

Ratio & Proportion

Author: Rekha Kulkarni, Maths teacher, Shri Manik Prabhu Academy for the Blind,
Manik Prabhu Layout, Raichur 584103, Karnataka

School Overview:

- 7 teachers are working in our school.
- CT by Vision Empower started in our school in 2021.
- CT classes are held 3 periods a week.
- 3 teachers are involved in CT.
- Students come from middle-class families.
- Social interaction is not very good.

Objectives of Ratio & Proportion:

- To describe the relationship between two quantities expressed with ratio notations.
- To solve many daily life problems using ratio and proportion.
- To analyze relationships and see multiplication patterns.

IMPLEMENTATION:

Ratio: Comparison of two quantities by division.

Proportion: Equality of two ratios.

TYPES OF PROPORTION:

- Direct Proportion:** If one quantity increases, the other also increases.
- Inverse Proportion:** If one quantity increases, the other decreases.

Materials Required:

- Aliguli mani
- Beads
- Rope
- Milk
- Sugar
- Money
- Fruits
- Scale

Methodology:

For Ratio

-Introduced with simple examples:

- Buying 20 fruits: 7 oranges and 13 apples (Ratio: 7:13).
- 1 boy and 3 girls on a bench (Ratio: 1:3).
- 5 pens for Rs. 100 and 10 pencils for the same amount (Ratio: 1:2 after simplification).

For Proportion

Explained with an activity:

- 1 cup of milk with 2 spoons of sugar (Ratio: 1:2).
- 5 cups of milk with 10 spoons of sugar (Ratio: 1:2 after simplification).

Types of Proportion:

Direct Proportion Activity:

- **Aliguli Mane Activity:**
 - Holes were filled with 2 beads each.
 - Children touch and feel each hole and say the number of beads.
 - Count beads in increasing holes (e.g., 2 holes 4 beads, 3 holes 6 beads).

Inverse Proportion Activity:

- **Rope Activity:**
 - 100cm rope divided among children.
 - As the number of children increases, each gets less rope (e.g., 2 children 50cm each, 4 children 25cm each).

Impact & Analysis

- Reinforced the concept of ratio through interactive questioning.
- Questions for practice:
 1. Direct or inverse proportion: 1 apple for 2 children, 2 apples for 4 children.
 2. Walking 1 km per hour, walking 5 km in 5 hours.
 3. 1 orange for 1 person, 1 orange for 3 persons.
- Children's analytical thinking improved.
- CT skills: Students recognize patterns in proportion problems.
- Beneficial for visually challenged children in understanding mathematical concepts.
- Participation in CT games fostered knowledge and a competitive spirit among children.

Conclusion

- Earlier, math concepts were explained without teaching materials, making it hard for children to understand.
- Vision Empower's introduction of CT games proved highly effective.
- Teaching materials and activities helped simplify complicated topics like ratio and proportion.