

Math

KINDERGARTEN

During the kindergarten year, students learn to listen, share, cooperate, use materials responsibly, and follow directions in a formal school setting. Mathematics is introduced at this level through play-based opportunities that develop and deepen students' conceptual understanding. Connections are beginning to be made between the informal knowledge of mathematics and the formal system of numerical expressions. To foster these connections, the kindergarten environment should provide a variety of concrete learning experiences.

The physical arrangement of the kindergarten classroom should allow for exploration, for manipulation of objects, and for active movement. Manipulative materials enable students to count, engage in active learning, and broaden simple mathematical concepts. Students benefit from planned, thought-provoking activities that allow for active participation and provide a rich introduction to mathematical language.

In Kindergarten, mathematical concepts include recognizing patterns and shapes, demonstrating one-to-one correspondence, making comparisons, using classification skills, and ordering sets of objects. By the end of Kindergarten, students are able to recognize numbers and basic shapes, replicate simple patterns, and communicate using mathematical terms.

Number and Operations

Students will:

1. Count in sequence
2. Relate numbers to numerals (0 to 100)
3. Identify sums to 10 and differences with minuends of 10 or less
4. Identify numbers 0 to 100
5. Compare numbers and sets to objects
 - 1 to 10
 - 11 to 20
6. Use and demonstrate knowledge of vocabulary
 - More than, less than, equal, and fewer
 - Ordinal numbers
 - First, next, last
7. Sequence numbers
8. Identify number words 0 to 10
9. Recognize that a whole object can be divided into equal parts
10. Count by 1's and 10's with beginning understanding of counting by 5's
11. Print numbers 0 to 10

GEOMETRY AND SPATIAL SENSE

12. Recognize and use calendar and time
 - Use appropriate calendar vocabulary: before, yesterday, tomorrow, today, after, etc.
 - Identify features of a calendar: days, months, seasons, dates, week
 - Develop oral language of time
 - identify parts of a analog clock: hands, face, numbers
 - identify hour, minute and colon on a digital clock
 - Tell time to the hour
13. Compare temperature
 - Observe temperature changes throughout the year: hotter, colder
14. Recognize monetary value of coins: penny, nickel, dime, quarter
15. Begin learning exchanging coins of equivalent value
16. Find the total value of similar coins
17. Estimate and measure the length of objects using nonstandard units
 - Cubes, links, paper clips, etc.
18. Use vocabulary associated with measurement
 - Longer than, shorter than, taller than, wider than, more than, less than
 - As long as, as short as, as tall as, as wide as, same as
19. Investigate the capacity of different containers
20. Describe relative location using positional terms correctly
 - Beside, inside, outside, above, below, between, on
 - Left, right
21. Identify and manipulate common shapes
22. Describe likenesses and differences in geometric shapes through exploration with beginning understanding of vocabulary: cylinder, sphere, cubes, etc.

Algebra, Patterns and Probability

23. Identify colors
24. Sort a collection of objects by various characteristics (Venn Diagram)
25. Explore and create patterns using objects and pictures
26. Reproduce and extend patterns with objects
27. Develop an understanding that a quantity remains the same when the spatial arrangements changes
28. Collect data, read and interpret graphs

* Integrate word problems in all areas