Illinois

Math Goals 6 - 10
Goals/Standards/Benchmarks

Correlated to AIMS Activities

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Illinois State Goals/Standards/Benchmarks

Early Elementary Mathematics

GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.

A. A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.

6.A.1a Identify whole numbers and compare them using the symbols <, >, or = and the words "less than," "greater than", or "equal to", applying counting, grouping and place value concepts.

Activity	Source	Students will:
Bus For Us	9.01	Explore counting concepts with a bus theme.
Pockets	10.02	Practice counting skills using one to one correspondence.
A Fish Story –More or Less	8.06	Apply one to one correspondence to develop understanding.
A Pumpkin Cover Up	8.03	Estimate and count large numbers.
Making Ten My Way	8.10	Gather objects and group them into sets of ten.
The Jar That Likes to Keep You Guessing	Primarily Bears	Apply estimation skills with a variety of objects.
Counting on One Hundred	8.07	Apply estimation, counting, and place value skills.
I've Got Your Number	9.03 Just For the Fun of It	Use inference to determine an unknown number by asking "yes" and "no" questions.
Seed Sort	Primarily Plants	Estimate, count, sort and compare a variety of seeds.
Math with M & M® Candies	Primarily Bears	Estimate, count, sort, compare M&Ms.
A Pumpkin With Class	6.03	Count pumpkin seeds and group them in sets of ones, tens, and hundreds.
Popped or Not	7.10	Compare the mass of popped popcorn using "greater than", "less than", or "equal to".
Shake It Up!	15.01	Play a simple game to build and compare unifix cube towers.
Hide and Seek	Bats Incredible	Play a game using a number line to reinforce concepts of "greater than" and "less than".
A Number Wall	16.08	Seek and identify number patterns as they generate number facts.
A Fit Mitten?	Winter Wonders	Fill a mitten with manipulatives to explore the concepts of place value and volume.
Trading Boards	17:02	Use five different trading boards to build conceptual understand of place value.
Building on Base	Awesome Addition & Super Subtraction	Construct buildings using Base Ten Blocks and calculate the value of each building.
Basic Beans	Awesome Addition & Super Subtraction	Trade beans in a base ten system and construct and solve addition and subtraction problems involving regrouping.

Making Arrangements	Awesome Addition & Super Subtraction	Realize there are patterns in the ways that numbers are formed.

6.A.1b Identify and model fractions using concrete materials and pictorial representations.		
Activity	**Source**	**Students will:**
Cookies For All	8.01/Just For the Fun of It	Explore fractional concepts and practice skill of fair share through problem solving.
All Around the Apple	5.02	Use an apple to explore measurement and fraction concepts.

B. B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.

6.B.1 Solve one- and two-step problems with whole numbers using addition, subtraction, multiplication and division.

Activity	**Source**	**Students will:**
Matching Tops and Bottoms Sum Song	10.08	Explore how many ways they can make combinations of ten.
McGregor's Garden	10.09	Design a garden using whole numbers, addition, and subtraction.
Let Me Count the Ways	Primarily Bears	Use teddy bear counters to measure the mass of an object and create mathematical sentences.
Bear Shares	7.01	Develop the concept of division by "fair-sharing" manipulatives.
Base Place The Pluses	Awesome Addition & Super Subtraction	Construct manipulative models of one and two digit addition problems and solve them.
Base Place The Minuses	Awesome Addition & Super Subtraction	Construct manipulative models of one and two digit subtraction problems and solve them.
Money Has Its Place	Awesome Addition & Super Subtraction	Construct manipulative models to represent operations of addition and subtraction of money.
Shape Frame Math	Awesome Addition & Super Subtraction	Create an addition problem on the Shape Frame Math mat and solve for missing addends.
Cornering the Facts	Awesome Addition & Super Subtraction	Read an addition/subtraction chart and create a personal set of fact cards.

C. C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.		
6.C.1a Select and perform computational procedures to solve problems with whole numbers.		
6.C.1b Show evidence that whole number computational results are correct and/or that estimates are reasonable.		
Activity	**Source**	**Students will:**
Teddy Bears and Oranges	Primarily Bears	Use non-standard units quantify the mass of an orange.
Math with M & M® Candies	Primarily Bears	Estimate, count, sort, and compare M & Ms.
Digits in Disguise	Awesome Addition & Super Subtraction	Create their own number riddles and think and communicate mathematically.
Uncle Remus Stories	Awesome Addition & Super Subtraction	Identify problems to be solved in stories and solve them.
Make It Even	Awesome Addition & Super Subtraction	Play a card game that challenges them to use mental math to find sums equal to target sums.
Seek and Hide	18:01	Gain practice with basic addition facts by adding totals from rolling dice and playing a cover-up board game.

D. D. Solve problems using comparison of quantities, ratios, proportions and percents.		
6.D.1 Compare the numbers of objects in groups.		
Activity	**Source**	**Students will:**
Pets Are Part of the Picture	5.10	Graph and compare the number of pets in each group.
Busy With Buses	10.06	Count and compare the objects related to a school bus such as seats, students, and windows.
The Joys of Jelly Beans	Primarily Bears	Count, graph, and compare different colors of jelly beans.
Gummy Bears	Primarily Bears	Count, graph, and compare different colors of gummy bears.
Valentine Candy Count	Glide Into Winter	Count, graph, and compare different conversation hearts.
Pockets	10.02	Count and compare the number of pockets they are wearing.
Count by Shoes, Count by Twos	14.09	Skip count by twos while marching and counting pairs of shoes.

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GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

E. A. Measure and compare quantities using appropriate units, instruments and methods.		
7.A.1a Measure length, volume and weight/mass using rulers, scales and other appropriate measuring instruments in the customary and metric systems.		
Activity	**Source**	**Students will:**
Queen's Bed	13.06	Construct a bed using their feet to measure length and width.
My Shoe	4.06	Measure the length of their shoe and graph the results.
Let Me Count the Ways	7.04	Find the mass of a variety of objects.
Rows of Bows	11.06 Winter Wonders	Measure the length of ribbon in a bow.
Great Cookie Mix-up	13.01	Apply measuring skills in a real-life context of making cookies.
Rock Hounds and Bears	4.04	Use a balance and counting bears to explore mass measurement.
Teddy Bears & Oranges	Primarily Bears	Find the mass of an orange including its skin and edible parts.
Feet Findings	Spring Into Math and Science	Use non-standard unit (their feet) to measure distance.
Rainwater Tea	8.08	Estimate and measure volume using non-standard containers.
A Fit Mitten	5.06	Compare volume of various size mittens with assortment of units.
Frog Leaps and Lily Pads	5.09	Count, measure, order, and compare length of frog jumps.
Popped or Not	7.10	Compare the mass of popcorn using "greater than", "less than", or "equal to".
Wrap Around Ruler	11.10	Make and use a ruler to measure a variety of objects.
Graph-Feet-EE	Math + Science a Solution	Draw, measure, and graph the overall length of their feet.
Two-Colored Metric Tape	12.06	Create a 10 cm. unit ruler to measure and determine equalities and inequalities of a variety of objects.
Pour, Pour, & Pour Some More	15.03	Discover relationship between volume and shape of containers.
Red or Blue Will Tell You	15.9	Make and use a measuring cup for use in a water quality investigation.

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Look At Me Now	Cycles of Knowing and Growing	Measure and compare their height to other students and themselves throughout the year. (I Am Growing-song)
Whoa-That's Heavy!	Glide Into Winter with Math and Science	Use a balance to compare objects and determine which is heavier.

Sizing Up Bear	Under Construction	Compare bears to explore the concept that size is relative.
Fit for a Bear	Under Construction	Use story of "The Three Bears" to construct beds and chairs to explore relative size (too big, too small, just right).
Spread Your Wings	Bats Incredible	Estimate and measure the wing spans of micro and mega bats.
Huff & Puff	Spring Into Math and Science	Explore how many times do you have to blow on an object to make it travel three feet.
It's a Force, Of Course!	16.03	Measure the distance traveled by toy cars.
Paws for Measurement	17:07	Measure using track units and select appropriate "track" unit for the object being measured.
Leapin' Leprechauns	17:05	Will try to determine the appropriate height of a leprechaun given only an example of his footprint.

7.A.1b Measure units of time using appropriate instruments (e.g., calendars, clocks, watches-both analog and digital).

Activity	Source	Students will:
Just a Minute	10.10	Make a timer to measure a minute.
Talk About Time	11.01	Position the hands of a clock throughout the day and make a book.
Melt An Ice Cube	Primarily Physics	Use a clock to measure how long it takes to melt an ice cube.
Polar Bear Pie	Glide Into Winter With Math & Science	Check the progress of a melting Eskimo pie at 5 minute intervals.
Tell Me When Your Birthday Comes	Cycles of Knowing and Growing	Develop an awareness of the passing of time between birthdays.
You Are All Heart	Glide Into Winter With Math & Science	Use a clock with a second hand to count their heartbeat for 1 minute while at rest and after strenuous activity.
The Long and Short of It	It's About Time	Classify events based on the time it takes to complete them.
Before and After	It's About Time	Identify before and after based on a sequence of cards.
Line Up the Time	It's About Time	Sequence and illustrate the day's events.
Time Counts	It's About Time	Use a pendulum to measure the passage of time.

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Time in a Bottle!	It's About Time	Describe how a sand timer works and time classroom tasks.
Clocks, Clocks and More Clocks	It's About Time	Examine and sort a variety of clocks and discuss how clocks and watches are similar and different.
Hour by Hour	It's About Time	Relate the numbers on a clock to those on a number line and read an analog clock to the nearest hour.
Hands on the Hour	It's About Time	Use model clocks to show where the hour hand would be positioned for times on the hour.
Time by Fives	It's About Time	Identify minutes after the hour in five minute intervals.
Double Time	It's About Time	Set a clock to show the time in five minute intervals.
Name that Time	It's About Time	Use flip cards and role play and read clocks with minute and hour hands.
Two Timers	It's About Time	Read analog clocks to the nearest hour and half hour.
Minute by Minute	It's About Time	Construct and read a student clock to the nearest minute.
How Time Flies	It's About Time	Explore the connection between the movement of the minute hand and the hour hand.
Can You Tell Time?	It's About Time	Identify and record the hour and minute positions on a digital clock and determine the number of minutes left in the hour.
Flipping Over Time	It's About Time	Use student-sized digital and analog clocks to show the relationship between the two.
Watch the Time Fly	It's About Time	Use model watches to record the passing of time.

7.A.1c Identify and describe the relative values and relationships among coins and solve addition and subtraction problems using currency.

Activity	Source	Students will:
Quick Quilts Part II	7.08	Use problem-solving skills to purchase items for a quilt square.
Making Cents of Dollars	15.10	Exchange coins to equal specific values.
Coin Talk	Counting on Coins	Sort, identify and name coins
Coin Walk	Counting on Coins	Practice identifying coins by name.
Pigs in a Pen	Counting on Coins	Match heads and tails of coins, match to pictures of coins and match to value of coin
Piggy Parade	Counting on Coins	Practice ordering coins by value in a problem solving context.
Coin Conflict	Counting on Coins	Determine which coin has the greater value using a set of coin cards.

Hundred Penny Pie	Counting on Coins	Use an area model of money values and equivalencies to understand a variety of combinations of coins.
Bank On It	Counting on Coins	Play a game that involves trading pennies for nickels and matching real coins to their values.
Money Bags	Counting on Coins	Use coins to practice counting on and skip counting.
Coin Draw	Counting on Coins	Play a version of tic-tac-toe by totaling the value of three coins drawn out of a sock and covering that value on the gameboard.
Piggy Banks	Counting on Coins	Match coins to values
Pockets Full-O Money	Counting on Coins	Determine the values of various combinations of coins.
Show Me the Money	Counting on Coins	Use coins to show a variety of ways to represent specific amounts.
Making Cents of Dollars	Counting on Coins	Exchange coins to equal specific values and count to find the total of a combination of coins.
Who's Smart?	Counting on Coins	Make the coin amounts given in the poem with play money.
Alexander's Not Rich Anymore	Counting on Coins	Identify each coin and its value, spend money and keep track of how much is spent.
Books for a Bargain	Counting on Coins	Identify coins needed to buy item priced at $5.00 or less and solve problem using money and making change.

7.A.1d Read temperatures to the nearest degree from Celsius and Fahrenheit thermometers.		
Activity	**Source**	**Students will:**
Air Temperature	Primarily Earth	Use a thermometer to measure air temperature.
Temperature Told-Hot or Cold	11.07	Build a model and use an immersion thermometer.
What is Hot? What is Cold?	Primarily Physics	Explore concepts of hot and cold.

Hot or Cold	Primarily Physics	Develop their understanding of temperature by exploring hot and cold.
What is the Temperature?	Primarily Physics	Make a thermometer and learn how to read temperatures.

F. B. Estimate measurements and determine acceptable level of accuracy.
7.B.1a Given a problem, describe possible methods for estimating a given measure.

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7.B.1b Compare estimated measure to actual measures taken with appropriate measuring instruments.		
Activity	**Source**	**Students will:**
The Jar That Likes to Keep You Guessing	Primarily Bears	Apply estimation skills with a variety of objects.
A Pumpkin Cover Up!	8.03	Explore estimation, grouping and area using points of reference.
Pumpkin, Pumpkin Seed!	12.04	Investigate, estimate, and compare the number of seeds in small and large pumpkins.
A Pumpkin With Class	6.03	Estimate, count, and group pumpkin seeds using place value.
Surprise Packages	14.05	Predict, measure, and order objects by their masses.
Super Sand Castles	15.10	Construct and measure sand castles comparing non-customary units.
Get the Picture	16.1	Determine how actual physical sizes of objects compared to pictured objects.

G. C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.		
7.C.1 Determine perimeter and area using concrete materials (e.g., geoboards, square tiles, grids, measurement instruments).		
Activity	**Source**	**Students will:**
A Pumpkin Cover Up!	8.03	Explore estimation, grouping, and area using points of reference.
Queen's Bed	13.06	Construct a bed using their feet to measure length and width.
Leaf Safari	Primarily Bears	Compare, measure, and determine the area of leaves.

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GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

H. A. Describe numerical relationships using variables and patterns.		
8.A.1a Identify, describe and extend simple geometric and numeric patterns.		
Activity	**Source**	**Students will:**
Picking Apart Patterns	8.05	Construct, describe, and group similar patterns.
Quilted Bed Spreads	11.05	Create a quilt square by cutting shapes out of bread.
Quick Quilts I	7.08	Form a symmetrically designed square for a paper quilt and explore relationships between triangles and square.
Who's Not Home	Primarily Bears	Determine which bears will complete the pattern.
Party Patterns	17:09	Identify, extend and create growing and repeating patterns using party hats.

8.A.1b Solve simple number sentences (e.g., 2 + = 5).		
Activity	**Source**	**Students will:**
Math with M&M Candies	Primarily Bears	Estimate, count, sort, compare M&Ms.
Let Me Count The Ways	Primarily Bears	Predict and order a variety of items from heaviest to lightest and then find the mass of each item and represent their data with a number sentence.

I. B. Interpret and describe numerical relationships using tables, graphs and symbols.		
8.B.1 Solve problems involving pattern identification and completion of patterns.		
Activity	**Source**	**Students will:**
Taking Turns With Triangles	9.05	Rotate a triangular pattern and practice completing a pattern.
Eager Weavers	8.04	Construct patterns and discover additional patterns.
Pop Out Patterns	9.10	Build and manipulate a basic pattern piece to form patterns.
Picking Apart Patterns	8.05	Construct, describe, and group patterns into pattern families.
Domino Design	14.04	Explore, recognize, and create patterns with a set of double-six dominoes.

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J. C. Solve problems using systems of numbers and their properties.		
8.C.1 Describe the basic arithmetic operations (addition, subtraction, multiplication, division) orally, in writing and using concrete materials and drawings.		
Activity	**Source**	**Students will:**
A Pig's Tale	7.10	Write number sentences on a mat based on the story of "The Three Little Pigs".
Making Ten My Way	8.10	Use concrete materials to represent combinations of 10.
Making Tracks	15.4	Use Geo Sticks to explore combinations and algebraic notation.

K. D. Use algebraic concepts and procedures to represent and solve problems.		
8.D.1 Find the unknown numbers in whole number addition, subtraction, multiplication and division situations.		
Activity	**Source**	**Students will:**
None Available		

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GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

L. A. Demonstrate and apply geometric concepts involving points, lines, planes and space.

9.A.1a Identify related two-and three-dimensions shapes including circle-sphere, square-cube, triangle-pyramid, rectangle-rectangular prism and their basic properties.

9.A.1b Draw two-dimensional shapes.

Activity	Source	Students will:
Busy With Buses	10.06	Use a school bus to learn about measurement and geometry and construct a shape book.
Shape Takers	11.03	Compare and construct geometric shapes of various orientations and sizes.
Quilted Bed Spreads	11.05	Create a quilt square by cutting shapes out of bread.
Quick Quilts I	7.08	Form a symmetrically designed square for a paper quilt and explore relationships between triangles and square.
Shifty Shapes	15.10	Discover how many different ways hexagon shape can be made using a combination of smaller pattern blocks.
Cube Challenges	16.01	Explore 3D shapes with Kinder Cubes.

M. B. Identify, describe, classify and compare relationships using points, lines, planes and solids.

9.B.1a Identify and describe characteristics, similarities and differences of geometric shapes.

Activity	Source	Students will:
Suitcase Solutions	15.06	Develop problem solving strategies and spatial visualization skills using tangram pieces.
Geometric Garden	17:09	Fold origami tulips, stems and kites and create a garden. Label, identify and describe these shapes.
Solid Shape Relay	17:10	Play a game and sort various solids into like groups.

9.B.1b Sort, classify and compare familiar shapes.

Activity	Source	Students will:
None Applicable		

9.B.1c Identify lines of symmetry in simple figures and construct symmetrical figures using various concrete materials.

Activity	Source	Students will:
Quick Quilts Part 1	7.08	Form a symmetrically designed square for a

		paper quilt and explore relationships between triangles and square.

N. C. Construct convincing arguments and proofs to solve problems.		
9.C.1 Draw logical conclusions and communicate reasoning about simple geometric figures and patterns using concrete materials, diagrams and contemporary technology.		
Activity	**Source**	**Students will:**
None Applicable		

O. D. Use trigonometric ratios and circular functions to solve problems.		
Activity	**Source**	**Students will:**
None Applicable		

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GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

P. Organize, describe and make predictions from existing data.		
10.A.1a Organize and display data using pictures, tallies, tables, charts or bar graphs.		
10.A.1b Answer questions and make predictions based on given data.		
Activity	**Source**	**Students will:**
None Applicable		

Q.

R. Formulate questions, design data collection methods, gather and analyze data and communicate findings.		
10.B.1a Formulate questions of interest and design surveys or experiments to gather data.		
10.B.1b Collect, organize and describe data using pictures, tallies, tables, charts or bar graphs.		
10.B.1c Analyze data, draw conclusions and communicate the results.		
Activity	**Source**	**Students will:**
I've Got Your Number	9.03	Use inference to determine an unknown number by asking "yes" and "no" questions.
Harriet's Halloween Treats	4.03	Classify Halloween treats and apply problem solving strategies.
Joys of Jelly Beans	Primarily Bears	Use jelly beans to estimate, count, compare, and graph.
Sherlock Combs the Yard	1.10	Collect items that share a common attribute.
Bunches of Lunches	5.02	Compare lunch containers and graph by type and color.
Weather Wear	14.02	Determine how weather influences their clothing and use data to record this information over time.
Cereal Numbers	14.02	Use multiple boxes of the same cereal to estimate, count, compare, and graph the contents.
Going Nuts	14.03	Use nuts to compare, count, and graph in a variety of ways.
Watching the Weather	Primarily Earth	Graph weather conditions over time.
Recycle Relay	15.09	Collect, organizing, display, and interpret data from the collection of recycled materials.
Backpack Bounty	16.08	Examine a collection of 10-12 items determine sorting rule and display the results.
The Gingerbread Man	Winter Wonders	Sort, graph, and measure gingerbread men.
Valentine Candy Count	Winter Wonders	Sort, count, and graph valentine candy.

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S. Determine, describe and apply the probabilities of events.		
10.C.1a Describe the concept of probability in relationship to likelihood and chance.		
10.C.1b Systematically list all possible outcomes of a simple one-stage experiment (e.g., the flip of one coin, the toss of one die, the spin of a spinner).		
Activity	**Source**	**Students will:**
Teddy Bears Playing in the Den	Primarily Bears	Investigate random samples to predict the nature of a population.
Leaping Lily Pads	15.7	Use three different spinners to play a game and develop the vocabulary of probability.
Gimme A Gimmel	8.05	Use a driedel to identify possible outcomes.
Take a Chance	12.08	Predict the number and color of plastic eggs in the bag based upon 3 samples.
Sack of Socks	17:03	Conduct a simple probability experiment and interpret the results.
Penguin & Snowman	17:06	Have repeated experiences of fair and unfair spinners. They will tally and record results and detect what makes a spinner fair or unfair.

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Late Elementary Mathematics

GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.

T. A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.

6.A.2 Compare and order whole numbers, fractions and decimals using concrete materials, drawings and mathematical symbols.

Activity	Source	Students will:
Fractions with Pattern Blocks	12.04	Use pattern blocks to explore equivalent addition of fractions and mixed numbers.
Fabulous Fractions (Entire Book)	Fabulous Fractions	Develop a conceptual understanding of fractions.
Tangrammy Squares	10.02	Use tangrams to explore and compare fraction concepts.
Jelly Belly	Pieces and Patterns	Write fractions that represent the color of jelly beans.
Flip	8.05	Decide how numerals can be strategically placed to create the largest or smallest number.
Fraction Dominoes	3.09	Apply their understanding of equivalent fractions in a series of games.
Compression Session	Jawbreakers and Heart Thumpers	Measure and compare their height in the morning and later in the day.
Fat Finder	Jawbreakers	Use foods to determine the amount of fat in a meal they select and compare to 30% limit of calories from fat.
Candy Factory	Jawbreakers	Compare the color distribution within packages of candy and then divide them into four shares.
Making Arrangements	15.06	Seek patterns as they take regroup sets of 1's, 10's, 100's can be taken apart in several ways.
Cookie Combos	Just For the Fun of It	Use divergent thinking to find multiple ways to count 25 cookies.
Uniquely Even	17:02	Explore even numbers within a problem solving context.

U. B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.

6.B.2 Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.

Activity	Source	Students will:
Fish and Clips	Mostly Magnets	Quantify, measure, and average the number of paper clips attracted by a magnet.
Stacking the Facts	Marvelous	Use an area model to provide meaning for the

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	Multiplication & Dazzling Division	multiplication operation.
Area Codes	Marvelous Multiplication & Dazzling Division	Visualize the process of multiplication as an area model of covering a rectangular region and visualize a pattern of partial products connected to place value concepts.
Multiplication Stretch	Marvelous Multiplication & Dazzling Division	Learn to multiply using the display multiplication method and become aware of the ten-ness of our numeration system.
Square Rules	Marvelous Multiplication & Dazzling Division	Practice squaring two-digit numbers to gain fluency with multiplication facts.
Quick Sticks and Lattice Multiplication	Marvelous Multiplication & Dazzling Division	Evaluate Napier's strategies for rapid calculation of multiplication problems using a set of wooden rods.
Camp Fair Shares	Marvelous Multiplication & Dazzling Division	Use a small set of manipulatives to create fair shares as a way of modeling the process of division.
Boxing Bags and Matches	Marvelous Multiplication & Dazzling Division	Connect what it means to "do" division at the manipulative level with the "writing" about division at the abstract level and practice fair sharing with a concrete model.
Pack Ten Trading Centers	Marvelous Multiplication & Dazzling Division	Use base ten blocks to understand the meaning of multi-digit division at the concrete level.
Clearing the Table	Marvelous Multiplication & Dazzling Division	Recognize patterns in the multiplication table and explore divisibility rules.
Thinking Our Way Out of the Bag	Marvelous Multiplication & Dazzling Division	Devise a strategy for calculating a close approximation of the number of objects in a container without counting each one.

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Facing the Facts: Who Has (Whole Number/Operations) Crazy Clues	11.05	Use mental math to apply operations in a whole class format.
Facing the Facts: Who Has (Fractions)	11.06	Use mental math to apply operations in a whole class format.
Two-Digit Turn Around	12.04	Explore what happens when two digit numbers are subtraction in a certain pattern.
Skip to My Rule	11.03	Generate their own multiplication table.
Fascinating Triangle	Just for the Fun of It	Arrange digits on a triangle to find common sums and explore patterns created.
Palindromic Ponderings	8.06	Explore properties and patterns of palindromes.
Lattice Multiplication	Historical Connections I	Explore an alternative method of multiplication.
Actions With Fractions (Entire Book)	Actions With Fractions	Apply understanding of fractions.
Fabulous Fractions (Entire Book)	Fabulous Fractions	Develop a conceptual understanding of fractions.
X-cellent Addition	14.02	Place numbers from 1-8 in a double X arrangement so that the sums of the numbers on each diagonal is the same.
Taking Away by Ones and Twos	13.05	Experience a version of the historic "Nim" game and develop strategies based on mathematics.
Teddy Bears Come Ashore	3.06	Develop a conceptual understanding of division.
Russian Peasant Method of Multiplication	2.10	Experience an alternative method of multiplication.
Multiplication of Fractions	Multiplication the Algebra Way	Multiply fractions using arrays to understand the area model of multiplication of fractions.
Distributive Property and Multiplication of Mixed Numbers	Multiplication the Algebra Way	Discover how to use the distributive property of multiplication over addition and how it underlies all multiplication and arithmetic and algebra.
Desert Crossings	Just For the Fun of It	Use creative thinking and problem solving to determine the maximum amount of watermelons to take to market.
Figuring Fingers and Tallying Toes	18:01	Experience counting objects in uniform sized groups and learn that the shortcut is to use multiplication.

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V. C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.		
6.C.2a Select and perform computational procedures to solve problems with whole numbers, fractions and decimals.		
6.C.2b Show evidence that computational results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable.		
Activity	**Source**	**Students will:**
Fabulous Fractions (Entire Book)	Fabulous Fractions	Develop a conceptual understanding of fractions.
Actions With Fractions (Entire Book)	Actions With Fractions	Build mental images of fractional parts and operations on fractions.
Jelly Belly	Pieces and Patterns	Write fractions to represent colors of jelly beans.
Clock-WISE Fractions	11.04	Construct sums of fractions with unlike denominators using sectors of a clock as a manipulative.
Weight in Space	Out of This World	Calculate their weight on moon and other planets.
Scatter Beans	10.04	Play an adapted version of a Native American game using mental math to keep track of their score.
Digits in Disguise	14.01	Create number riddles to investigate number patterns and relationships.
To A+D+D or Not to Add	15.05	Use a series of numbers and choose an operation to play a game of odd and even.
A Close Call	6.01	Devise a strategy to estimate the number of objects in a container.
I've Got Your Number	Just For the Fun of It	Use inference to determine an unknown number by asking yes and no questions.
Circles, Squares, and Sums	15.04	Arrange the numbers 1-9 in a microworld so that any number in a square is the sum of the numbers in the circles connected to that square.
Calendar Capers	Just for the Fun of It	Look for patterns in calendars.
Amazing Arithmetic Arrays	13.02 Just for the Fun of It	Place consecutive numbers and multiples into a square grid and explore number patterns.
Charting Numbers	16.02	Explore and compare patterns that exist in a 0-99 number chart and a 1-100 chart.
Deals on Wheels	Just For the Fun of It	Find multiple solutions to a problem with bicycles, tricycles, and wagon wheels.
The Hundred Number Challenge	Just For the Fun of It	Find the sum of the numbers 1-100 in as many multiple methods as possible.
Leaf the Counting to Me	16.07	Make an initial estimate of the number of leaves on a tree and then make a strategic estimate of the number of leaves on the same tree.

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W. D. Solve problems using comparison of quantities, ratios, proportions and percents.

6.D.2 Describe the relationship between two sets of data using ratios and appropriate notations (e.g., a/b, a to b, a:b).

Activity	Source	Students will:
By Golly, By Gum	Jaw Breakers Heart Thumpers	Collect and record data using ratios to compare mass of chewed and unchewed gum.
By Golly, By Gum, By Time	Jaw Breakers Heart Thumpers	Collect and record data using ratios to compare mass of chewed and unchewed gum and time chewed.
Clock-WISE Fractions	11.04	Explore relationships of fractional parts of a circle.
Hands On The Giant	Jaw Breakers Heart Thumpers	Use human body ratios to determine height of giant given hand print.
Hands On The Giant	16.02	(Teacher Article)
Bubbling Around	16.02	Investigate soap bubbles to discover the relationship between height and diameter and how diameter is related to circumference.
Now That's Using Your Head	Jaw Breakers Heart Thumpers	Explore relationship between their height and circumference of their head.
Oranges For the Most Part	10.05	Collect and record data using ratio to compare edible and inedible parts of an orange.
Are You a Square?	Hardhatting in a Geo-World	Investigate how their height and arm span compare.
Round About Our Heads and Feet	14.04	Compare the measures of head circumference and foot perimeters and examine ratios.

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Late Elementary Mathematics

GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

X. A. Measure and compare quantities using appropriate units, instruments and methods.

7.A.2a Calculate, compare and convert length, perimeter, area, weight/mass and volume within the customary and metric systems.

Activity	Source	Students will:
The Food Tube	11.10	Calculate and compute length of the digestive track.
Mini Metric Olympics	3.03	Measure, record, and compare results of classroom Olympic events.
Weight Watchers	Math + Science A Solution	Estimate and measure mass of a collection of objects.
Rulers Line Up	Hardhatting in a Geo-World	Construct a non-standard ruler to develop understanding of standard measurement.
Cups 'n Stuff	Hardhatting in a Geo-World	Measure and order the mass of 5 different objects with equal volumes.
Links to Lengths	Hardhatting in a Geo-World	Create longest paper chain possible from limited materials.
Massive Boxes	Floaters and Sinkers	Find the relationship between mass, volume, and density.
Metric Scavenger Hunt	Math + Science A Solution	Use estimation and measurement skills to find an object to match a given measurement.
Bear Facts	1.02	Compare the measurements of their body parts with the measurements of a teddy bear.
Cutting Corners	8.02	Construct various boxes and compare capacity.
Measure Hunt	14.09	Select a measurement tool and unit to measure a variety of real-world objects.
Now That's Using Your Head	Jawbreakers & Heart Thumpers	Explore ratio of height to circumference of head.
Hands on the Giant	Jawbreakers & Heart Thumpers	Determine the approximate height of a giant given only an example of a giant's handprint.
Balance Bazaar	11.05	Use a balance to directly compare objects according to measurable attributes.
Balance Baffler	Just for the Fun of It	Develop a strategy to identify which of 8 film canisters has a different mass.
Are You a Square?	Hardhatting in a Geo-World	Compare measurement of arm span to height and organize class data.
All Bottled Up	Water, Precious Water	Predict, compare, and order the volume of different bottles.
Round About Our Heads and Feet	14.04	Compare the measurement of their head circumference and foot perimeter and determine the ratio between the two.
Inquiring About Lenses	16.02	Discover that the focal length of a convex lens varies with different thickness.

Activity	Source	Students will:
Focus Pocus	16.01	Use lenses to investigate the relationship between area, lens thickness and focal length.
Flight Paths	15.07	Plot three city flight paths on a US map and precisely measure angles formed by these paths.
Beat the Heat	16.01	Determine the amount of water lost.
Bottom Line	14.09	Estimate, make, and use measurement to describe and compare soil and substrate.
Determining Diameters	16.07	Measure the diameter of a tree using a logger's diameter tape and investigate the relationship between circumference and diameter of a circle.

7.A.2b Solve addition, subtraction, multiplication and division problems using currency.		
Activity	**Source**	**Students will:**
Peddle the Metal	Hardhatting in a Geo-World	Make pasta jewelry and calculate selling price based on mass.
Cash Combos	11.09	Explore an open-ended problem to discover how to make combination of $50.00.
Going Shopping/Back to School	4.05	Investigate the cost of school supplies.
Changing A Quarter	7.02	Determine the number of ways to make change for a quarter.

Y. B. Estimate measurements and determine acceptable levels of accuracy.		
7.B.2a Determine and communicate possible methods for estimating a given measure, selecting proper units in both customary and metric systems.		
Activity	**Source**	**Students will:**
Our Body of Water	Jaw Breakers Heart Thumpers	Measure and display the amount of water in the human body.
Sky High	Hardhatting in a Geo-World	Construct and measure free-standing structures.
Looking for a Liter	10.09	Find the dimensions of at least 5 cartons that can hold 1 liter.
Leapin' Frogs	13.09	Make an origami frog and measure and graph results.
Classifying Cotton	Crazy About Cotton	Compare the mass of seeds, lint, and trash to determine the percentage of those in a sample boll of cotton.
Metric Scavenger Hunt	Math + Science- A Solution	Estimate measurements in metric system and search for items of specific lengths.
Hands On The Giant	Jaw Breakers Heart Thumpers	Use human body ratios to determine height of giant given hand print.
Hands On The Giant	Jaw Breakers Heart Thumpers	(Teacher Article)

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Activity	Source	Students will:
Measure Hunt	14.09	Identify attributes such as length, area, and volume and know the type of unit and tool needed to measure each attribute.

7.B.2b Estimate conversions between measures within the customary and metric systems.		
Activity	**Source**	**Students will:**
Mixing Measures	Proportional Reasonings	Measure items in centimeter and inches to determine a conversion rate and make a scatter plot of the data.

Z. C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.		
7.C.2a Describe relationships in a simple scale drawing.		
Activity	**Source**	**Students will:**
A Whale of a Scale	11.10	Make a scale drawing of a whale using their heights.
Scale the Room	Finding Your Bearings	Record room measurements and draw a map to scale.
Up & Down the Scale	12.05	Draw top-down views of various objects and replicate in different scales.
Shrinking Boundaries	Finding Your Bearings	Create a scale drawing of half a basketball court and combine with another student's drawing to complete a full court.
What a Plan!	Finding Your Bearings	Interpret and enlarge to scale plans for a house.
Peachy Keen	17:06	Detect how large to make a peach based on the height of an average student. Use it to make other scale models of critters coordinated with James and the Giant Peach
Bicycling Through Yellowstone	17:07	Use a coordinate grid with a map of Yellowstone to trace a directed route and write a similar travel plan for others to use.

7.C.2b Construct or draw figures with given perimeters and areas.		
Activity	**Source**	**Students will:**
Twenty-4 Square	9.01	Make as many different rectangles as they can using 24 squares.
Working Out the Wiggles	Hardhatting in a Geo-World	Construct, test, and find ways to stabilize various polygons.
Side by Side	8.09	Make squares, find area and perimeter, and graph perimeter and area relating to side length.
Cube Construction	Just for the Fun of It	Use 2, 3, and 4 wooden cubes to make a variety of constructions.
Think Cards 1-5	Spatial Visualization	Construct blocks with precise volume, perimeter, and area.
Geo Strips	2.06	Use geo-strips to explore triangles.

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Paper Pinchers	Hardhatting in a Geo-World	Fold squares in various ways to explore area.
Constant Areas	13.07	Use different perimeters to construct rectangular figures with constant areas.

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Late Elementary Mathematics

GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

AA. A. Describe numerical relationships using variables and patterns.

8.A.2a Identify, describe and extend simple geometric and numeric patterns.

Activity	Source	Students will:
Picking Apart Patterns	8.05	Construct, describe, and group similar patterns.
Fibonnaci Magic	Historical Connections III	Create a numerical pattern using Fibonnaci as a model.
The Up and Down Staircase	9.02	Use cubes to identify, describe, and extend a geometric pattern.
Bear Soccer	Primarily Bears	Solve a logic matrix.
Now What?	What's Next? Vol. 3	Extend a variety of visual patterns.
In and Out	What's Next? Vol. 1	Explore function using a table.
Bicycles, Tricycles, and Wagons	12.01	Investigate a numeric pattern through the use of a T table.

8.A.2b Construct and solve number sentences using a variable to represent an unknown quantity.

Activity	Source	Students will:
Stamp Patterns	15.09	(Teacher Article)
Stamp It Paid	15.09	Determine the pattern of sums possible using a set of fixed values.
Heads "N" Tails	Just For the Fun of It	Use mathematical reasoning to discover the solution to several word problems.

BB. B Interpret and describe numerical relationships using tables, graphs and symbols.

8.B.2 Analyze a geometric pattern and express the results numerically.

Activity	Source	Students will:
Fractions with Pattern Blocks	12.04	Use pattern blocks to explore equivalency and write algebraically.
Tangrammy Squares	Fabulous Fractions	Use tangrams to explore geometric patterns.
Rectangle Round-Up	What's Next? Volume III	Determine the total number of rectangles on an 8X8 checkerboard and express numerically.
Pizza Party	What's Next? Volume III	Discover a formula for the maximum amount of pieces possible when making 8 straight cuts.

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CC. C. Solve problems using systems of numbers and their properties.		
8.C.2 Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.		
Activity	**Source**	**Students will:**
Four Fours	Historical Connections I	Make equations using exactly four 4's and the operations.
Counting on Combinations	10.07	Investigate the commutative and associative properties as they create number combinations that produce a sum of fourteen.
Multiplying with Tens	Multiplication the Algebra	Use the associative and commutative property of addition and the distributive property of multiplication over addition to simplify computation of integers, fractions, and decimals.
Building Rectangles	Multiplication the Algebra Way	Use the area model to develop the relation of powers of 10 to multiply.
Picturing a Rectangle	Multiplication the Algebra Way	Multiply by partial products in an area model
Writing Rectangles	Multiplication the Algebra Way	Learn to solve multi-digit multiplication problems as a partial product algorithm.
Display Multiplication	Multiplication the Algebra Way	Learn to multiply using the display multiplication method.
Expanding the View	Multiplication the Algebra Way	Use their understanding of place value to write numbers in expanded notation form.
Horizontal Multiplication	Multiplication the Algebra Way	Determine the algorithm for using the distributive property when factors are arranged horizontally.
Picturing Multiplication	Multiplication the Algebra Way	Understand the effects of multiplying and dividing numbers.
Interpretations	Multiplication the Algebra Way	Learn to read and interpret pictures resulting from multiplication to determine factors and products involved.
From Tens to Tenths	Multiplication the Algebra Way	Use base ten materials and the distributive property to show multiplication with decimals.

DD. Use algebraic concepts and procedures to represent and solve problems.		
8.D.2 Solve linear equations involving whole numbers.		
Activity	**Source**	**Students will:**
Zap It!	Looking At Lines	Write a statement describing the pattern in a set of lines.
Worm Scaler	Brick Layers II	Explore gear ratios and apply understanding to develop a system to measure objects with the model.

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Late Elementary Mathematics

GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

EE. A. Demonstrate and apply geometric concepts involving points, lines, planes and space.

9.A.2a Build physical models of two-and three-dimensional shapes.

Activity	Source	Students will:
Slice Me Twice	Hardhatting in a Geo-World	Cut through different sized circles and construct quadrilaterals.
Geo-Panes	Hardhatting in a Geo-World	Construct physical models of 3-D shapes.
Building Boxes	9.02	Construct as many possible different sized boxes with a fixed area of 24 square units.
Squarely Constructed	9.01	Explore puzzles to cut a given shape into two pieces that can be rearranged to form a square.
Stick With Triangles	15.02	Build different triangles using Geo-sticks.
Straws Take a Stand	Hardhatting in a Geo-World	Construct a cube.
Tri-Square	13.01	Solve a puzzle in which they must construct squares each with the same area and perimeter.
Net-Sense	Hardhatting in a Geo-World	Explore pentominoes and construct boxes.
Working Out the Wiggles	Hardhatting in a Geo-World	Construct, test, and find ways to stabilize polygons.
Shape Maker	15.01	Reassemble squares and triangles to create a variety of geometric shapes.
Property Lines	16.03	Identify, compare, and analyze attributes of 2 and 3 dimensional shapes and develop vocabulary to describe the attributes.

9.A.2b Identify and describe how geometric figures are used in practical settings (e.g., construction, art and advertising).

Activity	Source	Students will:
A Triangle T Party	11.04 (pgs. 12-14)	Experience 12 stations to explore triangle relationships.
Shaping Up	Hardhatting in a GeoWorld	Observe and draw geometric shapes in nature and made by people.
Sizing Shapes	14.07	Investigate with figures from "Shaping Up" how the perimeter of shapes with a constant area changes.
Puzzling Pyramids	Historical Connections II	Problem solve how to construct pyramids with a set number of pieces.

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9.A.2c Describe and draw representations of geometric relationships, patterns, symmetries, and design in two- and three- dimensions with and without technology.		
Activity	**Source**	**Students will:**
Nine-Square Toothpick Challenge	15.02	Create a number of geometric shapes by moving/removing various numbers of toothpicks.
Families of Flakes	14.05	Draw, create, describe, and classify snowflakes.
Toothpick Triangle Challenges	15.10	Design equilateral triangles using six toothpicks.
Tessellating Triangles	16.08	Use origami to explore tessellation of congruent triangles.
Record-Making Cubes	Just For the Fun of It	Use soma cubes to record their solution to a construction puzzle.
Rules of Arrangement	17:02	Explore patterns of geometric shapes.

FF. B. Identify, describe, classify and compare relationships using points, lines, planes and solids.		
9.B.2 Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent and line symmetry.		
Activity	**Source**	**Students will:**
3-D Plot Line	11.10	Sort 3-D shapes by attributes and create a "real" line plot.
Back Talk	10.09	Determine what geometric figure label is on their back by asking peers "yes" or "no" questions.
Digging into Diagonals	15.03	Investigate how the number of sides of a polygon is related to the number of diagonals extending from the vertex.
Congruent Shape Detective	12.04	Divide congruent squares into pairs of congruent "halves".
Searching for Congruent Halves	12.06	Divide congruent squares with no center cell into two congruent halves.
Dick & Bob Are Twins	4.01	Explore horizontal and vertical symmetry.
What Symmetry!	What's Next Vol. 3	Draw and record the number of lines of symmetry.
Mirrors Reflect	Primarily Physics	Investigate symmetry using mirrors.
A Hat Trick	14.04	Investigate lines of symmetry using a "Reflect/View".
Flipping Over Symmetry	16:09	Use symmetry to analyze mathematical situations.

C. Construct convincing arguments and proofs to solve problems.
9.C.2 Formulate logical arguments about geometric figures and patterns and communicate reasoning.

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Activity	Source	Students will:
Rectangular Reckonings	8.07	Identify and justify the number of rectangles in a figure.
How Many Squares?	12.01	Use problem solving to determine the number of squares contained in a figure.
Twenty Four Square	9.01	Use problem solving to construct rectangles out of 24 squares.
Counting Quad	8.10	Determine the number of quadrilaterals in a 4 X 4 grid.
Recreating Rectangles	13.08	Use 8 pieces to find all of the possible rectangles.
Pick Out Four	8.07	Arrange 16 toothpicks to solve a variety of puzzles.
Arranging Rectangles	7.10	Use 7 shapes and arrange them to create all possible rectangles.
Give Me Five	What's Next? Volume I	Solve a problem by seeking patterns and creating a table.
Geoboard Patterns	15.01	(Teacher Article)
Junks Puzzles	16.08	Identify the number of moves it takes to transfer blocks in a geometric figure from one side to the other.
Penny Patterns	Just For the Fun of It	Find all possible solutions to arrange five pennies in a 5X5 grid and explain their answer and solution process.
That's Sum Face	Just For the Fun of It	Arrange the numbers 1-8 on the vertices of a cube so the sum of the numbers on each of the 6 faces is equal and seek patterns in the solutions.
Slides and Jumps Part I & II	Just For the Fun of It	Use markers of different colors to solve a slide and jump puzzle and discover patterns that exist.

GG. D. Use trigonometric ratios and circular functions to solve problems.		
Activity	**Source**	**Students will:**
Circle Sighs	Hardhatting in a Geo-World	Use paper clips to draw circles and determine radii and diameters.
Can You Believe It?	2.08	Predict and compare the relationship between circumference and height of a variety of cylinders.
ME Highs	15.02	Make and use a clinometer to determine the heights of vertical objects.
Practically Pi	Math + Science a Solution	Discover the relationship between the circumference and diameter of any given circle.
Bubbling Around	15.01	Use soap bubbles to explore properties of circles and explore the relationship between radius and diameter.

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Late Elementary Mathematics

GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

HH. A. Organize, describe and make predictions from existing data.		
10.A.2a Organize and display data using pictures, tallies, tables, charts, bar graphs, line plots and stem-and-leaf graphs.		
10.A.2b Using a data set, determine mean, median, mode and range, with and without the use of technology.		
10.A.2c Make predictions and decisions based on data and communicate their reasoning.		
Activity	**Source**	**Students will:**
I've Got Your Number	9.03 Just For the Fun of It	Use inference to determine an unknown number by asking "yes" and "no" questions.
Fish & Clips	Mostly Magnets	Quantify, measure, and average the number of paper clips attracted by a magnet.
Cat Scan	7.07	Use pictures of cats and represent the data in circle graphs, Binary Tree Diagrams, Venn Diagrams, and Bar Graphs.
Bicycles, Tricycles, Wagons, and Wheels	12.01	Use manipulatives to create vehicles in order to see the use of a line graph to show the relationship between the x and y axis.
What's My Line?	10.05	Interpret the line of a graph produced by the volume and height of water in bottles.
Links to Length	Hardhatting in a Geo-World	Use paper chains to create a line plot to examine range and mode.
Worldwide Highs	11.05	Collect world temperature data for a week and interpret patterns.
Life Lines	15.03	Represent data using tables and graphs of animal life expectancies.
Heroes Take a Spin	14.08	Demonstrate Newton's Third Law of motion and run the mode in statistics.
Labor Day Dilemma	15.01	Analyze calendar data to describe and interpret patterns.
Polar Brrrs	15.04	Construct an investigation to gather, organize, and interpret data.

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II. B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.
10.B.2a Formulate questions of interest and design surveys or experiments to gather data.
10.B.2b Collect, organize and describe data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and-leaf graphs.
10.B.2c Analyze the data using mean, median, mode and range, as appropriate, with or without the use of technology.
10.B.2d Interpret results or make relevant decisions based on the data gathered.

Activity	Source	Students will:
Fish & Clips	Mostly Magnets	Measure and average-- by number and mass—the small and large clips they catch.
Collecting Data	12.09	Collect, organize, and display data.
How High? How Far?	13.02	Measure and compare their heights to the class data and examine median, extremes, and graphic displays.
Ring Around the Posies	14.01	Compare and construct graph based on characteristics of flower parts.
Getting To Know You	12.01	Collect, organize, and display data about classmates.
The Marbleous Rolls	8.01	Collect data using marbles and an inclined plane and determine median, mean, and range.
M & M Count and Crunch	Math + Science-A Solution	Determine the numerical frequency of the color of M&Ms®.
And the Survey Says	17:02	Conduct a survey and create a circle percentage graph out of beads.

JJ. C. Determine, describe and apply the probabilities of events.
10.C.2a Calculate the probability of a simple event.
10.C.2b Compare the likelihood of events in terms of certain, more likely, less likely or impossible.
10.C.2c Determine the probability of an event involving “and”, “or” “not”.

Activity	Source	Students will:
Spinning Sums	11.08 Just For the Fun of It	Use a spinner (0-9) to explore probability and find most common sums.
Sharing Birthdays	9.06	Explore the probability of sharing a birthday with at least one other person.
The Maelstrom	10.07	Construct a model of a maelstrom and test probability outcomes.
Sum Domino Discoveries	3.10	Discover the probability of prime sums.
Ahlewus	4:10	Native American game based on predictions

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		of an event.
Scissors, Rock or Paper	3:05	Students will explore theoretical and experimental probabilities.
Dueling Dice	14:03	Construct and use non-standard dice to study probability.
Pot of Gold	17:08	Compute the theoretical probability of selecting the correct path to the pot of gold and perform a probability experiment.
Centering on Colors	17:10	Identify and compare median, mean and spread of sets of color synonyms.

Middle School/Junior High Mathematics

GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.

KK. A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.

6.A.3 Represent fractions, decimals, percentages, exponents and scientific notation in equivalent forms.

Activity	Source	Students will:
Sieve of Eratosthenes	Historical Connections III	Discover and explore prime numbers and multiples.
Percent Bands	Proportional Reasoning	Use rubber bands to compare ratios, percents, and decimal equivalents.
Making Cents of Percents	Proportional Reasoning	Report data in fraction, decimal, and percent format.
Patterns in Equivalent Fractions	Proportional Reasoning	Graph equivalent fractions on a coordinate plane.
Decimal Predictions	What's Next Vol. 3	Use a pattern to predict decimal representations for rational numbers.
Honeycomb Decimals	What's Next Vol. 1	Examine a pattern and fill in the cells with the correct decimals.
Patterns With A Point	What's Next Vol. 1	Identify the pattern of decimal equivalents to predict the 50^{th} digit.
Decimal Downpour	15.9	Use the internet to gather monthly precipitation figures then graph and interpret the data.

LL. B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.

6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.

Activity	Source	Students will:
Multiplying with Tens	Multiplication the Algebra Way	Calculate the number of unit cubes in a set of base ten blocks by using multiples of ten.
Building Rectangles	Multiplication the Algebra Way	Model multiplication by constructing an array and recognize powers of tens within arrays.
Picturing Rectangles	Multiplication the Algebra Way	Solve multi-digit multiplication problems with arrays and learn the solution is the sum of partial products.
Writing Rectangles	Multiplication the Algebra Way	Solve multi-digit multiplication problems with a partial product algorithm.
Display Multiplication	Multiplication the Algebra Way	Multiply using the display multiplication method.
Expanding the View	Multiplication the Algebra Way	Write numbers in expanded notation and think in terms of place value.

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Horizontal Multiplication	Multiplication the Algebra Way	Write factors in expanded notation for use in a horizontal arrangement.
Picturing Multiplication	Multiplication the Algebra Way	Picture multiplication of binomials and polynomials as the subproducts obtained by the display and other methods of multiplication.
Filling Frames	Multiplication the Algebra Way	Cover rectangles using the fewest possible number of base ten blocks and write a mathematical sentence for length X width = area using expanded notation.
Construction Plus	Multiplication the Algebra Way	Arrange base ten blocks to form rectangles and write a mathematical sentence for length X width = area using expanded notation.
From Tens to Tenths	Multiplication the Algebra Way	Use base ten materials to show multiplication with decimals.

6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.

Activity	Source	Students will:
Prime & Squares (Fermat)	Historical Connections III	Apply knowledge of prime numbers to magic squares.
Greatest Common Denominators and Least Common Multiples	Historical Connections II	Use Euclid's algorithm to find the greatest common denominator and least common multiple of two positive integers.
One Number Indivisible	17:01	Construct rectangles with square tiles to explore prime and composite numbers.

6.B.3c Identify and apply properties of real numbers including pi, squares, and square roots.

Activity	Source	Students will:
Prime & Squares (Fermat)	Historical Connections I	Generate prime numbers from perfect squares.
Heron's Square Root Method	7.03	Investigate square roots.
Finding Pi	Historical Connections II	Determine the value of pi experimentally.
Models of Square Numbers	Multiplication the Algebra Way	Construct models of square numbers and discover patterns in consecutive square numbers.
Practically Pi	Math + Science – A Solution	Understand that pi is a constant relationship between circumference and diameter.
Models of Square Numbers	Multiplication the Algebra Way	Compute the square of a number from a mental picture of its physical model.

MM. C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.		
6.C.3a Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions.		
6.C.3b Show evidence that computational results using whole numbers, fractions, decimals, decimals, percents and proportions are correct and/or that estimates are reasonable.		
Activity	**Source**	**Students will:**
Tunnel Vision	Through the Eyes of the Explorers	Investigate indirect measures.

NN. D. Solve problems using comparison of quantities, ratios, proportions and percents.		
6.D.3 Apply ratios and proportions to solve practical problems.		
Activity	**Source**	**Students will:**
Paper Clip Chains	Proportional Reasoning	Measure objects using standard and jumbo paper clips and use ratios and proportions to change clip size.
I Spy	14.01	Use proportionality, an aerial photograph, and a map to determine the relationship between distance and travel time.
Drop It	Proportional Reasoning	Understand and apply ratios, proportions, and percents to understand the bounce-to-drop ratio.
Tailor Made	Proportional Reasoning	Determine the average ratios of the circumference of different body parts and design a coat for an imaginary giant.
Star Spangled Banner	18:01	Create a large scale model of the U.S. flag based on the official proportions.

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Middle School/Junior High Mathematics

GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

OO. A. Measure and compare quantities using appropriate units, instruments and methods.

7.A.3a Measure length, capacity, weight/mass and angles using sophisticated instruments (e.g., compass, protractor, trundle wheel).

Activity	Source	Students will:
Measuring Lines	Looking at Lines	Measure items in centimeters and inches and determine a conversion rate.
Plod and Plot	15.04	Use a compass, metric tape, and protractor to physically plot and label coordinate points.

7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.

Activity	Source	Students will:
Fencing Squares	13.06	Determine the cost of fencing per unit area as a square plot increases in size.
Constant Areas	13.07	Use a 12x12 multiplication table, also known as a constant area table to graph rectangles with the same area.
Corpus All Around Us	From Head to Toe	Measure an outline of their body in metric units to find "their perimeter".
Keeping Tabs on Mass	4.09	Measure the mass of an object using pop can tabs.
Area Patterns	11.05	Compute area of a rectangle by counting tiles on a grid.
The Perimeter Area Ratio	11.06	Examine the ratio of perimeter to area in squares of different sizes.
Designing Efficient Storage Space	11.07	Design a rectangular storage space with a perimeter of 20 meters and the lowest cost per square meter of floor space.
How Slow is the Flow?	15.09	Investigate relationship between particle size and rate of flow.
Coaster Construction	16.08	Construct a roller coaster and investigate the relationship between height to potential kinetic energy.
Rising Towers	Looking at Lines	Determine the surface area of height of towers.
Books Upon Books	Looking at Lines	Collect and graph discrete data.
Temperature Conversion	Looking at Lines	Make a data table or graph comparing F and C temperature scale and describe the relationship.
Mystery Mass	Looking at Lines	Write linear function rules for situations.
Pattern Block Function	Looking at Lines	Explore, identify, and describe the relationship between perimeter and the number of tiles in a pattern.

A Winter Holiday Adventure	Looking at Lines	Take measurement of a growing plant and make predictions based on patterns of growth.
Style Tiles	Multiplication the Algebra Way	Deepen their understanding of the meaning and purpose of perimeter and area.

PP. B. Estimate measurements and determine acceptable levels of accuracy.

7.B.3 Select and apply instruments including rulers and protractors and units of measure to the degree of accuracy required.

Activity	Source	Students will:
An Inside Job	Pieces and Patterns	Measure angles and determine if they tessellate.

QQ. C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.

7.C.3a Construct a simple scale drawing for a given situation.

Activity	Source	Students will:
What a Plan	Finding Your Bearings	Interpret and enlarge to scale plans for a house.
Shrink Art	Proportional Reasoning	Compare and contrast the sizes before and after scaling.
Spacing Out the System	Out of This World	Determine the relative distance of the planets in order to construct a model of the solar system.
Doin' Dots	Proportional Reasoning	Apply their understanding of scaling to enlarge a mural.
Playing at Math	Proportional Reasoning	Measure scaled toy cars and use scaling techniques to determine the actual dimensions of a real car.
Toy Soldiers Take the Court	Proportional Reasoning	Measure a basketball and make a scale drawing of it based on a toy soldier.
Measuring Models	Proportional Reasoning	Measure models of different scales and compare them by making a drawing of them all in the same scale.
Making Movie Props	Proportional Reasoning	Use their height and the height of an action figure to establish a scale with which they will construct an enlarged object that makes them appear to be the size of the action figure.

7.C.3b Use concrete and graphic models and appropriate formulas to find perimeters, areas, surface areas and volumes of two-and three-dimensional regions.

Activity	Source	Students will:
Think Cards 1-5	Spatial Visualization	Construct models of 3D figures and determine volume, perimeter, and surface area.
Squaring Up Circles	Looking at Geometry	Discover how the area of a circle relates to the length of the circle's radius.

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GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

RR. A. Describe numerical relationships using variables and patterns.

8.A.3a Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.

Activity	Source	Students will:
Dealing with Negatives	Multiplication the Algebra Way	Become acquainted with modeling the distributive property and develop a mental image of progressive steps in use of distributive property.
Filling Frames Parts 1-2	Multiplication the Algebra Way	Represent the idea of a variable as an unknown and arrange sets of base three tiles into a rectangle.
Filling Frames Parts 3-5	Multiplication the Algebra Way	Use distributive property to compute the area and complete the l x w = area math sentence.
Mystery Numbers	Multiplication the Algebra Way	Determine the length, width, and area of a 2D rectangle.

8.A.3b Solve problems using linear expressions, equations and inequalities.

Activity	Source	Students will:
Building Picket Fences	13.01	Use pictures of picket fences to determine patterns of pickets and nails and write linear equations.
Entire Book	Looking at Lines	Use real-world situations as a context for building an understanding of linear function concepts.
On the Level I On Level II	Looking at Lines	Construct an equal arm balance to collect data and analyze data to discover the linear relationship.
Sales Calls	Looking at Lines	Interpret and graph inequalities from written statements.
Bungee Jump	16.02	Measure length, graph the data collected and derive an equation.
Let's Party	Looking at Lines	Represent and interpret data and recognize the connection of rate of change in numeric forms as equivalent to the slope.
Hooked on Algebra	14.06	Use the language of algebra to describe a stretched rubber band where length is a function of added weight.

SS. B. Interpret and describe numerical relationships using tables, graphs and symbols.

8.B.3 Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.

Activity	Source	Students will:

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The Parade of Triplets	Proportional Reasoning	Graph fractions as ordered pairs and explore the relationships and patterns.
Entire Book	Looking at Lines	Use real world situations as a context for building an understanding of linear function concepts.
Calling Long Distance	Looking at Lines	Build a cost table detailing the charges for long-distance calling.
Get Wet!	16.01	Collect and weigh objects in air and water; graph the results and predict linear relationships.
Patterns of Growth	16.07	Construct graphs comparing growth rates of trees; develop equations to predict age and height of tree from diameter.

TT. C. Solve problems using systems of numbers and their properties.

8.C.3 Apply the properties of numbers and operations including inverses in algebraic settings derived from economics, business and the sciences.

Activity	Source	Students will:
Nickels and Dimes	14.08	Interpret data and write and algebraic rule for the number of nickels and dimes that add to exactly $1.00.
Candy Combinations	14.10 Looking at Lines	Organize a method to combine 5c and 7c candies so that each represents at least 20% of the total number of pieces.

UU. D. Use algebraic concepts and procedures to represent and solve problems.

8.D.3a Solve problems using numeric, graphic or symbolic representations of variables, expressions, equations and inequalities.

Activity	Source	Students will:
Combinations I, II Positives & Negatives	Multiplication the Algebra Way	Explore positive and negative terms using base ten tiles.
Quadratic Equation Snapshots	Multiplication the Algebra Way	Translate pictures of quadratic equations into the standard written language of algebra.
Mathbot	17:05	Convert a string of symbols into a geometric diagram on a coordinate grid.

8.D.3b Propose and solve problems using proportions, formulas and linear functions.

Activity	Source	Students will:
Prime Number "Machine"	Historical Connections I	Use formulas to explore prime numbers.
Head Hunter	9.10	Determine if there is a correlation between a person's height to head circumference.
Up Periscope	15.06	Construct a working model of a periscope and use it to collect, record, and graph data;

		write an equation that describes the relationships discovered.

8.D.3c Apply properties of powers, perfect squares and square roots.		
Activity	**Source**	**Students will:**
None applicable		

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GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

VV. A. Demonstrate and apply geometric concepts involving points, lines, planes and space.

9.A.3a Draw or construct two- and three-dimensional geometric figures including prisms, pyramids, cylinders and cones.

Activity	Source	Students will:
Trying Triangles	Pieces and Patterns	Roll 3 number cubes and determine if a triangle could be made and generate a formula.
Three-Dimensional Puzzles	Puzzle Play	Construct and draw 3-D geometric figures using wooden cubes and golf balls.
Cube Construction	Just For the Fun of It	Discover and construct the seven irregular shapes that compose a Soma Cube.
Record-Making Cubes	Just For the Fun of It	Use divergent thinking to draw/record Soma Cube solutions in a many ways possible.
Property Lines	16.03	Sort quadrilaterals by attributes of their diagonals; create a tree diagram from the results.

9.A.3b Draw transformation images of figures, with and without the use of technology.

Activity	Source	Students will:
Growing Designs	Proportional Reasoning	Explore transformations by enlarging designs on graph paper and analyze the coordinates and dimensions of the enlargements.
Cut and Fold Challenge	Puzzle play	Explore the transformation of 2-D pieces of paper into 3-D shapes such as a hypersquare.
Baffling Band	Puzzle Play	Transform pieces of paper into 3-D shapes.

9.A.3c Use concepts of symmetry, congruency, similarity, scale, perspective, and angles to describe and analyze two- and three-dimensional shapes found in practical applications (e.g., geodesic domes, A-frame houses, basketball courts, inclined planes, art forms, blueprints).

Activity	Source	Students will:
Rectangle Ratios	Proportional Reasoning	Be introduced to proportionality of similar figures.
What A Plan	Finding Your Bearings	Interpret and enlarge to scale plans for a house.
Shrinking Boundaries	Finding Your Bearings	Create a scale drawing of half of a basketball court.
Rubber Band Enlargements	Proportional Reasoning	Enlarge to scale using a rubber band enlarger.
Symmetrically	16:09	Use triangles and squares to create

Challenged		tessellations.
Quad Squad	Looking at Geometry	Construct a graphic organizer showing the relationships among quadrilaterals and determine how the properties of one quadrilateral relate to the others.
Sorting Solids	Looking at Geometry	Sort and classify geometric solids by similar and distinguishing properties.
Suits for Solids	Looking at Geometry	Construct a net for a solid and determine its surface area.

Shrink Art	Proportional Reasoning	Compare and contrast the sizes before and after scaling.
Growing Designs	Proportional Reasoning	Enlarge designs on a graph and study coordinates to understand scaling.
Doin' Dots	Proportional Reasoning	Apply understanding of scaling to enlarge a mural.
Up and Down the Scale	12.05	Draw objects from a top-down view in several different scales and compare the results.
Dissection Puzzles	Puzzle Play	Use geometric shapes to build geometric concepts such as similarity, area, perimeter, and congruence while solving problems.
The Spider's Web	16.03	Reflect images, construct perpendicular bisectors, construct a line of symmetry, and compare the meaning of line symmetry.
Symmetrically Challenged	16.09	Use multiple triangles and square pieces to create square tessellations and use tessellations to explore symmetry.

WW. B. Identify, describe, classify and compare relationships using points, lines, planes and solids.

9.B.3 Identify, describe, classify and compare two- and three-dimensional geometric figures and models according to their properties.

Activity	Source	Students will:
Five-Sided Box	Paper Square Geometry	Fold a 3D five-sided box and identify its geometric properties.
Rectangular Box	Paper Square Geometry	Will fold a 3D rectangular box and determine geometric relationships between elements of the box.
Triangular Box	Paper Square Geometry	Fold a triangular box and identify the geometric properties.
Bird Tetrahedron	Paper Square Geometry	Fold a tetrahedron bird and determine the number of faces, edges, vertices, and surface area.
Regular Tetrahedron	Paper Square	Fold a regular tetrahedron and compare its

	Geometry	properties to those of the bird tetrahedron.
Cube	Paper Square Geometry	Fold a cube and identify the geometric properties.
Octahedron	Paper Square Geometry	Fold an octahedron, identify properties, and compare to other folded figures.
Dodecahedron	Paper Square Geometry	Construct a dodecahedron, identify properties, and compare to other folded figures.
Icosahedron	Paper Square Geometry	Fold an icosahedron, identify properties, and make comparisons between icosahedron and other platonic solids.
24-Sided Figure	Paper Square Geometry	Fold a 24-sided figure, identify properties, and compare/contrast the 24-sided figure stellated octahedron.

XX. C. Construct convincing arguments and proofs to solve problems.

9.C.3a Construct, develop and communicate logical arguments (informal proofs) about geometric figures and patterns.

Activity	Source	Students will:
Quarter Quandary	15.06	Investigate circumference of new quarters; observe and explain a discrepant event.
Junk's Puzzle: A Mathematical Look	16.08	Identify the number of moves necessary to move a block within a geometric puzzle and justify their strategy.
Entire Book	The Amazing Circle	Use a plain circular sheet of paper and observe, identify, and compare geometric properties and relationships as they fold, crease, unfold the circle.
Triangles and Squares	Looking at Geometry	Recognize the equality and inequalities between the sum of the areas of the squares on the short legs of a triangle compared to the area of the square on the longest side.
Puzzling Polygons	17:08	Use geometric models to represent and explain numerical and algebraic relationships.

9.C.3b Develop and solve problems using geometric relationships and models, with and without the use of technology.

Activity	Source	Students will:
Playing At Math	Proportional Reasoning	Measure scale toy cars and use scaling to determine actual dimensions of a car.
Functions In Circles	14.07	Explore circumference of a circle as a function of its diameter.
Toothpick Puzzles	Puzzle Play	Use toothpicks to construct various 2-D geometric shapes and solve puzzles.
Visual Illusions	Puzzle Play	Explore and solve problems involving visual illusions.
Determining	16.07	Use a logger's diameter tape to find the

Diameters		diameter of a tree; apply the relationship between circumference and diameter to evaluate the design and effectiveness of the tape.
Geoboard Formulas	Looking at Geometry	Generalize a method of finding the areas of rectangles by studying the figures made on a geoboard.
Pool Parallels	17:09	Use a transparent mirror to discover the path a cue ball follows when reflected off two perpendicular cushions.

YY. D. Use trigonometric ratios and circular functions to solve problems.		
9.D.3 Compute distances, lengths and measures of angles using proportions, the Pythagorean theorem and its converse.		
Activity	**Source**	**Students will:**
The Shadow Knows	Proportional Reasoning	Determine the height of an object using shadows and proportionality.
Probably Pythagorean	Pieces and Patterns	Roll 3 dice and determine the probability that the resulting triangles are acute, right, or obtuse.
Triangles of Squares	Looking at Lines	Recognize equality and inequality between the sum of the areas of the squares on the short legs of a triangle compared to the area of the square on the longest side.
Pythagoras	Historical Connections I	Explore Pythagoras and his work on his theorem for right triangles to extend their geometric understanding.

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GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

ZZ. A. Organize, describe and make predictions from existing data.

10.A.3a Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.

10.A.3b Compare the mean, median, mode and range, with and without the use of technology.

10.A.3c Test the reasonableness of an argument based on data and communicate their findings.

Activity	Source	Students will:
Making Cents of Percents	Proportional Reasoning	Construct a visual model of data to better understand proportional relationship of percents.
Global Gains	Finding Your Bearings	Construct a bar graph of global populations, note when it has doubled, and predict when it will double again.
What's In The Bag	Math + Science A Solution	Explore bags of candies and compute the average total number of candies of the percent of each color.
Dealing With Data	Math + Science A Solution	Gather and record data on what part of the school population has the same traits as they have.
Sunsational Changes	16.08	Measure, record, and graph temperature change over time.
Olympic Park Bobsled Track Part I	16.05	Use 2001 World Cup Bobsled Race data to determine measures of central tendency and spread; construct box plots to compare events and make predictions and infer reasons for differences in events.
Olympic Park Bobsled Track Part II	16.06	Use data from 2001 World Cup Bobsled Race to determine average speeds; display data on a distance versus time graph.
More Pennies in a Cup	Spills and Ripples	Determine mean and range of data collected in surface tension investigation.

AAA. B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.

10.B.3 Formulate questions (e.g., relationships between car age and mileage, average incomes and years of schooling), devise and conduct experiments or simulations, gather data, draw conclusions and communicate results to an audience using traditional methods and contemporary technologies.

Activity	Source	Students will:
Against the Wall	14.01	Measure length of legs and height of torso and graph values and compare the slope of their line with others.

Welcome to 42nd Street	13.08	Graph ordered pairs whose product is 42 and construct 3-D models.
Night and Day	14.08	Use sunrise and sunset data to compare length of day explore transition from a bar graph to a circle graph.
The Marbelous Rolls	8.01	Compute the ratio of the mean distance rolled on the carpet to distance rolled on the plane.
Color Samples	12.08	Gather data on quantity and distribution of colors in a bag of M&Ms; make graphic display and determine measure of central tendency to summarize findings.
Is Anyone Normal?	Proportional Reasoning	Use height data from class to generate stem and leaf and box and whisker plots; based on data analysis make inferences and convincing arguments.
Are You Ideal?	Proportional Reasoning	Compare their body height and arm span to da Vinci's ideal image and use a variety of graphs to gain understanding of central tendencies, dispersions, and correlation of data.
This Is So Typical	Proportional Reasoning	Gather and analyze data to determine some of the physical proportions of a typical student.
An Olympic Latitude	16.06	Plot countries on map and look for patterns to suggest reasons why latitude may influence location of winners in Winter Olympics.

BBB. C. Determine, describe and apply the probabilities of events.

10.C.3a Determine the probability and odds of events using fundamental counting principles.

Activity	Source	Students will:
See How They Roll	Pieces and Patterns	Explore the probability of rolling 3 dice so that a scalene, equilateral, or isosceles triangle is found.
Trying Triangles	Pieces and Patterns	Roll 3 cubes to represent the lengths of line segments of triangles and determine which 3 segments will construct triangles.
Who's on First	2.02	Use permutations to figure the number of arrangements.
Trait Combos	6.10	Determine the probability of inheriting certain traits and combinations of traits.
Galton Board	16.07	Construct a Galton Board to investigate probability; collect and compare data; discuss theoretic probability; compare arithmetic concepts to probability concepts.
Parking Plots	17:07	Construct bar, circle, line and box-and-whisker plots; choose the appropriate data display, and learn which measure of central

		tendency and distribution are most important attributes of national parks.

10.C.3b Analyze problem situations (e.g., board games, grading scales) and make predictions about results.		
Activity	**Source**	**Students will:**
Color Samples	12.08	Gather data with M&Ms, make graphic displays, determine measures of central tendency for the samples, and summarize findings to make predictions about other bags.
Logical Thinking Problems	Puzzle Play	Analyze problems to explore and solve puzzles.
Problem Solving and Divergent Thinking Puzzles	Puzzle Play	Use divergent thinking to solve puzzles which require "out of the box" thinking.
Hurkle Hide and Seek	Just For the Fun of It	Locate hidden objects on a coordinate graph.
Desert Crossings	Just For the Fun of It	Employ creative thinking and problem solving to solve a challenging problem.
That's Sum Face	Just For the Fun of It	Study a mathematical microworld, find solution, and search for patterns in those solutions.
Slides and Jumps	Just For the Fun of It	Learn how to solve a puzzle and look for patterns in the solution.

