MINISTRY OF EDUCATION, YOUTH & INFORMATION
Every Child Can Learn, Every Child Must Learn

MATH COUNTS

NATIONAL MATHEMATICS PROGRAMME

Subject: Mathematics

Content Strand: Number

Grade: 3

Topic: Fractions

Sub-topic: Ordering fractions

Duration: 60 Minutes

Standard 1:

Students will demonstrate an understanding of numbers, types of numbers, numeration

systems, and the relationship among numbers, and apply number theory concepts to compute

fluently and solve problems.

Bench Mark:
- Use fractional numbers to name equal parts of an object or a set of objects.

Specific Objectives: By the end of the lesson, students will be able to:

(a)   Represent a given unit fraction using a number line
(b)   Arrange a set of unit fractions in ascending order
(c)   Placing unit fractions in serial order

Prior Learning:
Before doing this lesson, the students should already be able to:
- Identify numerator and denominator of a fraction and tell what each shows using parts of an object, shape or grid.
- Identify numerator and denominator; arrange numbers in ascending and descending order on number line.
- Identify different names for a fraction (equivalent fraction).

Content Summary

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A unit fraction is a fraction which refers to one part of the total number of equal parts as indicated by the denominator in any given fraction. A larger denominator indicates that the sizes of the pieces are smaller than that of fractions with smaller denominators. When comparing fractional parts of the same whole, if the numerators are the same the fraction with the smaller denominator is larger.

Engage

Provide students with another scenario:

Five frogs jump to Mosquito Land for their meal. After the first jump, the following was observed:

1. Frog 1 completed the journey

2. Frog 2 completed half of the journey

3. Frog 3 completed a third of the journey

4. Frog 4 completed a fourth of the journey

5. Frog 5 completed a fifth of the journey

- Show the five positions on one number line? How would you do this?

Explore

Provide students with five strips of paper, all having the same length. Have the students

represent each of the positions on individual strips then have them transfer this to one strip.

Explain

- Through whole class discussion, have students discuss which frog covered the greatest distance; giving supporting arguments.

- Place the distance covered by each frog in order from the greatest to the least (descending order) on a number line.

- What do you notice about the size of the jump and the number used to represent each of

 the distances? (Make the connection with the denominator)

- What if there were other frogs that jumped ~~of the~~ journey, could you, without using the

  number line, arrange in order the greatest to the least, the fractions that represent the

  distance covered by all the frogs?

Elaborate/Extend

- Provide students with the following scenario

"Sandra went on a journey with her father. After a while, she asked her father how far they had travelled. He told her they have travelled of the way. Sandra did not understand. Use a number line to help Sandra."

- Have the students, in small groups; suggest ways in which this journey could be represented on a number line.

- Provide students with strips of papers and encourage them to work in groups to formulate their ideas.

- Bring the whole group back together and have students share their findings. Build on these findings such that students are able to see the following:
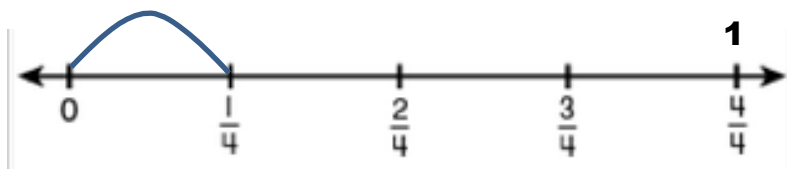
Suggested questions

  o What did you do? Was the strip of paper helpful?

  o Why do you think this represents 1/4 of the journey?

  o Based on your answer, could you show where Sandra would be if they completed of the journey?

- What if the frogs had made two jumps instead of one, would the results be the same? Can you prove it?

- What have you discovered? Do you think the same would apply if each made 3 jumps initially?

- Can you make a general statement about fractions with a common numerator?

Evaluate

Allow students to suggest a rule for ordering unit fractions.

Solve the following:

Mr. Brown sells ribbons by the length. He cuts each length of ribbon as a fraction of a roll. Help Mr. Brown place the following lengths of ribbons in order from the longest to the shortest. How did you solve the problem?