GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

BUSINESS & COMPUTER SCIENCE

PATHWAY: Computing

COURSE: Computing in the Modern World

UNIT: 1- Careers in Computer Science

# INTRODUCTION

**Annotation:**

This unit provides an introduction to the various careers in Computer Science. Students will explore a career in Computer Science and then develop a Career Card in Microsoft PowerPoint that will summarize the career they have chosen.

**Grade(s):**

| | |
|---|---|
| X | 9th |
| X | 10th |
| X | 11th |
| X | 12th |

**Time:** 5 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-1** Students will explore the different careers available in the field of computing.

### GPS Academic Standards:

**ELA10W2** The student demonstrates competence in a variety of genres.

**ELA10W3** The student uses research and technology to support writing.

**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.

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

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

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

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

# UNDERSTANDINGS & GOALS

### Enduring Understandings:

Students will develop a sense of the different careers available in Computer Science. Students will also develop an understanding of the coursework, qualifications, and certifications needed to be a professional in the career. Finally, students will understand the daily work required in the chosen field.

### Essential Questions:

- What career opportunities are there in the field of Computer Science?
- What credentials are needed to work in Computer Science?
- What are the characteristics of Computer Science occupations?

### Knowledge from this Unit:

- Students will be able to name at least three careers in Computer Science.
- Students will identify the credentials needed to be a professional in the field of Computer Science.
- Students will create a profile of a chosen career field in Computer Science.

### Skills from this Unit:

- Students will use Microsoft PowerPoint to effectively profile a career in Computer Science.
- Students will organize files effectively.

# 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
x Group project
x Individual project
_____ 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
__ 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
x Dialogue and Discussion
_x_ 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:**

**Teacher Informal Observation and Project check-in meetings.**

**Assessment(s) Description/Directions:**

Teacher should meet once a day with each student to discuss progress on the career unit. Feedback should be provided.

**Attachments for Assessment(s):**

http://computingcareers.acm.org/ Association for Computing Machinery Career Center

(Web site with information about careers in Computer Science from a leading professional organization in the industry.)

# 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.**

   **BCS-CMW-1** Students will explore the different careers available in the field of computing.

2. **Review Essential Questions.**
   - What career opportunities are there in the field of Computer Science?
   - What credentials are needed to work in Computer Science?
   - What are the characteristics of Computer Science occupations?
3. **Identify and review the unit vocabulary.**
4. **Assessment Activity.**

**Sequence of Instruction and Learning:**

(Based on a 50 minute period)

Day 1: Introduction of Careers in Computer Science

Day 2-3: Career Card creation

Day 4: Career Card class presentations

Day 5: Discussion of women and minorities in Computer Science

**Technology Connection/Integration**

Students will use technology to research and then create a profile of a chosen career. Teachers will assist students in using Microsoft PowerPoint to create an effective Career Card from a design standpoint.

**Attachments for Learning Experiences:** Please list.

**Notes & Reflections:**

- This lesson plan requires students to create a Career Card in order to explore career choices in the computing field. Additional options include the following:
  - Students can create a research-storyboard PowerPoint presentation on a chosen computer career describing education and training requirements and salary ranges.
  - Scavenger Hunt – Students will explore the Georgia Career Information Systems (GCIS) www.gcic.peachnet.edu website to find answers to the questions from the worksheet that the teacher makes up for the computing careers. The questions will allow students to explore the different careers in computing, the education requirements, training requirements, and salary. Students can write a one page report on their findings. The website can also be used to explore other careers. Note: Your school must have a username and password to access the website.

# CULMINATING PERFORMANCE TASK (Optional)

## Culminating Unit Performance Task Title:

**Career Card creation**

## Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

**Students will create a PowerPoint presentation (1-2 slides) that profiles a career in Computer Science.**

## Attachments for Culminating Performance Task:

**Lesson Plan**
**AP Computer Science**
**Jason Naile**
**Parkview High School**

**Lesson Title:** Career Cards
**Annotation:** Students will create a career card for a technology career that interests him/her.
**Primary Learning Objectives:** Students will demonstrate an understanding and create a profile of a technology career.
**Additional Learning Outcome:** Students will use technology to profile a career.

**Assessed QCCs**
**Non-assessed QCC's**

**Local and/or National Standards:**

**Materials:**

1. Internet (http://www.careercornerstone.org/)
2. Microsoft Word
3. Microsoft PowerPoint

**Total Duration:** 2 hours

**Technology Connection:** Students will use the Internet to conduct their research and complete the career card using Microsoft Word.

**Procedures:**
Step 1: Teacher presents PowerPoint presentation on the Sloan Career Cornerstone Center.
Step 2: Student will work individually and research a career in technology of their choice.
Step 3: Students will complete a career card.
Step 4: The students will present their career cards to the class.
Step 5: Career cards are copied and distributed to all students.

**Assessment:** Students will receive a grade based on their career card and their presentation.

**Extension:** Students can research more colleges/universities that offer the career program.

**Remediation:** Accommodations and/or modification will be made according to the student's Individual Education Plan on file. If needed, Special Education teachers will be consulted for additional assistance.

**Career Card Rubric**

| Attribute/Trait | Student Points | Possible Points |
|---|---|---|
| Computer Science career identified | | 1 |
| Three traits of the individuals in that career field | | 3 |
| Two specialty areas in field | | 2 |
| Two college /universities for this career field | | 1 |
| Middle 50% salary range | | 1 |
| Career outlook (in terms of growth) | | 1 |
| Two professional organizations | | 1 |
| **Total** | | |

**Web Resource Titles:** Sloan Career Cornerstone Center, PhotoStory Tutorial, MovieMaker Tutorial.

**Web Resource Description:** Web site with information about careers in Computer Science. Tutorials with directions on how to use Windows MovieMaker and PhotoStory 3

**Web Resource (Career Cornerstone):** http://www.careercornerstone.org/computing/computing.htm

### Student Work Sample With Teacher Commentary

**Title of Student Work:**

Career Card for Computer Software Engineering

**Student Work Sample Description:**

A career card with all required components.

**Student Work Sample:**

**Computer Software Engineering.ppt**

# UNIT RESOURCES

**Web Resources:**

**Attachment(s):**

**Materials & Equipment:**

- Computer
- Microsoft PowerPoint
- Internet

**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 | | Desktop Publishing | x | Image File(s) |
| | Web Design Software | | Blog | | Video |
| | Animation Software | | Wiki | | Electronic Game or Puzzle Maker |
| | Email | x | Website | | |