

LITCHFIELD PUBLIC SCHOOLS  
Core Curriculum Scope and Sequence  
Integrated IV

<u>Essential questions:</u> How do patterns and functions help us describe data and physical phenomena and solve a variety of problems? How are quantitative relationships represented by numbers? How do geometric relationships and measurements help us to solve problems and make sense of our world? How can collecting, organizing, and displaying data help us analyze information and make reasonable and informed decisions?				
	CT Frameworks/ Standards	Content and Skill Objectives Students will be able to:	Assessments	Resources
UNIT 1  MEASURES OF CENTRAL TENDENCY  (4 WEEKS)	CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information  CT (Extended) 4.1.a(1) Investigate and solve relevant problems by designing statistical experiments and collecting, organizing, displaying and analyzing data in tabular, graphical and symbolic forms  CT (Core) 4.2.a(3) Determine and use measures of spread and central tendency to describe and compare sets of data	<ul style="list-style-type: none"> <li>• Calculate the mean, median, and mode</li> <li>• Create a five-number summary</li> <li>• Calculate the range</li> <li>• Determine any outliers in a set of data</li> <li>• Compare means, medians and modes of multiple sets of data</li> <li>• Identify the most relevant measure of central tendency</li> </ul>	Daily assignments Quizzes Unit project (Class Profile) CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<u>Textbook:</u> Understandable Statistics 6 <sup>th</sup> edition Brase/Brase Houghton Mifflin 1999  <u>Practice worksheets:</u> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>  <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a>  <u>Technology:</u> SMARTBoard TI-83/84 calculator  <u>Unit project resource:</u> Survey of students enrolled in class

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UNIT 2  ORGANIZING DATA  (4 WEEKS)	CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information  CT (Core) 4.1.a(1) Collect real data and create meaningful graphical representations of the data	<ul style="list-style-type: none"> <li>• Display data using a Stem-and-Leaf format</li> <li>• Display data using a Box-and-Whiskers plot</li> <li>• Display data on a circle graph (pie chart)</li> <li>• Display data on a histogram</li> <li>• Display data on a relative frequency histogram</li> <li>• Display data on an ogive</li> <li>• Display data on a Pareto chart</li> </ul>	Daily assignments Quizzes Unit project (Class Profile) CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<u>Textbook:</u> Understandable Statistics 6 <sup>th</sup> edition Brase/Brase Houghton Mifflin 1999  <u>Practice worksheets:</u> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>  <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a>  <u>Technology:</u> SMARTBoard TI-83/84 calculator  <u>Unit project resource:</u>

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UNIT 3  ANALYZING DATA  (4 WEEKS)	CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information  CT (Core) 4.2.a(3) Determine and use measures of spread and central tendency to describe and compare sets of data	<ul style="list-style-type: none"> <li>Determine the Standard Deviation of data using a chart</li> <li>Determine the Standard Deviation using the formula:</li> </ul> $s = \frac{\sqrt{\frac{\sum(x-x)^2 \cdot f}{n-1}}}{n-1}$	Daily assignments Quizzes Unit project (Class Profile) CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<u>Textbook:</u> Understandable Statistics 6 <sup>th</sup> edition Brase/Brase Houghton Mifflin 1999  <u>Practice worksheets:</u> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>  <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a>  <u>Technology:</u> SMARTBoard TI-83/84 calculator  <u>Unit project resource:</u>

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UNIT 4  PROBABILITY  (3 WEEKS)	CT (Core) 4.2.a(2) Use data from samples to make inferences about a population and determine whether claims are reasonable or false. CT (Core) 4.3.a(1) Determine outcomes and solve problems involving the probabilities of events.	<ul style="list-style-type: none"> <li>• Calculate probability</li> <li>• Convert decimals to fractions to percents</li> <li>• Differentiate between union and intersection of sets</li> <li>• Identify the complement of a set</li> <li>• Illustrate multiple intersections and unions in the same Venn diagram <math>(A \cap B) \cup (B \cap C)</math></li> </ul>	Daily assignments Quizzes Unit project (Town Profile) CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<u>Textbook:</u> Understandable Statistics 6 <sup>th</sup> edition Brase/Brase Houghton Mifflin 1999  <u>Practice worksheets:</u> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>  <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a>  <u>Technology:</u> SMARTBoard TI-83/84 calculator  <u>Unit project resource:</u> <a href="http://www.cerc.com">http://www.cerc.com</a>

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UNIT 5 STATISTICS (3 WEEKS)	CT (Core) 4.1.a(1) Collect real data and create meaningful graphical representations of the data.  CT (Extended ) 4.3.a(1) Understand and use permutations, combinations, recursion and mathematical induction to solve problems.	<ul style="list-style-type: none"> <li>Organize a sample space onto a Tree diagram</li> <li>Assign probabilities to each branch of a tree diagram</li> <li>Calculate a combination using the Combination formula:  <math display="block">C_{n,r} = \frac{n!}{r!(n-r)!}</math> </li> <li>Calculate a permutation using the Permutation formula:  <math display="block">P_{n,r} = \frac{n!}{(n-r)!}</math> </li> <li>Evaluate combinations using the MATH key on TI-83/84</li> <li>Apply Pascal's Triangle to the Combination Formula</li> </ul>	Daily assignments Quizzes Unit project (Restaurant Menu) CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<u>Textbook:</u> Understandable Statistics 6 <sup>th</sup> edition Brase/Brase Houghton Mifflin 1999  <u>Practice worksheets:</u> <a href="http://www.kutasoftware.com">www.kutasoftware.com</a>  <a href="http://www.mathworksheetscenter.com">www.mathworksheetscenter.com</a>  <u>Technology:</u> SMARTBoard TI-83/84 calculator  <u>Unit project resource:</u>

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UNIT 6  INCOME (3  WEEKS)	<p>CT (Core) 1.1.a(1) Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules</p> <p>CT (Extended ) 2.1.a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales</p> <p>CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information</p>	<p><u>Gross Income:</u></p> <ul style="list-style-type: none"> <li>• Compute straight-time, over-time, and total pay</li> <li>• Compute the total hours on a weekly time card</li> <li>• Compute the total pay on a piecework basis</li> <li>• Compute the salary per pay period</li> <li>• Compute the straight commission and determine the gross pay</li> <li>• Compute the total graduated commission</li> </ul> <p><u>Net Income:</u></p> <ul style="list-style-type: none"> <li>• Calculate Federal Income Tax using a withholding table</li> <li>• Compute State Income Tax on a percent basis</li> <li>• Compute Graduated Income Tax</li> <li>• Compute paycheck deductions for Social Security &amp; Medicare Tax</li> <li>• Calculate paycheck deductions for Group Insurance</li> <li>• Compute the net pay per pay period</li> </ul>	Daily assignments Quizzes Unit project CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<p><u>Textbook:</u> Mathematics with Business Applications Lange/Rousos/Mason Glencoe McGraw-Hill 1998</p> <p><u>Technology:</u> SMARTBoard TI-83/84 calculator</p> <p><u>Unit project resource:</u></p>

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UNIT 7  BANKING  (3 WEEKS)	<p>CT (Core) 1.1.a(1) Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules</p> <p>CT (Extended) 1.1.a(4) Solve problems involving financial applications including compound interest, amortization of loans, and investments</p> <p>CT (Extended ) 2.1.a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales</p> <p>CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information</p>	<p><u>Checking Accounts:</u></p> <ul style="list-style-type: none"> <li>• Compute the total checking account deposit</li> <li>• Write a Check</li> <li>• Compute the balance in a Check Register</li> <li>• Compute the present balance on a checking account Bank Statement</li> <li>• Reconcile a check register and a Bank Statement</li> </ul> <p><u>Saving Accounts:</u></p> <ul style="list-style-type: none"> <li>• Complete a Savings Account Deposit slip and compute the total deposit</li> <li>• Complete a Savings Account Withdrawal slip</li> <li>• Compute the new balance in a Savings Account Passbook</li> <li>• Compute the new balance on a Savings Account Statement</li> <li>• Compute the Simple Interest</li> <li>• Compute the Compound Interest and the amount</li> <li>• Determine Compound Interest with Tables</li> <li>• Find Daily Compound Interest with Tables</li> </ul>	Daily assignments Quizzes Unit project CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<p><u>Textbook:</u> Mathematics with Business Applications Lange/Rousos/Mason Glencoe McGraw-Hill 1998</p> <p><u>Technology:</u> SMARTBoard TI-83/84 calculator</p> <p><u>Unit project resource:</u></p>

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<p>UNIT 8</p> <p>CASH AND CREDIT CARD PURCHASES</p> <p>(4 WEEKS)</p>	<p>CT (Core) 1.1.a(1) Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules</p> <p>CT (Extended ) 1.1.a(4) Solve problems involving financial applications including compound interest, amortization of loans, and investments</p> <p>CT (Extended ) 2.1.a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales</p> <p>CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information</p>	<p><u>Cash Purchases:</u></p> <ul style="list-style-type: none"> <li>• Sales Tax</li> <li>• Total Purchase Price</li> <li>• Unit Pricing</li> <li>• Finding the Better Buy</li> <li>• Coupons &amp; Rebates</li> <li>• Markdown</li> <li>• Sale Price</li> </ul> <p><u>Charge Accounts &amp; Credit Cards:</u></p> <ul style="list-style-type: none"> <li>• Sales Receipts</li> <li>• Account Statements</li> <li>• Finance Charge – Previous balance Method</li> <li>• Finance Charge – Unpaid balance Method</li> <li>• Finance Charge – Average Daily Balance</li> </ul>	<p>Daily assignments</p> <p>Quizzes</p> <p>Unit project</p> <p>CAPT related items</p> <p>Common Unit Assessment</p> <p>Peer Evaluation</p> <p>Teacher Observation</p>	<p><u>Textbook:</u> Mathematics with Business Applications Lange/Rousos/Mason Glencoe McGraw-Hill 1998</p> <p><u>Technology:</u> SMARTBoard TI-83/84 calculator</p> <p><u>Unit project resource:</u></p>

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UNI T 9  MONET ARY LOANS  (6 WEEK S)	<p>CT (Core) 1.1.a(1) Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules</p> <p>CT (Extended ) 1.1.a(4) Solve problems involving financial applications including compound interest, amortization of loans, and investments</p> <p>CT (Extended ) 2.1.a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales</p> <p>CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information</p>	<p><u>Loans:</u></p> <ul style="list-style-type: none"> <li>• Single-Payment Loans</li> <li>• Installment Loans</li> <li>• Simple Interest Installment Loans</li> <li>• Installment Loans – Allocation of Monthly Payment</li> <li>• Paying Off Simple Interest Installment Loans</li> <li>• Determining APR</li> <li>• Refund of Finance Charges</li> </ul> <p><u>Automobile Transportation:</u></p> <ul style="list-style-type: none"> <li>• Purchasing a New Automobile</li> <li>• Dealer’s Cost</li> <li>• Purchasing a Used Automobile</li> <li>• Automobile Insurance</li> <li>• Operating &amp; Maintaining an Automobile</li> <li>• Leasing an Automobile</li> <li>• Renting an Automobile</li> </ul> <p><u>Housing Costs:</u></p> <ul style="list-style-type: none"> <li>• Mortgage Loans</li> <li>• Monthly Payment and Total Interest</li> <li>• Closing Costs</li> <li>• The Monthly Payment</li> <li>• Real Estate Taxes</li> <li>• Homeowner’s Insurance</li> <li>• Homeowner’s Insurance</li> </ul>	Daily assignments Quizzes Unit project CAPT related items Common Unit Assessment Peer Evaluation Teacher Observation	<p><u>Textbook:</u> Mathematics with Business Applications Lange/Rousos/Mason Glencoe McGraw-Hill 1998</p> <p><u>Technology:</u> SMARTBoard TI-83/84 calculator</p> <p><u>Unit project resource:</u></p>

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<p>UNIT 10</p> <p>INSURANCE AND INVESTMENTS</p> <p>(2 WEEKS)</p>	<p>CT (Core) 1.1.a(1) Identify, describe, create and generalize numeric, geometric and statistical patterns with tables, graphs, words and symbolic rules</p> <p>CT (Extended ) 2.1.a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales</p> <p>CT (Core) 2.1.b(1) Use technological tools such as spreadsheets, probes, computer algebra systems and graphing utilities to organize and analyze large amounts of numerical information</p>	<ul style="list-style-type: none"> <li>• Health Insurance Premiums</li> <li>• Health Insurance Benefits</li> <li>• Term Life Insurance</li> <li>• Other Types of Life Insurance</li> <li>• Certificates of Deposit</li> </ul>	<p>Daily assignments</p> <p>Quizzes</p> <p>Unit project</p> <p>CAPT related items</p> <p>Common Unit Assessment</p> <p>Peer Evaluation</p> <p>Teacher Observation</p>	<p><u>Textbook:</u> Mathematics with Business Applications Lange/Rousos/Mason Glencoe McGraw-Hill 1998</p> <p><u>Technology:</u> SMARTBoard TI-83/84 calculator</p> <p><u>Unit project resource:</u></p>