

Course of Study

Consumer Mathematics

Warren County Career Center

**3525 North State Route 48
Lebanon, Ohio 45036**

Adopted 08-16-07

*This document is for the use of the staff at Warren County Career Center.
Credit is given the designer of the template, Upper Valley JVS, Piqua, Ohio.*

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Acknowledgements

Consumer Mathematics Warren County Career Center

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Warren County Career Center Administrative Team

Warren County Educational Service Center

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Statement of Recommendation

The Mathematics Advisory Committee at Warren County Career Center has reviewed this course of study and recommends it for use as the foundation for instruction in the Consumer Mathematics class.

The developers of this course of study have considered local labor market needs and the school's ability to offer specialized programs. The competencies have been reviewed and accepted as being congruent with our school's vision, mission, and strategic goals. When appropriate, additional competencies related to the program area have been incorporated into this course of study.

Achievement of technical competencies, utilizing proper attitudes, and demonstrating appropriate values are critical for successful employment and for furthering educational opportunities within a student's chosen field. We believe that this course of study adequately and correctly focuses upon student development.

This course of study is recommended on: 08-16-07

Warren County Career Center Vision Statement

WCCC is the valued partner of choice within the educational and economic systems of our communities, by providing quality academic and career technical education.

We pave the way for a future of opportunities unique to each of our learners.

Warren County Career Center Mission Statement

To prepare youths and adults to make informed career choices and to successfully enter, compete, and advance in a changing work world.

Warren County Career Values

- Treating each other with respect, dignity, trust and mutual value
- Communicating openly and honestly
- Taking ownership of personal actions and being held accountable for results
- Upholding and demonstrating high ethical, educational and fiscal standards
- Exhibiting high levels of professionalism
- Providing high quality instruction and highly qualified staff to ensure success for all learners
- Making quality customer service a high priority
- Promoting partnerships and a team environment
- Celebrating team and individual achievements
- Using data to drive planning, decision making and actions
- Embracing educational opportunities for change and diversity

Course Design

Courses are designed to reflect career-focused education, which combines high-level academics with real-life technical skills. The intent is to maximize a student's present and future academic and career success.

Career-focused education enhances the integration of academic and technical skills, designs programs that prepare students with transferable skills and promotes each student's career opportunities.

Course Philosophy

We believe that

- Mathematics literacy is needed to make everyday decisions such as choosing which product to purchase, interpreting information in news reports, and selecting insurance or health plans.
- Mathematical thinking and problem solving are needed in the workplace, and those who understand and can use mathematics have significantly enhanced opportunities and options.
- Mathematics plays a central role in modern culture, including aesthetic and recreational aspects, and an essential role in the scientific and technical community.
- Set high expectations and strong support for mathematics achievement by ALL students.
- Represent mathematics knowledge and skills needed to make successful transitions to post-secondary education, workplace and daily life.
- Reflect sound application of research on how students learn mathematics.
- Align with national standards documents and major studies in Geomathematics
- Address mathematics content knowledge and mathematical processes, including problem-solving, mathematical reasoning, communication, representation and connections.
- Focus on important mathematics topics that are well-articulated through benchmarks and grade-level indicators.
- Represent rigorous progression across grades and in-depth study within each grade.
- Provide an appropriate balance among conceptual understanding, procedural knowledge and skills, and application and problem solving.
- Incorporate use of technology by ALL students in learning mathematics
- Serve as the basis for classroom, district and state assessments.
- Guide the development of local mathematics curriculum and instructional programs.

Course Goals

The course goals for Consumer Mathematics are:

1. The student will be able to add, subtract, multiply, and divide whole numbers and decimals.
2. The student will be able to add, subtract, multiply, and divide fractions.
3. The student will be able to convert, compare, and work with percents.
4. The student will be able to find income from various types of payment methods and compare these payment methods along with job benefits and future earnings.
5. The student will be able to calculate problems of chance (probability).
6. The student will be able to compute various types of taxes.
7. The student will be able to solve problems dealing with personal finance.
8. The student will be able to solve problems involving food, diet, health, and fitness.
9. The student will plan, create, and develop and travel portfolio.
10. The student will solve problems involving investments and retirement.

Course Description

Math skills needed to survive as an intelligent consumer in today's society will be developed in Consumer Math. Topics will include the mathematics of personal income, buying a car and related expenses, purchasing various types of insurance, housing, unit pricing, discounts and mark-ups, banking, budgeting, investments, taxes, travel and fitness. All juniors and seniors would benefit by taking this course.

Academic and Technical Integration

Expectations of curriculum must be aligned with what is written, taught, assessed, and reported. Student expectations focus on active, project-centered learning—an approach to learning that emphasizes a connection between ideas in a discipline and the outside world. Educational programming and course content will clearly connect career and post-secondary opportunities. At the Warren County Career Center, the main goal is to design courses and projects that use strategies for authentic instruction. These characteristics of instruction focus on deep understanding, established opportunities for concept connections, provide anticipatory and abstract thinking, and emphasize genuine application.

The academic courses at the WCCC follow the state model curricula. They are designed to meet both associate school and state requirements. These standards respond to the need to improve student achievement, quality of curriculum and instruction, and strengthen school and community relationships.

Technology

The Warren County Career Center board and staff believe that technology skills are essential for all students to achieve in the 21st century. It is the goal of this district to infuse technology into all facets of education:

- Instruction
- Assessment
- Administration
- Career planning
- Course design
- Professional development

Strategies to incorporate technology into all facets of education are a priority of the district and there is commitment to a continual process to provide updated hardware, software, and professional development for staff members for the purpose of providing a high quality education, with the integration of technology, for all students.

Students Served

The population served by this program is seniors.

Scope and Sequence

Grade-Level Indicators

Number, Number Sense and Operations Standard

Students demonstrate number sense, including an understanding of number systems and operations and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods.

- Benchmark C. Apply properties of operations and the real number system, and justify when they hold for a set of numbers.
- Benchmark E. Compare, order and determine equivalent forms of real numbers.
- Benchmark F. Explain the effects of operations on the magnitude of quantities.
- Benchmark G. Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions.
- Benchmark H. Find the square root of perfect squares, and approximate the square root of non-perfect squares.
- Benchmark I. Estimate, compute and solve problems involving square roots and numbers with integer exponents.

Patterns, Functions and Algebra Standard

Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.

- Benchmark A. Generalize and explain patterns and sequences in order to find the next term and the nth term.
- Benchmark B. Identify and classify functions as linear or nonlinear, and contrast their properties using tables, graphs or equations.
- Benchmark C. Translate information from one representation (words, table, graph or equation) to another representation of a relation or function.
- Benchmark D. Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations.
- Benchmark C. Use recursive functions to model and solve problems; e.g., home mortgages, annuities.(11th)

Data Analysis and Probability Standard

Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.

- Benchmark A. Create, interpret and use graphical displays and statistical measures to describe data; e.g., box-and-whisker plots, histograms, scatterplots, measures of center and variability.
- Benchmark B. Evaluate different graphical representations of the same data to determine which is the most appropriate representation for an identified purpose.

Benchmark C. Compare the characteristics of the mean, median and mode for a given set of data, and explain which measure of center best represents the data.

Benchmark A. Create and analyze tabular and graphical displays of data using appropriate tools, including spreadsheets and graphing calculators.(11th)

Mathematical Processes

- A. Formulate a problem or mathematical model in response to a specific need or situation, determine information required to solve the problem, choose method for obtaining this information, and set limits for acceptable solution.
- B. Apply mathematical knowledge and skills routinely in other content areas and practical situations.
- C. Recognize and use connections between equivalent representations and related procedures for a mathematical concept; e.g., zero of a function and the x-intercept of the graph of the function, apply proportional thinking when measuring, describing functions, and comparing probabilities.
- D. Apply reasoning processes and skills to construct logical verifications or counter-examples to test conjectures and to justify and defend algorithms and solutions.
- E. Use a variety of mathematical representations flexibly and appropriately to organize, record and communicate mathematical ideas.
- F. Use precise mathematical language and notations to represent problem situations and mathematical ideas.
- G. Write clearly and coherently about mathematical thinking and ideas.
- H. Locate and interpret mathematical information accurately, and communicate ideas, processes and solutions in a complete and easily understood manner.

Algebraic Concepts

Computation: Real World Problems

The learner will be able to obtain solutions to real world problems that involve computations.

Strand	Scope
Computation	Reinforce

Estimate: Multiple Step Story Problem

The learner will be able to estimate the solution to a story problem which requires multiple calculations.

Strand	Scope
Multiple-step Problems	Reinforce

Exponents: Understand Representation

The learner will be able to demonstrate an understanding of the value of a number represented in exponential form.

Strand	Scope
Exponents	Master

Order of Operations: Apply

The learner will be able to correctly use the rules for order of operations.

Strand	Scope
Order of Operations	Reinforce

Radicals: Square Roots/Simplify

The learner will be able to simplify radical expressions with square roots.

Strand	Scope
Radicals	Reinforce

Fractions

Fractions: Operations

The learner will be able to add, subtract, multiply and divide fractions and mixed fractions.

Strand	Scope
Fractions	Reinforce

Data Interpretation

Data: Sorting

The learner will be able to sort data by common characteristics.

Strand	Scope
Data Collection and Classification	Reinforce

Table: Draw Conclusion

The learner will be able to draw conclusions and make inferences from information presented in tables or charts.

Strand	Scope
Tables/Charts	Reinforce

Decimals

Decimals: Convert to Percents/Fractions

The learner will be able to represent decimal numbers as either fractions or percents.

Strand	Scope
Decimals	Reinforce

Functions

Functions: Graph

The learner will be able to create graphs of functions.

Strand	Scope
Graphing Functions	Reinforce

Functions: Interpret

The learner will be able to interpret functions.

Strand	Scope
Functions	Reinforce

Functions: Represent

The learner will be able to use tables or graphs to represent a function.

Strand	Scope
Functions/Relations	Reinforce

Functions: Represent/Learned

The learner will be able to represent a function or relation using learned mathematical symbols.

Strand	Scope
Functions/Relations	Reinforce

Functions: Tables/Predict Output

The learner will be able to predict output from input for a given function table.

Strand	Scope
Functions	Reinforce

Representations: Functions/Relations

The learner will be able to use tables, mappings, and coordinate pairs to represent functions and relations.

Strand	Scope
Representations of Functions	Reinforce

Mathematics Processes

Math as Reasoning: Apply

The learner will be able to develop reasoning skills and become an independent mathematical thinker who is able to draw logical conclusions and make generalizations.

Strand	Scope
Reasoning	Master

Math as Reasoning: Estimating Solutions

The learner will be able to apply mathematical reasoning to estimate solutions to problems.

Strand	Scope
Reasoning	Reinforce

Math Concepts: Relating

The learner will be able to associate mathematical ideas and/or skills with practical applications.

Strand	Scope
Mathematical Concepts	Reinforce

Mathematical Concepts: Using Technology

The learner will be able to use technology to explore and interpret mathematical concepts.

Strand	Scope
Mathematical Concepts	Reinforce

Mathematical Connections: Apply

The learner will be able to apply the concepts of one mathematical problem situation to extend understanding of another problem.

Strand	Scope
Connections	Reinforce

Mathematics as Communication

The learner will be able to use speaking, writing, graphical forms, and physical models to communicate mathematics concepts.

Strand	Scope
Communication	Reinforce

Modeling: Real World

The learner will be able to apply mathematical models to real world problem scenarios.

Strand	Scope
Mathematical Modeling	Reinforce

Percents

Percent/Percentage/Symbol

The learner will be able to identify the definition of percent (one out of a hundred), percentage (part of a whole), and the percent symbol (%).

Strand	Scope
Percent Representations	Reinforce

Problem Solving: Compound Interest

The learner will be able to calculate compound interest using formulas and technology when necessary.

Strand		Scope	
Problem Solving		Master	

Problem Solving: Discount/Interest/Tax

The learner will be able to determine the operations necessary to solve problems with discounts, interest, and sales tax.

Strand		Scope	
Problem Solving		Reinforce	

Perspective/Role in Society

Applications: Math Skills

The learner will be able to identify math skills that are necessary for successful careers.

Strand		Scope	
Applications		Master	

Applications: Society

The learner will be able to recognize mathematics as integral to the development of all cultures and civilizations, and in particular to that of our own society.

Strand		Scope	
Applications		Master	

Assessment Outcomes: Errors

The learner will be able to attempt to use errors as learning experiences and apply new learning so as to not repeat errors.

Strand		Scope	
Assessment Outcomes		Reinforce	

Attitude: Appreciation

The learner will be able to develop an appreciation for the value of mathematics.

Strand		Scope	
Attitude/Perspective		Reinforce	

Attitude: Confidence

The learner will be able to become confident in solving problems.

Strand		Scope	
Attitude/Perspective		Reinforce	

Attitude: Mathematics/Language Arts

The learner will be able to understand and appreciate that discussing, listening, reading, and writing are vital parts of learning and using mathematics.

Strand		Scope	
Attitude/Perspective		Reinforce	

Banking: Checking/Problem Solving

The learner will be able to solve real-world problem situations involving checking accounts (banking situations).

Strand		Scope	
Banking		Reinforce	

Banking: Compare

The learner will be able to compare services offered by a variety of banking institutions.

Strand		Scope	
Banking		Master	

Banking: Compare Services

The learner will be able to compare the services offered by a financial institution.

Strand		Scope	
Banking		Master	

Banking: Deposits

The learner will be able to correctly add deposits to the balance of a bank account.

Strand		Scope	
Banking		Master	

Banking: Ending Balance

The learner will be able to correctly subtract check amounts to calculate the ending balance of a check register.

Strand		Scope	
Banking		Master	

Banking: Evaluating

The learner will be able to make decisions about a variety of financial institutions with regard to fees, service, options, etc.

Strand		Scope	
Banking		Master	

Banking: Evaluate Services

The learner will be able to evaluate the services offered by a financial institution to determine which is most appropriate for his/her needs.

Strand		Scope	
Banking		Master	

Banking: Problem Solving

The learner will be able to determine solutions to mathematical problems encountered in banking situations, such as savings, checking, and loans.

Strand		Scope	
Banking		Master	

Banking: Reconcile Statement

The learner will be able to correctly reconcile a bank statement to determine a current balance.

Strand		Scope	
Banking		Master	

Banking: Service Charges

The learner will be able to appropriately subtract service charges from a bank account.

Strand		Scope	
Banking		Master	

Budgets: Automobile Costs/Calculate

The learner will be able to calculate the costs of operating an automobile.

Strand	Scope
Spending/Budget	Master

Budgets: Automobile Costs/Factors

The learner will be able to list the factors which contribute to the cost of operating an automobile.

Strand	Scope
Spending/Budget	Master

Budgets: Creating

The learner will be able to create a variety of budgets (personal, family, small business, etc.), using spreadsheets when appropriate.

Strand	Scope
Spending/Budget	Master

Budgets: Gasoline Costs

The learner will be able to calculate gasoline costs in the operation of an automobile.

Strand	Scope
Spending/Budget	Master

Budgets: Personal/Create

The learner will be able to create a personal budget.

Strand	Scope
Spending/Budget	Reinforce

Budgets: Utility Costs

The learner will be able to calculate monthly utility costs.

Strand	Scope
Spending/Budget	Master

Car Purchase

The learner will be able to explore, compare, and evaluate information about buying a car (used or new, down payment, insurance, maintenance, etc).

Strand	Scope
Spending/Budget	Master

Consumer: Problem Solving

The learner will be able to apply problem solving strategies to solve problems encountered by consumers.

Strand	Scope
Spending/Budget	Master

Credit: Determine Cost

The learner will be able to determine the added cost of buying an item on credit.

Strand	Scope
Loans/Credit	Master

Credit Cards: Exploring

The learner will be able to understand how charge accounts and credit cards operate (costs, payments, interest, etc.).

Strand	Scope

Loans/Credit		Master	
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Credit Cards: Problem Solving

The learner will be able to solve real-world problems regarding credit cards, including comparing costs, computing daily balances, finance charges, etc.

Strand		Scope	
Loans/Credit		Master	

Credit Cards: Responsibilities

The learner will be able to list consumer responsibilities for credit cards.

Strand		Scope	
Loans/Credit		Master	

Employment Options: Analyzing

The learner will be able to analyze a variety of employment options, such as personal satisfaction, financial gain, etc., when evaluating job choices.

Strand		Scope	
Income/Benefits		Master	

Government Effects: Analyzing

The learner will be able to analyze the progressive effect that the Federal Reserve System has on consumer prices.

Strand		Scope	
Economics		Master	

Health Industry: Problem Solving

The learner will be able to apply problem solving strategies to solve problems encountered within the health industry.

Strand		Scope	
Economics		Master	

Income/Benefits

The learner will be able to determine and make comparisons of various forms of earnings, determine net pay, using technology as needed.

Strand		Scope	
Income/Benefits		Master	

Insurance: Auto

The learner will be able to decide on the purchase of auto insurance with respect to need and cost.

Strand		Scope	
Insurance		Master	

Insurance: Coverage Options

The learner will be able to study and/or make comparisons of the types of coverage and rates available in insurance plans.

Strand		Scope	
Insurance		Master	

Insurance: Health

The learner will be able to decide on the purchase of health insurance with respect to need and cost.

Strand		Scope	
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Insurance		Master	
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Insurance: Home

The learner will be able to decide on the purchase of home insurance with respect to need and cost.

Strand		Scope	
Insurance		Master	

Insurance: Life

The learner will be able to decide on the purchase of life insurance with respect to need and cost.

Strand		Scope	
Insurance		Master	

Investments: Analyzing Retirement Plans

The learner will be able to analyze the effects of early and continual participation in a variety of retirement plans (such as IRAs, tax sheltered annuities, etc.), using technology when necessary.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Anticipated Value

The learner will be able to compute the anticipated value of a variety of investments, such as college, retirement, etc., using technology as necessary.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Appreciation/Depreciation

The learner will be able to evaluate a purchase on the basis of its appreciated or depreciated value.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Comparing

The learner will be able to compare the benefits and drawbacks of a variety of investments.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Evaluating

The learner will be able to evaluate investments with varying principals and rates of interest to determine which is the better option.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Graphing Interest

The learner will be able to display the interest gained on a bank account graphically.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Investigate/Compare

The learner will be able to explore and/or compare many different investment options, such as stocks, bonds, annuities, and/or retirement plans.

Strand		Scope	
Personal Finances/Investments		Master	

Investments: Savings Options

The learner will be able to study different savings options that use simple and/or compound interest and make comparisons of the advantages of each type.

Strand	Scope
Personal Finances/Investments	Master

Learning Objective

The learner will be able to learn to accept responsibility for his/her own learning in mathematics.

Strand	Scope
Learning Mathematics	Reinforce

Loan/CD: Maturity Date

The learner will be able to calculate the maturity date of both certificates of deposit (CD's) and loans.

Strand	Scope
Loans/Credit	Master

Loans: Down Payment

The learner will be able to determine the down payment required for a given loan.

Strand	Scope
Loans/Credit	Master

Loans: Exploring

The learner will be able to understand the options available (types, uses, costs, etc.) when considering a personal, car, or home loan.

Strand	Scope
Loans/Credit	Master

Loans: Interest

The learner will be able to calculate the interest accrued on a given loan or credit purchase.

Strand	Scope
Loans/Credit	Reinforce

Loans: Monthly Payments

The learner will be able to calculate the monthly payments for loans.

Strand	Scope
Loans/Credit	Master

Loans: Mortgage Costs/Different Rates

The learner will be able to calculate the costs of mortgages at a variety of rates, using technology when necessary.

Strand	Scope
Loans/Credit	Master

Loans: Mortgage Costs/Different Time

The learner will be able to calculate the costs of mortgages for different time frames, using technology when necessary.

Strand	Scope
Loans/Credit	Master

Mathematical Perspective

The learner will be able to understand mathematics as integral to the development of all cultures and

civilizations.

Strand	Scope
Attitude/Perspective	Reinforce

Mathematical Perspective

The learner will be able to see mathematics as a connected whole as opposed to an isolated set of topics.

Strand	Scope
Attitude/Perspective	Reinforce

Mathematical Situations: Decisions

The learner will be able to apply an understanding of how to make mathematical decisions to personal and social issues.

Strand	Scope
Mathematical Situations	Master

Mathematics: Careers/Proficiency

The learner will be able to understand that many careers require proficiency in mathematics.

Strand	Scope
Careers	Reinforce

Mathematics: Role in Marketing

The learner will be able to understand the role mathematics plays in marketing.

Strand	Scope
Role	Master

Payments/APR: Relationship

The learner will be able to create a graph illustrating the relationship between charges accrued through the annual percentage rate and payments made.

Strand	Scope
Loans/Credit	Master

Personal Income: Net Pay

The learner will be able to calculate net pay after deductions are made.

Strand	Scope
Income/Benefits	Reinforce

Personal Income: Commission Options

The learner will be able to compare a variety of commission options when solving real-world problems.

Strand	Scope
Income/Benefits	Master

Personal Income: Deductions/Calculate

The learner will be able to calculate the deductions made from a payroll check.

Strand	Scope
Income/Benefits	Master

Personal Income: Deductions/Identify

The learner will be able to identify deductions taken from a salary.

Strand	Scope
Income/Benefits	Master

Personal Income: Fringe Benefits

The learner will be able to compute values of various fringe benefits.

Strand	Scope
Income/Benefits	Master

Personal Income: Gross Income

The learner will be able to calculate gross income, taking into account various pay scales (salary, commission, hourly wage, etc.), using technology when necessary.

Strand	Scope
Income/Benefits	Master

Personal Income: Net Income

The learner will be able to calculate net income, taking into account assorted deductions (tax withholdings, profit sharing, etc.), using technology when appropriate.

Strand	Scope
Income/Benefits	Master

Personal Income: Salaries/Calculate

The learner will be able to calculate hourly, weekly, monthly, and annual salaries.

Strand	Scope
Income/Benefits	Master

Personal Income: Salaries/Compare

The learner will be able to compare hourly, weekly, monthly, and annual salaries.

Strand	Scope
Income/Benefits	Master

Personal Income: Terms

The learner will be able to understand the following terms associated with earned income: wage, salary, overtime, bonus, take-home pay, net pay, gross pay, deduction, FICA, federal tax, sales tax, retirement, commission, rate of commission, and State Unemployment Insurance.

Strand	Scope
Income/Benefits	Master

Personal Income: Wages

The learner will be able to calculate wages earned where no deductions are involved.

Strand	Scope
Income/Benefits	Master

Personal Income: Wages/Overtime

The learner will be able to determine wages when calculating overtime pay is involved.

Strand	Scope
Income/Benefits	Master

Personal Income: Wages/Salary/Commission

The learner will be able to calculate personal income where wages, salary, and commissions are involved.

Strand	Scope
Income/Benefits	Master

Personal Taxes: Problem Solving

The learner will be able to obtain solutions to problems involving personal taxes.

Strand	Scope
Personal Finances/Investments	Master

Preparing Payroll: Spreadsheet

The learner will be able to utilize a spreadsheet when preparing a payroll.

Strand	Scope
Income/Benefits	Master

Purchases: Cost Comparison

The learner will be able to perform cost comparisons and savings when making purchases.

Strand	Scope
Spending/Budget	Master

Purchases: Cost Comparison/Basic Needs

The learner will be able to make judgments with respect to cost comparisons when deciding on food, shelter, clothing, transportation, etc.

Strand	Scope
Spending/Budget	Master

Purchases: Discounts/Sales/Coupons

The learner will be able to solve real-world problems where discounts, sales, and/or coupons are involved with a purchase.

Strand	Scope
Spending/Budget	Reinforce

Purchases: Problem Solving

The learner will be able to solve real-world problem situations involving purchases.

Strand	Scope
Spending/Budget	Master

Purchases: Vacation Costs/Identify

The learner will be able to list vacation costs (fares, lodging, etc.).

Strand	Scope
Spending/Budget	Master

Purchases: Vacation Costs/Calculate

The learner will be able to calculate vacation costs (fares, lodging, etc.).

Strand	Scope
Spending/Budget	Master

Stock/Bonds: Exploring

The learner will be able to explore and understand a variety of stocks and bonds.

Strand	Scope
Personal Finances/Investments	Master

Taxes: Calculate/Real-World

The learner will be able to solve problems in real-world situations where calculating taxes (income tax, social security tax, etc.) is required.

Strand	Scope
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Economics		Master	
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Taxes: Calculate/Use Technology

The learner will be able to calculate use tax, using technology when necessary.

Strand		Scope	
Economics		Master	

Taxes: Completing Forms

The learner will be able to complete a variety of tax forms, including standard and itemized deductions. 6-1-1-n.

Strand		Scope	
Economics		Master	

Taxes: Excise/Calculate

The learner will be able to calculate excise tax, using technology when necessary.

Strand		Scope	
Economics		Master	

Taxes: Gift/Calculate

The learner will be able to calculate gift tax, using technology when necessary.

Strand		Scope	
Economics		Master	

Taxes: Inheritance/Calculate

The learner will be able to calculate inheritance tax, using technology when necessary.

Strand		Scope	
Economics		Master	

Taxes: Property/Calculate

The learner will be able to calculate property tax, using technology when necessary.

Strand		Scope	
Economics		Master	

Probability/Statistics

Chance: Apply

The learner will be able to apply concepts of chance or occurrence.

Strand		Scope	
Chance		Reinforce	

Frequency Table: Interpret

The learner will be able to interpret information presented in frequency tables or tree charts.

Strand		Scope	
Frequency		Reinforce	

Informal Predictions

The learner will be able to make informal predictions based on collected data.

Strand		Scope	
Predictions		Reinforce	

Mean/Median/Mode/Range: Apply

The learner will be able to use the mean, median, mode, and range of a set of data to solve problems that are presented in a variety of contexts.

Strand	Scope
Average/Median/Mode/Range	Reinforce

Problem Solving

Analyze Problems: Multiple Views

The learner will be able to analyze problems from more than one point of view.

Strand	Scope
Analyzing Problems	Reinforce

Analyzing Problems: Simplify

The learner will be able to simplify a problem.

Strand	Scope
Analyzing Problems	Reinforce

Analyzing Problems: Breaking Down

The learner will be able to break down problems into their parts and identify the smaller problems within the main problem being addressed.

Strand	Scope
Analyzing Problems	Reinforce

Analyzing Problems: Communicating

The learner will be able to demonstrate an understanding of a problem by communicating the problem and its relevant elements to others.

Strand	Scope
Analyzing Problems	Reinforce

Problem Solving: Multiple Operations

The learner will be able to solve story problems that require multiple steps (more than two).

Strand	Scope
Problem Solving	Reinforce

Strategies

The learner will be able to incorporate a variety of strategies to solve problems (brainstorming, creating models, drawing, guessing, checking, creating graphs, identifying patterns, finding similar problem/solution models, and working backward).

Strand	Scope
Strategies	Reinforce

Strategies: Evaluating

The learner will be able to evaluate a given group of strategies to determine which would be most effective for solving a real world scenario.

Strand	Scope
Strategies	Reinforce

Technology

Computers: Computation

The learner will be able to use computers in solving computation problems.

Strand		Scope	
Computers		Reinforce	

Technology as a Tool: Retrieve Data

The learner will be able to obtain mathematical information from many different sources through the use of technology.

Strand	Bloom's	Scope	
Technology as a Tool		Master	

Technology Standards

Standard 1: Nature of Technology

Students develop an understanding of technology, its characteristics, scope, core concepts* and relationships between technologies and other fields.

Benchmark A: Synthesize information, evaluate and make decisions about technologies.

Benchmark B: Apply technological knowledge in decision-making.

Benchmark C: Examine the synergy between and among technologies and other fields of study when solving technological problems.

Standard 2: Technology and Society Interaction

Students recognize interactions among society, the environment and technology, and understand technology's relationship with history. Consideration of these concepts forms a foundation for engaging in responsible and ethical use of technology.

Benchmark A: Interpret and practice responsible citizenship relative to technology.

Benchmark B: Demonstrate the relationship among people, technology and the environment.

Benchmark C: Interpret and evaluate the influence of technology throughout history, and predict its impact on the future.

Benchmark D: Analyze ethical and legal technology issues and formulate solutions and strategies that foster responsible technology usage.

Benchmark E: Forecast the impact of technological products and systems.

Standard 3: Technology for Productivity Applications

Students learn the operations of technology through the usage of technology and productivity tools.

Benchmark A: Integrate conceptual knowledge of technology systems in determining practical applications for learning and technical problem-solving.

Benchmark B: Identify, select and apply appropriate technology tools and resources to produce creative works and to construct technology-enhanced models.

Standard 4: Technology and Communication Applications

Students use an array of technologies and apply design concepts to communicate with multiple audiences, acquire and disseminate information and enhance learning.

Benchmark A: Apply appropriate communication design principles in published and presented projects.

Benchmark B: Create, publish and present information, utilizing formats appropriate to the content and audience.

Benchmark C: Identify communication needs, select appropriate communication tools and design collaborative interactive projects and activities to communicate with others, incorporating emerging technologies.

Standard 5: Technology and Information Literacy

Students engage in information literacy strategies, use the Internet, technology tools and resources, and apply information-management skills to answer questions and expand knowledge.

Benchmark A: Determine and apply an evaluative process to all information sources chosen for a project.

Benchmark B: Apply a research process model to conduct research and meet information needs.

Benchmark C: Formulate advanced search strategies, demonstrating an understanding of the strengths and limitations of the Internet, and evaluate the quality and appropriate use of Internet resources.

Benchmark D: Evaluate choices of electronic resources and determine their strengths and limitations.

Standard 6: Design

Students apply a number of problem-solving strategies demonstrating the nature of design, the role of engineering and the role of assessment.

Benchmark A: Identify and produce a product or system using a design process, evaluate the final solution and communicate the findings.

Benchmark B: Recognize the role of teamwork in engineering design and of prototyping in the design process.

Benchmark C: Understand and apply research, development and experimentation to problem-solving.

Standard 7: Designed World

Students understand how the physical, informational and bio-related technological systems of the designed world are brought about by the design process. Critical to this will be students' understanding of their role in the designed world: its processes, products, standards, services, history, future, issues and career connections.

Benchmark A: Classify, demonstrate, examine, and appraise energy and power technologies.

Benchmark B: Classify, demonstrate, examine and appraise transportation technologies.

Benchmark C: Classify, demonstrate, examine and appraise manufacturing technologies.

Benchmark D: Classify, demonstrate, examine and appraise construction technologies.

Benchmark E: Classify, demonstrate, examine and appraise information and communication technologies

Benchmark F: Classify, demonstrate, examine and appraise medical technologies.

Benchmark G: Classify, demonstrate, examine and appraise agricultural and related biotechnologies.

Performance Measures/Student Assessment/Instructional Strategies

Assessments/Evaluations

- Observations
- Demonstrations
- Portfolios
- Standardized Tests
- Class Assignment
- Quizzes/Tests/Exams
- Web Exam/Certification

Instructional Strategies

- Teacher-Directed & Student-Centered Activities
- Case Study Problem Solving
- Cooperative Learning
- Project-Based Learning
- Career-Based Learning (Internships/Shadowing/Placement)
- Community-Based Learning (CTSOs and Other)
- Exploratory Learning
- Independent Research
- Team Teaching

Content Specific Strategies