

# 7th Grade Computer Applications

LENGTH OF TIME: Every other day, 90 minutes class, 45 days

GRADE LEVEL: 7

## COURSE STANDARDS:

Students will:

1. Manage an operating system. (PA Std 3.7.7c)
2. Demonstrate skill applying a variety of programs. (PA Std 3.7.7d)
3. Understand the basic parts of the computer and their functions. (PA Std 3.7.7c)
4. Create reports using the correct format. (PA Std 3.7.7c)
5. Create graphic organizers. (PA Std 3.7.7d)
6. Review and apply basic design principles (PA 3.6.7 b)
7. Import and manipulate graphics. (PA Std 3.7.7d)
8. Create basic spreadsheets and graphs. (PA Std 3.7.7d)
9. Use formulas in spreadsheets. (PA Std 3.7.7d)
10. Demonstrate an understanding of the role computers play in society. (PA Std 3.8.7a,c)
11. Create presentations. (PA Std 3.7.7d)
12. Use the Internet for information. (PA Std 3.7.7d)
13. Evaluate Internet sources for validity. (PA Std 3.7.7e)
14. Understand Internet safety precautions and responsibilities. (PA Std 3.8.7a,c)
15. Manage time and tasks for a long-term multi-step project. (PA Std 3.7.7d)
16. Explore resources and demonstrate age-appropriate knowledge and skills related to career acquisition, advancement, and retention. (PA Std 13.1.8a,e,f; 13.2.8b,e)

## RELATED PA ACADEMIC STANDARDS FOR SCIENCE & TECHNOLOGY

3.6.7 B. Apply communications technology to relay a thought

3.7.7 C. Explain and demonstrate basic computer operations and concepts

D. Apply computer software to solve specific problems

E. Explain basic computer communications systems

3.8.7 A. Identify changes in society as a result of technological development

C. Describe positive and negative expected and unexpected effects

## RELATED PA ACADEMIC STANDARDS FOR CAREER EDUCATION

13.1.8 A. Relate careers to individual interests, abilities, and aptitudes

E. Analyze economic factors that impact employment

- F. Analyze the relationship of interests and experience to careers
- 13.2.8 B. Evaluate resources available in researching job opportunities
- E. Explain the importance of essential workplace/skills and knowledge

#### PERFORMANCE ASSESSMENTS:

Students will demonstrate achievement of the standards by:

1. Understanding basic computer terminology. (2)
2. Composing on the keyboard. (3)
3. Understanding the basic parts of the computer and their functions. (1, 2, 3)
4. Understanding basic computer terminology. (1, 2, 3)
5. Creating and managing documents(3)
6. Preparing documents using digital images and design principles. (2,4,5,6,7)
7. Completing projects involving formatting text and graphic organizers. (2,4)
8. Creating and using spreadsheets. (2)
9. Exploring what the basic parts of the computer look like and understanding their function. (2, 3)
10. Using computer software to organize and evaluate information. (2,3,9,10)
11. Preparing a spreadsheet using data from the Internet and formulas. (6, 9)
12. Using formulas to solve problems in a spreadsheet. (7)
13. Formatting graphs in spreadsheets. (6,7)
14. Understanding and demonstrating essential Internet safety. (11)
15. Using specific criteria to evaluate the validity of Internet sources. (10)
16. Using online resources to investigate basic career information and demonstrate an understanding of necessary knowledge and skills for job acquisition. (17)
17. Completing a culminating project using the Internet and other computer software to organize information, compose a bibliography, and present information orally. (2,3,5,6,7,8,9,10,12,14)
18. Demonstrating basic data storage and data manipulation skills. (2,4,5)
19. Demonstrating self evaluation and reflection on all projects. (13)

#### DESCRIPTION OF COURSE:

This course provides students with the opportunity to learn how to manage a computer in an academic environment. They will work on composing and editing their work in proper format. They will learn to gather information and assess information from the Internet. They will be aware that Internet use carries responsibilities as well as privileges that extend beyond the school community. Students will use technology to gather information, organize information, and evaluate and analyze information. They will learn to present information visually and orally to the class.

#### THEMATIC UNITS (not necessarily in this order):

1. Introduction to the class and each other

2. Parts of the Computer: Understanding how computers work
  - a. Learning basic computer science theory
  - b. Identifying basic computer hardware
3. Spreadsheet Research: Reviewing spreadsheet concepts and skills
  - a. Identifying a topic of debate or confusion to research
  - b. Using formulas in a spreadsheet
  - c. Using functions in a spreadsheet
  - d. Problem solving using a spreadsheet
  - e. Creating a graph from a spreadsheet
4. Career Presentations: Developing and conveying a clear message
  - a. Investigating career possibilities
  - b. Developing and practicing a presentation
5. Internet Safety Report: Understanding online responsibilities
  - a. Identifying current trends and risks
  - b. Determining correct and appropriate behaviors
6. Newsletter: Developing a publication with design principles
  - a. Composing, formatting, and editing text
  - b. Using columns and design elements
7. Computer Science: Computer programming
  - a. Review of algorithmic thinking
  - b. Purposeful programming
8. Enrichment: Exploring emerging technologies

#### SAMPLE INSTRUCTIONAL STRATEGIES:

1. Cooperative learning
2. Individualized instruction
3. Projects
4. Oral presentations
6. Online tests and review games
7. Writing
8. Visual presentation
9. Demonstrations
10. Peer Assistance and evaluation

#### MATERIALS

1. Networked computer with required software

#### METHODS OF ASSISTANCE AND ENRICHMENT:

1. Course is individualized where needed
2. On-line tutorials are available for remedial work and enrichment
3. Students may extend the requirements of a project for enrichment
4. Peer practice and feedback
5. Remedial and enrichment work done during resource period or after school

#### PORTFOLIO DEVELOPMENT:

1. Self Assessment
2. Artifacts of exemplary work stored on student drives

#### METHODS OF EVALUATION:

1. Teacher produced quizzes
2. Class participation
3. Teacher observations
4. Student self assessment for individual projects as well as portfolio
5. Group work
6. Completed projects
7. Oral media presentation
8. Grading criteria (rubrics)

#### INTEGRATED ACTIVITIES:

1. Concepts
  - Demonstrate age-level proficiency with current academic hardware and software
  - Demonstrate understanding of the safe and responsible use of the Internet by observing safe practices
2. Communication
  - Describe procedures
  - Use correct terminology
  - Exchange information
  - Present acquired information in a media presentation
3. Thinking/Problem Solving
  - Use computer generated, organized and presented information to draw conclusions, form opinions, and make critical judgements
4. Application of Knowledge
  - Use software, hardware to present, evaluate, and communicate
  - All skills and performance tasks are specifically linked to the core curriculum
  - Internet research project applying spreadsheet visualization
5. Interpersonal Skills
  - Demonstrate the ability to listen and communicate effectively to instructor and peers