Year	Development	Grade	Overview
2009	[Scatter Brained](#)	**Grade 7**	These lessons were developed for students who already have some knowledge about graphing and using statistics. In these lessons, students will create and analyze scatterplots. The students will also create a line of best fit and use it to make predictions. The line of best fit in these lessons will be used to show a correlation but will not be connected to finding slope and writing equations as they will be taught later in the curriculum.
2009	[Modeling Linear Relationships](#)	**Grades 8-10**	In this unit, students will work with situations that can be modeled using linear functions. Students will draw connections between a situation, equation, graph, and table. By understanding how the concept of slope and y–intercept show up in different representations, students will gain fluency in moving between the various representations. Representing a situation as an equation, graph, and table will also give students the tools to make predictions about future (or past) behavior. Students start with modeling fairly concrete situations and move towards working with more abstract equations and graphs presented in non–contextual settings.
2009	[Is Bigger Always Better?](#)	**Grades 6-8**	This unit reviews the conversions between fractions, decimals, and percents and teaches the concept of unit pricing through real-world application. Not only do students learn the mathematics behind the concept, but they become more educated consumers as well.
2008	[Understanding Proportions and Scale Drawings](#)	**Grades 6-8**	These lessons develop an understanding of proportionality and scale drawings. It also develops spatial sense. In these lessons, students will apply knowledge to solve multistep problems. The problems used in these lessons consist of using similar objects in conjunction with scale factors that relate corresponding lengths of the objects or by using the fact that relationships of lengths within an object are preserved in similar objects, as suggested by NCTM. Proportional thinking is fostered by performing activities that compare ratios and use scale models.
2007	[Skate Party](#)	**Grades 6-8, Pre-Algebra**	The following activities are designed to reinforce the solving of single variable open sentences using real–world problems. Students will solve problems that may be encountered during a fictional trip to a local skating rink. Students will determine the cost for renting and/or buying skates and various materials while on the trip. Vocabulary and graphing techniques will be used during the activities.
2007	[Balancing Act - Solving Multi-Step Equations](#)	**Grades 6-8, Pre-Algebra**	Students will be able to solve multi–step equations, including the concepts of distributive property and combining like terms. At the beginning of the unit, students will review the distributive property and identifying like terms. Throughout the unit students will be using manipulatives and cooperative learning strategies in order to enhance their understanding of solving multi–step equations.

Year	Development	Grade	Overview
2006	Ordering, Adding, and Subtracting Integers	Grades 6-8, Pre-Algebra	This unit will prepare students to develop comprehension of and calculate integers. Teacher will introduce the concept of positive and negative integers using number lines, manipulatives, and cooperative learning. Students will participate in whole–class and group movement activities in order to facilitate understanding of positive and negative integers, the Zero Principle, and addition and subtraction of integers.
2006	Money Matters: Integers are Integral!	Grades 6-8, Pre-Algebra	In this unit, students will design and develop a working budget for a one-month period after learning to add and subtract integers. Within that budget, students will utilize integers to maintain an accurate account of monies saved and spent over that time. Students will explore addition and subtraction of integers with various strategies and manipulatives along the way.
2006	Interpreting Graphs	Grade 6, Pre-Algebra	This lesson provides students with opportunities to explore graphic representations through kinesthetic modeling, written representation, and analysis. Students will use a ██████████████████
2006	An Introduction To Solving And Graphing Inequalities	Pre-Algebra/ Algebra	This is a three-day unit on solving one-step and two-step inequalities. The lessons include identifying and graphing various inequalities. Students are expected to have previous knowledge of inequality symbols and solving one-step and twostep equations.
2005	Problem Solving Model	Grades 6-8	Students will learn to translate the language of word problems into mathematical sentences they solve. Students practice translating words into mathematical operations by creating a vocabulary chart. The chart will help students categorize words and phrases under the categories: Addition, Subtraction, Multiplication, Division, Equalities/Inequalities, and Type of Question Being Asked. Students will practice using a 3-step model to solve the questions. The three-step process will include: (1) Analysis, (2) Representation, and (3) Application with explanation.
2005	Partying with Proportions and Percents	Grades 6-7	Using real life experiences, such as buying produce, planning a party, and taking a survey, students will be able to calculate unit rates, write and solve proportions, and identify percentages in degrees on a circle graph.
2005	It's All in the Measurements	Grade 6	The purpose of this unit is to provide students the opportunity to develop and apply knowledge of measurement tools for linear and capacity measurement using the customary system. The students will apply their knowledge to convert linear measurements using craft string and standard conversions. The students will use an ice cream recipe to convert customary measurements.

Year	Development	Grade	Overview
2005	[Interesting Integers and Exciting Equations](#)	Grade 6	The lessons in this unit are designed to address content standards for integers and solving one and two-step equations. Each lesson is based on the student learning outcomes prescribed for sixth grade. The one-day lesson on integers is designed as a review, as this concept has been previously taught. The three remaining lessons address the basics of evaluating expressions and solving simple equations using the balance method.
2005	[Integer and Equation Jeopardy](#)		Pre-Algebra Jeopardy
2005	[Incredible Integer](#)	Grades 6-7	Students of sixth grade mathematics often come to middle school lacking a firm grasps on the concept of positive and negative numbers. The integer unit is critical for the development of this understanding and serves as a vital springboard for future work with negative numbers. The unit is divided into three main components, each involving a full, ninety-minute lesson. An overhead projector should be available for all lessons. The first lesson reviews key vocabulary and builds a fundamental understanding of positive and negative whole numbers and their absolute values. The second lesson moves to the application of those integers in addition and subtraction. The final lesson applies integers to situations requiring multiplication and division.
2005	[Get A Line on Integers](#)	Grades 6-8	After studying whole and natural numbers, it becomes obvious that one cannot apply them to all situations. Therefore it is necessary to introduce another system of numbers. This system is called Integers, which allows one to explore numbers greater than and less than zero. The students will be able to grasp the concept of integers and apply it to the four basic operations (addition, subtraction, multiplication and division). They will use manipulates such as counters and number line to illustrate rules pertaining to integers. Students will also apply integers to everyday life situations.
2003	[The Sum of Our Integer Intelligences](#)	Grades 7-8	The students will be able to explore addition of integers through seven learning stations based on the seven intelligences identified by Dr. Howard Gardener. Each station contains a performance task or tasks and scoring key or rubric.
2003	[The "Heart" of the Problem](#)	Grades 7-9	This activity integrates the use of operations with decimals, percents, and fractions with knowledge of nutrition, the circulatory system, heart rate, and pulse rate. Students will experiment with aerobic and anaerobic exercises to determine an exercise and nutrition program. For a conclusion, students will present fitness and nutrition programs to gain, maintain, and lose weight.

Year	Development	Grade	Overview
2003	[Percents: What's the Use?](#)	**Grades 6-8**	This activity focuses on the use of percents in situations involving discounts and tax with catalogues. The students will conduct an interview to discover the use of percents in different careers. They will then further their knowledge of percents with a cooperative learning exercise that involves catalogues, discounts, and taxes. In assessing their knowledge of percents, there is a writing activity and a project involving the construction of a menu.
2003	[Metric Meals](#)	**Grade 6**	Students will gain an understanding of the measuring units of linear metric measurement, mass and capacity and the tools needed to obtain those measurements. Students will estimate and then verify measurements of various linear metric measurements, mass and capacity. Students will convert units within the metric system. Students will write a news report regarding the effects of the mass of paper trash generated by McDonald's.
2003	[Fractions, Decimals, and Percents Got You Down? "Tri" This!](#)	**Grades 6-7**	Students will prepare a presentation for and write a letter to the State Department of Education persuading them to utilize their tri-fold designs in Adult Education Programs. Students will be able to construct a tri-fold explaining the relationships between fractions, decimals, and percents. Students will apply prior knowledge of fractions, decimals, and percents for use in the real-world. Students will apply prior knowledge of fractions, decimals, and percents for use in the real-world.
2003	[Fashion Sense and Dollar Wise](#)	**Grades 6-8**	Students will collect clothing advertisements from newspapers and magazines. Cooperatively the students will discuss the various ways used to express savings or sales. Discussion and example will assist students in understanding the conversion relationship between fractions, percents and decimals. Using various examples, students will work with advertisements to choose their favorite outfit while considering lowest costs. Ultimately, students will find the best look and the best price. Furthermore, students will hypothesize what effect inflation has had and will have on these prices. Then, using the CPI, students will test their hypothesis.
1998	[Squares in the Light](#)	**Grades 7-12, Pre-Algebra/ Algebra I,**	This lesson is designed for students to investigate the relationship between the length of the side of a square and its distance from the light source. A 2 cm square is cut from a 3" by 5" card and placed on an overhead projector.

Year	Development	Grade	Overview
1997	Metric Meals	**Grade 6**	Students will gain an understanding of the measuring units of linear metric measurement, mass and capacity and the tools needed to obtain those measurements. Students will estimate and then verify measurements of various linear metric measurements, mass and capacity. Students will convert units within the metric system. Students will write a news report regarding the effects of the mass of paper trash generated by McDonald's.
1997	Let's Get Slopey	**Grades 8-9, Pre-Algebra/ Algebra I**	This lesson will introduce the concept of slope of a line in a Cartesian plane. Using a CBL unit and graphing calculator, the lesson will help explain the relationship between the X and Y axes as they are related to time and distance (giving "X" and "Y" tangibility).
1997	Hit Me If You Can!	**Grades 8-11, Pre-Algebra/ Algebra I**	This lesson is designed to help students learn to use the CBL and the motion detector. Using the CBL, TI-82 and motion detector, students will see that the speed and direction of their own body over time creates a different slope line.
1997	Fractions, Decimals, and Percents Got You Down...	**Grades 6-7**	Students will prepare a presentation for and write a letter to the State Department of Education persuading them to utilize their tri-fold designs in Adult Education Programs. Students will be able to construct a tri-fold explaining the relationships between fractions, decimals, and percents. Students will apply prior knowledge of fractions, decimals, and percents for use in the real-world.
1996	The Sum of Our Integer Intelligences	**Grades 7-8**	The students will be able to explore addition of integers through seven learning stations based on the seven intelligences identified by Dr. Howard Gardener. Each station contains a performance task or tasks and scoring key or rubric.
1996	Percents: What's the Use?	**Grades 6-8**	This activity focuses on the use of percents in situations involving discounts and tax with catalogues. The students will conduct an interview to discover the use of percents in different careers.
1995	The Heart of the Problem	**Grades 7-9**	This activity integrates the use of operations with decimals, percents, and fractions with knowledge of nutrition, the circulatory system, heart rate, and pulse rate. Students will experiment with aerobic and anaerobic exercises to determine an exercise and nutrition program. For a conclusion, students will present fitness and nutrition programs to gain, maintain, and lose weight.
1995	How High Are the Clouds?	**Grades 7-12, Pre-Algebra - Algebra II**	The students will gather data in an experiment in order to compute the dewpoint, the altitude of cloud formation, the altitude of ice crystal formation, and relative humidity.

Year	Development	Grade	Overview
1995	Fashion Sense and Dollar Wise	Grades 6-8	Students will collect clothing advertisements from newspapers and magazines. Cooperatively the students will discuss the various ways used to express savings or sales. Discussion and example will assist students in understanding the conversion relationship between fractions, percents and decimals. Using various examples, students will work with advertisements to choose their favorite outfit while considering lowest costs. Ultimately, students will find the best look and the best price. Furthermore, students will hypothesize what effect inflation has had and will have on these prices. Then, using the CPI, students will test their hypothesis.