GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

BUSINESS & COMPUTER SCIENCE

PATHWAY: Computing

COURSE: Computing in the Modern World

UNIT: 2-History and Ethics

INTRODUCTION

Annotation:

Grade(s):

X	9th
X	10th
X	11th
X	12th

Time: 10 hours

Author: Jason Naile

Additional Author(s):

Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

BCS-CMW-2 Students will identify key developments and individuals relating to the history of computing and explore emerging technologies.

a. Describe the development of hardware, programming languages, and applications.

b. Identify persons with major contributions to the field of computing.

c. Outline the history and development of the Internet and explain its effects on computing and society.

d. Identify and describe emerging technologies.

e. Demonstrate an understanding of Moore's Law and its applicability to emerging technologies.

BCS-CMW-3 Students will examine the professional and ethical issues involved in the use of computer technology.

a. Identify and describe the relevant professional codes.

b. Explain the pros and cons of hacking and cracking.

c. Explain the consequences of software piracy on software developers and the role of relevant enforcement organizations.

d. Identify the benefits and drawbacks of public domain software.

e. Determine the reliability of information posted on the Internet.

f. Explain ethics issues involving security, privacy, intellectual property, and licensing.

g. Identify and explain the effects of technology crimes such as viruses, hacking, and identity theft.

GPS Academic Standards:

MM2A2 Students will explore exponential functions.

ELA10RL2 The student identifies, analyzes, and applies knowledge of theme in literary works and provides evidence from the works to support understanding.

ELA10RL4 The student employs a variety of writing genres to demonstrate a comprehensive grasp of significant ideas in selected literary works. The student composes essays, narratives, poems, or technical documents.

ELA10RL5 The student understands and acquires new vocabulary and uses it correctly in reading and writing.

ELA10RC3 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

ELA10W2 The student demonstrates competence in a variety of genres.

ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

UNDERSTANDINGS & GOALS

Enduring Understandings:

Upon conclusion of the unit, students will understand the considerations a professional must take into account in the field of Computer Science. Additionally, students will develop an understanding of the legal and ethical ramifications of computer usage. Finally, students will view computer science from a historical perspective to understand the current state of computing.

Essential Questions:

- What events affect modern computing?
- Who are the key individuals in Computer Science?
- What are the emerging issues and technologies in computing?
- What occurs when working in a connected environment?

Knowledge from this Unit:

- Students will be able to discuss and identify the key events that effect modern computing.
- Identify key individuals in the field of Computer Science.
- Identify emerging issues and technologies in computing.
- Explain the implications of working in a connected environment (piracy, hacking, security, identity theft, privacy, intellectual property)

Skills from this Unit:

- Students will use research techniques to locate reputable sources.
- Students will use writing skills to explain a situation.
- Students will complete oral presentations to explain a concept.

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

_____ Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
__ Unit test
_____ Group project
_____ Individual project
_x_ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
__ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
_x_ Academic prompts
__ Practice quizzes/tests
_____ Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
_____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
_____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
_____ Post-test

Assessment(s) Title:

Person and event quiz

Assessment(s) Description/Directions:

At the conclusion of the unit, students should be assessed on their knowledge of the various topics associated with the standards. A simple matching quiz will be sufficient.

Attachments for Assessment(s):

Name that Nerd Assignment

Web Resource Description: This web page forces students to identify key individuals in Computer Science.

Web Resource: http://www.trumbull.k12.oh.us/teachers/resources/InternetHunt/nerds.htm

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Sequence of Instruction

1. **Identify the Standards. Standards should be posted in the classroom for each lesson.**
2. **Review Essential Questions.**
   - What events affect modern computing?
   - Who are the key individuals in Computer Science?
   - What are the emerging issues and technologies in computing?
   - What occurs when working in a connected environment?
3. **Identify and review the unit vocabulary.**
4. **Assessment Activity.**

(Based on a 50 minute period)

Week 1

Introduction to History and Ethical Issues in Computing

Formation of groups

Selection of topics

Researching of topics

Week 2

Continue research

Write summary and design presentations

Student Presentations

Technology Connection/Integration

Students will use technology to research topics, write a summary, and design a presentation. Students will use technology to present findings.

Attachments for Learning Experiences:

Notes & Reflections:

- Teacher should provide "project checkpoints" for students to ensure they are on the right track.
- Additional activities for the topic of ethics suggested by Johnnie Sue Moore:
    - Discuss with the class issues surrounding intellectual property, privacy, and security. Then, show the movie *Antitrust*. Once the movie is over, facilitate a class discussion on the issues addressed in the movie.
    - Have students create a brochure to describe how to keep personal information safe on the Internet. Issues discussed could include: how to create a "good" password, reliability of Internet information, benefits/drawbacks of public domain software, etc.
    - Hold a class discussion on ethical vs. unethical practices regarding the utilization of another student's original work (jazz composition, short story, or project idea). Give the students a checklist with various solutions/behaviors listed. Students will check the ones that they determine to be ethical. To take this assignment one step further, have students explain why the unethical behaviors are so deemed.

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Presentation of Social/Ethical Topics in Computer Science.

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

From a suggested list of topics, students will choose, research, and present their findings. Any topic related to the social/ethical ramifications of computer use is sufficient. At the conclusion of the unit, students will turn in a summary and present an oral presentation of their findings.

Attachments for Culminating Performance Task:

Rubric for Performance Task:

Computer History & Ethics Project

Task:

Students will research and present their findings on a topic of their choice relating to the current state of computing. To accomplish this task, students will work in groups of three. Students will have three days to complete their research and will present their findings the following day. The presentation should be at least seven and no more than twelve minutes. Any topic will be acceptable as long as it addresses the following:

- Social and Ethical Ramifications of Computer Use (i.e. People's life depending on a computer, ethical computer use)
- Privacy Issues and the Computer (Identity Theft, Protecting yourself, "Big Brother")
- Legal Issues and Intellectual Property (Copyright Infringement)
- System Reliability (Dependability of databases, on-line applications, minimizing downtime for business applications)

Suggestions for content include finding and profiling current articles that relate to your topic, outlining current legislation addressing your topic, proposing your own legislation for the topic, etc. Make sure you describe the history of the issue noting any important events in the past. Presentations could be simple PowerPoint presentation, class discussions with your group leading, town hall type discussions, roundtable discussions with your group being the experts, mock trials, etc.

Include five web-based (reputable) sources for this project. Reputable sources include online journals, newspapers, dissertations, books, government documents, etc. Reputable does not include personal websites, opinion papers, satire columns, etc. If you have any questions whether or not a source is reputable you should ask! Be sure to include citations of your sources.

Deliverable Requirements:

Each group will turn in a deliverable on the presentation date.

Below are required deliverables:

- **PowerPoint presentation with at least 15 slides**
  - One Title Slide with the Topic and Group Members Name
  - Two slides describing the topic
  - Two slides for EACH source
  - One slide highlighting your conclusions
  - One slide with citations
- **2 page Executive Summary describing your research**
  - One Opening Paragraph describing your research and historical perspective
  - One Paragraph for EACH source
  - One Closing Paragraph with your conclusions.

Name:_____

Task/Points	Incomplete	Needs Improvement	Satisfactory	Excellent	Student Score	Teacher Score
PowerPoint	No PowerPoint presentation is delivered. (0)	PowerPoint is delivered but does not include required components (10)	PowerPoint is delivered, contains most required components. Grammatical errors present (15)	PowerPoint is delivered, contain all required components. No grammatical errors (20)		
Executive Summary	No executive summary is delivered (0)	Executive summary is delivered but does not include required components or contains many grammatical errors (10)	Executive summary is delivered, contains most required components. Grammatical errors present (15)	Executive summary is delivered, contain all required components. No grammatical errors (20)		
Sources	No sources are used (0)	Sources are used but are not reputable. Sources are not cited. (10)	Reputable sources are used but number of sources is less than five. Sources are cited. (15)	Report contains five reputable sources. All sources are cited (20)		
Group Evaluation	Unfavorable group evaluation (0)		Marginal group evaluation (15)	Favorable Group evaluation (20)		
Presentation	Student did not present (0)		Student presented but did not meet time limit (10)	Student presented and met time limit (20)		
				Total (100 possible)		

UNIT RESOURCES

Web Resources:

Attachment(s):

Materials & Equipment:

Computer

Internet connection

Microsoft Word & PowerPoint

LCD projector

What 21st Century Technology was used in this unit:

x	Slide Show Software		Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator		Graphic Organizer
	Student Response System	x	Desktop Publishing	x	Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		