
Coal City Unit District #1
Financial Algebra
Math Curriculum

- MA.FA:1** **Students will be introduced to basic business organization terminology in order to read, interpret and chart stock ownership and transaction data. (N-Q1, N-Q2, N-Q3, A-SSE1, A-CED1, A-CED2, A-CED4, A-REI3)**
- MA.FA:1-1 Compute financial responsibility of business ownership based on ratios and percents.
- MA.FA:1-2 Use stock data to follow the daily progress of a corporate stock.
- MA.FA:1-3 Create and interpret a stock bar chart and stock candlestick chart.
- MA.FA:1-4 Use simple moving averages to smooth data.
- MA.FA:1-5 Determine the total value of a trade and trade volumes from stock market ticker information.
- MA.FA:1-6 Compute gains and losses from stock trades.
- MA.FA:1-7 Compute the fees involved in buying and selling stock.
- MA.FA:1-8 Calculate the post-split outstanding shares for a traditional split and a reverse split; including the fractional amount a shareholder receives after a split.
- MA.FA:1-9 Compute various forms of profit to which shareholders are entitled including dividend income, yield, and interest earned on corporate bonds.
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- MA.FA:2** **Students will use mathematics to model a new business venture. Specifically, students will interpret scatterplots, use linear and quadratic modeling along with regression analysis to analyze supply, demand, expense, revenue, and profit. (N-Q1, N-Q2, N-Q3, A-CED2, A-CED3, A-REI2, A-REI4b, A-REI6, A-REI7, A-REI10, A-REI11, A-REI12, A-SSE1a, F-IE4, F-IF1, F-IF4, F-IF7a, F-FIF8, S-ID6c, S-ID8, S-ID9)**
- MA.FA:2-1 Graph bivariate data, draw lines and curves of best fit, then interpret resulting trends.
- MA.FA:2-2 Given a set of bivariate data, use technology to find the line of best and correlation coefficient. Make predictions based on the line of best fit.
- MA.FA:2-3 Interpret and analyze supply and demand curves to determine the point of equilibrium.
- MA.FA:2-4 Classify expenses as fixed or variable and then create an expense equation based on fixed and variable expenses.
- MA.FA:2-5 Write, graph, and interpret revenue and expense functions. Find and interpret breakeven points (points of intersection).
- MA.FA:2-6 Perform a breakeven analysis using technology.
- MA.FA:2-7 Given the expense and revenue equations, create a profit equation and find the price where maximum profit is attained.
- MA.FA:2-8 Recognize and explain how the transitive property is used in a business model.

MA.FA:3 **Students will learn the function and computation of interest in short-term, long-term, single deposit and periodic deposit accounts. (N-RN1, N-RN2, A-SSE1a, A-SSE1b, A-SSE3c, A-CED4, F-BF1a, F-IF4, F-IF8b)**

- MA.FA:3-1 Explore different types of checking accounts and complete a check register.
- MA.FA:3-2 Reconcile a bank statement.
- MA.FA:3-3 Compute simple interest for a savings account.
- MA.FA:3-4 Compute compound interest for different types of savings accounts.
- MA.FA:3-5 Compute compound interest on an account that is continuously compounded.
- MA.FA:3-6 Graph and interpret the graph of a future value function. Calculate the future value of a periodic deposit.
- MA.FA:3-7 Calculate the present value of a single and periodic deposit.

MA.FA:4 **Students will learn how to use and manipulate the credit formulas in order to make wise credit choices that fit their needs, current financial situation, and future goals. (N-Q1, N-Q2, A-SSE1, A-SSE1b, A-SSE2, A-SSE3c, A-CED3, F-BF1a, F-IF8b, F-LE5, S-ID6a)**

- MA.FA:4-1 Compute finance charges for installment purchases.
- MA.FA:4-2 Compute monthly payments and finance charges on installment loans.
- MA.FA:4-3 Calculate the present value of a single and periodic deposit.
- MA.FA:4-4 Compute the average daily balance of a credit card.
- MA.FA:4-5 Identify and use the various entries in a credit card statement.
- MA.FA:4-6 Calculate the average daily balance and finance charge and using the credit calendar.

MA.FA:5 Students will learn and apply the mathematics that models purchasing, insuring, depreciating, maintaining, and driving a car. (A-SSE1b, A-SSE3, A-CED2, A-CED3, A-CED4, A-REI2, F-IF1, F-IF2, F-IF4, F-IF6, F-IF7a, F-IF7b, F-IF7e, F-IF8b, F-IF9, F-LE1b, F-LE1c, F-LE5, G-C5, S-ID1, S-ID2, S-ID3, S-ID4, S-ID6, S-ID7)

- MA.FA:5-1 Compute the cost of sales tax on automobiles.
- MA.FA:5-2 Compute the mean, median, mode, range, quartiles, and interquartile range of car prices in an effort to make an informed buying or selling decision.
- MA.FA:5-3 Create and use a frequency distribution, stem and leaf plots, and a box and whiskers plot to negotiate the purchase or sale of a used car.
- MA.FA:5-4 Compute insurance costs and payments on claims.
- MA.FA:5-5 Write, interpret, and graph a straight line depreciation equation.
- MA.FA:5-6 Write, interpret, and graph an exponential equation. Manipulate the equation to determine time, original price, and depreciated price.
- MA.FA:5-7 Write, interpret, and use the distance formula to determine the relationship between distance, fuel economy, and gas usage.
- MA.FA:5-8 Calculate reaction time and distance, braking distance, and total distance in the English Standard and Metric Systems.
- MA.FA:5-9 Determine the minimum skid speed using the skid mark formula and the yaw mark formula.

MA.FA:6 Students will know how salaries are computed, the value of benefits, and how wage taxes are calculated. (A-SSE, A-CED1, A-CED2, A-CED4, A-REI3, F-IF2, F-IF4, F-IF7b, F-BF1, F-LE1)

- MA.FA:6-1 Compute periodic salary based on annual contract salary.
- MA.FA:6-2 Express certain costs of a job search as a piecewise function.
- MA.FA:6-3 Compute weekly, semi-monthly, and bi-weekly earnings given an annual salary. Compute hourly pay and overtime pay given an hourly rate.
- MA.FA:6-4 Compute and analyze the advantages and disadvantages of pay based on production; specifically, commission and piecework pay.
- MA.FA:6-5 Calculate the value of certain employment benefits.
- MA.FA:6-6 Compute paycheck deductions for Social Security and Medicare.

MA.FA:7 Students will model and interpret our progressive tax system via the creation of functions and the graphic representation of those functions. (A-SSE1, A-CED3, F-IF1, F-IF2, F-IF7B, F-IF8, F-BF1)

- MA.FA:7-1 Express tax schedules algebraically and use the tax schedules and tables to compute federal income taxes.
- MA.FA:7-2 Construct income tax graphs using compound equations and inequalities.
- MA.FA:7-3 Interpret and use the information on a pay stub, W-2 form, and 1099 form.
- MA.FA:7-4 Complete forms 1040EZ, 1040A and 1040 with itemized deductions.
- MA.FA:7-5 Understand the difference between a tax credit and a tax deduction.

MA.FA:8 Students will work with the mathematics that models moving, renting, and purchasing a place to live. (A-SSE1, A-APR6, A-CED2, A-CED3, A-REI6, F-BF1, F-LE1, G-C5, G-MG3, S-ID6a, S-ID6c, S-ID8)

- MA.FA:8-1 Calculate costs associated with renting such as, affordability of monthly rent, the relationship between square footage and monthly rent, lease signing costs, and moving expenses.
- MA.FA:8-2 Compute the perimeter and area of a polygon, the area of an irregular region, and volumes a rectangular solids.
- MA.FA:8-3 Compute the monthly cost of paying for a house.
- MA.FA:8-4 Estimate closing costs when buying a house. Create and analyze an amortization table for a variety of scenarios.
- MA.FA:8-5 Compute the costs of purchasing a cooperative or condominium.

MA.FA:9 Students will explore the fiscal plans required to establish a retirement plan well ahead of actually retiring. (A-SSE1, A-CED3, F-IF8b, F-BF1, S-MD1, S-MD2, S-MD4, S-MD5)

- MA.FA:9-1 Compute future values of retirement investments that are both single and periodic deposits.
- MA.FA:9-2 Calculate and compare the tax savings achieved by making contributions to pre-tax savings accounts. Calculate an employer's matching contribution to a retirement account.
- MA.FA:9-3 Understand how Social Security benefits are calculated and compute federal income taxes on said benefits.
- MA.FA:9-4 Calculate pension benefits for a variety of scenarios.
- MA.FA:9-5 Compute and compare the cost and benefits of different types of life insurance.

MA.FA:10 Students will create, chart, and use a personal budget. (N-Q1, N-Q2, N-VM6, A-SSE1a, A-SSE1b, A-REI10, F-IF4, F-IF5, F-IF7a, F-IF7b, F-BF1)

- MA.FA:10-1 Compute the cost of utilities, the cost of using appliances for specific lengths of time, and the time it takes for an energy saving device to pay for itself.
- MA.FA:10-2 Compute and compare the cost of cell phone calls, text messaging, internet, and television services.
- MA.FA:10-3 Represent a budget with a budget check off matrix, pie chart, bar graph, line graph, and a budget line graph.
- MA.FA:10-4 Develop and interpret a cash flow chart.
- MA.FA:10-5 Develop and interpret a frequency budget plan and a year long expense budget plan.