

Afterschool Curriculum

Mathematics Grade 1

Learner Expectation	Show-Me Standards	Suggested Activity
<p>Algebraic Concepts</p> <p>Sets: Create/Recognize The learner will be able to construct and recognize sets with more, less, or equal members by matching.</p>	<p>MA 1.6, 1.10</p>	<p>Sets</p> <p>Objectives:</p> <ul style="list-style-type: none">-read, write, and identify the numerals 7 and 8-identify correct sets with objects of 7 and 8 <p>Materials:</p> <ul style="list-style-type: none">-chalkboard-individual counters <p>Procedure:</p> <p>Direct students to the chalkboard and point to the word “seven” and have them repeat it together. Then have the students count the number in the set together. Do the same with the number 8.</p> <p>Teacher will draw and label the sets on the board before the lesson begins.</p> <p>Closure:</p> <p>Whole class activity: students take turns at the board drawing sets of 7</p>

and 8 (teacher will decide in advance what number set and type of object to be drawn).

Evaluation:

Whole class checks work completed as a group. Individual students go to the chalkboard and draw and label the correct set of 7 or 8.

Numeral Recognition, Matching, and Writing

OVERVIEW: Most children enter the first grade able to count to twenty and many to 100; and most recognize numerals to twenty in isolation and can match one to one. However, each year there are a number of children to whom all of this is foreign. What they have learned is rote and not truly conceptualized. The following activity is designed to reinforce what many already know and to teach or reteach numeral recognition, one to one matching and the writing of numerals from 1-20.

PURPOSE: At the beginning of the year it is important to evaluate the needs of the individual child in as non threatening a way as possible. The purpose of this activity is to evaluate, reinforce and reteach numeral recognition, one to one matching and the writing of numerals from 1-20.

OBJECTIVE(s): As a result of this activity 80% of the students will be able to :

1. Count aloud sequentially from one to twenty.
2. Identify numerals (1-20) in isolation.
3. Write numerals from 1 - 20.
4. Match numerals to objects from 1 - 20.

RESOURCES/MATERIALS: Anno's Counting Book (1975), other counting books, pens or crayons, laminator or clear contact paper, a saddle stapler

ACTIVITIES AND PROCEDURES:

1. Read aloud Anno's Counting Book (1975).
2. Explore the pages of the book asking the children to describe what is seen. Allow them to find the printed numeral, the corresponding number of colored blocks, the one to one relationships between the picture and the numeral, and lastly, the introduction of the correspondence of months and seasons to numerals.
3. Allow time for each student to explore the book with a friend or alone.
4. Reread aloud Anno's Counting Book and allow the students to mention additional discoveries.
5. Give each student a piece of 8 1/2" X 11" paper folded vertically and imprinted with _____'S COUNTING BOOK.
Have the child write his/her name in the blank and design the cover using his/her theme. Laminate the cover, add five more folded sheets and staple the fold. Allow the use of felt tip pens for this project (if available), or stickers, or stamps.
6. Have each child complete page 1 - 20 using his/her chosen theme i.e. butterflies, balls, space ships or stars.
7. Have the child read aloud his/her book to:
 - a. and older student (2nd or higher)
 - b. a volunteer, AND
 - c. the classroom teach and or a paraprofessional
8. Allow several activity periods to complete this project. Give extra supervision and encouragement to

<p>Number Sentence: Create Problems The learner will be able to develop problem scenarios leading to given number sentences using addition and subtraction.</p>	<p>MA4, 1.6, 3.1</p>	<p>complete the task to those who work slowly or who are not task oriented. You could also use stickers in lieu of drawings for those who prefer.</p> <p>9. Read other counting books prior to activity times.</p> <p>TYING IT ALL TOGETHER:</p> <ol style="list-style-type: none"> 1. Have students read their books to a younger student (K). 2. Have each students read their books to a parent. 3. Make a calendar for the month of September, having students write numerals 2 - 20. Have the 1st, and 21st - 30th in place. <p>Number Sentences</p> <p>Materials:</p> <p>Cup Plate Colored beans (green and white) Pencil Chart/worksheet Chalkboard Large paper beans Chalk</p> <p>Lesson Plan:</p> <ol style="list-style-type: none"> 1. The beans will be placed in a jar and the students will be asked to guess the number of beans in the jar. After the students have guessed, the teacher will count what appears to be half of the beans in the jar. After half of the beans have been counted the students will be
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		<p>given the chance to change their estimation.</p> <p>2. The students will be asked to retrieve their plates, chart, beans and cup for this lesson. The students will then be given time to freely experiment with the materials. The attention will then be brought back to the instructor. The instructor will then model the procedure. The students will be asked to follow the model and complete the following process:</p> <ol style="list-style-type: none">1. The children will place a set of beans into a cup and shake them loose onto a plate.2. The students will be asked to count the total number of green beans and the total number of white beans.3. The children will then write an addition problem making the number of green beans the first number in the number sentence and the number of white beans the second number in the sentence.4. The children will then chart their equation on the given chart.5. The students will then count the total number of beans.6. The students will repeat steps 1-5 six times. <p>The children will then color the “Xed” blocks in different colors. The teacher will ask for results and differences of their data by comparing graphs of the children.</p> <p>Closure: The instructor will chart the students’ data or how many times they had a specific equation. The instructor will then discuss with the children patterns that they see in the chart. After the discussion, we will finish counting the number of beans in the jar and take a look at their original estimation.</p>

<p>Whole Numbers</p> <p>Addition: Represent The learner will be able to represent any situation involving the combining of sets as addition.</p> <p>Addition/Subtraction: Develop/Apply The learner will be able to develop and apply strategies for solving addition and subtraction basic facts.</p> <p>Addition: Solve/Problems/Models The learner will be able to apply concrete models to obtain solutions to basic addition problems.</p>	<p>MA 1, 1.6, 1.10</p> <p>MA 1, 1.6</p> <p>MA 1, 4, 1.6, 3.6</p>	<p>Number Tick Tack Toe</p> <p>OVERVIEW: As surely as the sun rises and sets, kids will learn how to play tick tack toe. They do not have to be taught the game. Kids learn it the way they learn jump-rope rhymes and knock-knock jokes. Yet, kids lose interest quickly because tick tack toe is not challenging enough. There are only about a dozen different outcomes. by changing the rules and symbols slightly, you can give the game new life while giving students extended practice in basic addition and subtraction facts.</p> <p>OBJECTIVE(s):</p> <ol style="list-style-type: none"> 1. Students will practice basic addition and subtraction facts to twelve. 2. Students will use high level thinking skills to win at the game of tick tack toe. <p>RESOURCES/MATERIALS: Students will simply need lots of scratch paper and pencils.</p> <p>ACTIVITIES AND PROCEDURES:</p> <ol style="list-style-type: none"> 1. The class will need to be divided into pairs. 2. Each pair makes a standard tick-tack-toe grid. 3. Instead of using X's and O's, students use the numbers 0 through 9. Use numbers 0 through 12 for a greater challenge. Each number can be used only once during a game. 4. The object of the game is to complete any row, column, or diagonal so that two of the three numbers add up to the third. The order of the numbers does not matter.
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		<p>5. The first move may NOT be in the center. (If the first player is allowed to make that move, he or she can always win the game.)</p> <p>6. The second and subsequent moves, however, can be anywhere on the grid.</p> <p>TYING IT ALL TOGETHER:</p> <p>There is not any sure fire strategy for winning this type of tick-tack-tow game. Likewise, there seems to be no advantage in going first. The games, however, tend to end with a winner rather than in ties.</p> <p>Most losses result from carelessness. It's easy to make a mistake after four or five numbers have been played. That's when the game requires close attention, higher level thinking skills, and accurate adding and subtracting.</p> <p>The game is far more complex than tick-tack-toe in that there are thousands of outcomes. The one constant is good number facts practice in an enjoyable context.</p>
<p>Numeration</p> <p>Patterns: Recognize/Explain/Extend The learner will be able to recognize, explain, extend, reproduce, and create color, rhythmic, shape, number, and letter patterns possessing simple characteristics.</p>	<p>MA 4, 1.6</p>	<p>Block It</p> <p>OVERVIEW: Students in primary grades need varied activities to help them learn basic facts and about operations.</p> <p>PURPOSE: This problem solving game uses pattern blocks to reinforce computational skills in a challenging format rather than the drudgery of drill.</p> <p>OBJECTIVE(s): Students will</p> <ol style="list-style-type: none"> 1. use problem solving strategies such as guess and check and visualization to play the game.

2. use mental mathematics to decide on the placement of pattern blocks.
3. look for patterns.

RESOURCES/MATERIALS:

Pattern blocks

Paper on which to keep score

Calculator

ACTIVITIES:

1. Two players are needed to play BLOCK IT. Each receives three each of the following pattern blocks: green triangle, blue rhombus, red trapezoid, yellow hexagon.
2. Players agree on assigned points for each color (e.g. green=1, blue=2, red=3, yellow=6).
3. The game begins with one yellow hexagon starting block placed on the playing surface. This piece does not belong to either player.
4. The first player must place one of her/his blocks such that one side of the block is completely touching on one side of the block(s) on the playing surface. The scoring for each play is the sum of the values of the block placed and those that it touches on a side. Play continues until both players use all of their pieces.

For example, Player A selects a green triangle to play, therefore the green triangle (1 point) touches the yellow hexagon (6 points) so 7 points (1+6) are scored. Player B then places a red trapezoid (3 points) such that it touches one full side of the green triangle (1 point) and one full side of the yellow hexagon (6 points); Player B scores 10 points (3+1+6). Player A places a blue rhombus (2 points) that touches one full

		<p>side of the green triangle (1 point) and one full side of the yellow hexagon (6 points) which scores another 9 points (2+1+6) giving Player A a total now of 16 points. Player B continues play in this manner.</p> <ol style="list-style-type: none"> 5. Students may use a calculator to help them keep score. 6. The player with the most total points after all pieces have been used is the winner. <p>TYING IT ALL TOGETHER</p> <ol style="list-style-type: none"> 1. Have students share their scores and strategies used. 2. What was the most points a player scored in one play in your game? the least? 3. Did students use the blocks with higher point values first or last? 4. Does Player A have an advantage by going first? 5. Is there a maximum score a player can earn? 6. If the pieces were assigned different values, how would that affect their play?
<p>Mathematics Processes</p> <p>Sorting: Classify/Objects The learner will be able to recognize, sort, and classify objects according to size, number and other characteristics.</p>	<p>MA 2, 6, 1.8</p>	<p>Valentine Candy Count</p> <p>OVERVIEW: Developing, reading, and interpreting graphs is a vital skill in today's society. It is a skill required in a variety of areas, specifically in science and math.</p> <p>PURPOSE: This activity provides a fun and exciting method through which children can explore and internalize graphing skills. Specifically, the students will discover what color Valentine Candy is found more often</p>

than any other in a standard bag of "Valentine Conversation Hearts."
The lesson takes approximately sixty minutes and is most effectively used in connection with Valentine's Day.

OBJECTIVE(s): Through this activity the students will:

1. observe, predict, sort, and classify
2. develop graphing skills such as counting and equations
3. gather and record data
4. interpret data
5. apply and generalize data

RESOURCES/MATERIALS:

- 12 oz. bag of small "Valentine Conversation Hearts"
- clear glass or plastic decanter (large enough to hold all of the hearts)
- styrofoam cups (1 cup for every 4-6 students)
- pencils
- crayons (1 crayon for each color of Valentine Candy)
- prediction graph
- final result graph
- Valentine name tags (with student's names written on them)
- sorting/classifying sheets
- student recording sheet (1 for each group of 4-6 students)
- glue stick for attaching the initial predictions to the prediction graph

ACTIVITIES AND PROCEDURES:

	<ol style="list-style-type: none">1. The teacher brings to class a glass or plastic decanter full of a 12 oz. bag of small "Valentine Conversation Hearts."2. Students predict which color candy they think will be found most frequently by placing their name Valentines on the appropriate color valentine on the prediction graph. (total class)3. Students then sort and classify a cup-full of Valentine Heart Candy according to color on their sorting/classifying sheets. (small groups)4. Next, the students record their color counts on the student recording sheet. (one member of the group records the counts while the rest of the group counts)5. Students finally graph their results on the final results graph. (graph one color at a time - one student from each group graphs one color - all students will have a turn to graph a color) <p>Discussion:</p> <ol style="list-style-type: none">a. How many (color) Valentine Hearts did we find? How manyb. What color did we find more of than any other?c. Did the prediction that you made turn out to be true?d. What if we bought a new bag of candy - would we find the same number of each color of candy? Why? Why not? <p>TYING IT ALL TOGETHER:</p> <ol style="list-style-type: none">1. Distribute the "candy hearts" for eating!2. Have the children figure out number sentences about the graph. Post their ideas on a chart near the graph.
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		<ol style="list-style-type: none"> 3. Challenge the children to think of questions to ask "you" about the graph they have just created. Many will find it is much more difficult to "ask" a question than it is to answer one! 4. Display the prediction graph and the final graph for the school to see...it will draw a lot of interest from adults as well as other students. 5. Encourage all students to share the results of this activity with their parents/guardians. 6. An extension activity for another lesson might be to have the students work in teams to recreate a graph pertaining to weather, favorite colors, types of pets, etc. the possibilities are endless!
<p>Geometry</p> <p>Shapes: Construct/Recognize/Sort The learner will be able to construct, recognize, and sort basic two- and three-dimensional shapes (circle, square, rectangle, triangle) using concrete materials.</p> <p>Positions: Relative The learner will be able to identify, describe and interpret relative positions between objects (before, between, near, etc.).</p>	<p>MA 2, 1.6, 1.10</p> <p>MA 2, 3.3, 4.1</p>	<p>Recognizing Shapes</p> <p>Materials:</p> <ul style="list-style-type: none"> • pattern blocks • black line master with triangle, circle, rectangle, and square • sorting material <p>1. <u>Shape Recognition</u></p> <p>Point to each shape on black line master one at a time. Say to the child: <i>Tell me the name of this shape.</i></p>

<p>Geometric Concepts: Explore/Environment The learner will be able to explore the geometry present in the environment.</p>	<p>MA 2, 3.3</p>	<p>If the child can't, say to the child: <i>Do you see any triangles?</i> <i>Do you see any circles?</i> <i>Do you see any squares?</i> <i>Do you see any rectangles?</i></p> <p>2. <u>Pattern copy and continue ABAB</u></p> <p>Teacher creates an ABAB pattern using pattern blocks.</p> <p>Say to the child: <i>I've made a pattern. Can you continue this pattern two more times?</i></p> <p>3. <u>Pattern copy and continue AABAAB</u></p> <p>Teacher creates an AABAAB pattern using pattern blocks.</p> <p>Say to the child: <i>I've made a pattern. Can you continue this pattern two more times?</i></p> <p>4. <u>Attribute Classification</u></p> <p>Display a large selection of sorting materials.</p> <p>Say to the child: <i>Use these materials to make two different groups or sets.</i> <i>You don't have to use them all.</i></p> <p>Say to the child: <i>Why did you group them that way?</i></p>
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<p>Measurement</p> <p>Time: 1/1/2 Hour</p> <p>The learner will be able to record time to the nearest hour and half-hour using an analog or digital clock.</p>	<p>MA 2, 3.3</p>	<p>Title - Grouchy Ladybug Time Lesson</p> <p>Performance Objective: The learners will demonstrate an understanding of using clocks to tell time by using manipulatives provided and by sketching them on paper with 100% accuracy.</p> <p>Strategies used in this lesson: Clock Manipulatives</p> <p>Materials Needed:</p> <ul style="list-style-type: none"> Teacher model clock Student manipulative clocks Clock diagrams Sticky tack/tape, or a tripod <p>Prior knowledge needed for this lesson:</p> <ul style="list-style-type: none"> Number recognition -- needs to be able to easily identify the numbers 1 - 12. <p>Key vocabulary used in the lesson:</p> <ul style="list-style-type: none"> Clock, hands, arrow, o'clock, time, hour, gentle, clockwise, counter-clockwise <p>Lesson Presentation:</p> <p>Motivation/Focus:</p> <ol style="list-style-type: none"> 1. Show the large clock and how its hand moves. 2. Ask students to state reasons why we need clocks. 3. Today, we will learn to tell time with a grouchy ladybug and fun clocks. Before we can do that, we need to discuss some key words that may be unclear or have more than one meaning so that when we use them to tell time, we all know how to interpret those words.
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		<p>Procedure/Activities:</p> <ol style="list-style-type: none">1. Talk about clock.2. The teacher will introduce some key terms and write them down.3. Each student may turn their yellow clock over and become familiar with the clock.4. Stop, clocks down.5. The teacher will read "The Grouchy Ladybug" by Eric Carle6. While the teacher reads the book, she/he will point out the times on the clocks and the students will move their clocks to show the time the book says. The teacher may call students at random to come to the big clock and show everyone the time.7. The students will draw the hands on the clocks according to the time stated below the clocks.8. When the students have finished, we will go over each one together with random students taking turns to show the correct time on the big clock.9. The teacher will check the students' clocks for 100% accuracy for "five" (sticker). <p>Evaluation/assessment:</p> <p>Each student must have all of the clocks completed on their sheets with 100% accuracy. Each student must be able to demonstrate on the manipulative clock the time asked by the teacher. The teacher will ask students to hold up their clocks with the time specified showing in order to do an "around the room" quick glance at the clocks. Each student must be able to move the clock hands to show a specified time with 100% accuracy.</p> <p>Closure: the teacher will ask the following questions...</p> <ul style="list-style-type: none">• Tell me what you liked the most about the story.• What was the hardest part of learning to move the hands on the clocks?
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<p>Tools/Instruments: Choose/Apply The learner will be able to choose or apply measurement tools for length, volume, temperature, and weight, and units of measure suitable for the given situation.</p>	<p>MA 2, 1.4, 3.7</p>	<ul style="list-style-type: none"> • What was the best part of learning to tell time this way? • What could we have done differently to make it more fun/interesting to you? <p>Extend/Enrich:</p> <ol style="list-style-type: none"> 1. Students will go to the art center and paint a picture of their favorite time of day, a clock showing the specified time (as in the Eric Carle book) and show it to the rest of the class at the end of the day with a brief description of what time it is and why it is their favorite time of day. 2. Students can work with partners to make a daily schedule similar to the one posted and illustrate the activity for each time of day. <p>Reteach:</p> <ol style="list-style-type: none"> 1. Using the sheet with the clocks that already have the hands drawn and the time written out below them and write the time in digit form. Students may color the clocks with different colored crayons. <p>Zoo Food</p> <p>Children read a chart of directions on how to prepare their zoo food. They will follow each step and measure the appropriate amount for each ingredient. Read the book <i>Curious George Visits the Zoo</i>. Talk about what kind of animals he saw. How were the animals the same. How were they different. Ask the children if they were to go to the zoo what animal would they want to see. Tell them you are going to make a snack to take to that animal. Each child gets 1 regular ice cream cone, 1 spoon full of raisins, 1/4 cup of dried banana chips, 1/4 cup of goldfish crackers, 1 spoon full of sunflower seeds, and 1 spoonful of peanuts. After making your zoo food, give each child a piece of paper with a writing line on it and a large space for illustration. Have the children write a sentence about their favorite animal and draw it at the zoo. While doing this, they</p>
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<p>Money: Count/Compare The learner will be able to count and compare a group of pennies, nickels, dimes, and quarters whose total is \$2.00 or less.</p>	<p>can enjoy their zoo food. (Have each child measure out their own ingredients. Share your pictures and sentences with others.</p> <p>Shopping</p> <p>OVERVIEW: I use this lesson to give the children a chance to apply what they have learned about money. I also use it to provide variety and incentive during review time of other skills.</p> <p>PURPOSE: Students are often taught money skills through the use of worksheets. They're seldom given a chance to apply the skill in a realistic manner and often become bored with the drill of worksheets. This lesson provides them with practice opportunities prior to going into the community to shop.</p> <p>OBJECTIVE(s): Students will be able to:</p> <ol style="list-style-type: none"> 1. Determine how much money they have in hand. 2. Find and read the price of a product. 3. Determine which product they would like to buy. 4. Determine if they have enough money for the item. 5. Count out the exact change or determine how much change they are due. <p>RESOURCES/MATERIALS: Clean trash (empty soup cans, cereal boxes, vegetable cans, etc.) and stickers to use as price tags on items or index cards with prices to label the shelf the item is on.</p> <p>ACTIVITIES AND PROCEDURES:</p> <ol style="list-style-type: none"> 1. Each child is given a set amount of change. The
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particular coins each is given is determined by which coins have already been introduced to them and which ones they have prior experience counting. Beginners start with pennies only.

2. Each child is given a set amount of work in any subject that they need extra practice on. I usually use computational math skills. How many problems need to be completed before visiting the store is determined on an individual basis by the difficulty of the work for each child and how long it will take them to complete it.

3. As the student completes the assigned number of problems (i.e. three addition problems), they bring the work and their change to the "store" where they count their money and decide what to buy while the teacher corrects the problems. The teacher or a student helper is then the store clerk and takes the change from the student. The student must tell the clerk how much change they are due, if any. The student then returns to their seat and completes another three addition problems (or whatever their assignment is) before returning to the store.

TYING IT ALL TOGETHER: After each child has progressed at least through counting quarters, I like to take them on a field trip to practice these skills in the community. Each child is responsible for paying the correct fare upon boarding the city bus and if they can bring a small amount of money, they can actually buy something in the store. If they can't bring money they window shop and compare prices. This activity is good just before winter break as it affords the children a chance to shop for gifts without the family members around they want to buy for, although some years the children are not quite ready that soon in the school year.

<p>Data Interpretation</p> <p>Data: Collect/Represent/Interpret The learner will be able to collect and represent information and interpret findings using pictures and bar graphs.</p>	<p>MA 3, 1.8</p>	<p>What is your favorite ice cream?</p> <p>Materials: construction paper brown paper for cones tape marker</p> <p>Procedure: Find a space to hang three triangles made of brown construction paper. Then take the black marker and make crisscrosses on them to make them look like ice cream cones. At the top of the spot label this "What is your favorite flavor?"</p> <p>Then cut out circles of different colors of construction paper to represent different flavors of ice cream.</p> <p>Ask every child what their favorite kind of ice cream is and then put that color up on the board. Make rows for each flavor. Then when you are done, ask the children these questions: What is the flavor that this class likes best? What flavor does this class like the least? Are any flavors tied? How many people liked chocolate the best? Vanilla? How many people are in our class? How did you figure that out?</p> <p>This is a graph. You can all read graphs. I made this graph as a bar graph. There are many other kinds of graphs. Can any one think of another kind of graph?</p>
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		<p>line graph, pie graph etc.</p> <p>Objectives: To help children learn to read a bar graph. To help them learn what a bar graph is. To help children learn how to put information into different terms.</p> <p>Extension: Make a graph to show what everyone's favorite color is in the class.</p>
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