving, holding, storing, loading, moving, unloading, delivering, evaluating, marketing, managing, communicating, and using conventions are necessary for the entire transportation system to operate efficiently.

19 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES

Students in grades K-2 should learn that:

- A. Manufacturing systems produce products in quantity.
- B. Manufactured products are designed.

Students in grades 3-5 should learn that:

- C. Processing systems convert natural materials into products.
- D. Manufacturing processes include designing products, gathering resources, and using tools to separate, form, and combine materials in order to produce products.
- E. Manufacturing enterprises exist because of a consumption of goods.

Students in grades 6-8 should learn that:

- F. Manufacturing systems use mechanical processes that change the form of materials through the processes of separating, forming, combining, and conditioning.
- G. Manufactured goods may be classified as durable and nondurable.
- H. The manufacturing process includes the designing, development, making, and servicing of products and systems.
- I. Chemical technologies are used to modify or alter chemical substances.
- J. Materials must first be located before they can be extracted from the earth through such processes as harvesting, drilling, and mining.
- K. Marketing a product involves informing the public about it as well as assisting in selling and distributing it.

20 STUDENTS WILL DEVELOP AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE CONSTRUCTION TECHNOLOGIES

Students in grades K-2 should learn that:

- A. People live, work, and go to school in buildings, which are of different types: houses, apartments, office buildings, and schools.
- B. The type of structure determines how the parts are put together.

Students in grades 3-5 should learn that:

- C. Modern communities are usually planned according to guidelines.
- D. Structures need to be maintained.
- E. Many systems are used in buildings.

Students in grades 6-8 should learn that:

- F. The selection of designs for structures is based on factors such as building laws and codes, style, convenience, cost, climate, and function.
- G. Structures rest on a foundation..
- H. Some structures are temporary, while others are permanent
- I. Buildings generally contain a variety of subsystems.

**AMERICAN ASSOCIATION OF SCHOOL LIBRARIANS (AASL)
STANDARDS FOR THE 21ST CENTURY LEARNER**

1. Inquire, Think Critically, and Gain Knowledge

1.1. **Skills:** The key abilities needed for understanding, learning, thinking, and mastering subjects.

- 1.1.1. Follow an inquiry-based process in seeking knowledge in curricular subjects and make real world connection for using this process in own life.
- 1.1.2. Use prior and background knowledge as context for new learning
- 1.1.3. Develop and refine a range of questions to frame the search for new understanding.
- 1.1.4. Find, evaluate, and select appropriate sources to answer questions.
- 1.1.5. Evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context.
- 1.1.6. Read, view, and listen for information presented in any format (e.g., textual, visual, media, digital) in order to make inferences and gather meaning.
- 1.1.7. Make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, and point of view or bias.
- 1.1.8. Demonstrate mastery of technology tools for accessing information and pursuing inquiry.
- 1.1.9. Collaborate with others to broaden and deepen understanding.

1.2. **Dispositions in Action:** Ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken.

- 1.2.1. Display initiative and engagement by posing questions and investigating the answers beyond the collection of superficial facts.
- 1.2.2. Demonstrate confidence and self-direction by making independent choices in the selection of resources and information.
- 1.2.3. Demonstrate creativity by using multiple resources and formats.
- 1.2.4. Maintain a critical stance by questioning the validity and accuracy of all information.
- 1.2.5. Demonstrate adaptability by changing the inquiry focus, questions, resources, or strategies when necessary to achieve success.
- 1.2.6. Display emotional resilience by persisting in information searching despite challenges.
- 1.2.7. Display persistence by continuing to pursue information to gain a broad perspective.

1.3. **Responsibilities:** Common behaviors used by independent learners in researching, investigating, and problem solving.

- 1.3.1. Respect copyright/intellectual property rights of creators and producers.
- 1.3.2. Seek divergent perspectives during information gathering and assessment.
- 1.3.3. Follow ethical and legal guidelines in gathering and using information.
- 1.3.4. Contribute to the exchange of ideas within the learning community.
- 1.3.5. Use information technology responsibly.

1.4. **Self-Assessment Strategies:** Reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective.

- 1.4.1. Monitor own information-seeking processes for effectiveness and progress, and adapt as necessary.
- 1.4.2. Use interaction and feedback from teachers and peers to guide own inquiry process.
- 1.4.3. Monitor gathered information, and assess for gaps or weaknesses.

1.4.4. Seek appropriate help when it is needed.

2. **Draw Conclusions, Make Informed Decisions, Apply Knowledge to New Situations, and Create New Knowledge.**

2.1. **Skills:** The key abilities needed for understanding, learning, thinking, and mastering subjects.

2.1.1. Continue an inquiry-based research process by applying critical-thinking skills (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge.

2.1.2. Organize knowledge so that it is useful.

2.1.3. Use strategies to draw conclusions from information and apply knowledge to curricular areas, real-world situations, and further investigations.

2.1.4. Use technology and other information tools to analyze and organize information.

2.1.5. Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.

2.1.6. Use the writing process and visual literacy and technology skills to create products that express new understandings.

2.2. **Dispositions in Action:** Ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken

2.2.1. Demonstrate flexibility in the use of resources by adapting information strategies to each specific resource and by seeking additional resources when clear conclusions cannot be drawn.

2.2.2. Use both divergent and convergent thinking to formulate alternative conclusions and test them against the evidence.

2.2.3. Employ a critical stance in drawing conclusions by demonstrating that the pattern of evidence leads to a decision or conclusion.

2.2.4. Demonstrate personal productivity by completing products to express learning.

2.3. **Responsibilities:** Common behaviors used by independent learners in researching, investigating, and problem solving.

2.3.1. Connect understanding to the real world.

2.3.2. Consider diverse and global perspectives in drawing conclusions.

2.3.3. Use valid information and reasoned conclusions to make ethical decisions.

2.4. **Self-Assessment Strategies:** Reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective.

2.4.1. Determine how to act on information (accept, reject, modify)

2.4.2. Reflect on systematic process and assess for completeness of investigation.

2.4.3. Recognize new knowledge and understanding.

2.4.4. Develop directions for future investigations.

3. **Share Knowledge and Participate Ethically and Productively as Members of Our Democratic Society.**

3.1. **Skills:** The key abilities needed for understanding, learning, thinking, and mastering subjects.

3.1.1. Conclude an inquiry-based research process by sharing new understandings and reflecting on the learning.

3.1.2. Participate and collaborate as members of a social and intellectual network of learners.

3.1.3. Use writing and speaking skills to communicate new understandings effectively.

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- 3.1.4. Use technology and other tools to organize and display knowledge and understanding in ways that others can view, use, and assess.
- 3.1.5. Connect learning to community issues.
- 3.1.6. Use information and technology ethically and responsibly
- 3.2. **Dispositions in Action:** Ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken
 - 3.2.1. Demonstrate leadership and confidence by presenting ideas to others in both formal and informal situations
 - 3.2.2. Show social responsibility by participating actively with others in learning situations and by contributing questions and ideas during group discussions.
 - 3.2.3. Demonstrate teamwork by working productively with others.
- 3.3. **Responsibilities:** Common behaviors used by independent learners in researching, investigating, and problem solving.
 - 3.3.1. Solicit and respect diverse perspectives while searching for information, collaborating with others, and participating as a member of the community.
 - 3.3.2. Respect the differing interests and experiences of others and seek a variety of viewpoints.
 - 3.3.3. Use knowledge and information skills and dispositions to engage in public conversation and debate around issues of common concern.
 - 3.3.4. Create products that apply to authentic, real-world contexts.
 - 3.3.5. Contribute to the exchange of ideas within and beyond the learning community.
 - 3.3.6. Use information and knowledge in the service of democratic values.
 - 3.3.7. Respect the principles of intellectual freedom.
- 3.4. **Self-Assessment Strategies:** Reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective.
 - 3.4.1. Assess the processes by which learning was achieved in order to revise strategies and learn more effectively in the future.
 - 3.4.2. Assess the quality and effectiveness of the learning product.
 - 3.4.3. Assess own ability to work with others in a group setting by evaluating varied roles, leadership, and demonstration of respect for other viewpoints.
- 4. **Pursue personal and aesthetic growth.**
 - 4.1. **Skills:** The key abilities needed for understanding, learning, thinking, and mastering subjects.
 - 4.1.1. Read, view, and listen for pleasure and personal growth.
 - 4.1.2. Read widely and fluently to make connections with self, the world, and previous reading.
 - 4.1.3. Respond to literature and creative expressions of ideas in various formats and genres.
 - 4.1.4. Seek information for personal learning in a variety of formats and genres.
 - 4.1.5. Connect ideas to own interests and previous knowledge and experience.
 - 4.1.6. Organize personal knowledge in a way that can be called upon easily.
 - 4.1.7. Use social networks and information tools to gather and share information.
 - 4.1.8. Use creative and artistic formats to express personal learning.
 - 4.2. **Dispositions in Action:** Ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken.
 - 4.2.1. Display curiosity by pursuing interests through multiple resources.

I=Introduce

D=Develop

M=Master

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- 4.2.2. Demonstrate motivation by seeking information to answer personal questions and interests, trying a variety of formats and genres, and displaying a willingness to go beyond academic requirements.
 - 4.2.3. Maintain openness to new ideas by considering divergent opinions, changing opinions, or conclusions when evidence supports the change, and seeking information about new ideas encountered through academic or personal experiences.
 - 4.2.4. Show an appreciation for literature by electing to read for pleasure and expressing an interest in various literary genres.
- 4.3. **Responsibilities:** Common behaviors used by independent learners in researching, investigating, and problem solving.
- 4.3.1. Participate in the social exchange of ideas, both electronically and in person.
 - 4.3.2. Recognize that resources are created for a variety of purposes.
 - 4.3.3. Seek opportunities for pursuing personal aesthetic growth.
 - 4.3.4. Practice safe and ethical behaviors in personal electronic communication and interaction.
- 4.4. **Self-Assessment Strategies:** Reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective.
- 4.4.1. Identify own areas of interest.
 - 4.4.2. Recognize the limits of own personal knowledge.
 - 4.4.3. Recognize how to focus efforts in personal learning.
 - 4.4.4. Interpret new information based on cultural and social context.
 - 4.4.5. Develop personal criteria for gauging how effectively own ideas are expressed.
 - 4.4.6. Evaluate own ability to select resources that are engaging and appropriate for personal interests and needs.

NJ CORE CURRICULUM CONTENT STANDARDS
TECHNOLOGY

- 8.1 EDUCATIONAL TECHNOLOGY:** All students will use digital tools to assess, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.
- A. **Technology Operations and Concepts:** The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.
 - B. **Creativity and Innovation:** The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.
 - C. **Communication and Collaboration:** Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.
 - D. **Digital Citizenship:** Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.
 - E. **Research and Information Literacy:** Effective use of digital tools assists in gathering and managing information.
 - F. **Critical Thinking, Problem Solving, and Decision-Making:** Information accessed through the use of digital tools assists in generating solutions and making decisions.
- 8.2 TECHNOLOGY EDUCATION, ENGINEERING, AND DESIGN:** All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.
- A. **Nature of Technology: Creativity and Innovation:** Technology products and systems impact every aspect of the world in which we live.
 - B. **Design: Critical Thinking, Problem Solving, and Decision Making:** The design process is a systematic approach to solving problems.
 - C. **Technological Citizenship, Ethics, and Society:** Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.
 - D. **Research and Information Fluency:** Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.
 - E. **Communication and Collaboration:** Digital tools facilitate local and global communication and collaboration in designing products and systems.
 - F. **Resources for a Technological World:** Technological products and systems are created through the application and appropriate use of technological resources.
 - G. **The Designed World:** The designed world is the product of a design process that provides the means to convert resources into products and systems.

ADDITIONAL NEW JERSEY CORE CURRICULUM CONTENT STANDARDS ADDRESSED

LANGUAGE ARTS LITERACY

Standard 3.1: All students will understand and apply the knowledge of sounds, letters, and words in written English to become independent and fluent readers, and will read a variety of materials and texts with fluency and comprehension.

Standard 3.2: All students will write in clear, concise, organized language that varies in content and form for different audiences and purposes

Standard 3.3: All students will speak in clear, concise, organized language that varies in content and form for different audiences and purpose.

Standard 3.4: All students will listen actively to information from a variety of sources in a variety of situations.

Standard 3.5: All students will access, view, evaluate, and respond to print, non-print, and electronic texts and resources.

MATHEMATICS

Standard 4.1: All students will develop number sense and will perform standard numerical operations and estimations on all types of numbers in a variety of ways.

Standard 4.2: All students will develop spatial sense and the ability to use geometric properties, relationships, and measurement to model, describe and analyze phenomena.

Standard 4.3: All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes.

Standard 4.4: All students will develop an understanding of the concepts and techniques of data analysis, probability, and discrete mathematics and will use them to model situations, solve problems, and analyze and draw appropriate inferences from data.

Standard 4.5: All students will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas.

SCIENCE

Standard 5.1: All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.

Standard 5.2: All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.

Standard 5.3: All students will integrate mathematics as a tool for problem solving in science, and as a means of expressing and/or modeling scientific theories.

Standard 5.4: All students will understand the interrelationships between science and technology and develop a conceptual understanding to the nature and process of technology.

Standard 5.5: All Students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

Standard 5.6: All students will gain an understanding of the structure and behavior of matter.

Standard 5.7: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.

Standard 5.8: All students will gain an understanding to the structure, dynamics, and geophysical systems of the earth.

Standard 5.9: All students will gain an understanding of the origin, evolution, and structure of the universe.

Standard 5.10: All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.

SOCIAL STUDIES

Standard 6.1: All students will learn democratic citizenship and how to participate in the constitutional system of government of the United States.

Standard 6.2: All students will learn democratic citizenship through the humanities, by studying literature, art, history, and philosophy, and related fields.

Standard 6.3: All students will acquire historical understanding of political and diplomatic ideas, forces, and institutions throughout the history of New Jersey, the United States, and the world.

Standard 6.4: All students will acquire historical understanding of societal ideas and forces throughout the history of New Jersey, the United States, and the world.

Standard 6.5: All students will acquire historical understanding of varying cultures throughout the history of New Jersey, the United States, and the world.

Standard 6.6: All Students will acquire historical understanding of economic forces, ideas, and institutions throughout the history of New Jersey, the United States, and the world.

Standard 6.7: All students will acquire geographical understanding by studying the world in spatial terms.

Standard 6.8: All students will acquire geographical understanding by studying human systems in geography.

Standard 6.9: All students will acquire geographical understanding by studying the environment and society.

21ST CENTURY LIFE AND CAREERS

Standard 9.1: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 9.2: All students will develop skills strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

Standard 9.3: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

| KINDERGARTEN | | | | |
|---|---|----------|----------|----------|
| By the end of Kindergarten students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use the mouse to negotiate a simple menu on the screen (e.g., to print a picture) | 8.1.P.A.1 | X | | |
| Use electronic devices (e.g., computer) to type name and to create stories with pictures and letters/words. | 8.1.P.A.2 | X | | |
| Identify the “power keys” (e.g., ENTER, spacebar) on a keyboard | 8.1.P.A.3 | X | | |
| Recognize that the number keys are in a row on the top of the keyboard | 8.1.P.A.4 | X | | |
| Use basic technology terms in conversations (e.g., digital camera, battery, screen, computer, Internet, mouse, keyboards, and printer) | 8.1.P.A.5 | X | | |
| Turn computer and monitor on and off. | 8.1.P.A.6 | X | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use a digital camera to take a picture. | 8.1.P.B.1 | X | | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Operate frequently used, high-quality, interactive games or activities in either screen or toy-based formats | 8.1.P.C.1 | X | X | |
| Access materials on a disk, cassette tape, or DVD. Insert a disk, cassette tape, CD-ROM, DVD, or other storage device and press “play” and “stop” | 8.1.P.C.2 | X | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use the Internet to explore and investigate information with a teacher’s support | 8.1.P.E.1 | X | | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Navigate the basic functions of a browser, including how to open or close windows and use the “back” key | 8.1.P.F.1 | X | | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | <i>I</i> | <i>D</i> | <i>M</i> |
| Listen and respond to a story | 3.1,3.2, 3.3, 3.4, 3.5, 5.3, 9.1A, 9.1B, | X | X | |
| Care for and appropriately handle library materials | 6.1, 9.1.E, | X | | |
| Comply with the policies and procedures of the library | 3.4, 6.1, 9.1.C, 9.1.D, 9.1.F | X | | |
| Follow directions | 3.4, 6.1, 9.1.F | X | | |
| Begin to identify, locate, select, and access library materials | 3.1, 5.1, 9.1.D, 9.1.E, 9.3.A | X | | |

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|---|-----------------------------|---|--|--|
| Exhibit good listening skills | 3.1, 3.3, 3.4 | X | | |
| Respect other student's interests and needs | 3.3, 6.1, 6.2, 9.1.D, 9.1.F | X | | |
| Use the school library media specialist as a resource | 9.1.A, 9.1.D | X | | |

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| GRADE 1 | | | | |
|---|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 1, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Identify the basic features of a computer and explain how to use them effectively. | 8.1.2.A.1 | X | | |
| Use technology terms in daily practice | 8.1.2.A.2 | X | X | |
| Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages | 8.1.2.A.3 | X | | |
| Create a document with text using a word processing program | 8.1.2.A.4 | X | | |
| Demonstrate the ability to navigate in virtual environments that are developmentally appropriate | 8.1.2.A.5 | X | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Illustrate and communicate original ideas and stories using digital tools and media-rich resources | 8.1.2.B.1 | X | | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools | 8.1.2.C.1 | X | | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Model legal and ethical behaviors when using both print and non-print information by citing resources | 8.1.2.D.1 | X | | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions | 8.1.2.E.1 | X | | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use mapping tools to plan and choose alternate routes to and from various locations | 8.1.2.F.1 | X | | |

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|--|---|----------|----------|----------|
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Describe how technology products, systems, and resources are useful at school, home, and work | 8.2.2.A.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Brainstorm and devise a plan to repair a broken toy or tool using the design process | 8.2.2.B.1 | X | | |
| Investigate the influence of a specific technology on the individual, family, community, and environment | 8.2.2.B.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Demonstrate how reusing a product affects the local and global environment | 8.2.2.C.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions | 8.2.2.D.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results | 8.2.2.E.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Identify the resources needed to create technological products and systems | 8.2.2.F.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Describe how the parts of a common toy or tool interact and work as part of a system | 8.2.2.G.1 | X | | |
| Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose | 8.2.2.G.2 | X | | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | <i>I</i> | <i>D</i> | <i>M</i> |
| Attend and respond to a story | 3.1, 3.2, 3.3, 3.4, 3.5, 5.3, 9.1.A, 9.1.B | | X | |
| Care for and appropriately handle library resources | 6.1, 9.1.E | | X | |
| Comply with the policies and procedures of the library | 3.4, 6.1, 9.1.C, | | X | |

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| | 9.1.D, 9.1.F | | | |
| Follow oral and simple written directions | 3.4, 6.1, 9.1.F | | | |
| Identify the appropriate sections of the library for their needs | 3.1, 5.1, 9.1.D, 9.1.E, 9.3.A, | | | |
| Locate parts of a book: front, back, cover, title page, and spine | 3.1 | | | |
| Identify the author and illustrator of a book | 3.1, 8.2.A | | | |
| Locate the fiction and nonfiction sections of the library and understand the difference between the two types of books | 3.1, 8.2.A, 9.1.B, | | | |
| Begin to understand the organizational structure of books in the library: Dewey, alphabetical, etc. | 3.1, 8.2.A | | | |
| Demonstrate proper use of shelf markers | 3.4, 6.1, 9.1.C, 9.1.D, 9.1.F | | | |
| Become aware of the spine label as a tool for locating books in the library | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | | |
| Begin to use strategies for selecting appropriate books for independent reading | 9.1.A, 9.1.B | | | |
| Ask and explore questions related to a topic of interest and draw conclusions from information and data gathered. | 9.1.A, 9.1.D | | | |
| Exhibit good listening skills | 3.1, 3.3, 3.4 | | | |
| Respect other students' interests and skills | 3.3, 6.1, 6.2, 9.1.D, 9.1.F | | | |

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| GRADE 2 | | | | |
|---|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 2, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Identify the basic features of a computer and explain how to use them effectively. | 8.1.2.A.1 | | X | |
| Use technology terms in daily practice | 8.1.2.A.2 | | X | |
| Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages | 8.1.2.A.3 | | X | |
| Create a document with text using a word processing program | 8.1.2.A.4 | | X | |
| Demonstrate the ability to navigate in virtual environments that are developmentally appropriate | 8.1.2.A.5 | | X | X |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Illustrate and communicate original ideas and stories using digital tools and media-rich resources | 8.1.2.B.1 | | X | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools | 8.1.2.C.1 | X | | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Model legal and ethical behaviors when using both print and non-print information by citing resources | 8.1.2.D.1 | X | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions | 8.1.2.E.1 | X | X | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use mapping tools to plan and choose alternate routes to and from various locations | 8.1.2.F.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Describe how technology products, systems, and resources are useful at school, home, and work | 8.2.2.A.1 | X | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Brainstorm and devise a plan to repair a broken toy or tool using the design process | 8.2.2.B.1 | X | X | |
| Investigate the influence of a specific technology on the individual, family, | 8.2.2.B.2 | X | X | |

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| community, and environment | | | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Demonstrate how reusing a product affects the local and global environment | 8.2.2.C.1 | X | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions | 8.2.2.D.1 | X | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results | 8.2.2.E.1 | X | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Identify the resources needed to create technological products and systems | 8.2.2.F.1 | X | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Describe how the parts of a common toy or tool interact and work as part of a system | 8.2.2.G.1 | X | X | |
| Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose | 8.2.2.G.2 | X | X | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | <i>I</i> | <i>D</i> | <i>M</i> |
| Comply with the policies and procedures of the library | 3,4, 6.1, 9.1.F | | X | |
| Develop an appreciation for literature by recognizing certain authors and illustrators and award winning books from a variety of genres | 3.1, 5.1, 9.1.B, | | X | |
| Use strategies for selecting appropriate books for independent reading | 3.1, 5.1, 9.1.B | | X | |
| Locate and interpret the call numbers of easy picture books, fiction, nonfiction, and biographies | 3.1, 8.2.A | X | | |
| Identify parts of a book, including the title page, table of contents, and index | 3.1 | | X | |
| Locate and identify a book's title, author, illustrator, publisher, place of publication, and copyright date. | 3.1 | X | | |
| Recognize various mediums used in illustrations and be aware of specific children's illustrators | 1.1, 1.4, | | X | |
| Locate various sections of the library, including folktales, animals, dinosaurs, sports, and poetry | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | X | |
| Identify a variety of learning materials for reading pleasure and research, including periodicals, dictionary, encyclopedia, Internet | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | X | | |

I=Introduce

D=Develop

M=Master

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| | | | | |
|---|------------------------------------|--|---|--|
| Exhibit good listening skills | 3.1, 3.3, 3.4 | | X | |
| Respect other students' interests and needs | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |
| Explore different cultures through literature | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |

I=Introduce

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| GRADE 3 | | | | |
|---|------------------|-----------------|-----------------|-----------------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 3, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Demonstrate effective input of text and data using an input device | 8.1.4.A.1 | | X | |
| Create a document with text formatting and graphics using a word processing program | 8.1.4.A.2 | | X | |
| Create and present a multimedia presentation that includes graphics | 8.1.4.A.3 | | X | |
| Create a simple spreadsheet, enter data, and interpret the information. | 8.1.4.A.4 | X | | |
| Determine the benefits of a wide range of digital tools by using them to solve problems | 8.1.4.A.5 | X | | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Produce a media-rich digital story about a significant local event or issue based on first-person interviews | 8.1.4.B.1 | X | | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Engage in online discussions with learners in the United State or from other countries to understand their perspectives on a global problem or issue | 8.1.4.C.1 | X | | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies | 8.1.4.D.1 | X | | |
| Analyze the need for and use of copyrights | 8.1.4.D.2 | X | | |
| Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology | 8.1.4.D.3 | X | | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all ages | 8.1.4.E.1 | X | | |
| Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks | 8.1.4.E.2 | X | | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Select and apply digital tools to collect, organize, and analyze data that support a scientific finding | 8.1.4.F.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |

I=Introduce***D***=Develop***M***=Master

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|--|-------------|----------|----------|----------|
| NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | | | | |
| Investigate factors that influence the development and function of technology products and systems | 8.2.4.A.1 | X | | |
| Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences | 8.2.4.A.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | I | D | M |
| Develop a product using an online simulation that explores the design process | 8.2.4.B.1 | X | | |
| Design an alternative use for an existing product | 8.2.4.B.2 | X | | |
| Explain the positive and negative effect of products and systems on humans, other species, and the environment | 8.2.4.B.3 | X | | |
| Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study | 8.2.4.B.4 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | I | D | M |
| Explain the impact of disposing of materials in a responsible way | 8.2.4.C.1 | X | | |
| Explain the purpose of trademarks and the impact of trademark infringement on business | 8.2.4.C.2 | X | | |
| Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers | 8.2.4.C.3 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | I | D | M |
| Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses | 8.2.4.D.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | I | D | M |
| Work in collaboration with peers to produce and publish a report that explains how technology is or was successfully or unsuccessfully used to address a local or global problem | 8.2.4.E.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | I | D | M |
| Describe how resources are used in a technological product or system | 8.2.4.F.1 | X | | |
| Explain how resources are processed in order to produce technological products and systems | 8.2.4.F.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | I | D | M |
| Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product | 8.2.4.G.1 | X | | |
| Explain the functions of a system and subsystems | 8.2.4.G.2 | X | | |

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| | | | | |
|--|--|----------|----------|----------|
| Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer | 8.2.4.G.3 | X | | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | I | D | M |
| Comply with the policies and procedures of the library | 3.4, 6.1, 9.1.C, 9.1.D | | X | |
| Locate materials of interest in the library | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | X | |
| Know that the Dewey Decimal System is a resource location tool for nonfiction books | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | X | |
| Utilize general reference books for research assignments | 3.1, 3.3, 3.4 | | X | |
| Understand that fiction and nonfiction books can be used as resources for research and class assignments. | 3.1, 3.3, 3.4, 9.1.D | | X | |
| Use problem-solving skills to locate specific information in a variety of age appropriate reference materials. | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | X | |
| Identify and use all parts of a book. | 3.1 | | X | |
| Identify and explore a variety of literary genres | 3.1, 5.1, 8.2.A, 9.1.D, 9.1.E, 9.3.A | | X | |
| Use library-based databases and the Internet as a research tool | 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F | | X | |
| Exhibit good listening skills | 3.1, 3.3, 3.4 | | X | |
| Respect other students' interest and needs | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |
| Explore different cultures through literature, online resources, and reference materials | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |

I=Introduce

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| GRADE 4 | | | | |
|---|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 4, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Demonstrate effective input of text and data using an input device | 8.1.4.A.1 | | X | |
| Create a document with text formatting and graphics using a word processing program | 8.1.4.A.2 | | X | |
| Create and present a multimedia presentation that includes graphics | 8.1.4.A.3 | | X | |
| Create a simple spreadsheet, enter data, and interpret the information. | 8.1.4.A.4 | X | | |
| Determine the benefits of a wide range of digital tools by using them to solve problems | 8.1.4.A.5 | X | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Produce a media-rich digital story about a significant local event or issue based on first-person interviews | 8.1.4.B.1 | X | | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem or issue | 8.1.4.C.1 | X | | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies | 8.1.4.D.1 | | X | |
| Analyze the need for and use of copyrights | 8.1.4.D.2 | | X | |
| Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology | 8.1.4.D.3 | | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all ages | 8.1.4.E.1 | | X | |
| Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks | 8.1.4.E.2 | | X | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Select and apply digital tools to collect, organize, and analyze data that support a scientific finding | 8.1.4.F.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |

I=Introduce

D=Develop

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| Investigate factors that influence the development and function of technology products and systems | 8.2.4.A.1 | X | | |
| Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences | 8.2.4.A.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Develop a product using an online simulation that explores the design process | 8.2.4.B.1 | X | | |
| Design an alternative use for an existing product | 8.2.4.B.2 | | X | |
| Explain the positive and negative effect of products and systems on humans, other species, and the environment | 8.2.4.B.3 | | X | |
| Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study | 8.2.4.B.4 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI## | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of disposing of materials in a responsible way | 8.2.4.C.1 | | X | |
| Explain the purpose of trademarks and the impact of trademark infringement on business | 8.2.4.C.2 | | X | |
| Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers | 8.2.4.C.3 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses | 8.2.4.D.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Work in collaboration with peers to produce and publish a report that explains how technology is or was successfully or unsuccessfully used to address a local or global problem | 8.2.4.E.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Describe how resources are used in a technological product or system | 8.2.4.F.1 | X | X | |
| Explain how resources are processed in order to produce technological products and systems | 8.2.4.F.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product | 8.2.4.G.1 | X | X | |
| Explain the functions of a system and subsystems | 8.2.4.G.2 | | X | |
| Evaluate the function, value, and esthetics of a technological product, system, or | 8.2.4.G.3 | | X | |

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| environment from the perspective of the user and the producer | | | | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | <i>I</i> | <i>D</i> | <i>M</i> |
| Comply with the policies and procedures of the library | 3.4, 6.1, 91.C, 91.D, 91.F | | | X |
| Use the library's resources to satisfy classroom assignments and personal inquiries | 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F | | | X |
| Utilize indexes in reference materials | 3.1 | | X | |
| Acquire a general understanding of what information is available in a variety of print and online resources | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Search for and locate titles by subject, title, and author in an OPAC | 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F | X | | |
| Identify, locate, select, and utilize print materials by classification | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | X | | |
| Identify, locate, select, and utilize nonprint reference resources and use library-based databases and the Internet as a research tool | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | X | | |
| Identify and explore a variety of literary genres | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Understand that fiction and nonfiction books can be used as resources for research and class assignments | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Understand that libraries provide diverse collections presenting many points of view. | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | X | | |
| Exhibit good listening skills | 3.1, 3.3, 3.4 | | X | |
| Respect other students' interest and needs | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |
| Recognize the terms copyright and plagiarism | 8.1.D | X | | |
| Develop and understanding of different cultures through literature, online resources, and reference materials | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |

I=Introduce

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| GRADE 5 | | | | |
|---|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 5, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Demonstrate effective input of text and data using an input device | 8.1.4.A.1 | | | X |
| Create a document with text formatting and graphics using a word processing program | 8.1.4.A.2 | | | X |
| Create and present a multimedia presentation that includes graphics | 8.1.4.A.3 | | X | |
| Create a simple spreadsheet, enter data, and interpret the information. | 8.1.4.A.4 | | X | |
| Determine the benefits of a wide range of digital tools by using them to solve problems | 8.1.4.A.5 | | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Produce a media-rich digital story about a significant local event or issue based on first-person interviews | 8.1.4.B.1 | | X | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem or issue | 8.1.4.C.1 | | X | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies | 8.1.4.D.1 | | X | |
| Analyze the need for and use of copyrights | 8.1.4.D.2 | | X | |
| Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology | 8.1.4.D.3 | | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all ages | 8.1.4.E.1 | | X | |
| Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks | 8.1.4.E.2 | | X | |

I=Introduce

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| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Select and apply digital tools to collect, organize, and analyze data that support a scientific finding | 8.1.4.F.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Investigate factors that influence the development and function of technology products and systems | 8.2.4.A.1 | | X | |
| Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences | 8.2.4.A.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Develop a product using an online simulation that explores the design process | 8.2.4.B.1 | | X | |
| Design an alternative use for an existing product | 8.2.4.B.2 | | X | |
| Explain the positive and negative effect of products and systems on humans, other species, and the environment | 8.2.4.B.3 | | X | |
| Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study | 8.2.4.B.4 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of disposing of materials in a responsible way | 8.2.4.C.1 | | X | |
| Explain the purpose of trademarks and the impact of trademark infringement on business | 8.2.4.C.2 | | X | |
| Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers | 8.2.4.C.3 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses | 8.2.4.D.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Work in collaboration with peers to produce and publish a report that explains how technology is or was successfully or unsuccessfully used to address a local or global problem | 8.2.4.E.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |

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| Describe how resources are used in a technological product or system | 8.2.4.F.1 | | X | |
| Explain how resources are processed in order to produce technological products and systems | 8.2.4.F.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | I | D | M |
| Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product | 8.2.4.G.1 | | X | |
| Explain the functions of a system and subsystems | 8.2.4.G.2 | | X | |
| Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer | 8.2.4.G.3 | | X | |
| LIBRARY AND INFORMATION STUDIES | NJCCCS | I | D | M |
| Comply with the policies and procedures of the library | 3.4, 6.1, 9.1.C, 9.1.D, 9.1.F | | | X |
| Search for and locate titles by subject, title, and author in an OPAC | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Identify, locate, select, and utilize print materials by classification | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Identify, locate, select, and utilize nonprint reference resources and use library-based databases and the Internet as a research tool | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Identify and explore a variety of literary genres | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Understand that fiction and nonfiction books can be used as resources for research and class assignments | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | | XX |
| Understand that libraries provide diverse collections presenting many points of view. | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | | |
| Apply writing skills learned in the classroom when developing research projects | 3.1,3.2, 5.1, 8.1.A, 8.1.B, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | X | |
| Gather and organize information | | | X | |
| Refine note taking skills | | | X | |
| Produce a finished research project | | | X | |
| Create a works cited page | | | X | |
| Identify and explore a variety of literary genres | 3.1, 5.1, 8.1.C, 8.1.E, 8.1.F, 8.2.A, 8.2.D, 8.2.F, 9.1.D, 9.1.E, 9.3.A | | | |
| Exhibit good listening skills | 3.1, 3.3, 3.4 | | | X |
| Respect other students' interest and needs | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | | X |

I=Introduce**D=Develop****M=Master**

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| Understand the concept of plagiarism as applied to research projects. | 8.1.D | | | X |
| Develop and understanding of diversity through literature, online resources, and reference materials | 3.1, 6.1, 6.2, 8.1.C, 9.1.D, 9.1.F | | X | |

I=Introduce

D=Develop

M=Master

| GRADE 6 | | | | |
|--|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 6, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Create professional documents (e.g., newsletter, personalized learning play, business letter, or flyer) using advanced features of a word processing program | 8.1.8.A.1 | | X | |
| Plan and create a simple database, define fields, input data, and produce a report using sort and query | 8.1.8.A.2 | X | | |
| Create a multimedia presentation including sound and images | 8.1.8.A.3 | | X | |
| Generate a spreadsheet to calculate, graph, and present information | 8.1.8.A.4 | X | X | |
| Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems | 8.1.8.A.5 | | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Synthesize and publish information about a local or global issue or event on a collaborative, web-based service | 8.1.8.B.1 | X | X | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Participate in an online-learning community with learners from other countries to understand their perspectives on a global problem or issue, and propose possible solutions | 8.1.8.C.1 | X | | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics | 8.1.8.D.1 | X | X | |
| Summarize the application of fair use and Creative Commons guidelines | 8.1.8.D.2 | X | | |
| Demonstrate how information on a controversial issue may be biased | 8.1.8.D.3 | X | | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Gather and analyze findings using data collection technology to produce a possible solution for a content-related or real-world problem | 8.1.8.E.1 | X | | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure | 8.1.8.F.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of globalization on the development of a technological | 8.2.8.A.1 | X | | |

I=Introduce

D=Develop

M=Master

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| system over time | | | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN; CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Design and create a product that addresses a real-world problem using the design process and working with specific criteria and constraints | 8.2.8.B.1 | X | | |
| Identify the design constraints and trade-offs involved in designing a prototype (i.e., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation | 8.2.8.B.2 | X | | |
| Solve a science-based design challenge and build a prototype using science and math principles throughout the design process. | 8.2.8.B.3 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for patents and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.1 | X | | |
| Compare and contrast current and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Evaluate the role of ethics and bias on trend analysis and prediction in the development of a product that impacts communities in the United States and/or other countries | 8.2.8.D.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle | 8.2.8.E.1 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of resource selection and processing in the development of a common technological product or system | 8.2.8.F.1 | X | | |
| Explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment (e.g., by using recycled materials, alternate energy sources) and the economy | 8.2.8.F.2 | X | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. | 8.2.8.G.1 | X | | |
| Explain the interdependence of a subsystem that operates a part of a system | 8.2.8.G.2 | X | | |

I=Introduce

D=Develop

M=Master

| GRADE 7 | | | | |
|--|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 7, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Create professional documents (e.g., newsletter, personalized learning play, business letter, or flyer) using advanced features of a word processing program. | 8.1.8.A.1 | | X | X |
| Plan and create a simple database, define fields, input data, and produce a report using sort and query | 8.1.8.A.2 | | X | |
| Create a multimedia presentation including sound and images | 8.1.8.A.3 | | X | X |
| Generate a spreadsheet to calculate, graph, and present information | 8.1.8.A.4 | | X | |
| Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems | 8.1.8.A.5 | | X | |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Synthesize and publish information about a local or global issue or event on a collaborative, web-based service | 8.1.8.B.1 | | X | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Participate in an online-learning community with learners from other countries to understand their perspectives on a global problem or issue, and propose possible solutions | 8.1.8.C.1 | | X | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics | 8.1.8.D.1 | | X | |
| Summarize the application of fair use and Creative Commons guidelines | 8.1.8.D.2 | | X | |
| Demonstrate how information on a controversial issue maybe biased | 8.1.8.D.3 | | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Gather and analyze findings using data collection technology to produce a possible solution for a content-related or real-world problem | 8.1.8.E.1 | | X | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure | 8.1.8.F.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of globalization on the development of a technological | 8.2.8.A.1 | | X | |

I=Introduce

D=Develop

M=Master

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| system over time | | | | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Design and create a product that addresses a real-world problem using the design process and working with specific criteria and constraints | 8.2.8.B.1 | | X | |
| Identify the design constraints and trade-offs involved in designing a prototype (i.e., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation | 8.2.8.B.2 | | X | |
| Solve a science-based design challenge and build a prototype using science and math principles throughout the design process. | 8.2.8.B.3 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for patents and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.1 | | X | |
| Compare and contrast current and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Evaluate the role of ethics and bias on trend analysis and prediction in the development of a product that impacts communities in the United States and/or other countries | 8.2.8.D.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle | 8.2.8.E.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of resource selection and processing in the development of a common technological product or system | 8.2.8.F.1 | | X | |
| Explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment (e.g., by using recycled materials, alternate energy sources) and the economy | 8.2.8.F.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. | 8.2.8.G.1 | | X | |
| Explain the interdependence of a subsystem that operates a part of a system | 8.2.8.G.2 | | X | |

I=Introduce*D*=Develop*M*=Master

| GRADE 8 | | | | |
|--|------------------|----------|----------|----------|
| Building upon knowledge and skills gained in preceding grades, by the end of Grade 8, students will: | | | | |
| EDUCATIONAL TECHNOLOGY TECHNOLOGY OPERATIONS AND CONCEPTS | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Create professional documents (e.g., newsletter, personalized learning play, business letter, or flyer) using advanced features of a word processing program. | 8.1.8.A.1 | | X | X |
| Plan and create a simple database, define fields, input data, and produce a report using sort and query | 8.1.8.A.2 | | X | |
| Create a multimedia presentation including sound and images | 8.1.8.A.3 | | X | X |
| Generate a spreadsheet to calculate, graph, and present information | 8.1.8.A.4 | | X | |
| Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems | 8.1.8.A.5 | | X | X |
| EDUCATIONAL TECHNOLOGY CREATIVITY AND INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Synthesize and publish information about a local or global issue or event on a collaborative, web-based service | 8.1.8.B.1 | | X | |
| EDUCATIONAL TECHNOLOGY COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Participate in an online-learning community with learners from other countries to understand their perspectives on a global problem or issue, and propose possible solutions | 8.1.8.C.1 | | X | |
| EDUCATIONAL TECHNOLOGY DIGITAL CITIZENSHIP | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics | 8.1.8.D.1 | | X | |
| Summarize the application of fair use and Creative Commons guidelines | 8.1.8.D.2 | | X | |
| Demonstrate how information on a controversial issue maybe biased | 8.1.8.D.3 | | X | |
| EDUCATIONAL TECHNOLOGY RESEARCH AND INFORMATION LITERACY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Gather and analyze findings using data collection technology to produce a possible solution for a content-related or real-world problem | 8.1.8.E.1 | | X | |
| EDUCATIONAL TECHNOLOGY CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure | 8.1.8.F.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN NATURE OF TECHNOLOGY: CREATIVITY & INNOVATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |

I=Introduce

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M=Master

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| Explain the impact of globalization on the development of a technological system over time | 8.2.8.A.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN DESIGN, CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Design and create a product that addresses a real-world problem using the design process and working with specific criteria and constraints | 8.2.8.B.1 | | X | |
| Identify the design constraints and trade-offs involved in designing a prototype (i.e., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation | 8.2.8.B.2 | | X | |
| Solve a science-based design challenge and build a prototype using science and math principles throughout the design process | 8.2.8.B.3 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN TECHNOLOGICAL CITIZENSHIP, ETHICS, & SOCIETY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the need for patents and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.1 | | X | |
| Compare and contrast current and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation | 8.2.8.C.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESEARCH AND INFORMATION FLUENCY | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Evaluate the role of ethics and bias on trend analysis and prediction in the development of a product that impacts communities in the United States and/or other countries | 8.2.8.D.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN COMMUNICATION AND COLLABORATION | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle | 8.2.8.E.1 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN RESOURCES FOR A TECHNOLOGICAL WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain the impact of resource selection and processing in the development of a common technological product or system | 8.2.8.F.1 | | X | |
| Explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment (e.g., by using recycled materials, alternate energy sources) and the economy | 8.2.8.F.2 | | X | |
| TECHNOLOGY EDUCATION, ENGINEERING & DESIGN THE DESIGNED WORLD | CPI# | <i>I</i> | <i>D</i> | <i>M</i> |
| Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved | 8.2.8.G.1 | | X | |
| Explain the interdependence of a subsystem that operates a part of a system | 8.2.8.G.2 | | X | |

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