

May Curriculum Planning Kindergarten 🍟

"If children are unable to learn, we should assume that we have not yet found the right way to teach them."



- Marie Clay

Curriculum Outcomes for May

N4 (cont'd): Represent and describe numbers 2 to 10, concretely and pictorially. [C, CN, ME, R, V]

N5 (cont'd): Compare quantities, 1 to 10, using one-to-one correspondence. [C, CN, V]

SS1(cont'd): Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight) and volume (capacity). [C, CN, PS, R, V]

SS2 (cont'd): Sort 3-D objects using a single attribute. [C, CN, PS, R, V]

SS3 (cont'd): Build and describe 3-D objects. [CN, PS, V]

Revisit

N1: Say the number sequence by 1s starting anywhere from 1 to 10 and from 10 to 1. [C, CN, V]

N2: Recognize, at a glance, and name familiar arrangements of 1 to 5 objects or dots. [C, CN, ME]

N3: Relate a numeral, 1 to 10, to its respective quantity. [CN,R,V]

Mathematical Processes

Communication (C): It is important to encourage young students to create their own representations of mathematical ideas to make sense by constructing and refining thinking. Representations may involve acting out situations, drawing, painting, or using concrete materials. Some students might even begin to use numerals and words. Opportunities for students to generate multiple representations of the same idea are a critical component of developing a deeper understanding of mathematical concepts. There should be time for children to share and discuss their representations.

Connections (CN): Sorting and classifying are basic concepts that help students organize and understand their surroundings. Through sorting and classifying experiences students come to understand that objects can be grouped in different ways. This supports part-part-whole understanding (e.g., 8 can be grouped as 7 and 1 or 5 and 3).

Reasoning (R): While working on SS2, it is important to provide students with opportunities to verbalize their sorting rule. This helps to build and solidify reasoning skills, and enhances students' observations of multiple properties.

Mental Mathematics and Estimation (ME): Kindergarteners need to begin to develop an understanding of number relationships. They need to be able to mentally decompose numbers into parts and to put the parts together to create wholes. Fluency with small numbers (up to 10) enables students to work easily with large numbers and complex mental computations later. One way to do this is to flash quick images of a ten frame with counters on the SmartBoard. Images should be shown for 3 seconds. See "Subitizing with a Ten Frame" notebook file under Lessons and Activities heading on the portal.

Problem Solving (PS): Some problems are difficult to "see" even if students draw a picture. For these problems, it can be helpful to act out the problem. When students role-play with friends, they may discover the solution as they act out the problem. Or they may recognize another strategy that will help them find the answer. Sometimes "acting out" a problem can be done with manipulative materials. See role play activites in this document.

Technology (T): Activities such as "Sort It" from the following website can provide interesting problem-solving situations and applications.

http://hzsd.ca/LearningCenter/Library/Math%20Resources/Kindergarten%20Math%20Web sites

Visualization (V): The main purpose of a ten-frame is to visualize numbers in relation to 5 and 10, or relate numbers to 5 and 10 as benchmarks. Hence, in Kindergarten, filling left to right with no empty spaces is recommended as a starting point so that students internally visualize that when you have three counters, you need two more to make five; it is two away from five; or three and two make five. Later, ten frame activities could be extended to include alternate arrangements within the ten frame.



Role Play Activities

Freddy Frog: Have students become the director and choose their cast to act this out: Freddy Frog is at the bottom of the stairs. He can move up two steps each time he hops. The pool is at the top of the stairs. Freddy Frog hops five times before he is in the pool, how many stairs are there to the pool?

Bus Stop: Line up 10 chairs. Have numeral cards 1-5 for the "bus driver", who role-plays driving to a bus stop and pickina up passengers. He or she repeatedly "pulls in to the bus stop" (e.g. the class meeting area), draws a numeral card and picks up that many passengers. Students determine how many passengers are on the bus, and how many more people can get on the bus. Play continues until approximately 10 passengers are on the bus. (Extension: Play continues until all students in the class are on the bus.)



Literature Connections



David's Father by Robert Munch - Students compare themselves with students using terms taller, shorter, and almost the same as. (SS1)

10 for Dinner by J.E. Bogart - The pages provide a setting for students to think about number combinations for 10. Have the student use a ten frame and double sided counters to create their own story showing their 2 part combinations for 10. E.g., 6 red balloons and 4 yellow balloons. (N4)



Goldilocks and the Three Bears - Using the bears' belongings, discuss length. Chairs - Using three different size chairs get the students to compare height and size. Beds - Using pictures of three different size beds get the students to compare the height of each.



Investigation Ideas

Build It: Provide students with various building materials such as Leao, snap cubes, or blocks. Ask them to recreate a given object. Have them describe and explain their representation. Teachers could model mathematical vocabulary – as tall as, round like..., flat, curved, sides, and points. While the students create, ask questions such as: How is your creation the same as the given object? How is it different? What words can you use to describe your creation? (round, flat, shaped like a box). (SS3)



Make Ten: Show students 10 clothespins on a plastic hanger. Have student partition the clothespins in two groups to show a combination for 10. Challenge students to find as many combinations as they can find for number 10. Share their findings. (N4)

Sort: Give students a mixed set of 3-D objects. Ask them to sort the objects and to explain their sorting rule. Encourage them to re-sort them in other ways. (SS2)

Interesting Websites

Students sort items using different attributes: http://www.scholastic.com/clifford/play/sortitout/sortit out.htm

For journal question, games, centre ideas and more, visit http://www.k-5mathteachinaresources.com/

Journal Ideas

Working in pairs, each student is given a die. At the same time each student rolls a die. Then record the combination in their journal (drawing dots or number sentence). Or, one student rolls 2 dice. (N4)

Ask students to find things in the classroom that are taller, shorter than, or as tall as themselves or other objects, e.g., pencil, or block tower. Ask students to identify the tallest or shortest in a group of objects, e.g., a bunch of carrots, a group of crayons or straws. (SS1)

Have your students solve the problem below by drawing a picture. A worm came out of his hole. He saw ten legs. Some were horses and some were chickens. How many horses and chickens were there? (N4)

Place four 3-D objects on a table and ask which shape does not belong (i.e., ice cream cone, tennis ball. party hat, and pylon). Have students explain why it does not belong. (SS2)

Luis has 5 apples. Some are red and some are yellow. How many are red? How many are yellow? Record as many different solutions as you can. (N4)

Order the numeral cards 0 – 10. Put out a matchina number of counters for each numeral. Record your work. (N5)

Game/Activity Ideas

Pass The Bean Bag: While students are sitting in a circle, pass a bean bag to a student, say a number between 0 - 10. Each student must continue the number sequence aloud to 10 then backwards to 0 as they pass the bean bag around the circle. (N1)

Shake and Spill: Provide students with a cup and up to 10 double sided counters. Students shake and spill counters, then compare colours using the words 'more', 'fewer', 'as many as' or 'the same as'. (N5)

Mystery Game: Select a set of objects or people. Oraanize them into two sets (e.g., sorting by hair color: blonde - not blonde or sorting by height: tall and short). Ask other students to identify and explain the sorting rule. (SS2)

Show a Number: Ask students to prepare different arrangements of objects for a given number. Use a variety of materials such as buttons, toothpicks, or paper clips to make arrangements. (N2)



Number Combination Noisy Boxes:

Children shake marble-filled boxes to create number combinations. See Portal for directions. (N4)

Model It: Provide students with modeling clay. Ask them to recreate a given object. Have them describe and explain their representation (as tall as, flat, curved sides, big, little, round, like a box, like a can). (SS3)