OP C

Add and subtract fractions with like denominators using models and symbols

Ribbon Task

Description

Students will determine how many decorations they can make with a given length of ribbon. Within the context of creating ribbon decorations, they will appropriately partition 3 metres of ribbon into lengths of $\frac{2}{5}$ metres and calculate the number of decorations that can be made.

Mathematics

This task will move the students towards the use of a number line to conceptualize the pieces of ribbon. They will need to partition the ribbon into appropriate sections in order to calculate the total number of decorations that can be made.

Curriculum Connections

Students will:

- represent fractional amounts such as proper and improper fractions and mixed numbers;
- add and subtract fractions with simple like and unlike denominators.

Instructional Sequence

1. Partner students and introduce the task.
2. Distribute BLM 1 and the manipulatives.
3. Provide students with time to complete the task. Circulate, using key questions to prompt student thinking.
4. Consolidate (provide opportunities for students to share solutions with the class), using key questions to elicit student thinking for discussion.

Highlights of Student Thinking

Students may:

- use repeated addition when adding lengths of $\frac{2}{5}$;
- count up using increments of $\frac{2}{5}$ using fractional or a number line;
- convert to centimetres and know that $\frac{2}{5}$ of 1 metre is 40 cm.;
- cut the 3 metres into single metres or leave it as one piece.

Key Questions

1. What happens when you count beyond $\frac{5}{5}$?
2. What does the denominator in $\frac{2}{5}$ tell you? What does the numerator tell you?
3. When we count up or add $\frac{2}{5}$, what part of the fraction changes? The numerator or the denominator?
4. Why is the denominator always the same?
5. If you had one more metre of ribbon, what would happen?

Materials

- BLM 1 (one copy per pair)
- Ribbon, string and/or paper strips to represent the ribbon
- chart paper
- markers