

Lace System: Mathematics Fundamentals

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School Overview:

- Brajkishore Blind Girls School is located in Ranchi, the capital of Jharkhand. This school is a residential school.
- This school has classes from 1 to 12.
- Blind girls are educated and taught to become self-reliant.
- Food and hostel facilities are provided.
- Along with studies, music and computer training are also taught here.

Lace System:

- Each plain lace represents a number, and each knot in the lace represents a specific number.
- A loose ribbon (without a knot) represents zero.
- This system helps blind children learn arithmetic gradually.
- It builds a foundation for computational thinking and is a step in algorithm design.



Objectives:

- Knowledge of mathematics is very important in daily life.
- There is difficulty in teaching mathematics through Maths Taylor's Board for the blind.
- The lace system can be used to explain mathematics easily using tape and matchsticks.
- A simple understanding of mathematics is crucial for blind students.

Materials:

- Lace/Ribbon
- Safety Pin

Process:

1. Each child is given a ribbon.
2. Counting from 1 to 10 is done using one ribbon.
3. Children are asked to tie knots (1-5, then 10).
4. Children count the knots made with their ribbons.
5. Numbers from 1 to 100 are shown on a single tape.
6. Example: To do 2×2 , two knots are tied in one lace and two knots in the other lace.

Example Exercises:

- For 312: Tie 3 knots in two laces, then 10 knots in the third lace.
- For 205: Tie two knots together by joining two laces, and the third lace separately.

Teaching Mathematical Symbols:

- With the help of a matchbox, signs of addition, subtraction, multiplication, and division can be shown.
- Blind children can identify these symbols by touching them.

Analysis:

- The tape system helps develop counting skills in children.
- Children recognize number patterns by tying knots on ribbons (e.g., 2, 4, 6, 8 for a pattern of 2).
- Recognizing patterns is an important part of computational thinking.
- Children learn to arrange numbers in a certain order by tying knots, which helps them understand sequences and algorithms.

Conclusion:

- The lace system simplifies the teaching of important subjects like mathematics for blind students.
- It develops computational thinking and logical reasoning.
- This system prepares children for future career options and helps them succeed in various aspects of life.

