

**Applied Technology
Digital Technology
Curriculum**

Grade 11

**Vineland Public Schools
Vineland, New Jersey**

July, 2003

Vineland Board of Education

Frank Giordano, President

Suzanne Morello, Vice President

David Acosta

Mayra Arroyo

Allan Bernardini

Jacqueline Gavigan

Nicholas Girone

Brian Romano

Richard Smith

Robert DeSanto, Solicitor

Administration

Dr. Clarence C. Hoover, III, Superintendent of Schools

Dr. Keith Figgs, Assistant Superintendent for Administration

Mrs. Marie Adair, Assistant Supt. for Curriculum & Instruction

Mr. Keith Franchetta, Assistant Superintendent for Business

Committee Members

Curriculum Developers

Drew Antale
Mary Beth Banko
Donna Meyers
Daniel Roman

Curriculum Committee Chairman

Stephen L. Dantine
Supervisor of District Technologies

Table of Contents

Vineland Public Schools Mission Statement.....	6
Technology Mission Statement	6
Purpose.....	7
Course Description	8
Specific Objectives/Goals.....	9-11
NJ CCC Standards – Technological Literacy.....	12-19
NJ Cross-Content Workplace Readiness Standards	20-23
Part I Digital Concepts.....	24
Unit 1 Introduction to Computers.....	25
Unit 2 The Internet and World Wide Web	26-27
Unit 3 Application Software	28
Unit 4 The Components of the System Unit.....	29-30
Unit 5 Input and Output.....	31-32
Unit 6 Storage	33-34
Part II Digital Productivity Tools	35
Unit 1 File Management and Operating System	36
Unit 2 Microsoft Word	37-38
Unit 3 Microsoft Excel	39-40
Unit 4 Microsoft Access	41-42

Unit 5 Microsoft PowerPoint.....	43-44
Unit 6 Microsoft Publisher	45-46
Unit 7 Microsoft FrontPage.....	47
Part III Digital Imagery.....	48
Unit 1 Terminology and Parts of a Camera.....	49
Unit 2 Composition and Lighting	50
Unit 3 Editing and Printing.....	51
Unit 4 Special Projects and Digital Photography	52
Learning Activities	53
Assessment.....	54
Instructional Resources and Material	55
Bilingual Education Curriculum.....	56

Vineland Public Schools Mission Statement

We believe that all Vineland Public School students can learn. We recognize that learning is the result of a strong partnership of parents, teachers, and the community, as students are challenged to become active participants in quest for excellence. Our goal is to ensure a safe, creative, stimulating and caring environment, which promotes self-esteem, sound character, responsibility and respect for diversity. This will enable students to become knowledgeable, skillful life-long learners who are contributing citizens in our changing society. We expect the best from our students and will give no less of ourselves.

Technology Mission Statement

In order to prepare students for an increasingly technological world, the Vineland Public Schools believe that all students should learn to access technology to gather, evaluate, process, and represent information in meaningful ways. We view technology as a critical tool for improving academic achievement for all students, to prepare them for what the future may bring and to encourage them to engage in lifelong learning. As such, the integration of technology into curriculum and instruction to improve student achievement is addressed in the Vineland Public Schools technology plan.

Purpose

Digital Technology is designed to provide students with an in-depth understanding of why computers are essential components in business and society. Further, it will teach the fundamentals of computers, computer nomenclature, productivity software tools, utilization of information data bases, digital imagery, and the Internet.

To achieve this knowledge, Digital Technology students will complete exercises and lab assignments that allow the student to interact with a computer and learn by using the computer.

The course will use information and technology to emphasize legal and ethical behaviors. They will experience and be able to evaluate the potential implications of future computer technologies as they apply to all facets of their lives and work.

Materials and strategies will be presented to students in order to accomplish problem-solving and decision making skills.

This course fulfills the purposed NJ State requirement for Technology Literacy and shall be taken in the 11th grade.

Course Description

This technology course provides students with computer and information literacy skills that are essential for all students whether college or workplace bound. This course provides the student with in-depth learning of technological skills mandated by the New Jersey Core Curriculum Content Standards and the International Society for Technology in Education (ISTE). This course builds upon the NJ CCS skills obtained in the fourth and eighth grade technology objectives.

Students will be able to apply technology skills to specific tasks. Additionally, students will be able to apply these skills to demonstrate their application in various academic courses.

Instruction will be in combination of teacher and student led presentations, discussions, on-line instruction and activities, hands-on computer learning , classroom exercises, and application of productivity software.

The course is divided into three inter-related divisions and is taught together rather than in isolated units. Divisions include Digital Concepts, Digital Productivity Tools, and Digital Imagery. Reinforcement of computer ethics, and the consequences of plagiarism will be incorporated throughout the units.

Recommended time lines are included with each topic allowing sufficient classroom time for the completion of supplemental activities, exercises, and projects, as well as instruction.

Specific Objectives/Goals

In accordance with New Jersey Core Curriculum Content Standards for Technology Literacy, this course will provide successful completion of Standards 8.1 (A). All students will use (technology skills and tools) computer applications to gather and organize information and to solve problems and 8.2 (B). 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.

(A) Computer and Information Literacy [Technology]

(B) Technology Education – Engineering and Technological Design

Students will be able to:

A. Basic Computer Skills and Tools

1. Create a multi-page document with citations using word processing software in conjunction with other tools that demonstrates the ability to format, edit, and print.
2. Construct a spreadsheet, enter data, use mathematical functions to manipulate and process data, generate charts and graphs, and interpret the results.
3. Plan and create a relational database, define fields, input data from multiple records, produce a report using sort and query, and interpret the data.
4. Produce a multimedia project using text, graphics, moving images, and sound.
5. Produce and edit page layouts in different formats using desktop publishing and graphics software.
6. Develop a document or file for inclusion into a website or web page.

7. Discuss and/or demonstrate the capability of emerging technologies and software in the creation of documents.
8. Create documents using professional format including a resume and a business letter.
9. Merge information from one document to another.

B. Application of Productivity Tools

Social Aspects

1. Evaluate the potential and implications of contemporary and merging computer applications for personal, social, lifelong learning, and workplace needs.
2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
3. Make informed choices among technology systems, resources and services in a variety of contexts.
4. Demonstrate sensitivity in communicating with diverse audiences using computer and information literacy.

Information Access and Research

5. Select and use specialized databases for advanced research and solve real world problems.
6. Integrate new information into existing knowledge base and communicate the results in a project or presentation.
7. Identify new technologies, and other organizational tools to use in personal, home, and/or work environments for information retrieval, entry, and presentation
8. Evaluate the accuracy, relevance, and appropriateness of electronic information sources.
9. Compose, send, and organize e-mail messages with or without attachments.

Problem-Solving and Decision Making

10. Create and manipulate information independently and/or collaboratively to solve problems, to design and to develop products.
11. Evaluate and correct non-functioning technology systems necessary to accomplish required tasks.
12. Identify a problem in a content area and formulate a strategy to solve the problem using brainstorming, flowcharting, and appropriate resources.

13. Integrate new information into existing knowledge base and communicate the results in a project or presentation.

NJ Core Content Curriculum Standards for Technological Literacy

STANDARD 8.1 (COMPUTER AND INFORMATION LITERACY
[TECHNOLOGY])
ALL STUDENTS WILL USE [TECHNOLOGY SKILLS AND TOOLS]
COMPUTER
APPLICATIONS TO GATHER AND ORGANIZE INFORMATION AND
TO SOLVE
PROBLEMS.

Descriptive Statement: [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 life skills standards, using computer applications.] Students will use technology tools and applications to conduct research, solve problems, improve learning, and produce products and presentations in conjunction with standards in all areas. They will also develop, locate, summarize, organize, synthesize, and evaluate information for lifelong learning.

Cumulative Progress Indicators

By the end of Grade 4, students will:

A. Basic Computer Skills and Tools

1. Use basic technology vocabulary.
2. Input and access text and data using proper keyboarding techniques.
3. Produce a simple finished document using word processing software.

4. Produce and interpret a simple graph or chart by entering and editing data on a prepared spreadsheet template.
5. Create and present an electronic presentation using appropriate software.
6. Create and maintain files and folders.

B. Application of Productivity Tools

Social Aspects

1. Discuss common uses of computer applications and identify their advantages and disadvantages.
2. Recognize and practice responsible social and ethical behaviors when using technology and information, and understand the consequences of inappropriate use.
 - Internet access
 - Software copyrights
 - Print and non-print copyrights
 - Library resources
 - Personal security and safety issues
3. Practice appropriate Internet etiquette.
4. Recognize the ethical implications of plagiarism of print, non-print and software copyrights.

Information Access and Research

5. Recognize the need for accessing and using information.
6. Identify and use simple web browsers, search engines, and directories to obtain information to solve real world problems.
7. Locate specific information by searching a database.
8. Recognize accuracy and/or bias of information.

Problem Solving and Decision Making

9. Solve problems individually and/or collaboratively using computer applications.
10. Identify basic hardware problems.

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

A. Basic Computer Skills and Tools

1. [Create and maintain files and folders.]

2. Develop the ability to use touch keyboarding without observing hands or keyboard.
3. Input and access data and text efficiently and accurately through proficient use of the keyboard and mouse.
4. [Create a multi-page document with citations using word processing software in conjunction with other tools that demonstrate the ability to format, edit, print, and perform back-up procedures.]
5. [Design a word processing document containing graphics.]
Create documents with advanced text-formatting and graphics using word processing.
6. Create a file containing customized information by merging documents.
7. Construct a simple spreadsheet, enter data, and interpret the information.
8. Design and produce a basic multimedia project [or web page using multiple digital sources].
9. Plan and create a simple database, define fields, input data, and produce a report using sort and query.
10. Use network resources for storing and retrieving data.

B. Application of Productivity Tools

Social Aspects

1. Demonstrate an understanding of changes in computer applications and the impact upon the workplace and society.
2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
3. Explain the purpose of an Acceptable Use Policy and the consequences of inappropriate use of technology.
4. Describe and practice safe Internet usage.
5. Describe and practice .netiquette. when using the Internet and electronic mail.

Information Access and Research

6. Choose appropriate tools and information resources [including] to support research and solve real world problems, including;
 - On-line resources and databases
 - Search engines

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

Problem Solving and Decision Making

8. Use computer applications to modify information independently and/or collaboratively to solve problems.
9. Identify basic hardware problems.
10. Determine when technology tools are appropriate to solve a problem and make a decision.

Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:

A. Basic Computer Skills and Tools

1. Create a multi-page document with citations using word processing software in conjunction with other tools that demonstrates the ability to format, edit, and print.
2. Construct a spreadsheet, enter data, use mathematical functions to manipulate and process data, generate charts and graphs, and interpret the results.
3. Plan and create a relational database, define fields, input data from multiple records, produce a report using sort and query, and interpret the data.
4. Produce a multimedia project using text, graphics, moving images, and sound.
5. Produce and edit page layouts in different formats using desktop publishing and graphics software.
6. Develop a document or file for inclusion into a website or web page.
7. Discuss and/or demonstrate the capability of emerging technologies and software in the creation of documents.
8. Create documents using professional format including a resume and a business letter.
9. Merge information from one document to another.

B. Application of Productivity Tools **Social Aspects**

1. Evaluate the potential and implications of contemporary and merging computer applications for personal, social, lifelong learning, and workplace needs.
2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
3. Make informed choices among technology systems, resources and services in a variety of contexts.
4. Demonstrate sensitivity in communicating with diverse audiences using computer and information literacy.

Information Access and Research

5. Select and use specialized databases for advanced research and solve real world problems.
6. Integrate new information into existing knowledge base and communicate the results in a project or presentation.
7. Identify new technologies, and other organizational tools to use in personal, home, and/or work environments for information retrieval, entry, and presentation
8. Evaluate the accuracy, relevance, and appropriateness of electronic information sources.
9. Compose, send, and organize e-mail messages with or without attachments.

Problem-Solving and Decision Making

10. Create and manipulate information independently and/or collaboratively to solve problems, to design and to develop products.
11. Evaluate and correct non-functioning technology systems necessary to accomplish required tasks.
12. Identify a problem in a content area and formulate a strategy to solve the problem using brainstorming, flowcharting, and appropriate resources.
13. Integrate new information into existing knowledge base and communicate the results in a project or presentation.

STANDARD 8.2 (TECHNOLOGY EDUCATION - ENGINEERING AND TECHNOLOGICAL 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, 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 (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 be prepared for the option of further study in the field of engineering and technological design at the high school level. The foundation for technology education is found in the science standards, particularly standards 5.2 - 5.4.

Cumulative Progress Indicators

By the end of Grade 8, students will:

A. Nature and Impact of Technology

1. Describe the nature of technology and the consequences of technological activity.
2. Describe how components of a technological product, system, or environment interact.
3. Describe how one technological innovation can be applied to solve another human problem to enhance human life or extend human capability.
4. Describe how technological activity has an affect on economic development, political actions, and cultural change.
5. Explain the societal and cultural effects of an exponential increase of information and knowledge.

B. Design Process and Impact Assessment

1. Demonstrate and explain how the design process is not linear.
2. Analyze products and systems to determine how the design process was applied to create the solution using hands-on activities.
3. Identify a technological problem and use the design process to create an appropriate solution.

4. Describe how variations in resources can affect solutions to a technological problem.
5. Select and use appropriate tools and materials safely in analyzing, designing, modeling or making a technological product, system or environment.

C. Systems in the Designed World

1. Explain technological advances in medical, agricultural, energy and power, information and communication, transportation, manufacturing, and construction technologies.
2. Explain reasons why human-designed systems, products, and environments need to be monitored, maintained, and improved to ensure safety, quality, cost efficiency, and sustainability.
3. Explain the functions and interdependence of subsystems such as waste disposal, water purification, electrical, structural, safety, climatic control and communication.

Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students electing courses in technology education may:

A. Nature and Impact of Technology

1. Discuss the full costs and benefits and trade-offs and risks related to the use of technologies using appropriate data.
2. Explain how technological development is affected by competition through a variety of management activities associated with planning, organizing and controlling the enterprise.
3. Provide various examples of how technological developments have shaped human history.

B. Design Process and Impact Assessment

1. Analyze a given technological product, system, or environment to understand how the engineering design process and design specification limitations influenced the final solution.
2. Evaluate the function, value, and appearance of technological products, systems, and environments from the perspective of the user and the producer.
3. Develop methods for creating possible solutions, modeling and testing solutions, and modifying proposed design in the solution of a technological problem using hands-on activities.

4. Use a computer assisted design (CAD) system in the development of an appropriate design solution.
5. Diagnose a malfunctioning product and system using appropriate critical thinking methods.
6. Create a technological product, system, or environment using given design specifications and constraints by applying design and engineering principles.

C. Systems in the Designed World

1. Explain the life cycle of a product, from initial design to reuse, recycling, remanufacture, or final disposal, and its relationship to people, society, and the environment, including conservation and sustainability principles.
2. Analyze the factors that influence design of products, systems, and environments.
3. Compare and contrast the effectiveness of various products, systems, and environments associated with technological activities in energy, transportation, manufacturing, and information and communication.

Cross-Content Workplace Readiness Standards and Indicators

Cross-Content Workplace Readiness Standards

Standard 1: ALL STUDENTS WILL DEVELOP CAREER PLANNING AND WORKPLACE READINESS SKILLS.

Descriptive Statement: Students will be expected to develop the skills to seek, obtain, maintain, and change jobs. These skills are critical to each student's future ability to navigate in the complex world of work. Prior to leaving school, each student should possess the skills needed to sustain him/herself as an adult in the labor force.

Cumulative Progress Indicators:

- 1.1 Demonstrate employability skills and work habits, such as work ethic, dependability, promptness, and getting along with others, needed to get and keep a job.
- 1.2 Describe the importance of personal skills and attitudes to job success.
- 1.3 Identify career interests, abilities, and skills.
- 1.4 Develop an individual career plan.
- 1.5 Identify skills that are transferable from one occupation to another.
- 1.6 Select a career major and appropriate accompanying courses.
- 1.7 Describe the importance of academic and occupational skills to achievement in the work world.
- 1.8 Demonstrate occupational skills developed through structured learning experiences, such as volunteer, community service, and work-based experiences or part-time employment.
- 1.9 Identify job openings.

- 1.10 Prepare a resume and complete job applications.
- 1.11 Demonstrate skills and attitudes necessary for a successful job interview.
- 1.12 Demonstrate consumer and other financial skills.

Standard 2: ALL STUDENTS WILL USE INFORMATION, TECHNOLOGY, AND OTHER TOOLS.

Descriptive Statement: Students will be expected to develop skills in the use of information, up to-date educational technology, and other tools to improve learning, achieve goals, and produce products and presentations. They will learn to develop, locate, summarize, organize, synthesize, and evaluate information. Students will be expected to use technological tools, such as telecommunications networking, for problem-solving, writing, and research.

Cumulative Progress Indicators:

- 2.1 Understand how technological systems function.
- 2.2 Select appropriate tools and technology for specific activities.
- 2.3 Demonstrate skills needed to effectively access and use technology-based materials through keyboarding, troubleshooting, and retrieving and managing information.
- 2.4 Develop, search, and manipulate databases.
- 2.5 Access technology-based communication and information systems.
- 2.6 Access and assess information on specific topics using both technological (e.g., computer, telephone, satellite) and print resources available in libraries or media centers.
- 2.7 Use technology and other tools to solve problems, collect data, and make decisions.
- 2.8 Use technology and other tools, including word-processing, spreadsheet and presentation programs, and print or graphic utilities, to produce products.
- 2.9 Use technology to present designs and results of investigations.
- 2.10 Discuss problems related to the increasing use of technologies.

Standard 3: ALL STUDENTS WILL USE CRITICAL THINKING, DECISIONMAKING AND PROBLEM-SOLVING SKILLS.

Descriptive Statement: Students will be expected to develop original thoughts and ideas, think creatively, develop habits of inquiry, and take intellectual and performance risks. They will be expected to recognize problems, devise a variety of ways to solve these problems, analyze the potential advantages and disadvantages of each alternative, and evaluate the effectiveness of the method ultimately selected.

Cumulative Progress Indicators:

- 3.1 Recognize and define a problem, or clarify decisions to be made.
- 3.2 Use models, relationships, and observations to clarify problems and potential solutions.
- 3.3 Formulate questions and hypotheses.
- 3.4 Identify and access resources, sources of information, and services in the school and the community.
- 3.5 Use the library media center as a critical resource for inquiry and assessment of print and nonprinting materials.
- 3.6 Plan experiments.
- 3.7 Conduct systematic observations.
- 3.8 Organize, synthesize, and evaluate information for appropriateness and completeness.
- 3.9 Identify patterns and investigate relationships.
- 3.10 Monitor and validate their own thinking.
- 3.11 Identify and evaluate the validity of alternative solutions.
- 3.12 Interpret and analyze data to draw conclusions.
- 3.13 Select and apply appropriate solutions to problem-solving and decision-making situations.
- 3.14 Evaluate the effectiveness of various solutions.
- 3.15 Apply problem-solving skills to original and creative/design projects.

Standard 4: ALL STUDENTS WILL DEMONSTRATE SELF-MANAGEMENT SKILLS.

Descriptive Statement: Students will be expected to address issues related to personal development, such as accepting responsibility for their own learning and understanding expectations for performance. They are also expected to demonstrate positive work behaviors and ethics, the ability to work individually and cooperatively in groups, and respect for others of diverse cultural and social backgrounds.

Cumulative Progress Indicators:

- 4.1 Set short and long term goals.
- 4.2 Work cooperatively with others to accomplish a task.
- 4.3 Evaluate their own actions and accomplishments.
- 4.4 Describe constructive responses to criticism.
- 4.5 Provide constructive criticism to others.
- 4.6 Describe actions that demonstrate respect for people of different races, ages, religions, ethnicity and gender.
- 4.7 Describe the roles people play in groups.
- 4.8 Demonstrate refusal skills.
- 4.9 Use time efficiently and effectively.
- 4.10 Apply study skills to expand their own knowledge and skills.
- 4.11 Describe how ability, effort, and achievement are interrelated.

Standard 5: ALL STUDENTS WILL APPLY SAFETY PRINCIPLES.

Descriptive Statement: Safety is an important component of all content areas, especially the arts, health and physical education, science, occupational education programs, and any content area where hands-on activities take place. Students need to learn behaviors that will ensure their own safety and health and that of others. They also should become familiar with the rules and laws governing safety and health so that they can act responsibly and implement these standards.

Cumulative Progress Indicators:

- 5.1 Explain how common injuries can be prevented.
- 5.2 Develop and evaluate an injury prevention program.
- 5.3 Demonstrate principles of safe physical movement.
- 5.4 Demonstrate safe use of tools and equipment.
- 5.5 Identify and demonstrate the use of recommended safety and protective devices.
- 5.6 Identify common hazards and describe methods to correct them.
- 5.7 Identify and follow safety procedures for laboratory and other hands-on experiences.
- 5.8 Discuss rules and laws designed to promote safety and health, and their rationale.
- 5.9 Describe and demonstrate procedures for basic first aid and safety precautions.

Part I

Digital Concepts

Unit 1 Introduction to Computers

A. Introduction

This unit will introduce students to basic computer concepts, such as what a computer is, how it works, and what makes it a powerful tool. Included in this unit is a discussion to develop an understanding of the components of a computer. This unit functions as an overview for the entire course.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Explain the importance of computer literacy.
2. Define the term computer.
3. Identify the components of the computer.
4. Explain why a computer is a powerful tool.
5. Differentiate among the various categories of software.
6. Explain the purpose of a network.
7. Discuss the uses of the Internet and the World Wide Web.
8. Describe the categories of computers and their uses.
9. Identify the various types of computer users.
10. Understand how a user can be a Web publisher.

Approximate time frame: 5 days

Unit 2 The Internet and World Wide Web

A. Introduction

This unit will introduce students to the history, structure, and the use of the various aspects of the Internet.

The unit will include the effects of the computer on society, as well as its application in education, home, and the business community. Emerging technologies will also be discussed, as well as health issues.

A special emphasis will be placed in the discussion of ethical issues surrounding computer use, including plagiarism.

Students will understand the importance of safeguards that schools, individuals, and businesses should implement to safeguard data.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Discuss how the Internet works.
2. Understand ways to access the Internet.
3. Identify a URL.

4. Know how to search for information on the Web.
5. Describe the types of Web pages.
6. Recognize how Web pages use graphics, animation, audio, video, and virtual reality.
7. Describe the uses of electronic commerce (e-commerce).
8. Identify the tools required for Web publishing.
9. Explain how e-mail, FTP, newsgroups and message boards, mailing lists, chat rooms, and instant messaging work.
10. Identify the rules of netiquette.
11. Understand that computers have a tremendous difference in daily living.
12. Explain how computers change the way society interacts with disciplines such as education, entertainment, finance, government, health care, science, publishing, and travel.
13. Recognize the issues associated with the digital divide.
14. Identify ways virtual reality, intelligent agents, and robots are being used in daily life.
15. Learn how to prevent health-related disorders and injuries due to computer use.
16. Understand how to design a workplace ergonomically.
17. Recognize symptoms of computer addiction.
18. Explain green computing.
19. Understand ethical issues surrounding computer use including plagiarism.
20. Identify the various types of security risks that can threaten computers.
21. Describe ways to safeguard a computer.
22. Know how a computer virus works and the steps individuals can take to prevent viruses.
23. Understand how to create a good password.
24. Identify various biometric devices.
25. Recognize that software piracy is illegal.
26. Explain why encryption is necessary.
27. Know why computer backup is important and how it is accomplished.
28. Discuss the steps in a disaster recovery plan.
29. Understand ways to secure an Internet transaction.
30. Understand how to use specialized Data Bases for advanced research and solve real world problems.

Approximate time frame: 15-20 days

Unit 3 Application Software

A. Introduction

This unit will focus on system and application software and how they are interrelated. Students will explore various productivity software applications, graphic design, multi-media, personal and educational applications and communication software.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Define application software.
2. Understand how system software interacts with application software.
3. Identify the role of the user interface.
4. Explain how to start a software application.
5. Identify the widely used products and explain key features of productivity/business software applications, graphic design/multimedia software applications, home/personal/educational software applications, and communications software applications.
6. Identify various products available as Web applications.
7. Describe the learning aids available with many software applications.

Approximate time frame: 5 days

Unit 4 The Components of the System Unit

A. Introduction

This unit will focus on the components of a system unit, how data is processed into information, and demonstrate the sequence of operation for a computer.

Students will understand the differences of the various computer processors.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Describe the components in the system unit.
2. Explain how the CPU uses the four steps of a machine cycle to process data.
3. Compare and contrast various personal computer processors on the market today.
4. Define a bit and describe how a series of bits represents data.
5. Differentiate between the various types of memory.
6. Describe the types of expansion slots and cards in the system unit.
7. Explain the difference between a serial, a parallel, and a USB port.
8. Describe how buses contribute to a computer's processing speed.
9. Identify components in a notebook computer.

10. Identify components in a handheld computer.

Approximate time frame: 10 days

Unit 5 Input and Output

A. Introduction

This unit will focus on various methods of input and output devices to further understand the process of collecting raw data and processing/organizing data into useful data .

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Describe the two types of input.
2. List the characteristics of a keyboard.
3. Identify various types of keyboards.
4. Identify various types of pointing devices.
5. Explain how a mouse types.
6. Describe different mouse types.
7. Explain how voice recognition works.
8. Understand how to input data into a handheld computer.
9. Identify the uses of a digital camera.
10. Describe the various techniques used to video input.
11. Describe the uses of PC video cameras and the Web cams.
12. Explain how scanners and other reading devices work.

13. Identify alternative input devices for physically challenged users.
14. Define the four categories of output.
15. Identify the different types of display devices.
16. Describe factors that affect the quality of a monitor.
17. Identify monitor ergonomic issues.
18. Explain the differences among various types of printers.
19. Describe the uses of speakers and headsets.
20. Identify the purpose of data projectors, fax machines, and multifunction devices.
21. Explain how a terminal is both an input and output device.
22. Identify output options for physically challenged users.

Approximate time frame: 10 days

Unit 6 Storage

A. Introduction

This unit will focus on various storage media and devices, such as floppy disks, hard disks, CD-ROMs, CD-RWs, DVD-ROMs, tape, card, and memory sticks.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Differentiate between storage and memory.
2. Identify various types of storage media and storage devices.
3. Explain how a floppy disk stores data.
4. Identify the advantages of using high-capacity disks.
5. Describe how a hard disk organizes data.
6. Identify the advantages of using an Internet hard drive.
7. Explain how a compact disc stores data.
8. Understand how to care for a compact disc.
9. Differentiate between CD-ROMs, CD-RWs, and DVD-ROMs.
10. Identify the use of tape.
11. Understand how an enterprise storage system works.
12. Explain how to use PC Cards and other miniature storage media.

13. Identify uses of microfilm and microfiche.

Approximate time frame: 5 days

Part II

Digital Productivity Tools

Unit 1 File Management and Operating Systems

A. Introduction

This unit will introduce students to file management and use of the operating system.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.1	4.10
	1.3	2.2	3.7	
	1.7	2.3	3.8 3.9	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Start Windows and view/use the Active Desktop.
2. Use menus, keyboard shortcuts, and toolbars.
3. Use dialog boxes.
4. Use Windows help.
5. Work with multiple programs.
6. Understand file management.
7. View files and create folders with My Computer.
8. Move and copy files with My Computer.
9. Manage files with Windows Explorer.
10. Delete and restore files.
11. Create a shortcut on the desktop.

Approximate time frame: 10 days

Unit 2 Microsoft Word

A. Introduction

This unit will introduce students to the latest available version of Microsoft Word (word processing program). Students will learn how to create a variety of professional-looking documents, edit these documents using the system's editing features, and enhance the appearance of these documents using the system's formatting features. Activities include multi-page documents with citations.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.1	4.10
	1.3	2.2	3.8	
	1.5	2.3		
	1.7	2.7		
		2.8		
	2.9			
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Understand word processing software.
2. Start Word and explore the Word program window.
3. Start a document, save it and print it.
4. Use the Help system.
5. Close a document and exit Word.
6. Open a document and select text.
7. Cut and paste text.
8. Copy and paste text.

9. Use the Office Clipboard.
10. Use the Spelling and Grammar checker and the Thesaurus.
11. Find and replace text.
12. Use wizards and templates.
13. Format with fonts.
14. Change font styles and effects.
15. Change line and paragraph spacing.
16. Align paragraphs.
17. Work with tabs and indents.
18. Add bullets, numbering, borders and shading.
19. Set document margins
20. Divide a document into sections.
21. Add page breaks and page numbers.
22. Insert and edit headers and footers.
23. Format columns.
24. Insert clip art.

Approximate time frame: 32 days

Unit 3 Microsoft Excel

A. Introduction

This unit will introduce students to the latest version available of Microsoft Excel . Students will learn how to plan and build their own worksheets; use Excel’s formatting features to make a worksheet more attractive and easier to read; and how to work with charts. Students will also learn how to integrate word and excel. Applications will include analysis of information and charts.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.12	4.10
	1.5	2.3	3.15	
		2.4		
		2.7		
		2.8		
	2.9			
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Define spreadsheet software.
2. Start Excel and view the Excel window.
3. Open and save a workbook.
4. Enter labels and values.
5. Name and move a sheet.
6. Preview and print a worksheet.
7. Close a workbook and exit Excel.
8. Plan and design a worksheet.
9. Edit cell entries.

10. Enter formulas.
11. Create complex formulas.
12. Introduce Excel functions.
13. Copy and move cell entries.
14. Understand relative and absolute cell references.
15. Copy formulas with relative cell references.
16. Copy formulas with absolute cell references.
17. Format values.
18. Use fonts and font sizes.
19. Change attributes and alignment.
20. Adjust column widths.
21. Insert and delete rows and columns.
22. Apply colors, patterns, and borders.
23. Use conditional formatting.
24. Check spelling.
25. Plan and design a chart.
26. Create a chart.
27. Move and resize a chart.
28. Edit, format, and enhance a chart.
29. Annotate and draw on a chart.
30. Preview and print a chart.
31. Understand integration.
32. Open multiple programs.
33. Copy Word data into Excel.

Approximate time frame: 27 days

Unit 4 Microsoft Access

A. Introduction

This unit will introduce students to the latest available version of Microsoft Access (database software program). Students will learn how to create tables, forms, queries and reports using Access. Students will also be able to integrate Word, Excel, and Access.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.12	4.10
	1.5	2.3	3.15	
		2.4		
		2.7		
		2.8		
	2.9			
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Define database software.
2. Learn database terminology.
3. Start Access, open a database and view the database window.
4. Navigate, enter and edit records.
5. Preview and print a datasheet.
6. Get help and exit Access.
7. Plan a database.
8. Create and modify a table.
9. Format a database.
10. Understand sorting, filtering, and finding.
11. Sort records and find data.

12. Filter records.
13. Create and modify a query.
14. Plan and create a form.
15. Move and resize controls.
16. Modify labels, text boxes, and tab order.
17. Enter and edit records.
18. Insert an image.
19. Plan and create a report.
20. Group records.
21. Change the sort order.
22. Add a calculation.
23. Align and format controls.
24. Create mailing labels.
25. Merge data between Access and Word.
26. Use Mail Merge to create a form letter.
27. Export an Access table to Excel.

Approximate time frame: 14 days

Unit 5 Microsoft PowerPoint

A. Introduction

This unit will introduce students to the latest available version of Microsoft PowerPoint. Students will learn to create, modify, and enhance a PowerPoint presentation. Students will also learn to integrate Word, Excel, Access, and PowerPoint.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.10	4.3
	1.3	2.2	3.14	4.9
	1.5	2.3	3.15	4.10
	1.7	2.5		
	1.8	2.6		
	1.10	2.7		
		2.8		
	2.9			
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Define presentation software.
2. Start PowerPoint 2002 and view the PowerPoint window.
3. Use the AutoContent Wizard.
4. View and save a presentation.
5. Print and close the file, and exit PowerPoint.
6. Plan an effective presentation.
7. Enter slide text.
8. Create a new slide.
9. Enter text in the Outline tab.

10. Add slide headers and footers.
11. Choose a look for a presentation.
12. Check spelling in a presentation.
13. Evaluate a presentation.
14. Open an existing presentation.
15. Draw and modify an object.
16. Edit drawing objects.
17. Align and group objects.
18. Add and arrange text.
19. Format text.
20. Import text from Microsoft Word.
21. Customize the color scheme and background.
22. Insert clip art.
23. Insert, crop, and scale a picture.
24. Embed a chart.
25. Enter and edit data in the database.
26. Format a chart.
27. Create tables in PowerPoint.
28. Use slide show commands.
29. Set slide show timings and transitions.
30. Set slide animation effects.
31. Understand embedding and linking.
32. Insert a Word outline into a PowerPoint presentation.
33. Embed an Excel chart into a PowerPoint slide.
34. Link an Excel worksheet to a PowerPoint slide.
35. Update a linked Excel worksheet in PowerPoint.
36. Export a PowerPoint presentation to Word.

Approximate time frame: 7 days

Unit 6 Microsoft Publisher

A. Introduction

This unit will introduce students to the latest available version of Microsoft Publisher. Students will learn how to create a newsletter, brochure, and a flyer using Publisher.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.4	4.9
	1.2	2.2	3.8	4.10
	1.3	2.3	3.10	
	1.5	2.6	3.15	
	1.7	2.7		
		2.9		
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Plan a publication.
2. Design a publication, including newsletter, flyer, and brochure.
3. Create a publication with the task pane.
4. Replace text.
5. Add a graphic image.
6. Add a sidebar.
7. Use the Design Gallery
8. Group objects.
9. Use layout guides.
10. Use ruler guides.
11. Format a text box.

12. Add bullets and numbering.
13. Check spelling.
14. Paint formats.
15. Add a table.

Approximate time frame: 5 days

Unit 7 Microsoft FrontPage

A. Introduction

This unit will introduce students to the latest available version of Microsoft FrontPage. Students will design a web page and develop a document or file for inclusion into a website or web page.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.8	4.1
	1.3	2.2	3.10	4.3
	1.5	2.7	3.11	4.4
		2.8	3.13	4.5
		2.9	3.14	4.9
		3.15	4.10	
Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Get started with the latest version of FrontPage.
2. Create a new web site.
3. Work on the Web's hyperlinks and appearance.
4. Work with pictures.
5. Create a table.

Approximate time frame: 10 days

Part III

Digital Imagery

Unit 1 Terminology and Parts of a Camera

A. Introduction

This unit will focus on the on the ability to identify the various parts of a digital camera and understand the specific terminology associated with digital imagery.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.15	4.2	5.4
	1.2	2.2		4.4	
	1.3	2.10		4.5	
	1.5			4.10	
	1.6			4.11	
	1.7				
	1.8				
	Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Understand the basic terminology associated with a digital camera such as graphics, photography, software and hardware.
2. Identify the various parts and components of a digital camera.
3. Understand various photographic techniques.
4. Describe different types of digital cameras.
5. Understand the various accessories used in conjunction with digital photography.

Approximate time frame: 3 days

Unit 2 Composition and Lighting

A. Introduction

This unit will focus on demonstrating proper photographic and lighting techniques with an emphasis on composition and exploration of various subject matter.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.15	4.2	5.4
	1.2	2.2		4.4	
	1.3	2.10		4.5	
	1.5			4.10	
	1.6			4.11	
	1.7				
	1.8				
	Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Demonstrate the use of proper lighting.
2. Describe multiple light sources.
3. Compose photographs utilizing the Rule of Thirds, geometry, and apparent motion.
4. Show how lighting and camera settings affect the outcomes of a photograph.

Approximate time frame: 5 days

Unit 3 Editing and Printing

A. Introduction

This unit will focus on the digital photographic components and the fundamentals of using editing software.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.15	4.2	5.4
	1.2	2.2		4.4	
	1.3	2.10		4.5	
	1.5			4.10	
	1.6			4.11	
	1.7				
	1.8				
	Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Correct imperfections in a photograph using Adobe Photoshop.
2. Create effects utilizing imagery editing tools.
3. Identify and demonstrate the usage of various editing tools within Adobe Photoshop, such as crop, marquee, magic wand, Quick Mask, etc.
4. Enhance photographs by correcting exposure, color balance, and blending.
5. Selecting and protecting specific areas of a photo.

Approximate time frame: 5 days

Unit 4 Special Projects and Digital Photography

A. Introduction

This unit will focus on the application of digital imagery in a multimedia formula.

References from the NJ Core Curriculum Content Standards are as follows:

Core Content Workplace Readiness	1.1	2.1	3.15	4.2	5.4
	1.2	2.2		4.4	
	1.3	2.10		4.5	
	1.5			4.10	
	1.6			4.11	
	1.7				
	1.8				
	Technological Literacy	8.1, 8.2			

B. Student Outcomes/Objectives

Given appropriate learning activities students will be able to successfully:

1. Create various multimedia projects, such as movie posters, magazine covers and/or articles, brochures, newsletters, etc.
2. Integrate use of digital photography with the development of a webpage.
3. Demonstrate the ability to print edited photographs using various printing media.

Approximate time frame: 7 days

Suggested Learning Activities

These activities build upon skills obtained based on 4th and 8th grade technology objectives, as well as the objectives of Digital Technology.

- * 1. Five-page paper with citations on selected computer topics.
(Word document)
- 2. Using word processing design a resume and cover letter.
- 3. Utilize a survey-type project to apply skills learned in the spread sheet unit (including graphs and analysis of graphs).
- 4. Complete an analysis project on saving money using a spreadsheet.
- 5. Create an address book using Access (including Queries and reports).
- * 6. Produce a multimedia project based on E-Commerce.
- 7. Using Desktop Publishing develop a flyer, brochure, and newsletter on computer-related topics. (i.e. emerging technologies)
- 8. Develop a website that includes a digital portfolio of student work.
- 9. Utilize on-line activities as outlined in the textbook.

Projects should be individual and group based and should be presented to the class.

* includes the use of specialized data bases.

ASSESSMENT

Applied Technology Digital Technology

Grade 11

Student proficiency (satisfactory achievement) in each of the outcomes/objectives listed in this guide shall be determined by student attainment of the 70% district passing standard which pertains to all curricula and populations. Such proficiency shall be measured by a multiplicity of evaluation techniques and instruments, which includes, but is not restricted to the following:

1. On-line teacher made tests/quizzes
2. Class participation
3. Research projects
4. Student presentations
5. Cooperative group projects/activities

Instructional Resources & Materials

Textbook: Discovering Computers
Concepts for a Digital World

Microsoft Office XP – Introductory

Microsoft FrontPage

Teacher Copy – Microsoft Publisher
Study Guide for Discovering Computers
Microsoft Office XP – Second Course
Teaching Tools CD

Internet

www.course.com

Bilingual Education Curriculum

This document serves as the general and bilingual education curriculum guide. Each objective is accomplished for the bilingual education student just as for the general education student. As required, for the bilingual education student, the materials must be presented in the language, which the student understands. As the bilingual student masters the English language, a transition in teaching occurs via several strategies – the teacher instructs using more English in accord with the ability of the student to comprehend and the student is mainstreamed for those classes in English where he/she is able to succeed.