

## **Consumer Math**

### **2008**

**COURSE DESCRIPTION:** “To close the expectations gap and better prepare students for college and careers, states must first ensure that high school standards reflect the real-world skills and knowledge students need to be successful after they graduate.” (Business Tools for Better Schools)

Consumer Mathematics is a full year elective designed for students who are interested in a course designed to develop and reinforce the applications of mathematics required for success in today's society. Students will investigate real world topics such as money management, banking, choosing a credit card, effective credit management, filing appropriate tax forms, real life geometric applications, calculating net pay, budgeting expenses, making cost comparisons, buying and renting a home, and finding the cost of operating a motor vehicle. The goal of this course is to guide students in building a strong foundation in logical thinking and problem solving that will enable them to prepare in a cost-benefit analysis as a decision making tool in their daily lives.

#### **CORE CURRICULUM CONTENT STANDARDS:**

**STANDARD 4.1** All students will develop number sense and will perform standard numerical operations and estimations on all types of numbers in a variety of ways.

**STANDARD 4.2** All students will develop spatial sense and the ability to use geometric properties, relationships, and measurement to model, describe and analyze phenomena.

**STANDARD 4.5** All students will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas

**STANDARD 8.1:** All students will use computer applications to gather and organize information to solve problems.

**STANDARD 9.1:** All Students will develop career awareness and planning, employability skills, and foundational knowledge necessary for success in the workplace.

**STANDARD 9.2:** All students will demonstrate critical life skills in order to be functional members of society.

## **CUMULATIVE PROGRESS INDICATORS:**

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

### **B. Numerical Operations.**

1. Develop, apply, and explain methods for solving problems involving rational and negative exponents.

### **C. Estimation**

1. Recognize the limitations of estimation, assess the amount of error resulting from estimation, and determine whether the error is within acceptable tolerance limits.

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

### **A. Geometric Properties**

1. Use geometric models to represent real-world situations and objects and to solve problems using those models (e.g., use Pythagorean Theorem to decide whether an object can fit through a doorway).

### **D. Units of Measurement**

1. Understand and use the concept of significant digits.
2. Choose appropriate tools and techniques to achieve the specified degree of precision and error needed in a situation.
  - Degree of accuracy of a given measurement tool.
  - Finding the interval in which a computed measure (e.g., area or volume) lies, given the degree of precision of linear measurements

### **E. Measuring Geometric Objects**

1. Use a variety of strategies to determine perimeter and area of plane figures and surface area and volume of 3D figures.

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

### **A. Problem Solving.**

1. Learn mathematics through problem solving, inquiry, and discovery.
2. Solve problems that arise in mathematics and in other contexts.
3. Select and apply a variety of appropriate problem-solving strategies (e.g., “try a simpler problem” or “make a diagram”) to solve problems.

### **B. Communication.**

1. Use communication to organize and clarify their mathematical thinking.
2. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
3. Analyze and evaluate the mathematical thinking and strategies of others.
4. Use the language of mathematics to express mathematical ideas precisely.

### **C. Connections.**

1. Recognize recurring themes across mathematical domains.
2. Use connections among mathematical ideas to explain concepts.
3. Recognize that mathematics is used in a variety of contexts outside of mathematics.
4. Apply mathematics in practical situations and in other disciplines.

**(8.1)**

**A Basic Computer Skills and Tools**

1. Use appropriate technology vocabulary.
2. Use common features of an operating system
3. Demonstrate effective input of text and data, using touch keyboarding with proper technique.
4. Input and access data and text efficiently and accurately through proficient use of other input devices, such as the mouse.
5. Create documents with advanced text-formats, 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.
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.
11. Choose appropriate electronic graphic organizers to create, construct, or design a document.
12. Create, organize and manipulate shortcuts.

**B. Application of Productivity Tools**

**Social Aspects**

1. Demonstrate an understanding of how changes in technology impact 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 “etiquette” when using the Internet and electronic mail.

**Information Access and Research**

6. Choose appropriate tools and information resources to support research and solve real world problems, including but not limited to:
  - On-line resources and databases
  - Search engines and subject directories
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 and demonstrate the ability to solve common problems.
10. Determine when technology tools are appropriate to solve a problem and make a decision.

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

**A. Career Awareness/Preparation**

1. [Analyze] Re-evaluate personal interests, abilities, and skills through various measures including self assessments.
2. Evaluate academic and career skills needed in various career clusters.
3. Analyze factors that can impact an individual's career.
4. Review and update one's career plan and include in a portfolio.
5. Research current advances in technology that apply to a selected occupational career cluster.

**B. Employability Skills**

1. Assess personal qualities that are needed to obtain and retain a job related to career clusters.
2. Communicate and comprehend written and verbal thoughts, ideas, directions, and information relative to educational and occupational settings.
3. Select and utilize appropriate technology in the design and implementation of teacher approved projects relevant to occupations and/or higher educational settings.
4. Evaluate the following academic and career skills as they relate to home, school, community, and employment:
  - Communication
  - Punctuality
  - Time management
  - Organization
  - Decision making
  - Goal setting
  - Resources allocation
  - Fair and equitable competition
  - Safety
  - Employment application skills
  - Teamwork
5. Demonstrate teamwork and leadership skills that include student participation in real world applications of career and technical education skills [through student organizations].

**All students electing further study in career and technical education will also:**

6. Participate in a structured learning experience that demonstrates interpersonal communication, teamwork, and leadership skills.
7. Participate in simulated industry assessments when and where appropriate.
8. Prepare industry-specific technical reports/projects that incorporate graphic aids when and where appropriate.
9. Demonstrate occupational health and safety skills related to industry-specific activities.

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

**A. Critical Thinking**

1. Apply communications and data analysis to the problem-solving and decision making processes [to] in a variety of life situations.
2. Describe and apply constructive responses to criticism.
3. Apply the use of symbols, pictures, graphs, objects, and other visual information to a selected project in academic and/or occupational settings.
4. Recognize bias, vested interest, stereotyping and the manipulation and misuse of information while formulating solutions to problems that interfere with attaining goals.
5. Apply knowledge and skills needed to use various means of transportation within a community.

**B. Self-Management**

1. Revise and update the personal growth plan to address multiple life roles.
2. Apply project planning and management skills in academic and/or occupational settings.
3. Compare and contrast methods for maximizing personal productivity.

**C. Interpersonal Communication**

1. Model interpersonal and effective conflict resolution skills [to peers].
2. Communicate effectively in a variety of settings with a diverse group of people.

**D. Character Development and Ethics**

1. Analyze how character influences work performance.
2. Identify and research privileges and duties of citizens in a democratic society.
3. Discuss consequences and sanctions when on-the-job rules and laws are not followed.
4. Compare and contrast a professional code of ethics or code of conduct from various work fields and discuss similarities and differences.
5. Apply a professional code of ethics to a workplace problem or issue.

**E. Consumer and Personal Finance**

1. Analyze factors that influence [employment] gross and net income.
2. Design, implement, and critique a personal financial plan.
3. Discuss how to obtain and maintain credit.
4. Prepare and use skills for budget preparation, making predictions about income and expenditures, income tax preparation, and adjusting spending or expectations based on analysis.
5. Use comparative shopping techniques for the acquisition of goods and services.
6. Analyze the impact of advertising on personal purchasing decisions.
7. Evaluate the actions a consumer might take in response to excess debt and personal financial status.
8. Analyze the interrelationships between the economic system and consumer actions in a chosen career cluster.

**SUGGESTED ACTIVITIES THAT ADDRESS THESE STANDARDS MAY INCLUDE BUT ARE NOT LIMITED TO:**

**(4.1B)**

Analyze and compare various methods for compounding interest.

Explore various financing methods for automotive purchase.

**(4.1C)**

Formulate a remodeling plan for “flipping” a house.

Analyze and compare various paths from college to a career.

**(4.2A)**

Design and prepare a cost analysis for landscaping a home.

**(4.2D&E)**

Construct and utilize a tool for measuring angles outdoors and measuring various objects indirectly.

Estimate the heights of the various buildings that comprise Hopatcong High School.

Use the bisected strings method to locate the desired corners of a rectangle.

**(4.5A)**

Applying problem-solving strategies when responding to real-life situations.

Identifying and evaluating various solutions and strategies to real-life situations.

**(4.5B)**

Identifying, analyzing, and communicating both positive and negative character influences in both occupational and community settings.

Operate as a team member in various targeted activities.

**(4.5C)**

Identify and evaluate various solutions and strategies to real-life decision making.

Examine various situations where compounding of interest is applied.

Identify and clarify what constitutes a good credit report.

**(9.1A)**

Defining personal, academic, and career goals.

Outlining steps for attaining goals.

Identifying and analyzing factors that affect goals.

Assessing and modifying goals.

Identifying possible applications of technology to goals.

**(9.1B)**

Identifying and defining job related skills by career clusters.

Assessing personal skills as related to career clusters.

Participating in co-operative learning activities that develop communication and teamwork skills.

Utilizing technology in both individual and co-operative learning activities.

Identifying and defining personal skills as they relate to home, school, community, and employment.

Completing hands-on activities that simulate industry specific activities.

**(9.2A)**

Applying problem-solving strategies when responding to real-life decision making activities.

Identifying and evaluating various solutions and strategies to real-life decision making activities.

**(9.2B)**

Assessing and revising personal growth plans for both academic and occupational goals.

**(9.2C)**

Communicating effectively in a variety of environments with both peer and diverse groups.

**(9.2D)**

Identifying and analyzing both positive and negative character influences in both occupational and community settings.

Comparing and contrasting both positive and negative character influences from one occupation to another.

**(9.2E)**

Developing a personal financial plan that will require income, spending, and tax calculations.

Developing a strategy to both obtain and maintain credit.

Identifying and analyzing methods of relieving debt.

Comparing and contrasting methods and costs of investing.

Identifying and analyzing factors that will positively or negatively affect a financial plan.

Developing and applying banking and accounting skills.

Identifying the financial aspects of purchasing and maintaining an automobile and a home.

Applying comparative shopping techniques to purchase goods and services.

**(8.1)**

Use a computer to research, prepare, and present individual or group projects relating to the above tasks.

**INSTRUCTIONAL STRATEGIES:**

Instructional strategies may include, but are not limited to:

- class discussions
- co-operative learning activities
- technological applications-internet research,
- computer aided presentations
- real-life problem solving experiences
- individual and group research projects
- guest speakers from related fields

**EVALUATION/ASSESSMENT OF STUDENTS:**

Students will be evaluated/assessed by the following methods:

written tests/quizzes

graded individual activities

graded co-operative learning activities

class interaction

**EVALUATION/ASSESSMENT OF CURRICULUM:**

This course of study this course of study will be reviewed according to the Five-Year Curriculum Review schedule (see attached).

**RESOURCES/BIBLIOGRAPHY:**

Student Texts: "Skills For Consumer Success"; Southwestern Educational Publishing, 4th Edition, 1999, Donnelly

"On Your Own"; Southwestern Educational Publishing, 1996, Donnelly

"Family Financial Management"; Southwestern Educational Publishing, 6th Edition, 1998, Roman and Finch

"Investing In Your Future"; Southwestern Educational Publishing, 2000, NAIC

"The Stock Market-Investment Simulation"; Southwestern Educational Publishing, 1997, Semmen and Semmen- Braun

Supplementary Material: TI 34 Calculator

How To Do Your Banking Manual

Investment Materials

Internet Research

State/Federal Tax Forms