

# 8th Grade Computer Applications

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

GRADE LEVEL: 8

## COURSE STANDARDS:

Students will:

1. Manage an operating system. (PA Std 3.7.7 c)
2. Demonstrate skill in applying a variety of programs. (PA Std 3.7.7 d)
3. Create documents using appropriate formatting. (PA Std 3.7.7 d)
4. Create graphic organizers or graphics to embellish documents. (PA Std 3.7.7 d)
5. Import and manipulate graphics. (PA Std 3.7.7 d)
6. Apply basic graphic design principles. (PA Std 3.6.7 b)
7. Create basic spreadsheets and graphs. (PA Std 3.7.7 d)
8. Demonstrate skill using spreadsheet formulas. (PA Std 3.7.7 d)
9. Use spreadsheets for problem solving strategies. (PA Std 3.7.7 d)
10. Use the Internet to acquire information. (PA Std 3.7.7 e)
11. Evaluate Internet information sources. (PA Std 3.7.7 e)
12. Understand Internet safety precautions and responsibilities. (PA Std 3.8.7 a,c)
13. Manage time and tasks for a long-term multi-step project. (PA Std 3.7.7 d)
14. Make an oral presentation using presentation software. (PA Std 3.7.7 d)
15. Compare entrepreneurship versus traditional employment. (PA Std 13.4.8 a)
16. Identify the basic components of a business plan. (PA Std 13.4.8 c)

## 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
- 13.4.8 A. Compare and contrast entrepreneurship to traditional employment
  - C. Identify the basic components of a business plan

## PERFORMANCE ASSESSMENTS & CORRESPONDING COURSE STANDARDS:

Students will demonstrate achievement of the standards by:

1. Understanding basic computer technology.
2. Creating documents and reports.
3. Using the appropriate format for documents.
4. Creating basic spreadsheets.
5. Preparing a spreadsheet using researched information.
6. Using spreadsheet formulas to manipulate data for a practical purpose.
7. Formatting graphs.
8. Using the Internet to access information.
9. Using computer software to organize and evaluate information.
10. Understanding Internet safety and responsibilities.
11. Completing an assignment on Internet safety.
12. Demonstrating data storage and transmission skills.
13. Demonstrate self evaluation and reflection on projects.
14. Demonstrate an understanding of business roles and models.

#### DESCRIPTION OF COURSE:

This course provides students with the opportunity to expand their knowledge of computer hardware and software, while incorporating interdisciplinary content (e.g. business plan). They will work on composing and editing their written work in proper format. They will learn to gather information and assess information from the Internet and then incorporate this information in the context of a project. They will gain a basic understanding of how to discern valid online information, as the Internet is a source of unsubstantiated opinion as well as factual content. They will be aware that Internet use carries responsibilities as well as privileges that extend beyond the school community. Students will be asked to organize, evaluate and analyze information. They will learn to present information visually and orally.

#### TITLES OF UNITS: (Not necessarily in this order)

1. Introduction to the class and each other
2. Public Service Announcement
  - a. Demonstrating design principles
  - b. Exploring online risks and solutions
3. Spreadsheets
  - a. Automating calculations using formulas (checkbox)
  - b. Calculating using formulas and functions (loan payment)
4. Robotics and Programming
  - a. Formal programming techniques
  - b. Programming syntax and structures
5. The Business Project

- a. Investigating entrepreneurship
  - b. Developing a business proposal
  - c. Presenting an original business concept
  - d. Creating and respecting intellectual property
6. Reviewing Internet Safety and Security
  7. Enrichment Activities

#### 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 modern computer with required software

#### METHODS OF ASSISTANCE AND ENRICHMENT:

1. Course is individualized where needed
2. Online 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 information to draw conclusions, form opinions, and make critical judgements

### 4. Application of Knowledge

- Use software, hardware to present, evaluate and communicate

### 5. Interpersonal Skills

- Demonstrate the ability to listen and communicate effectively through writing, speaking, and computer generated communications and oral media presentations