

Archdiocese of Chicago: Mathematics Curriculum Framework

Grade 1

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

Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Critical for Mastery</i></p> <p>1.06.01 Count with understanding, including skip counting by 2s, 5s, and 10s from zero. (6A)</p> <p>1.06.02 Develop initial understanding of place value and the base-ten number system using manipulatives. (6A)</p> <p>1.06.03 Connect number words and numerals to the quantities they represent. (6A)</p> <p>1.06.04 Solve one-step addition and subtraction number sentences and word problems using concrete materials. (6B)</p> <p>1.06.05 Construct number sentences to match word problems. (6B)</p> <p>1.06.06 Explore and apply properties of addition and</p>	<p>Ask students to count out a certain amount of links. (e.g. Show me 30 links) Students could count number of students present each day.</p> <p>Using index cards have students place the cards in the proper order for requested numbers. (e.g. Show me the number 254)</p> <p>Play a concentration (matching) game or bingo.</p> <p>Use links, or cubes, or whatever is handy. Tell students a story and they must act it out with the manipulatives. (e.g. One day there was a party. The hosts of the party were 2 dogs. Then 4 dogs came to the party. How many dogs were at the party?) Have students write the number sentence to match the story.</p>	<p>Relate to Religion by counting number of days in Advent and Lent. Make a count down chain.</p> <p>Connect to language arts by writing numbers, and using phonics to sound out number words.</p> <p>Connect to language arts through writing of verbal stories. They should also sound out the words they are using. Students should also draw a picture of their story. Students should also write the number sentence that matches their story. (e.g. Alvin had 4 cakes. He gave 1 to his friend. He had 3 left.)</p>

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<p>subtraction. (6B)</p> <p>1.06.07 Compare two or more sets using manipulatives to solve problems. (6D)</p> <p>1.06.08 Describe numeric relationships using appropriate vocabulary. (equal, more than, less than). (6A)</p> <p><i>Significant to Develop</i></p> <p>1.06.09 Demonstrate concept of odd and even using manipulatives. (6A)</p>	<p>The teacher will tell a story and the students must decide if the story talks about more or less. The students will use frogs or dinosaurs or whatever, to help with the story. (e.g. One day Juan played marbles with Hector. Juan started out with 4 marbles and Hector had 5 marbles. Who had more?)</p> <p>Show students two pictures of boats, or whatever. Ask them which group has more, less, or equal.</p> <p>Give students a certain number of links or cubes. Ask them if the group represents an odd or even number.</p>	<p>Are there more days in Advent or Lent?</p> <p>Did Jesus have an odd or even number of apostles?</p>

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<p>1.06.10 Describe parts of a whole using $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$. (6A)</p> <p>1.06.11 Compute using fact families. (6A)</p> <p><i>Useful to Work On</i></p> <p>1.06.12 Use mental math counting strategies. (6C)</p> <p>1.06.13 Describe reasonable and unreasonable sums and differences. (6C)</p> <p>1.06.14</p>	<p>Using a Hershey bar, have students divide the chocolate bar into $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$. Ask them which is smaller.</p> <p>Using links or cubes of different colors or shapes, have students make 2 groups. Then add the groups. Switch the groups to show that it doesn't matter in which order they are added. Do the same with subtraction.</p> <p>Play "Around the World" using addition and subtraction math facts(flash cards).</p> <p>Ask students if it is reasonable to add the weight of an ant to the weight of an elephant or would there be a difference in the weight of the student if a mosquito landed on his/her arm?</p>	<p>In science, have the students weigh the whole Hershey bar, then weigh $\frac{1}{2}$, etc. Ask them which is heavier? Can they figure out that if they put all the pieces on the balance that they will weigh the same as the whole car</p> <p>In Art have students draw pictures of 2 groups of items. They should then write the math sentence for adding the groups. They should then draw another picture where the groups have switched places. Again write the math sentence and add. Repeat for subtraction.</p> <p>The students should write a math story, practicing their penmanship and phonics. Afterward they should write the math sentences that correlate with their story and draw a picture of their story. Then to bring in reading skills, have each student share their story with the class.</p>

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Demonstrate and describe the affects of adding and subtracting whole numbers using appropriate mathematical notation (+, -, =) and vocabulary (and, take away, have left, more, remaining). (6B)	Tell the students a math story. As you tell the story have the students write the correct math sentences.	

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

Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Critical for Mastery at Grade 1:</i></p> <p>1.07.01 Determine the attributes of an object that are measurable (e.g., length and weight are measurable; color and texture are not). (7A)</p> <p>1.07.02 Compare and order objects according to measurable attributes. (7A)</p> <p>1.07.03 Measure objects using nonstandard units. (7A)</p> <p>1.07.04 Explore and describe chronological events (e.g., calendars, timelines, seasons). (7A)</p> <p>1.07.05 Identify units of money and the value of each. (7A)</p>	<p>From home, bring in an object that has measurable and non-measurable attributes. Identify the attributes and share them with the class.</p> <p>Sort attribute blocks by size. Order them from smallest to largest.</p> <p>Trace hands onto construction paper. Measure a bookshelf (or other object) using “hand measure”.</p> <p>Display a calendar and season chart on a bulletin board. The “Student of the Day” will name point to the correct month, day, and season of the year.</p> <p>Match coins (or reproductions of them) to their corresponding values.</p>	<p>Use data in connection to a language arts presentation and use the data to illustrate the presentation.</p> <p>Use in conjunction with science (e.g., measure the length of snakes and draw different kinds of snakes). Arrange and display them in order from shortest to longest.</p> <p>Use hands to create a display for religion, “God gives us hands to help”.</p> <p>Use in connection to a language arts oral presentation.</p> <p>Sort coins for classroom mission contributions.</p>

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

Learning Standard/Outcome	Sample Assessment	Connections
<p>1.07.06 Count like sets of coins. (7A)</p> <p><i>Significant to Develop at Grade 1:</i></p> <p>1.07.07 Tell time using an analog clock. (7A)</p> <p>1.07.08 Count, compare and order sets of unlike coins. (7A)</p> <p>1.07.09 Show equivalent amounts of money. (7A)</p> <p>1.07.10 Estimate nonstandard measurements of length, weight, and capacity. (7B)</p>	<p>Given sets of like coins, count the value of a number of pennies, nickels and dimes.</p> <p>Demonstrate time to the nearest hour (using a “Judy clock”) as to when school starts, lunch begins, and school ends.</p> <p>Given sets of unlike coins (or reproductions) which are less than or equal to \$1.00, arrange them in order from least to greatest.</p> <p>Using coins, (or reproductions) exchange ten pennies for one dime or two nickels.</p> <p>Guess how many steps it would take to walk the length of the classroom. Record the estimate. Verify the actual results.</p>	<p>Use 100 pennies (or reproductions of them) to make a poster design for 100’s Day.</p> <p>Connect to language arts by writing new verses for “Hickory Dickory Dock” for the various times on the clock.</p> <p>Using Holy Childhood Association data, exchange equivalent coins to “purchase” milk for one child in a mission country.</p>

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Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Useful to Work On at Grade 1:</i></p> <p>1.07.11 Explore and explain making change using manipulatives. (7A)</p> <p>1.07.12 Select appropriate nonstandard units to measure length, weight, and capacity (e.g., number of handfuls of cubes to fill a container). (7C)</p>	<p>Purchase items in a class “store” and make change for purchases less than \$1.00.</p> <p>Estimate and record how many small cups of jellybeans it would take to fill a glass jar. Verify the results of the estimate. Was the estimate less than or greater than the actual number?</p>	<p>Connect to science: study of capacity.</p>

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

Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Critical for Mastery at Grade 1:</i></p> <p>1.08.01 Recognize, describe, and extend patterns such as sequences of sounds, motions, shapes, or simple numeric patterns, and translate from one representation to another. (8A)</p> <p>1.08.02 Describe given patterns using letters. (8A)</p> <p>1.08.03 Analyze repeating patterns. (8A)</p> <p>1.08.04 Describe and compare qualitative change. (8B)</p>	<p>Analyze the pattern of a shapes or colors.</p> <p>Use letters to represent patterns and then draw a picture of the pattern.</p> <p>Teacher sets up different patterns using linking cubes and the students must describe the patterns they see.</p> <p>Class plants a seed and they measure its growth over time and describe how the height of the plant is changing. (for example, determining whether the plant is getting taller or not)</p>	<p>Relate the topic of patterns to science by looking at the patterns in flowers or leaves.</p> <p>Make the potted plant as a gift for the students' mothers for mother's day.</p>

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

Learning Standard/Outcome	Sample Assessment	Connections
<p>1.08.05 Solve simple number sentences with variables. (for example, missing addend problems) (8C)</p> <p><i>Significant to Develop at Grade 1:</i></p> <p>1.08.06 Describe common and uncommon attributes (all, same, none) in a set. (8A)</p> <p>1.08.07 Solve real life word problems using patterns. (8D)</p>	<p>Students solve simple number sentences like: $4 + 2 = \underline{\quad}$ with the aid of activity counters.</p> <p>In groups students draw pictures of what they have in common and how they are different. Have the groups share with the class. Compare attributes of stuffed animals using Venn Diagrams.</p> <p>Solve a variety of simple number sentences and record answers on the recording sheet, using teddy bear counters.</p>	<p>Class could make a bulletin board that honors the multicultural diversity in the classroom.</p>

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

Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Critical for Mastery at Grade 1:</i></p> <p>1.09.01 Identify two-and three-dimensional shapes. (9A)</p> <p>1.09.02 Model two-dimensional geometric shapes by drawing or building. (9A)</p> <p>1.09.03 Describe and interpret relative positions in space and apply concepts of relative positions. (e.g., above and below) (9A)</p> <p>1.09.04 Recognize and describe shapes that have line symmetry. (9A)</p> <p>1.09.05 Identify geometric shapes and structures in the environment. (9A)</p>	<p>Identify shapes: triangle, rectangle, and square using attribute blocks. Sort three-dimensional shapes: sphere, cone, and cylinder by looking at examples.</p> <p>Draw shapes: triangle, rectangle, and square by looking at examples.</p> <p>Stack blocks of different colors. Students identify above, below, between, near.</p> <p>Fold and cut construction paper</p> <p>Go on a safari in the building or classroom. Assign groups to locate specific shapes.</p>	<p>In Social Studies, create a mural of a country and city scene using specific shapes. Discuss the difference between the two scenes.</p> <p>Connect to art: Draw picture incorporating shapes. Employing language art skills, describe the picture with terms such as the sun is “near” the moon or the sun is “over” the house.</p> <p>Make ornaments for a Christmas tree.</p>

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

Learning Standard/Outcome	Sample Assessment	Connections
<p>1.09.06 Identify objects that are the same shape. (9B)</p> <p>1.09.07 Compare and sort two- and three-dimensional objects. (9B)</p> <p><i>Significant to Develop at Grade 1:</i></p> <p>1.09.08 Recognize and explain geometric pattern. (9C)</p> <p><i>Useful to Work on at Grade 1:</i></p> <p>109.09 Explore the effects of translations (slides), reflections (flips), and rotations (turns) with concrete objects. (9A)</p>	<p>Play a game called “What’s My Rule” (I have three sides, who am I?)</p> <p>Sort attribute blocks. Make polygons using students’ hands and string as a loop.</p> <p>Use pattern blocks to make a design. Explain the design.</p> <p>Use mirrors against objects to see reflections. Show rotation using clock angles</p>	<p>Make a card for someone you like using a pattern block design.</p> <p>Use carbon paper to make a mirror image of your name written in manuscript.</p>

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State Goal: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability

Learning Standard/Outcome	Sample Assessment	Connections
<p><i>Critical for Mastery at Grade</i></p> <p>01.10.01 Organize, describe, and label simple data displays such as pictographs, tallies, tables, and bar graphs (10A)</p> <p><i>Significant to Develop at Grade</i></p> <p>01.10.02 Identify possible and impossible results of probability events using concrete materials (10C)</p> <p>01.10.02 Determine all possible outcomes of a given situation (10C)</p> <p>01.10.03 Compare numerical information derived from tables and graphs (10A)</p>	<p>Select an attribute such as birth month, have the students stand in these groups. Represent these people groups on paper with pictographs, tallies, tables, bar graphs.</p> <p>Put several pairs of different colored socks in a bag. Show the students what you are putting in the bag. Ask the students if you could reach in the bag and pull out a mitten. Determine all the possible outcomes for this situation.</p> <p>Put a ball, two cubes and a hat in a bag. Discuss what can happen if you reach in the bag. Draw a picture of the outcomes.</p>	<p>Make a display of the animals Noah took on the Ark.</p> <p>In Science, ask students if it is possible for certain objects to float or sink, then place the objects in water and let them see if their prediction was correct.</p> <p>Discuss certain scenarios to see if they are Possible or not, for example “Is it possible for a rabbit to swim?”</p> <p>Create a bar graph of the birthdays of the students.</p>

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Useful to Work on at Grade 01.10.04 Gather data to answer a simple question (10B)	Collect information about an attribute such as who is wearing the color red. Display this data.	Discuss the attributes of a certain book and vote if the class wants the teacher to read that book during quiet time.