

# New Jersey Core Curriculum Content Standards For Technological Literacy

## STANDARD 8.1

### COMPUTER AND INFORMATION LITERACY

*ALL STUDENTS WILL USE COMPUTER APPLICATIONS TO GATHER AND ORGANIZE INFORMATION AND TO SOLVE PROBLEMS.*

**Descriptive Statement:** 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, including career education and consumer family, and life skills. They will also develop, locate, summarize, organize, synthesize, and evaluate information for lifelong learning.

## GRADE 8

### Technology Curriculum

**8.1.A** - Building upon knowledge and skills gained in preceding grades, by the end of Grade 8, students will:

#### Basic Computer Skills and Tools

| INSTRUCTIONAL OBJECT                                                                          | SUBJECT MATTER | STANDARDS   | ACTIVITIES                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------|----------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use appropriate technology vocabulary.                                                        |                | 8.1.A.1 (M) | Throughout 5 <sup>th</sup> -8 <sup>th</sup> grade vocabulary has been given to students and its been used every time a specific software package is used. By this point, they should be comfortable. |
| Use common features of an operating system (e.g., creating and organizing files and folders). |                | 8.1.A.2 (M) | It is expected for students to organize files automatically.                                                                                                                                         |
| Demonstrate effective input of text and data, using touch keyboarding with proper technique.  |                | 8.1.A.3 (M) | Throughout 5 <sup>th</sup> -7 <sup>th</sup> grade, students have practiced their typing skills. At this point they should be typing 35wpm with 3 errors.                                             |

GRADE 8 – 8.1.A (Cont'd)

| INSTRUCTIONAL OBJECT                                                                                                        | SUBJECT MATTER | STANDARDS     | ACTIVITIES                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------|----------------|---------------|--------------------------------------------------------------------------------------------------------------|
| Input and access data and text efficiently and accurately through proficient use of other input devices, such as the mouse. |                | 8.1.A.4 (M)   | This has been reinforced with all the projects assigned from 5-7 <sup>th</sup> grade.                        |
| Create documents with advanced text-formatting and graphics using word processing.                                          |                | 8.1.A.5 (M)   | Resume using Template/Wizard                                                                                 |
| Create a file containing customized information by merging documents.                                                       |                | 8.1.A.6 (I)   | Create a letter to mail to companies that might be interested in student's <u>new product</u> .              |
| Construct a simple spreadsheet, enter data, and interpret the information.                                                  |                | 8.1.A.7 (R/M) | Use Excel to gather information when <u>designing a new product</u> .                                        |
| Design and produce a basic multimedia project.                                                                              |                | 8.1.A.8 (M)   | Presentation on <u>Cyber-Bullying</u>                                                                        |
| Plan and create a simple database, define fields, input data, and produce a report using sort and query.                    |                | 8.1.A.9 (I)   | This is part of 8.1.A6                                                                                       |
| Use network resources for storing and retrieving data.                                                                      |                | 8.1.A.10 (M)  | Students will research information and watch videos based on Cyber Bullying.                                 |
| Choose appropriate electronic graphic organizers to create, construct, or design a document.                                |                | 8.1.A.11 (M)  |                                                                                                              |
| Create, organize and manipulate shortcuts.                                                                                  |                | 8.1.A.12 (M)  | Students have applied this since 5 <sup>th</sup> grade. Therefore, by 8 <sup>th</sup> grade it is automatic. |

**GRADE 8**  
**Application of Productivity Tools**

**8.1.B - Social Aspects**

| <b>INSTRUCTIONAL OBJECT</b>                                                                                    | <b>SUBJECT MATTER</b>                                                       | <b>STANDARDS</b> | <b>ACTIVITIES</b>                                           |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------|-------------------------------------------------------------|
| Demonstrate an understanding of how changes in technology impact the workplace and society.                    | Students are exposed to the consequences of harrassment using the Internet. | <b>8.1.B.1</b>   | Cyber-bullying presentation                                 |
| Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. |                                                                             | <b>8.1.B.2</b>   | Cyber-bullying presentation                                 |
| Explain the purpose of an Acceptable Use Policy and the consequences of inappropriate use of technology.       |                                                                             | <b>8.1.B.3</b>   | Discussed every year and students are assessed with a quiz  |
| Describe and practice safe Internet usage.                                                                     |                                                                             | <b>8.1.B.4</b>   | Discussed every year and students are assessed with a quiz. |
| Describe and practice “etiquette” when using the Internet and electronic mail.                                 |                                                                             | <b>8.1.B.5</b>   | Discussed every year and students are assessed with a quiz. |

**GRADE 8**  
**Application of Productivity Tools**

**8.1.B - Information Access and Research**

| INSTRUCTIONAL OBJECT                                                                                                                                                                                                                                                      | SUBJECT MATTER | STANDARDS      | ACTIVITIES                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-----------------------------------------------------------------------|
| Choose appropriate tools and information resources to support research and solve real world problems, including but not limited to: <ul style="list-style-type: none"> <li>• On-line resources and databases</li> <li>• Search engines and subject directories</li> </ul> |                | <b>8.1.B.6</b> | Students will develop a new product                                   |
| Evaluate the accuracy, relevance, and appropriateness of print and non-print electronic information sources.                                                                                                                                                              |                | <b>8.1.B.7</b> | This information is gathered from when students develop a new product |

**GRADE 8**  
**Application of Productivity Tools**

**8.1.B – Problem Solving and Decision Making**

Problem Solving and Decision Making

| <b>INSTRUCTIONAL OBJECT</b>                                                                             | <b>SUBJECT MATTER</b>                                                                                                                                                | <b>STANDARDS</b> | <b>ACTIVITIES</b>                            |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------|
| Use computer applications to modify information independently and/or collaboratively to solve problems. | As students modify and add information to a Template/Wizard they will learn that several tweaking needs to take place, so that the documents look the way they want. | <b>8.1.B.8</b>   | Create a resume using Templates and Wizards  |
| Identify basic hardware problems and demonstrate the ability to solve common problems.                  |                                                                                                                                                                      | <b>8.1.B.9</b>   | This is done automatically as problems arise |
| Determine when technology tools are appropriate to solve a problem and make a decision.                 | As they come-up with their new product, they will use various types of software applications to demonstrate all their data.                                          | <b>8.1.B.10</b>  | Create a new product.                        |

## New Jersey Core Curriculum Content Standards For Technological Literacy

### STANDARD 8.2

#### TECHNOLOGY EDUCATION

*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, SOCIETY, AND THE ENVIRONMENT.*

#### **Descriptive Statement:**

The following indicators are based on the Standards for Technological Literacy (STL, 2000) and support the National Academy of Engineering's (2002) call for students to gain technological literacy. Students will be expected to understand the various facets of technology and the design process. They will analyze and evaluate design options and then apply the design process to solve problems. A systems perspective is employed to emphasize the interconnectedness of all knowledge and the impact of technology and technological change. Students will be expected to use technology as it applies to physical systems, biological systems, and information and communication systems. The intent at the elementary and middle school levels is that all students develop technological literacy and are prepared for the option of further study in the field of technology education. At the elementary level, the foundation for technology education is found in the science standards, particularly standards 5.2 and 5.4

## GRADE 8

**Building upon knowledge and skills gained in the preceding grades,  
by the end of Grade 8, students will:**



### **8.2.A – Nature and Impact of Technology**

| <b>INSTRUCTIONAL OBJECT</b>                                                                                                                   | <b>SUBJECT MATTER</b>                      | <b>STANDARDS</b> | <b>ACTIVITIES</b>                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Describe the nature of technology and the consequences of technological activity.                                                             | Being smart when using the internet.       | <b>8.2.A.1</b>   | Students will handle all these instructional objectives with when they design a new product. They will investigate its consequences, its impact in society, who does it help and its trend. |
| Describe how components of a technological product, system, or environment interact.                                                          |                                            | <b>8.2.A.2</b>   |                                                                                                                                                                                             |
| Describe how one technological innovation can be applied to solve another human problem that enhances human life or extends human capability. | Relating technology being used in Society. | <b>8.2.A.3</b>   |                                                                                                                                                                                             |
| Describe how technological activity has an affect on economic development, political actions, and cultural change.                            |                                            | <b>8.2.A.4</b>   |                                                                                                                                                                                             |
| Explain the cultural and societal effects resulting from the dramatic increases of knowledge and information available today.                 |                                            | <b>8.2.A.5</b>   |                                                                                                                                                                                             |

## GRADE 8 Technology Curriculum

**8.2.B** – Building upon knowledge and skills gained in the preceding grades  
By the end of 8<sup>th</sup> grade students will:



### Design Process and Impact Assessment

| INSTRUCTIONAL OBJECT                                                                                                                              | SUBJECT MATTER                                                                                                                                                                                             | STANDARDS      | ACTIVITIES                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demonstrate and explain how the design process is not linear                                                                                      | Understand the flow of diagrams. How its direction affects its interpretation.                                                                                                                             | <b>8.2.B.1</b> | <br>Students will analyze today's society and then come-up with a New Product that will improve the old.<br> |
| Use hands on activities to analyze products and systems to determine how the design process was applied to create the solution.                   | Students will be drawing their new products describing the problems with the old way and the benefits of student's perspective.                                                                            | <b>8.2.B.2</b> |                                                                                                                                                                                                                                                                                      |
| Identify a technological problem and use the design process to create an appropriate solution.                                                    | Students will evaluate each other's product and then discuss its affects to society.                                                                                                                       | <b>8.2.B.3</b> |                                                                                                                                                                                                                                                                                      |
| Describe how variations in resources can affect solutions to a technological problem.                                                             | Students will be using a wordprocessor, spreadsheet, drawing tool to gather and represent information for the new product. Then they will create a presentation to share their new product with the class. | <b>8.2.B.4</b> |                                                                                                                                                                                                                                                                                      |
| Select and safely use appropriate tools and materials in analyzing, designing, modeling or making a technological product, system or environment. |                                                                                                                                                                                                            | <b>8.2.B.5</b> |                                                                                                                                                                                                                                                                                      |

**GRADE 8**  
**Technology Curriculum**

**8.2.C** – Building upon knowledge and skills gained in the preceding grades  
By the end of 8<sup>th</sup> grade students will:

**System in the Designed World**

| <b>INSTRUCTIONAL OBJECT</b>                                                                                                                                                           | <b>SUBJECT MATTER</b> | <b>STANDARDS</b> | <b>ACTIVITIES</b>                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Explain technological advances in medical, agricultural, energy and power, information and communication, transportation, manufacturing and construction technologies                 |                       | <b>8.2.C.1</b>   | <br>Students will analyze today's society and then come-up with a New Product that will improve the old.<br> |
| Explain reasons why human-designed systems, products, and environments need to be monitored, maintained, and improved to ensure safety, quality, cost efficiency, and sustainability. |                       | <b>8.2.C.2</b>   |                                                                                                                                                                                                                                                                                      |
| Explain the functions and interdependence of subsystems such as waste disposal, water purification, electrical, structural, safety, climate control, and communication.               |                       | <b>8.2.C.3</b>   |                                                                                                                                                                                                                                                                                      |