

**HOPATCONG BOROUGH SCHOOLS**  
**TECHNOLOGY LITERACY**  
**Grade 7**  
**2007**

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**COURSE DESCRIPTION:**

This course is designed for the 7<sup>th</sup> grade student. The students will be taught to use technology to become technology capable and to help them to develop their critical thinking and behavioral skills that will help them to become competitive in a technologically advanced society.

Using computer applications and technology tools, students will conduct research, solve problems, improve learning, achieve goals, and produce products and presentations in conjunction with standards in all content areas. They will also develop, locate, summarize, organize, synthesize, and evaluate information for lifelong learning.

Students will be taught to understand the various facets of technology and the design process. They will understand the interconnectedness of all knowledge and the impact of technology. The intent at the 7<sup>th</sup> grade level is that all students develop technological literacy and are prepared for the option of further study in the field of technology education.

The course is designed using the following three approaches:

1. Vertical alignment- using content and skills already learned to build on additional skills appropriate for the student's cognitive development;
2. Horizontal organization which relates to scope and sequence or side by side organization of the skills, and
3. Integration which connects the content and learning experiences to the curriculum.

## **CORE CURRICULUM CONTENT STANDARDS:**

There are two CCCS that will be taught in this class- 8.1 and 8.2.

### **STANDARD 8.1**

Computer and Information Literacy-All students will use computer applications to gather and organize information and to solve problems.

### **STANDARD 8.2**

Technology Education- All students will develop and understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual, society and the environment.

## **CUMULATIVE PROGRESS INDICATORS and SUGGESTED ACTIVITIES THAT ADDRESS THESE STANDARDS-**

Activities may include, but are not limited to the following suggestions:

Standard 8.1- Computer and Information Literacy-

### **A. Basic Computer Skills and Tools**

1. Use appropriate technology vocabulary.

Activities- Define appropriate technology words using Dictionary.com.

Words such as Internet, intranet, email, acceptable use policy, software, hardware, copyright, directory, multiple windows open, file formats, electronic mail, telecommunications, database, query, field, record, blog, Ipod, and netiquette.

2. Use common features of an operating system (e.g., creating and organizing files and folders).

Activities- Organizing a middle school network folder: Students will organize their internet files into subject-area folders. Save folders onto the student's X server.

3. Demonstrate effective input of text and data, using touch keyboarding with proper technique.- (Topic is covered in depth in 6<sup>th</sup> grade technology).

4. Input and access data and text efficiently and accurately through proficient use of other input devices, such as the mouse use.

Activity- students will create anti-drug and anti-bully posters using a digital painting program such as "Paint."

5. Create documents with advanced text-formatting and graphics using word processing.

Activity- Students will use word text and other formats to create cover sheets, title pages with graphics for various project assignments.

6. Create a file containing customized information by merging documents.

Activity- Students will create a spreadsheet address book. Students will create labels in a word processor for their address books in the spreadsheet.

7. Construct a simple spreadsheet, enter data, and interpret the information.

Activity- Students maintain a check book in Excel. They input debits and credits.

8. Design and produce a basic multimedia project.

Activity- Students will create multimedia project- [My Life: An Autobiographical Timeline](#).

9. Plan and create a simple database, define fields, input data, and produce a report using sort and query.

Activity- Students will create a database to sort students by extracurricular activities.

10. Use network resources for storing and retrieving data.

Activity- Students will work on project titled [Web Site Evaluation](#)

11. Choose appropriate electronic graphic organizers to create, construct, or design a document.

Activity- Students will be able to design a web for a book report. Students can make the web by using Auto shapes in a word processing document or in a Paint program. Templates for graphic organizers and/or graphic organizer programs can also be used.

12. Create, organize and manipulate shortcuts.

Activity- FYI and B4 students advance further than their teachers and parents, students will create a directory of commonly used electronic messaging shortcuts and/or keyboard shortcuts. Students will need to organize the data efficiently for quick retrieval of the information. During the school year, students can continue to add to the database.

## **B. Application of Productivity Tools**

### Social Aspects

1. Demonstrate an understanding of how changes in technology impact the workplace and society.

Activity- Climatic conditions have changed in the twenty-first century. Research scientists are looking at the oceans to create habitable communities. Create an underwater community.

2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.

Activities- After studying copyright law as it applies to downloading music, movies, games, etc., and file sharing those components, students will debate the pros and cons of copyright law as it applies to these kinds of activities.

Work on project titled [Web Site Evaluation](#)

3. Explain the purpose of an Acceptable Use Policy and the consequences of inappropriate use of technology.

Activity- Students will demonstrate that they understand the terms and vocabulary of the AUP by writing a letter to their guardian/parent explaining why it is necessary to sign the contract.

4. Describe and practice safe Internet usage.

Activity- Work on project titled [Web Site Evaluation](#)

5. Describe and practice “etiquette” when using the Internet and electronic mail.

Activity- Students choose a famous scientist to contact by e-mail and ask a probing question.

## **Information Access and Research**

6. Choose appropriate tools and information resources to support research and solve real world problems, including but not limited to:
- \* On-line resources and databases
  - \* Search engines and subject directories

Activity- Student will research using a computer and the Internet, the nutritional values of a number of possible snack foods (chips, raisins, trail mix, candy bars, peanuts, dried apricots, frozen fruit bars, yogurt, etc.) to determine what kinds of snacks should be offered in the school snack machine. Investigate state laws that apply to the use of machines for distribution of food products. Are there restrictions on the types of foods and length of time food can be stored in the machines?

7. Evaluate the accuracy, relevance, and appropriateness of print and non-print electronic information sources.

Activity- Although New Jersey is well known as the Garden State, it certainly could be recognized as the Invention State. We now live in an increasing complex "global society" with demands for increased invention, design, and manufacturing to make people's lives and work more productive while meeting personal and family needs

## **Problem Solving and Decision Making**

8. Use computer applications to modify information independently and/or collaboratively to solve problems.
- Activity- [Earth is becoming uninhabitable](#). Earth's resources are rapidly being depleted. An expedition to Mars revealed potential raw materials. Devise a plan for securing and transporting the raw materials from Mars to Earth. The plan must be submitted for government approval.
9. Identify basic hardware problems and demonstrate the ability to solve common problems.
- Activity- One student knowledgeable about computers helps another student solve a problem like document will not print.

10. Determine when technology tools are appropriate to solve a problem and make a decision.

Activity- Work on project titled - [Earth is becoming uninhabitable](#).

## Standard 8.2 Technology Education-

### A. Nature and Impact of Technology

1. Describe the nature of technology and the consequences of technological activity.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

2. Describe how components of a technological product, system, or environment interact.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

3. Describe how one technological innovation can be applied to solve another human problem that enhances human life or extends human capability.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

4. Describe how technological activity has an affect on economic development, political actions, and cultural change.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

5. Explain the cultural and societal effects resulting from the dramatic increases of knowledge and information available today.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

### B. Design Process and Impact Assessment

1. Demonstrate and explain how the design process is not linear.

Activity- Traffic Control: Change an intersection from two, two lane roads with a four way stop, to two four lane roads intersecting with turning lanes. Decide what the traffic light signals will be in each direction and assess the impacts on the flow of traffic. The design must be safe and efficient for all motorists and pedestrians. Use drawing paper to layout the design idea. Save all sketching ideas that lead to the final idea.

3. Identify a technological problem and use the design process to create an appropriate solution.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

4. Describe how variations in resources can affect solutions to a technological problem.

Activity- Work on project titled - [Earth is becoming uninhabitable](#)

5. Select and safely use appropriate tools and materials in analyzing, designing, modeling or making a technological product, system or environment.

Activity- Invent a new tool or machine that will do a specific task.

Identify the safety rules to be followed by the user. Draw the tool or machine. Write what the function is and make a list of the safety procedures. Example: a device that will check how dirty engine oil is so it does not have to be changed by mileages estimates only.

#### C. Systems in the Designed World

1-3 will be covered in depth in Technology Literacy for 8<sup>th</sup> graders.

#### WORKPLACE READINESS STANDARDS:

- 1 All students will use technology, information and other tools.
2. All students will use critical thinking, decision-making, and problem-solving skills.
3. All students will demonstrate self-management skills.
4. All students will apply safety principles while using the internet.

## **INSTRUCTIONAL STRATEGIES:**

This course will be taught through the use of computers, software, the internet, video cameras, digital cameras, telephones, audio systems, interactive white boards, PDA's and other available classroom technology. The course is based entirely on the NJCCS for Technology Literacy.

Students will be required to work alone, in small groups and as a class. They will be responsible for many diverse projects that will be aligned with other NJCCCS subjects.

Using computer applications and technology tools, students will conduct research, solve problems, improve learning, achieve goals, and produce products and presentations in conjunction with standards in all content areas. They will also develop, locate, summarize, organize, synthesize, and evaluate information for lifelong learning.

## **EVALUATION/ASSESSMENT OF STUDENTS:**

1. Students will create and print documents with accuracy.
2. Open and edit documents with increased proficiency as well as accuracy.
3. Papers are graded according to typing, text alignment, and enhancement.
4. End of project tests, true/false, multiple choice, fill in the blanks, projects as well as writings will be graded.
5. Rubric evaluation will be used to assess multi-media projects.

## **EVALUATION/ASSESSMENT OF CURRICULUM:**

This course of study will be evaluated /assessed by instructional staff during the first year of implementation for the purpose of necessary revision at the end of the first year. In addition, this course of study will be reviewed according to the Five-Year Curriculum Review schedule.

**RESOURCES/BIBLIOGRAPHY:**

[www.atomiclearning.com](http://www.atomiclearning.com)

[www.cybersmartcurriculum.org](http://www.cybersmartcurriculum.org)

[www.education.state.nj.us/ccs](http://www.education.state.nj.us/ccs)

[www.ideaportal.com](http://www.ideaportal.com)

[www.nj.gov/education/aps/cccs/tech/frameworks/](http://www.nj.gov/education/aps/cccs/tech/frameworks/)

[www.ntuافت.com/njcccs/webpage](http://www.ntuافت.com/njcccs/webpage)

New Jersey Cross-Content Workplace Readiness Curriculum Framework

**HYPERLINKS:**

[My Life: An Autobiographical Time](#)

[www.nj.gov/education/aps/cccs/tech/frameworks//ms/mylife.doc](http://www.nj.gov/education/aps/cccs/tech/frameworks//ms/mylife.doc)

[Web Site Evaluation](#)

[www.nj.gov/education/aps/cccs/tech/frameworks/ms/internet.doc](http://www.nj.gov/education/aps/cccs/tech/frameworks/ms/internet.doc)

[Earth is becoming uninhabitable](#)

[www.ntuافت.com/njcccs/webpage](http://www.ntuافت.com/njcccs/webpage)

New Jersey Cross-Content Workplace Readiness Curriculum Framework