

Illinois

Early Elementary Math Goals 6 - 10 Goals/Standards/Benchmarks

Correlated to AIMS Activities

Illinois State Specific Team

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Illinois State Goals/Standards/Benchmarks Early Elementary Mathematics Goals 6-10

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

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.

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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. 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.

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.

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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.

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.
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.

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Activity	Source	Students will:
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.

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.

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.

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.

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Activity	Source	Students will:
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.

B. Estimate measurements and determine acceptable level of accuracy.

7.B.1a Given a problem, describe possible methods for estimating a given measure.

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.

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.

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.

8.A.1b Solve simple number sentences (e.g., $2 + \quad = 5$).		
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.

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 (Primarily Problem Solving)	14.04	Explore, recognize, and create patterns with a set of double-six dominoes.

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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.

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.

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.

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.

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.

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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		

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.

A. 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		

B. 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.

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Activity	Source	Students will:
Valentine Candy Count	Winter Wonders	Sort, count, and graph valentine candy.

C. 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.