Personal Finance with Algebra

Unit 1 Discretionary Expenses

Often most teenager's expenses are discretionary expenses. Students often do not have the responsibility of essential expenses, especially at a younger age. The problems, activities and projects inherent in studying discretionary and essential expenses are a natural forum for all eight CCSS Mathematical Practices, but this unit will highlight MP1, MP2, MP3, MP4 MP5, MP6 and MP8

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts (Know)	Competencies (Do)	Lessons/ Suggested Resources	Vocabulary	Standards/ Eligible Content
	Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data. Money Management includes setting goals and developing a plan for how to spend, save, and share financial resources.	How do your discretionary and essential expenses vary??	Measure of central tendency Frequency distributions Decision Making Purchasing	Differentiate between essential and Discretionary expenses. Determine the mean, median, and mode of a data set. Use sigma notation to represent the mean of a data set. Create and interpret a frequency distribution table. Determine the mean, median and mode of a data set presented as a frequency distribution table.	1-1 Discretionary and Essential Expenses Financial Algebra (Cengage) 2nd Ed. Section 1-1 Pgs. 4- 13	Gross income Disposable Income Essential expenses Discretionary expenses Statistics Data Mean Median Mode Subscript Index Outlier Skewed data set Bimodal Frequency distribution	CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.3, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.4, A1.2.2.1.4) CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. (A1.2.1.1.1, A1.2.1.2.1, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.1) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.1.2, A1.1.1.2.1 CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on

Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data. Money Management includes setting goals and developing a plan for how to spend, save, and share financial resources.	How do your discretionary and essential expenses vary??	Cumulative and Relative Frequency Percentiles Spreadsheets Decision Making Purchasing	Determine and interpret cumulative frequency. Determine and interpret relative frequency. Determine and interpret relative cumulative frequency. Model a distribution using a spreadsheet. Determine and interpret percentiles.	1-2 Travel Expenses Financial Algebra (Cengage) 2nd Ed. Section 1-2 Pgs. 14 - 24	Cumulative Frequency Relative Frequency Spreadsheet Cell Relative cumulative frequency Percentile Percentile rank	measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.3, A1.1.3.2.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2) BCIT Standards 15.6.12.A, 15.6.12.H CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. (A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.1) CC.2.1.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) BCIT Standards 15.6.12.A, 15.6.12.B, 15.6.12.H
Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data.	How do your discretionary and essential expenses vary??	Scatterplots Correlations Linear Regressions Decision Making Purchasing	Differentiate between univariate and bivariate data. Interpret trends based in bivariate data. Construct a scatter plot. Fit a linear regression line to a scatterplot.	1-5 Personal Expenses Financial Algebra (Cengage) 2nd Ed. Section 1-5 Pgs. 43 - 54	Univariate data Bivariate data Scatterplot Trend Correlation Causal relationship Explanatory variable	CC.2.1.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable. (A1.2.3.2.1, A1.2.3.2.2., A1.2.3.2.3)

Money	Find the equation of a	Response variable	CC.2.4.HS.B.3 Analyze
Money Management includes setting goals and developing a plan for how to spend, save, and share financial resources	Find the equation of a linear regression line. Compute and interpret the correlation coefficient. Extrapolate and interpolate to make predictions based on regression lines.	Lurking variable Linear regression analysis Linear regression equation Independent variable Dependent variable Domain	CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.2, A1.2.3.2.3) BCIT Standards 15.6.12.B, 15.6.12.F
		Interpolation	
		Extrapolation	
		Correlation coefficient.	

Unit 1 Discretionary Expenses Review

Unit 1 Discretionary Expenses Assessment

Unit 2 Banking Services

In this unit, students examine the simple interest formula, and basic banking and checking services. They use the simple interest formula and calendars to get an intuitive feel for the concept of compound interest. The problems, activities and projects inherent in studying banking are a natural forum for all eight CCSS Mathematical Practice standards, but this unit highlights MP1, MP4, MP5, MP6, and MP8.

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts (Know)	Competencies (Do)	Lessons/ Suggested Resources	Vocabulary	Standards/ Eligible Content
	Numbers, measures, expressions, equations, and	What long- term and short- term services are available	Basic Operations Literal Equation	Make checking account transactions.	2-1 Checking Accounts	Direct Deposit ATM	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or

inequalities can represent mathematical situations and structures in many equivalent forms.	from financial institutions and how can they benefit you?	Extensions	Determine the balance in a check register.	Financial Algebra (Cengage) 2nd Ed. Section 2-1 Pgs. 66 - 72	Personal Identification Number Hold Endorse Canceled Insufficient funds Overdraft protection Maintenance fee Interest Single account	mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) BCIT Standards 15.1.12.F,
Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms	What long- term and short- term services are available from financial institutions and how can they benefit you?	Basic Operations Literal Equation Inequalities	Reconcile a bank statement and a check register. Model the reconciliation process using variables. Reconcile a bank statement and check register using a spreadsheet.	2-2 Reconcile a Bank Statement Financial Algebra (Cengage) 2nd Ed. Section 2-2 Pgs. 73 - 80	Joint account Statement period Starting balance Ending balance Outstanding balance Outstanding checks Balancing Reconciling	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) BCIT Standards 15.1.12.F
Relations and functions are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations. There are some mathematical relationships that are always true and these	What long- term and short- term services are available from financial institutions and how can they benefit you?	Simple Interest Formula Ordering rational numbers literal equations, Spreadsheets Arithmetic Sequences	Write the general form for an arithmetic sequence. Find the common difference in an arithmetic sequence. Order percentages. Make savings account calculations. Use the simple interest formula to find the interest given the	2-3 Savings Account Financial Algebra (Cengage) 2nd Ed. Section 2-3 Pgs. 81 - 88	Annual Percentage Rate Simple Interest Simple Interest Formula Statement savings Minimum balance Money market account Certificate of Deposit (CD) Maturity	CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.1.2.1) CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities

relationshi are used as rules of arithmetic algebra an useful for writing equivalent forms of expression and solving equations inequalitie	the and lare		principal, rate, and time. Use the simple interest formula to find the principal given the interest, rate, and time. Use the simple interest formula to find the time given the principal, rate, and interest. Use the simple interest formula to find the rate given the principal,		Arithmetic Sequence Common difference Finite Infinite	and systems of equations/inequalities algebraically and graphically. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2) BCIT Standards 15.1.12.F, 15.6.8.I, 15.6.8.J
Relations a functions a mathematic relationshing that can be represented and analyzing word tables, grajand equatic	term and short- term services are available from financial institutions and how can they benefit you?	Compound Interest calendar Iteration	interest, and time. Apply the compound interest formula. Explore annual, semiannual, quarterly, monthly, and daily iteration using the simple interest formula.	2-4 Explore Compound Interest Financial Algebra (Cengage) 2nd Ed. Section 2-4 Pgs. 89 - 94	Compound interest Annual compounding Semiannual compounding Quarterly compounding Daily compounding Crediting	CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) BCIT Standards 15.1.12.F, 15.6.8.I, 15.6.8.J

Unit 2 Banking Services Review

Unit 2 Banking Services Assessment

Unit 3 Consumer Credit

Using credit is a tremendous responsibility. Students need to learn all of the requirements and regulations involving loans and credit cards. Unit 3 examines loans, credit legislation, debtors and creditor responsibilities, and reading a credit card statement. The

problems, activities and projects inherent in studying credit are a natural forum for all eight CCSS Mathematical Practice standards, but this unit highlights MP1, MP2, MP3, MP4, MP5, MP6, and MP8.

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts (Know)	Competencies (Do)	Lessons/ Suggested Resources	Vocabulary	Standards/ Eligible Content
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities. Borrowing money has cost and benefits.	How can having credit (good or bad) impact your personal life?	down payments monthly payments credit scores Credit worthiness Spreadsheets Credit	Define the basic vocabulary necessary to use credit responsibly. Identify different types of lending institutions. Compute how long it takes to save for items when credit is not used. Compute finance charges for installment purchases. Explain layaway plan fees. Explain deferred payment plans. Explain credit scores. Compute how credit scores can affect the cost of credit.	3-1 Introduction to Credit Financial Algebra (Cengage) 2nd Ed. Section 3 – 1 Pgs. 148 - 156	Credit Debtor Creditor Asset Earning Power Credit rating Credit reporting agency FICO score Installment plan	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) BCIT Standards 15.1.12.F, 15.2.12.G, 15.2.12.H, 15.2.12.J, 15.6.12.H
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of	How can having credit (good or bad) impact your personal life?	monthly payment formula substitution monthly payment tables ordering percents decimals, and fractions converting fractions to	Compute monthly payments using a monthly payment table. Compute monthly payments using the monthly payment formula. Compute finance charges on loans.	3-2 Loans Financial Algebra (Cengage) 2nd Ed. Section 3 – 2 Pgs. 157 - 163	Promissory Notes Principal Annual Percentage Rate Cosigner Life insurance Prepayment privilege Prepayment penalty	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.1,

expressions		equivalent	Model finance charges		Wage assignment	A1.2.1.1.2, A1.2.1.1.3,
and solving		decimals	algebraically.		Waga gamiahmant	A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.3, A1.2.2.1.4)
equations and inequalities.		Credit			Wage garnishment	
-					Balloon payment	CC.2.1.HS.C.6 Interpret functions in terms of the
Borrowing money has cost						situations they model.
and benefits.						(A1.2.1.2.1, A1.2.2.1.2,
						A1.2.2.1.3, A1.2.2.2.1)
						CC.2.1.HS.F.2 Apply
						properties of rational and irrational to solve
						real world or
						mathematical problems.
						(A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1)
						CC.2.2.HS.D.9 Use
						reasoning to solve
						equations and justify the solution method.
						(A1.1.1.4.1, A1.1.2.1.1,
						A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2,
						A1.1.3.1.1, A1.1.3.1.2,
						A1.1.3.1.3)
						CC.2.2.HS.D.10
						Represent, solve, and interpret
						equations/inequalities
						and systems of
						equations/inequalities algebraically and
						graphically.
						(A1.1.2.1.1, A1.1.2.1.2,
						A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1,
						A1.1.3.1.2, A1.1.3.1.3,
						A1.1.3.2.1, A1.1.3.2.2)
						BCIT Standards
						15.1.12.F, 15.2.12.G, 15.2.12.H, 15.2.12.J,
						15.6.12.H
There are some mathematical	How can having credit	interest capitalization	Explain options available for student	3-3 Student Loans	Career school	CC.2.1.HS.F.2 Apply properties of rational
relationships	(good or bad)	capitanzation	loans.	Financial Algebra	Free Application for	and irrational to solve
that are always	impact your	simplified daily		(Cengage) 2nd Ed.	Federal Student AID	real world or
true and these	personal life?	interest	Calculate interest on a	Section 3 – 3	(FAFSA)	mathematical problems. (A1.1.1.1.1, A1.1.1.1.2,
relationships are used as the		monthly payment	student loan.	Pgs. 164 - 172	Student Aid Report	A1.1.1.3.1, A1.1.1.2.1)
rules of		formula			oracin ma neport	

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arithmetic and			Apply the simplified		Expected Family	CC.2.1.HS.C.3 Write
algebra and are		Credit	daily interest formula.		Contribution (EFC)	functions or sequences
useful for			-			that model relationships
writing					Federal Loan	between two quantities.
equivalent					reactar Eduir	(A1.1.2.1.1, A1.1.2.1.2,
					Defeate Lance	A1.1.2.1.3, A1.2.1.1.1,
forms of					Private Loan	A1.2.1.1.2, A1.2.1.1.3,
expressions						A1.2.1.2.1, A1.2.1.2.2,
and solving					Federal Direct	
equations and					Unsubsidized Loan	A1.2.2.1.3, A1.2.2.1.4)
inequalities.					(Stafford)	0004440064
inequalities.					(Stanord)	CC.2.1.HS.C.6 Interpret
l						functions in terms of the
Borrowing					Federal Direct	situations they model.
money has cost					Subsidized Loan	(A1.2.1.2.1, A1.2.2.1.2,
and benefits.					(Stafford)	A1.2.2.1.3, A1.2.2.2.1)
1					Accrues	CC.2.1.HS.F.2 Apply
					11001 000	properties of rational
					n i invitar	and irrational to solve
1					Federal PLUS Loan	real world or
1						mathematical problems.
					Federal Perkins Loan	(A1.1.1.1.1, A1.1.1.1.2,
						A1.1.1.3.1, A1.1.1.2.1)
						CC.2.2.HS.D.9 Use
						reasoning to solve
						equations and justify the
						solution method.
						(A1.1.1.4.1, A1.1.2.1.1,
						A1.1.2.1.2, A1.1.2.1.3,
						A1.1.2.2.1, A1.1.2.2.2,
						A1.1.3.1.1, A1.1.3.1.2,
						A1.1.3.1.3)
						A1.1.3.1.3)
						CC.2.2.HS.D.10
1						Represent, solve, and
						interpret
1						equations/inequalities
1						and systems of
1						equations/inequalities
1						algebraically and
1						graphically.
						(A1.1.2.1.1, A1.1.2.1.2,
1						A1.1.2.1.3, A1.1.2.2.1,
1						A1.1.2.2.2, A1.1.3.1.1,
1						
1						A1.1.3.1.2, A1.1.3.1.3,
						A1.1.3.2.1, A1.1.3.2.2)
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1						BCIT Standards
1						15.1.12.F, 15.2.12.G,
						15.2.12.H, 15.2.12.J,
						15.6.12.H
There are some	How can	literal equations	Define the vocabulary	3-5 Credit Cards	Credit cards	CC.2.1.HS.F.2 Apply
mathematical	having credit	•	of credit card usage.			properties of rational
 		l .	22 22 2411 241 4 424801	1	l	

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relationships	(good or bad)	Percent	Compute liabilities	Financial Algebra	Impulse buying	and irrational to solve
that are always	impact your		under the Truth in	(Cengage) 2nd Ed.		real world or
true and these	personal life?	Finance charges	Lending Act.	Section 3 – 5	Revolving charge	mathematical problems.
relationships	personal mer	Timanee enarges	Zenamg nea	Pgs. 179 - 186	account	(A1.1.1.1.1, A1.1.1.1.2,
		C 1:t	Comments on southless	1 gs. 179 - 100	account	A1.1.1.3.1, A1.1.1.2.1)
are used as the		Credit	Compute monthly			, , , , , , , , , , , , , , , , , , , ,
rules of		responsibilities	interest rates based on		Charge card	CC.2.1.HS.C.3 Write
arithmetic and			APR.			functions or sequences
algebra and are		Decision making			Truth-in-Lending Act	that model relationships
useful for			Compute the average			· · ·
writing			daily balance on a		Fair Debt Collection	between two quantities.
equivalent			credit card.		Practices	(A1.1.2.1.1, A1.1.2.1.2,
			credit card.		Fractices	A1.1.2.1.3, A1.2.1.1.1,
forms of					51001	A1.2.1.1.2, A1.2.1.1.3,
expressions			Model average daily		Debit Card	A1.2.1.2.1, A1.2.1.2.2,
and solving			balances algebraically.			A1.2.2.1.3, A1.2.2.1.4)
equations and					Electronic Funds	
inequalities.			Explain the various		Transfer Act	CC.2.1.HS.C.6 Interpret
1			credit legislations.			functions in terms of the
Borrowing			- Care regionations		Average Daily Balance	situations they model.
money has cost					Tiverage Daily Balance	(A1.2.1.2.1, A1.2.2.1.2,
						A1.2.2.1.3, A1.2.2.2.1)
and benefits.						
						CC.2.1.HS.F.2 Apply
						properties of rational
						and irrational to solve
						real world or
						mathematical problems.
						(A1.1.1.1.1, A1.1.1.1.2,
						A1.1.1.3.1, A1.1.1.2.1)
						CC.2.2.HS.D.9 Use
						reasoning to solve
						ū
						equations and justify the
						solution method.
						(A1.1.1.4.1, A1.1.2.1.1,
						A1.1.2.1.2, A1.1.2.1.3,
						A1.1.2.2.1, A1.1.2.2.2,
						A1.1.3.1.1, A1.1.3.1.2,
						A1.1.3.1.3)
						CC.2.2.HS.D.10
						Represent, solve, and
						interpret
						equations/inequalities
						and systems of
						equations/inequalities
						algebraically and
						graphically.
						(A1.1.2.1.1, A1.1.2.1.2,
						A1.1.2.1.3, A1.1.2.2.1,
						A1.1.2.2.2, A1.1.3.1.1,
						A1.1.3.1.2, A1.1.3.1.3,
						A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2)
						A1.1.3.2.1, A1.1.3.2.2)
			J			

There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and	How can having credit (good or bad) impact your personal life?	finance charges interpreting statements	Verify entries on a credit card statement. Explain the Schumer Box. Explain how interest accumulates when only the minimum payment	3-6 Credit Card Statement Financial Algebra (Cengage) 2nd Ed. Section 3 – 6 Pgs. 187 - 192	Billing Cycle Credit card statement Account number Credit line Available credit	BCIT Standards 15.6.12.B, 15.6.12.F, 15.2.12.H, 15.2.12.J, 15.6.12.H, 15.6.12.L, 15.6.12.M CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.2, A1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the
writing equivalent forms of expressions and solving equations and inequalities.					Payment due date Transactions Debit/credit Previous balance	A1.2.2.1.3, A1.2.2.2.1) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1)
Borrowing money has cost and benefits.					Payments/credits New purchases Late charges Finance charges	CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3)
					New balance Minimum payment	CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.3, A1.1.3.2.2) BCIT Standards 15.6.12.B, 15.6.12.F,

							15.2.12.H, 15.2.12.J, 15.6.12.H, 15.6.12.L, 15.6.12.M
matherelation that a true a relation are used to relation are used to relation are used to relation algebrased to relation algebrased to requive forms of the relation are used to require and so requal to require and so requal to require the relation are relations.	nematical ionships are always and these ionships used as the s of metic and ora and are al for ing valent	How can having credit (good or bad) impact your personal life?	computing average daily balance	Create an average daily balance calendar based on interpreting a credit card statement. Explain how purchases at different points in the billing cycle affect average daily balance. Compute average daily balance. Determine errors in credit card statements. Calculate and/or verify finance charges on a credit card statement.	3-7 Average Daily Balance Financial Algebra (Cengage) 2nd Ed. Section 3 – 7 Pgs. 193 - 200	Credit calendar Billing date Minimum payment warning box Negative amortization (NegAM)	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.3, A1.2.1.1.3, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.4, A1.2.2.1.3, A1.2.2.1.4) CC.2.1.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.3.1.3, A1.1.2.2.2, A1.1.3.1.3) CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities algebraically and graphically.

		(A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2)
		BCIT Standards 15.6.12.B, 15.6.12.F, 15.2.12.H, 15.2.12.J, 15.6.12.H, 15.6.12.L, 15.6.12.M

Unit 3 Consumer Credit Review

Unit 3 Consumer Credit Assessment

Unit 4 Employment

High school students are on the brink of joining the labor force, even if on a part-time, after school, or summer level. They need to fully understand the nuances of finding a job, salaries, labor laws, paystub deductions, and benefits. The problems, activities and projects inherent in studying employment are a natural forum for all eight CCSS Mathematical Practice standards, but this unit highlights MP1, MP4, MP5, MP6, MP7, and MP8.

Estimated	Big Ideas	Essential	Concepts	Competencies	Lessons/ Suggested	Vocabulary	Standards/ Eligible
Unit Time		Questions	(Know)	(Do)	Resources		Content
Frames							
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of	What do you need to know in order to make sound employment decisions?	piecewise functions percent decrease	Compute periodic salary based on annual contract salary. Compute employment agency fees. Interpret abbreviations in classified ads. Express classified ad prices as piecewise functions.	5-1 Look for Employment Financial Algebra (Cengage) 2nd Ed. Section 5 – 1 Pgs. 292 - 297	Employment agency Recruitment agency Employer paid Fee Paid Applicant paid Resume'	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.9 Use reasoning to solve

expressions and solving equations and inequalities. Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data.					Form W-4: Employee's Withholding Allowance Certification Benefits Discount	equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3)
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities. Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data.	What do you need to know in order to make sound employment decisions?	Literal equations Rational functions Spreadsheets	Compute weekly, semimonthly, and biweekly earnings given annual salary. Compute hourly pay. Compute overtime pay at different overtime rates. Model payment procedures algebraically. Compute hourly rates from total paycheck that include overtime.	Financial Algebra (Cengage) 2nd Ed. Section 5 - 2 Pgs. 298 - 305	Direct Deposit Hourly rate Regular hours Overtime hours Overtime hourly rate Time-and-a half overtime Double-time pay Gross pay Minimum wage	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.1.3, A1.1.2.1.4, A1.1.2.1.4, A1.1.2.1.5, A1.1.2.1.5, A1.1.3.1.2, A1.1.3.1.2, A1.1.3.1.2, A1.1.3.1.3) BCIT Standards 15.1.5.M, 15.6.8.D. 15.1.12.M, 15.1.12.Y, 15.1.12.E FCS Standards 11.1.12.E

There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities. Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the	What do you need to know in order to make sound employment decisions?	Commission Piecewise functions	Compute pay based on percent commission. Compute piecework pay. Model payment procedures algebraically. Discuss the advantages and disadvantages of incentive-based pay.	5-3 Commissions, Royalties, and Piecework Pay Financial Algebra (Cengage) 2nd Ed. Section 5 – 3 Pgs. 306 - 313	Commission Royalty Pieceworkers Piecework rate	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.2.2, A1.1.3.1.3) BCIT Standards 15.1.5.M, 15.6.8.D. 15.1.12.M, 15.1.12.Y, 15.1.12.E
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	What do you need to know in order to make sound employment decisions?	Literal equations Measures of central tendency	Explain the value of pensions and health care insurance, stock ownership plans, paid vacations, and child care. Model vacation time using linear functions. Compute the costs of purchasing employee benefits. Explain unemployment insurance.	5-4 Employee Benefits Financial Algebra (Cengage) 2nd Ed. Section 5 – 4 Pgs. 314 - 319	Insurance Paid vacation time Paid time off (PTO) Retirement plans Stock ownership plans Childcare leave Family health care Pension Unemployment Insurance	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.2.2.1.3,

1				T	T	T
Bivariate data			Compute final average salaries for pensions.		Base period	A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3)
modeled with mathematical functions that approximate the data well and help us make predictions based on the data.			Compute pensions.		Workers compensation	CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.3) BCIT Standards 15.6.12.N
Degree and direction of linear association between two variables is measurable						
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	What do you need to know in order to make sound employment decisions?	Slope Graphs with cusps Piecewise functions Discontinuities	Compute paycheck deductions for Social Security. Express Social Security payments as piecewise functions. Compute paycheck deductions for Medicare. Compute historical trends in Social Security deductions. Graph Social Security deduction functions.	5-5 Social Security and Medicare Financial Algebra (Cengage) 2nd Ed. Section 5 – 5 Pgs. 320 - 324	Social Security Federal Insurance Contributions Act (FICA) FICA Taxes Social Security Taxes Maximum Taxable Income Social Security Number	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.2.1) CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.2.1
Bivariate data can be modeled with mathematical functions that approximate the data well and help us make			Find coordinates of cusps in Social Security graphs. Compute excess Social Security taxes paid.			A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3) CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3)

predictions based on the data.			BCIT Standards 15.6.12.N
Degree and direction of linear association between two variables is measurable.			

Unit 4 Employment Review

Unit 4 Employment Assessment

Unit 5 Independent Living

Most students do not have a full grasp of the big picture when it comes to the financial demands of "moving out." There are so many expenses involved in purchasing and maintaining a home, or renting an apartment. Students will examine all of the expenses that comprise independent living. The problems, activities and projects inherent in studying independent living are a natural forum for all eight CCSS Mathematical Practice standards, but this unit highlights MP1, MP3, MP4, MP5, MP6, and MP7.

Estimated	Big Ideas	Essential	Concepts	Competencies	Lessons/ Suggested	Vocabulary	Standards/ Eligible
Unit Time		Questions	(Know)	(Do)	Resources		Content
Frames							
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of	How do you use mathematics to model moving, renting, and purchasing a place to live?	Systems of equations	Calculate the affordability of monthly rent. Use regression to determine the relationship between square footage and monthly rent. Determine lease signing costs.	7-1 Find a Place to Live Financial Algebra (Cengage) 2nd Ed. Section 7 – 1 Pgs. 392 - 400	Furnished Unfurnished Lease Expires Evict Single-family home Multiple family home	CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.1.2, A1.1.3.2.1

expressions			Calculate and compare		Condominium	
and solving			moving expenses.		Causas footogo	
equations and			Use simultaneous		Square footage	
inequalities.					Assoliantian Danielt	
			equations to model		Application Deposit	
			moving costs.			
			_		Security deposit	
There are some	How do you	Area	Compute the perimeter	7-2 Read a Floor	Area	CC.2.3.HS.A.3 Verify and
mathematical	use		of a polygon.	Plan		apply geometric
relationships	mathematics to	Perimeter			Congruent	theorems as they relate
that are always	model moving,		Compute the area of a	Financial Algebra		to geometric figures.
true and these	renting, and	Volume	regular polygon using	(Cengage) 2nd Ed.	Perimeter	(G.1.2.1.1, G.1.2.1.2,
relationships	purchasing a		its apothem.	Section 7 – 2		G.1.2.1.3, G.1.2.1.4, G.1.2.1.5, G.1.3.2.1,
are used as the	place to live?	Subtraction of	Convert scale drawing	Pgs. 401 - 406	Apothem	G.2.2.1.1, G.2.2.1.2,
rules of		areas	measurements to		Monte Carlo method	G.2.2.1.1, G.2.2.1.2, G.2.2.2.1, G.2.2.2.2,
arithmetic and			actual measurements.			G.2.2.2.3, G.2.2.2.4,
algebra and are		Apothem			Volume	G.2.2.2.5)
useful for		-	Use subtraction of			
writing		Monte Carlo	areas to find the areas		British Thermal Units	CC.2.3.HS.A.11 Apply
equivalent		method	of irregular regions.		(BTU)	coordinate geometry to
forms of					(=)	prove simple geometric
expressions			Use probability and the			theorems algebraically.
and solving			Monte Carlo Method to			(G.2.1.2.1, G.2.1.2.2,
equations and			compute the area of			G.2.1.2.3)
inequalities.			irregular regions.			
inequanties.			irregular regions.			CC.2.3.HS.A.14 Apply
Numbers,			Compute volumes of			geometric concepts to
measures,			rectangular solids.			model and solve real
· ·			rectangular solius.			world problems.
expressions,			Has valums to someuts			(G.2.2.4.1, G.2.3.1.1,
equations, and			Use volume to compute			G.2.3.1.2, G.2.3.1.3)
inequalities			BTU requirements for			
can represent			air-conditioning.			CC.2.2.HS.D.6 Extend the
mathematical						knowledge of rational functions to rewrite in
situations and						
structures in						equivalent forms. (A1.2.1.2.1, A1.2.2.1.2,
many						A1.2.2.1.3, A1.2.2.1.2,
equivalent						71.2.2.1.3, M1.2.2.2.1)
forms.						FCS Standards
						11.1.12.C
There are some	How do you	monthly payment	Define the vocabulary	7-3 Mortgage	Assesses value	CC.2.2.HS.D.6 Extend the
mathematical	use	formula	of closing on a home.	Application Process	113363363 value	knowledge of rational
relationships	mathematics to	substitution	or crossing on a nome.	Tippiicucion i iocess	Down payment	functions to rewrite in
that are always	model moving,	SabstitutiOII	Compute front end	Financial Algebra	Down payment	equivalent forms.
true and these	renting, and	literal equations	ratios	(Cengage) 2nd Ed.	Fixed-rate mortgage	(A1.2.1.2.1, A1.2.2.1.2,
		interar equations	1 41105		Fixeu-rate mortgage	A1.2.2.1.3, A1.2.2.2.1)
relationships	purchasing a		Commute Da -1 1	Section 7 – 3	A dispatable water are arts	·
are used as the	place to live?		Compute Back end	Pgs. 409 - 418	Adjustable rate mortgage	CC.2.2.HS.D.10
rules of			ratios		n 1	Represent, solve, and
arithmetic and					Foreclosure	interpret
algebra and are						equations/inequalities

				T	I	1	,
	useful for			Compute balloon		Private mortgage	and systems of
	writing			payments.		insurance	equations/inequalities algebraically and
	equivalent						graphically.
	forms of			Compute monthly		Home owner's insurance	(A1.1.2.1.1, A1.1.2.1.2,
	expressions			payment using the			A1.1.2.1.3, A1.1.2.1.2,
	and solving			monthly payment		Escrow	A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1,
	equations and			formula.			A1.1.3.1.2, A1.1.3.1.3,
	inequalities.					Front-end ratio	A1.1.3.2.1, A1.1.3.2.2)
				Compute the total			, (1.1.3.2.1, , (1.1.3.2.2)
	Numbers,			interest on a home		Back-end ratio	CC.2.4.HS.B.3 Analyze
	measures,			purchase.			linear models to make
	expressions,			•		Debt -to -income ratio	interpretations based on
	equations, and			Compute property			data.
	inequalities			taxes based on square		Balloon mortgage	(A1.2.2.2.1, A1.2.3.1.1,
	can represent			footage and assessed			A1.2.3.2.1, A1.2.3.2.2,
	mathematical			value.		Interest only mortgage	A1.2.3.2.3)
	situations and			varue.		meerest only mortgage	
	structures in						FCS Standards
	many						11.1.12.C
	equivalent						
	forms.	II d	Todayan	D. C th h l	7 4 December 2	De consider of Constant	CC 2 2 UC D C Totandaha
	There are some	How do you	Interest	Define the vocabulary	7-4 Purchase a	Recurring Costs	CC.2.2.HS.D.6 Extend the
	mathematical	use	0 11	of closing on a home.	Home		knowledge of rational functions to rewrite in
	relationships	mathematics to	Spreadsheets			Nonrecurring costs	equivalent forms.
	that are always	model moving,		Estimate closing costs.	Financial Algebra		(A1.2.1.2.1, A1.2.2.1.2,
	true and these	renting, and			(Cengage) 2nd Ed.	Closing	A1.2.2.1.3, A1.2.2.1.1)
	relationships	purchasing a		Create an amortization	Section 7 – 4		, (1.2.2.1.3, , (1.2.2.2.1)
	are used as the	place to live?		table for a fixed	Pgs. 419 - 429	Closing costs	CC.2.2.HS.D.10
	rules of			mortgage.			Represent, solve, and
	arithmetic and					Earnest money deposit	interpret
	algebra and are			Investigate			equations/inequalities
	useful for			amortization tables for		Attorney fees	and systems of
	writing			adjustable rate			equations/inequalities
	equivalent			mortgages.		Origination fees	algebraically and
	forms of						graphically.
	expressions					Title	(A1.1.2.1.1, A1.1.2.1.2,
	and solving						A1.1.2.1.3, A1.1.2.2.1,
	equations and					Title search	A1.1.2.2.2, A1.1.3.1.1,
	inequalities.						A1.1.3.1.2, A1.1.3.1.3,
	equantics.					Points	A1.1.3.2.1, A1.1.3.2.2)
	Numbers,					1 5/1165	
	·					Origination points	CC.2.4.HS.B.3 Analyze
	measures,					Origination points	linear models to make
	expressions,					Diagount noints	interpretations based on
	equations, and					Discount points	data.
	inequalities					Down aid into	(A1.2.2.2.1, A1.2.3.1.1,
	can represent					Prepaid interest	A1.2.3.2.1, A1.2.3.2.2,
	mathematical						A1.2.3.2.3)
	situations and					Arrears	FCC Ctandard
	structures in						FCS Standards
					l		11.1.12.C

1	ı	I	1	1	1	,
many					Transfer tax	
equivalent forms.					Amortization table	
					Initial rate	
					Adjustment period	
					Hybrid adjustment rate mortgage	
There are some	How do you	Discount points	Calculate the discount	7-5 Mortgage	Discount points	CC.2.2.HS.D.6 Extend the
mathematical relationships	use mathematics to	Breakeven date	points for a mortgage.	Points	Breakeven date	knowledge of rational functions to rewrite in equivalent forms.
that are always true and these relationships	model moving, renting, and purchasing a	Negative points	Determine the breakeven time for discount points.	Financial Algebra (Cengage) 2nd Ed. Section 7 – 5	Negative points	(A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1)
are used as the rules of arithmetic and	place to live?		Calculate negative points.	Pgs. 430 - 436		CC.2.2.HS.D.10 Represent, solve, and interpret
algebra and are useful for writing			•			equations/inequalities and systems of equations/inequalities
equivalent forms of						algebraically and graphically.
expressions and solving						(A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1,
equations and inequalities.						A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2)
Numbers, measures,						CC.2.4.HS.B.3 Analyze linear models to make
expressions, equations, and inequalities						interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1,
can represent mathematical						A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3)
situations and structures in						FCS Standards 11.1.12.C
many equivalent forms.						
There are some	How do you	Spreadsheets	Explain the difference	7-6 Rentals,	Condominium	CC.2.2.HS.D.6 Extend the
mathematical relationships	use mathematics to	Scatterplots	between cooperatives and condominiums.	Condominiums, and Cooperatives	Board of Directors	knowledge of rational functions to rewrite in equivalent forms.

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	that are always	model moving,					(A1.2.1.2.1, A1.2.2.1.2,
	true and these	renting, and	Regression	Compute the costs of	Financial Algebra	Maintenance fee	A1.2.2.1.3, A1.2.2.2.1)
	relationships	purchasing a		purchasing a	(Cengage) 2nd Ed.		
	are used as the	place to live?		cooperative or	Section 7 – 6	Co-op apartment	CC.2.2.HS.D.10
	rules of			condominium.	Pgs. 437 - 444		Represent, solve, and
	arithmetic and					Cooperative	interpret
	algebra and are					·	equations/inequalities
	useful for					Landominium	and systems of
	writing						equations/inequalities
	equivalent					Equity	algebraically and
	forms of					Equity	graphically.
	expressions						(A1.1.2.1.1, A1.1.2.1.2,
							A1.1.2.1.3, A1.1.2.2.1,
	and solving						A1.1.2.2.2, A1.1.3.1.1,
	equations and						A1.1.3.1.2, A1.1.3.1.3,
	inequalities.						A1.1.3.2.1, A1.1.3.2.2)
	. ,						CC.2.4.HS.B.3 Analyze
	Numbers,						linear models to make
	measures,						interpretations based on
	expressions,						data.
	equations, and						(A1.2.2.2.1, A1.2.3.1.1,
	inequalities						A1.2.3.2.1, A1.2.3.2.2,
	can represent						A1.2.3.2.3)
	mathematical						A1.2.3.2.3)
	situations and						
	structures in						FCS Standards
	many						11.1.12.C
	equivalent						11111210
	forms.						
	There are some	How do you	Pythagorean	Find missing sides of	7-7 Home	Legs	CC.2.2.HS.D.6 Extend the
	mathematical	use	Theorem	right triangles using	Maintenance and	1083	knowledge of rational
	relationships	mathematics to	Theorem	the Pythagorean	Improvement	Hypotenuse	functions to rewrite in
	that are always	model moving,		Theorem.	improvement	Hypotenuse	equivalent forms.
	true and these			Theorem.	Financial Alcabus	Distala	(A1.2.1.2.1, A1.2.2.1.2,
		renting, and			Financial Algebra	Pitch	A1.2.2.1.3, A1.2.2.2.1)
	relationships	purchasing a			(Cengage) 2nd Ed.		,
	are used as the	place to live?			Section 7 – 6	Rise	CC.2.2.HS.D.10
	rules of				Pgs. 445 - 454		Represent, solve, and
	arithmetic and					Run	interpret
1	algebra and are						equations/inequalities
	useful for					Similar	and systems of
1	writing						equations/inequalities
	equivalent					Proportion	algebraically and
	forms of					F	graphically.
	expressions					Means	(A1.1.2.1.1, A1.1.2.1.2,
	and solving						A1.1.2.1.3, A1.1.2.2.1,
	equations and					Extremes	A1.1.2.2.2, A1.1.3.1.1,
	inequalities.					LAUGINGS	A1.1.3.1.2, A1.1.3.1.3,
	mequanties.					Angle of elevation	A1.1.3.2.1, A1.1.3.2.2
	Numbers					Angle of elevation	
	Numbers,						CC.2.3.HS.A.14 Apply
	measures,		I				geometric concepts to

expression equations inequality can represent mathematics structure many equivaler forms.	and es sent ical and in			model and solve real world problems. (G.2.2.4.1, G.2.3.1.1, G.2.3.1.2, G.2.3.1.3) CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. (G.1.2.1.1, G.1.2.1.2, G.1.2.1.4,
	t l			to geometric figures.
_	t e			(G.1.2.1.1, G.1.2.1.2,
TOTHIS.				G.1.2.1.3, G.1.2.1.4, G.1.2.1.5, G.1.3.2.1,
				G.2.2.1.1, G.2.2.1.2,
				G.2.2.2.1, G.2.2.2.2, G.2.2.2.3, G.2.2.2.4,
				G.2.2.2.5

Unit 5 Independent Living Review

Unit 5 Independent Living Assessment

Unit 6 Automobile Ownership

Various functions, their graphs, and data analysis can be instrumental in the responsible purchase and operation of an automobile. In this unit, students will examine the mathematics of automobile advertising, sales and purchases, insurance, depreciation, safe driving, and accident reconstruction. The problems, activities, and key assignments in this Automobile Ownership Unit offer students opportunities to learn, explore, and use the CCSS Mathematical Practices MP1, MP2, MP3, MP4, MP5, MP6.

Estimated	Big Ideas	Essential	Concepts	Competencies	Lessons/ Suggested	Vocabulary	Standards/ Eligible
Unit Time		Questions	(Know)	(Do)	Resources		Content
Frames							
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in	Are automobile purchases a good investment??	Percent Piecewise functions domains as inequalities cusp	Determine the sales tax on an automobile purchase. Determine the cost of a classified auto advertisement. Model a classified ad pricing schedule using a piecewise function.	4-1 Classified Ads Financial Algebra (Cengage) 2nd Ed. Section 4 – 1 Pgs. 210 - 215	Sales tax Domain Piecewise Function Split Function Cusp	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1 CC.2.1.HS.C.3 Write functions or sequences

equivalent forms. Relations and functions are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations.			Find and interpret the cusp of a piecewise function.			that model relationships between two quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.3, A1.2.2.1.4)
Degree and direction of linear association between two variables is measurable	Are automobile purchases a good investment??	Measures of central tendency Range Quartiles Interquartile range Outliers	Determine the mean of a set of data. Determine the median of a set of data. Determine the mode of a set of data. Determine the range of a set of data. Determine the quartiles of a data set. Determine the interquartile range of a set of data. Identify any outliers in a set of data.	4-2 Automobile Transactions Financial Algebra (Cengage) 2nd Ed. Section 4 - 2 Pgs. 216 - 223	Data Measures of central tendency Quartiles Lower quartiles Upper quartiles Subscript Interquartile range Stem-and-leaf plot	CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable. (A1.2.3.2.1, A1.2.1.2.2., A1.2.3.2.3) CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3, A1.2.3.3.1)
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent	Are automobile purchases a good investment??	Basic calculations Literal equations and inequalities	Calculate an insurance policy surcharge. Determine insurance deductibles. Determine an insurance payout from a claim.	4-3 Automobile Insurance Financial Algebra (Cengage) 2nd Ed. Section 4 – 3 Pgs. 224 - 231	Claim Liability Insurance Bodily injury liability Property damage liability Uninsured/underinsured motorist protection No-fault insurance	CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. (A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.1.1, A1.1.3.1.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3) CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities

forms of expressions and solving equations and inequalities.					Comprehensive insurance Collision insurance Car-rental insurance	and systems of equations/inequalities algebraically and graphically. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3,
Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data.	Are automobile purchases a good investment??	Two-way tables Conditional probability Independent events Venn Diagrams	Determine the probability of an event. Determine conditional probabilities. Model a situation using Venn Diagrams. Use a Venn Diagram to solve a conditional probability problem. Convert a raw score to	4-4 Probability- The Basis of insurance Financial Algebra (Cengage) 2nd Ed. Section 4 – 4 Pgs. 232 - 240	Actuary Probability Event Two-way table Conditional probability Independent events Associated events	A1.1.3.2.1, A1.1.3.2.2) CC.2.4.HS.B.4 Apply rules of probability to compute probability compound events in a uniform probability model. (A1.2.3.3.1) CC.2.4.HS.B.5 Make inferences and justify conclusions based on sample surveys, experiments, and observational studies. (A1.2.3.2.1, A1.2.3.2.2,
Degree and direction of linear association between two variables is measurable	Are automobile purchases a good investment??	Straight line depreciation equation Slope Linear expense function System of linear depreciation and expense functions	a z-score. Determine the intercepts of a depreciation equation. Determine the slope of a depreciation equation. model an automobile depreciation situation using a linear equation. Use a linear depreciation equation to determine the value of a car after a specified period of time. Use a linear depreciation equation to determine the value of a car after a specified period of time. Write an automobile expense function.	4-5 Linear Automobile Depreciation Financial Algebra (Cengage) 2nd Ed. Section 4 – 5 Pgs. 241 - 248	Venn Diagrams Straight line depreciation Straight line depreciation equation Expense function Fixed expense Variable expense	A1.2.3.2.3) CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.4, A1.2.2.1.4) CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. (A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.4, A1.2.1.3, A1.2.2.1.1) CC.2.1.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1 CC.2.2.HS.D.7 Create and graph equations or

There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	Are automobile purchases a good investment??	Basic calculation Ratios	composed of the linear automobile expense function and the linear depreciation function. Interpret the domains and the intersection point for the expense/depreciation system of equations. Use the distance formula. Determine average speed. Determine mpg. Use exchange rates to find the value of world currencies.	4-7 Driving Data Financial Algebra (Cengage) 2nd Ed. Section 4 – 7 Pgs. 258 - 267	Odometer Trip odometer Speedometer Fuel economy measurement Miles per gallon Kilometers per liter English Standard System Metric System Distance formula Currency exchange rate	relationships. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.3, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.1, A1.1.3.2.1 CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.2.1 CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.4, A1.2.1.3, A1.2.2.1.4) CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.2.1.3, A1.2.2.1.4) CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.2.1, A1.1.2.1.4, A1.1.3.1.3, A1.1.2.2.1, A1.1.2.1.5, A1.1.3.1.3, A1.1.2.2.1, A1.1.3.1.3, A1.1.2.2.1, A1.1.3.1.3, A1.1.2.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.3, A1.2.2.3, A1.2.3.3, A1.2.2.3, A1.2.3.3, A1.3.2.3, A1.3.2.4, A1.3.3.2, A1.3.2.3, A1.
mathematical	purchases a		distance.	Data		functions or sequences

relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	good investment??	Simple quadratic braking distance formula Equivalent representations of a quadratic	Determine braking distance. Determine total stopping distance. Use the stopping distance formula for metric measures.	Financial Algebra (Cengage) 2nd Ed. Section 4 – 8 Pgs. 268 - 273	Reaction distance Breaking distance Total stopping distance	that model relationships between two quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.4, A1.2.2.1.3, A1.2.2.1.4) CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2, A1.1.3.2, A1.1.3.2.2, A1.1.3.2, A1.1.3
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	Are automobile purchases a good investment??	Square root skid speed formula Solving for a variable under a square root sign Components of a circle The middle ordinate The radius quadratic equation Projectile motion	Use the skid speed square root formula to determine the minimum speed of a car when entering a skid. Use the square root skid speed formula for yaw marks. Determine the radius of a circle given the length of a chord and a middle ordinate drawn to that chord. Use the accident reconstruction formulas and data taken from the scene of an accident to determine driving speed at the time of an accident. Use projectile motion equations to model an accident situation	4-9 Accident Investigation Data Financial Algebra (Cengage) 2nd Ed. Section 4 – 9 Pgs. 274 - 282	Accident reconstructionist Skid mark Shadow skid mark Antilock braking system Yaw mark Skid speed formula Drag factor Breaking efficiency Skid distance	CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.4, A1.2.1.2, A1.2.2.1, A1.2.2.4, A1.2.2.1, A1.2.2.1.4) CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.2)

Unit 6 Automobile Ownership Review

Unit 5 Automobile Ownership Assessment

Unit 7 The Stock Market

Students are often intrigued by the investment world. Many may end up working for a business and this unit allows them to learn about different types of business organizations. The unit will use algebra and graphs to explore how business raise capital through stock sales and how stock trades and dividends allow investors to make money. The problems and activities in this Stock Market unit offer students opportunities to learn, explore and use the CCSS Mathematical Practices MP1, MP2, MP3, MP4, MP5 and MP6.

Estimated	Big Ideas	Essential	Concepts	Competencies	Lessons/ Suggested	Vocabulary	Standards/ Eligible
Unit Time		Questions	(Know)	(Do)	Resources		Content
Frames							
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	How do you read, interpret, and chart stock ownership and transaction data?	Ratio and Proportion Investing	Define the basic vocabulary of business organizations. Express parts of a whole as ratios. Compute financial responsibility of business ownership based on ratio and proportion.	8-1 Business Organizations Financial Algebra (Cengage) 2nd Ed. Section 8-1 Pgs. 464 - 468	Profit Personally liable Partnership Corporation Shares of Stock Limited Liability Private Corporation Public Corporation	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.1.3, A1.1.3.1.3, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.1.4, A1.1.3.1.5, A1.1.3.2.2) CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3)

There are some	How do you	Percent increase	Use stock data to	8-2 Stock Market	Last	CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3 BCIT Standards 15.6.12.P, 15.6.12.P, 15.6.12.S, 15.6.12.I
mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	read, interpret, and chart stock ownership and transaction data?	Signed numbers Spreadsheets Investing	follow the daily progress of a corporate stock. Use net change to compute closing prices. Use closing prices to compute net change. Compute the volume of shares traded from a stock table. Express net changes as percents of closing prices. Create spreadsheet formulas to model stock share progress	Financial Algebra (Cengage) 2nd Ed. Section 8-2 Pgs. 469 - 476	Open Close High Low Volume Sales in 100's 52-week high 52-week low Net change After-hours trading	functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.2.4, A1.2.1.2.1, A1.2.1.2.4, A1.2.2.1.4) CC.2.2.HS.C.6 Interpret functions in terms of the situation they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.1.2) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems. (A1.1.1.5.1, A1.1.1.5.2, A1.1.5.3) CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. (A1.1.1.5.1, A1.1.1.5.2, A1.1.5.3) BCIT Standards

						15.6.12.P, 15.6.12.P, 15.6.12.S,15.6.12.Q, 15.6.12.I
There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	How do you read, interpret, and chart stock ownership and transaction data?	Graphing Investing	Interpret a stock bar chart. Create a stock bar chart. Interpret a stock candlestick chart. Create a stock candlestick chart. Compute net changes from bar charts and candlestick charts.	8-3 Stock Market Data Charts Financial Algebra (Cengage) 2nd Ed. Section 8-3 Pgs. 477 - 482	Stock Chart Stock Bar Chart Candlestick Chart	CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. (A1.2.1.1.1, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.1) BCIT Standards 15.6.12.P, 15.6.12.S,15.6.12.Q, 15.6.12.I
Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data. Degree and direction of linear association between two variables is measurable,	How do you read, interpret, and chart stock ownership and transaction data?	Mean Regression Analysis Investing	Explain how data is smoothed. Calculate simple moving averages using the arithmetic average formula. Calculate simple moving averages using the subtraction and addition method. Graph simple moving averages using a spreadsheet.	8-4 Trends in Stock Closing Prices Financial Algebra (Cengage) 2nd Ed. Section 8-4 Pgs. 483 - 493	Smoothing techniques Simple Moving Average Lagging indicators Fast moving averages Slow moving averages	CC.2.1.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1) CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable. (A1.2.3.2.1, A1.2.3.2.2., A1.2.3.2.3) CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.2.2, A1.2.3.2.3) CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3, A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2,

			I	I		T
						CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. (A1.2.1.1.1, A1.2.1.1.2, A1.2.1.2.1, A1.2.1.2.2, A1.2.1.2.1)
						CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1
						CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.3.1.2, A1.1.3.1.2, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2)
						BCIT Standards 15.6.12.P, 15.6.12.P, 15.6.12.S,15.6.12.Q, 15.6.12.I
Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data.	How do you read, interpret, and chart stock ownership and transaction data?	Mean Literal equations Investing	Interpret stock market ticker displays. Determine the value of a trade form ticker output. Determine trade volumes from ticker displays.	8-5 Stock Market Ticker Financial Algebra (Cengage) 2nd Ed. Section 8-5 Pgs. 494 - 499	Stock Symbol Ticker Symbol Shares traded Trading price Directional arrow Total value of the trade	CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.3, A1.2.1.2.4, A1.2.1.3, A1.2.1.2.4, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.1.3, A1.2.3.1, A1.
Degree and direction of linear					Uptick Downtick	(A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1)

between two variables is measurable, which is a series of actional and distributed to receive a series of actional and distributed to receive a series of actional and distributed to receive a series of accuracy appropriate to immittees on measurement when reporting quantities. (2.2.145.5.5.00.00 a level of accuracy appropriate to immittees on measurement when reporting quantities. (4.11.2.13, 4.11.2.12, 2.4.13.3.1, 4.11.3.12, 4.11.3.13, 4.11.3.12, 4.11.3.13					T			
variables is measurable, Regative money flow Negative money flow Daily money flow Positive money flow Daily money flow On the manufactal problems, [A11.11.1.11.11.11.11.11.11.11.11.11.11.1		association					Money flow	CC.2.1.HS.F.2 Apply
measurable, method of method of mathematical problems. (A1.1.1.1, A1.1.1.2, A1.1.1.2, A1.1.1.3, A1.1.1.2.1), A1.1.1.2, A1.1.1.3, A1.1.1.2.1, A1.1.1.3, A1.1.2.2, A1.1.3, A1.1.2.2, A1.		between two						
measurable, Pegative money flow Daily money flow Daily money flow Daily money flow Net money flow		variables is					Positive money flow	
Net money flow Net mo		measurable.					_	
Daily money flow Net money flow Net money flow Net money flow Net money flow CC2.118.55 Choose a least of facuratory implications on measurement when resporting quantities. (A.1.1.2.1, A.1.1.2.2, A.1.1.2.3, A.1.1.2.2, A.1.1.2.2, A.1.1.2.2, A.1.1.2.2, A.1.1.2.3, A.1.1.3.2, A.1.1.3.		,					Negative money flow	
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	make	G	stock trades.		Gross capital gain	A1.2.2.1.3, A1.2.2.1.4)
	predictions		stoom trades.		ar ooo caprear gam	
			E-muses conital coin on		Cross sonital loss	CC.2.2.HS.C.6 Interpret
	based on the		Express capital gain as		Gross capital loss	functions in terms of the
	data.		a percent of purchase			situation they model.
			price.			
	Degree and		1			(A1.2.1.2.1, A1.2.2.1.2,
	direction of					A1.2.2.1.3, A1.2.2.2.1)
	linear					CC.2.1.HS.F.2 Apply
	association					properties of rational
	between two					and irrational to solve
	variables is					real world or
	measurable,					mathematical problems.
	ilicasul abic,					(A1.1.1.1.1, A1.1.1.1.2,
						A1.1.1.3.1, A1.1.1.2.1)
1						
1						CC.2.1.HS.F.5 Choose a
						level of accuracy
1						appropriate to
						limitations on
						measurement when
						reporting quantities.
						(A1.1.2.1.1, A1.1.2.1.2,
						A1.1.2.1.3, A1.1.2.2.1,
						A1.1.2.2.2, A1.1.3.1.1,
						A1.1.3.1.2, A1.1.3.1.3,
						A1.1.3.2.1, A1.1.3.2.2)
						CC.2.2.HS.D.2 Write
						expressions in
						equivalent forms to
						solve problems.
						(A1.1.1.5.1, A1.1.1.5.2,
						A1.1.1.5.3)
						A1.1.1.5.5)
						CC.2.2.HS.D.6 Extend the
1						knowledge of rational
						functions to rewrite in
1						equivalent forms.
1						(A1.1.1.5.1, A1.1.1.5.2,
						A1.1.1.5.3)
1						CC.2.4.HS.B.3 Analyze
1						linear models to make
1						interpretations based on
						the data.
1						(A1.2.2.2.1, A1.2.3.1.1,
						A1.2.3.2.1, A1.2.3.2.2,
						A1.2.3.2.3)
						A1.2.3.2.3)
						BCIT Standards
						DCII StallualUS

N. I		Circulation	Company	0.7.65	Carallandari	15.6.12.P, 15.6.12.P, 15.6.12.S,15.6.12.Q, 15.6.12.I
Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. Degree and direction of linear association between two variables is measurable,		Signed numbers Literal equations Investing	Compute the fees involved in buying and selling stocks. Compare percent commissions to flat fees. Define the basic vocabulary of stock trading.	8-7 Stock Transaction Fees Financial Algebra (Cengage) 2nd Ed. Section 8-7 Pgs. 505 - 510	Stockbroker Broker fees Discount Broker Online brokerage house Full-service broker At the market Limit order Net proceeds	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.5, A1.2.1.3, A1.2.1.1.1, A1.2.1.5.1, A1.2.1.5.2, A1.2.1.3, A1.2.2.1.4) CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3) CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3) BCIT Standards 15.6.12.P, 15.6.12.P, 15.6.12.P, 15.6.12.S, 15.6.12.Q,
Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in	How do you read, interpret, and chart stock ownership and transaction data?	Proportions Spreadsheets	Calculate the post-split outstanding shares and share price for a traditional split. Calculate the post-split outstanding shares and share price for a reverse split.	8-8 Stock Splits Financial Algebra (Cengage) 2nd Ed. Section 8-8 Pgs. 511 - 516	Stock split Outstanding Shares Market capitalization Traditional stock split Reverse stock split	15.6.12.I CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) CC.2.1.HS.F.5 Choose a level of accuracy
many equivalent forms.			Calculate the fractional value amount that a		Penny stock	appropriate to limitations on

		shareholder receives	Fractional part of a share	measurement when
Degree and		after a split.	_	reporting quantities.
direction of				(A1.1.2.1.1, A1.1.2.1.2,
linear				A1.1.2.1.3, A1.1.2.2.1,
association				A1.1.2.2.2, A1.1.3.1.1,
between two				A1.1.3.1.2, A1.1.3.1.3,
variables is				A1.1.3.2.1, A1.1.3.2.2)
measurable,				
measurable,				CC.2.2.HS.D.2 Write
				expressions in
				equivalent forms to
				solve problems.
				(A1.1.1.5.1, A1.1.1.5.2,
				A1.1.1.5.3)
				CC 2 2 UC D C Estandaba
				CC.2.2.HS.D.6 Extend the
				knowledge of rational functions to rewrite in
				equivalent forms. (A1.1.1.5.1, A1.1.1.5.2,
				A1.1.1.5.3
				A1.1.1.3.3
				BCIT Standards
				15.6.12.P, 15.6.12.P,
				15.6.12.S,15.6.12.Q,
				15.6.12.I
				15.0.12.1

Unit 6 The Stock Market Review

Unit 6 The Stock Market Assessment

Unit 8 Modeling a Business (If Time Permits)

Students are introduced to basic business organization terminology in order to read, interpret, chart and algebraically model ownership, production, and sales data. Statistical analysis plays a very important role in the modeling of a business. Using linear, quadratic, and regression equations in that process assists students in getting a complete picture of supply, demand, expense, revenue, and profit as they model the production of a new product. The problems, activities, and assignments in this unit offer students opportunities to learn, explore, and use the CCSS Mathematical Practices MP1, MP2, MP3, MP4, MP5.

Estimated	Big Ideas	Essential	Concepts	Competencies	Lessons/ Suggested	Vocabulary	Standards/ Eligible
Unit Time Frames		Questions	(Know)	(Do)	Resources		Content
	Degree and direction of linear association between two variables is measurable, Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data	How do you use statistical analysis to model a business?	Experimental bias Experimental design Business plan using appropriate data to support the business concept.	Describe how to choose samples without bias. Use a random number table. Create diagrams for experimental designs.	9-1 Inventions Financial Algebra (Cengage) 2nd Ed. Section 9-1 Pgs. 532 - 542	Bias Question-wording bias Random number table Randomization Replication Control Group Experimental Group Complete randomized design Matched pairs design Observational study Hypothesis	CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.2, A1.2.3.2.3) BCIT Standard 15.5.12.D.
	Degree and direction of linear association between two variables is measurable. Bivariate data can be modeled with mathematical functions that approximate the data well and help us make predictions based on the data	How do you use statistical analysis to model a business?	Sampling techniques Unbiased estimators Factorals	Compute combinations. Compute unbiased estimators. Critique sampling techniques.	9-2 Market Research Financial Algebra (Cengage) 2nd Ed. Section 9-2 Pgs. 543 - 550	Hypothesis testing Focus group Inferential Statistics Convenience sample Replacement Combination Factoral Simple random sample Stratified random sample Undercoverage Nonresponse Unbiased estimator	CC.2.4.HS.B.3 Analyze linear models to make interpretations based on data. (A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.2, A1.2.3.2.3) BCIT Standard 15.5.12.D.

There are mathemat relationsh that are all true and the relationsh are used a rules of arithmetic algebra an useful for writing equivalent forms of expression and solvin equations inequalities. Degree and direction of linear association between the variables is measurable.	use statistical analysis to model a business? business? and lare	Supply and demand system Equilibrium point Modeling demand using linear regression Slope	Describe the slopes of the supply and demand curves. Find points of equilibrium. Calculate a retail price after a markup. Interpret the graph of a supply and demand system of equations.	9-3 Supply and Demand Financial Algebra (Cengage) 2nd Ed. Section 9-3 Pgs. 551 - 556	Demand Supply Wholesale price Retail Price Equilibrium	CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3) CC.2.2.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1)
There are mathemat relationsh that are all true and the relationsh are used a rules of arithmetic algebra an useful for writing equivalent forms of expression and solvin equations inequalities.	use statistical analysis to model a business? and are	Evaluating functions Expressing a function in terms of another variable Solving a system of linear equations.	Explain the difference between fixed and variable expenses. Represent expenses as a function of quantity produced. Determine average cost. Given a demand function expressed in terms of price, p, and expense function expressed in terms of demand Write the expense function in terms of price.	9-4 Fixed and Variable Expenses Financial Algebra (Cengage) 2nd Ed. Section 9-4 Pgs. 557 - 563	Variable expenses Fixed expenses Revenue Revenue function Breakeven point	CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.4, A1.2.1.3, A1.2.2.1.4) CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3) CC.2.2.HS.C.6 Interpret functions in terms of the situations they model. (A1.2.1.2.1, A1.2.2.1.2, A1.2.2.1.3, A1.2.2.2.1

				Determine the breakeven point for a			
				revenue and expense function both graphically and algebraically.			
	re are some hematical	How do you use statistical	quadratic equation	Create a linear expense function.	9-5 Graphs of Expense and	Nonlinear functions	CC.2.2.HS.C.3 Write functions or sequences
		analysis to model a	parabola	Graph a linear expense	Revenue Functions	Second degree equation	that model relationships between two quantities.
	and these tionships	business?	axis of symmetry,	function.	Financial Algebra (Cengage) 2nd Ed.	Quadratic equation	(A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3,
are u	used as the es of		Intercepts	Create a revenue function as the product	Section 9-5 Pgs. 564 - 571	Parabola	A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.3, A1.2.2.1.4)
algeb	hmetic and ebra and are		graphing a quadratic linear	of the price and quantity demanded.		Leading coefficient	CC.2.2.HS.D.3 Extend the
writi			system of equations	Graph a revenue		Minimum	knowledge of arithmetic operations and apply to
form				function.		Maximum	polynomials. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3)
and s	ressions solving ations and			Interpret the graph of a revenue function.		Vertex Axis of Symmetry	CC.2.1.HS.F.2 Apply
	qualities			Interpret the zeros of a revenue function.		Roots	properties of rational and irrational to solve
				revenue function.		Zeros	real world or mathematical problems. (A1.1.1.1.1, A1.1.1.1.2,
		How do you	Quadratic formula	Determine breakeven	9-6 Breakeven	Zero net difference	A1.1.1.3.1, A1.1.1.2.1) CC.2.2.HS.C.3 Write functions or sequences
relat	tionships	use statistical analysis to model a	Breakeven points	points using the quadratic formula.	Analysis Financial Algebra		that model relationships between two quantities.
true	e and these tionships	business?	Literal equation	Evaluate revenue and expense at breakeven	(Cengage) 2nd Ed. Section 9-6		(A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.2.1.1.1,
are u	used as the es of		Spreadsheets	points.	Pgs. 572 - 577		A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.1.3, A1.2.2.1.4)
algeb	hmetic and bra and are ful for			Set up and use a spreadsheet to determine breakeven			CC.2.2.HS.D.3 Extend the knowledge of arithmetic
	ivalent			points.			operations and apply to polynomials.
expre	ns of ressions						(A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3)
equa	solving ations and qualities						CC.2.1.HS.F.2 Apply properties of rational
							and irrational to solve real world or mathematical problems.

							(A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.1) BCIT Standards
m re the tree and rue and all use we expended to the tree and all use we expended to the tree and all use the tree and tree an	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and nequalities	How do you use statistical analysis to model a business?	Quadratic/linear system of equations Maximum point of a parabola, Interpreting profit Revenue, expense graphs	Determine the quadratic profit equation given a linear expense equation and a quadratic revenue equation. Determine the maximum point of a quadratic equation. Use the axis of symmetry to determine the maximum point of a quadratic profit equation. Interpret the maximum point of a quadratic profit equation.	9-7 The Profit Equation Financial Algebra (Cengage) 2nd Ed. Section 9-7 Pgs. 578 - 584	Profit Maximum profit Complex roots Complex number Imaginary unit	5.1.12.X. CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.4, A1.2.1.2.5, A1.2.1.3, A1.2.1.2.1.4) CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.1.2,
m re th tr re an ru an al us w ec for ex an ec	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are aseful for writing equivalent forms of expressions and solving equations and nequalities	How do you use statistical analysis to model a business?	Transitive property of dependence Modeling profit Revenue, expense)	Determine the quadratic profit equation given a linear expense equation and a quadratic revenue equation. determine the maximum point of a quadratic equation. use the axis of symmetry to determine the maximum point of a quadratic profit equation. interpret the maximum point of a quadratic profit equation.	9-8 Mathematically Modeling a Business Financial Algebra (Cengage) 2nd Ed. Section 9-8 Pgs. 585 - 589	Dependence Transitive property of dependence	A1.1.1.3.1, A1.1.1.2.1) CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. (A1.1.2.1.1, A1.2.1.2, A1.1.2.1.3, A1.2.1.1.1, A1.2.1.2.2, A1.2.1.3, A1.2.1.4) CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. (A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3) CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems. (A1.1.1.1, A1.1.1.1.2, A1.1.3.1, A1.1.1.2.1)

Unit 8 Modeling a Business Review								
	Unit 8 Modeling a Business Assessment							
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