Preliminary Planning Sheet

Grade 4 – Sawing a Board

Domain(s)

Number and Operations—Fractions[1]

Standard(s)

4.NF.B.3d

Mathematical Practices

MP.1 MP.3 MP.4 MP.5 MP.6

Major Underlying Mathematical Concepts

- Joining and separating parts referring to the same whole
- Ordinal numbers
- Comparing fractions
- Adding and subtracting fractions
- Fraction notation

Problem Solving Strategies

- Models (manipulatives)
- Diagram/Key
- Area model
- Table
- Number line

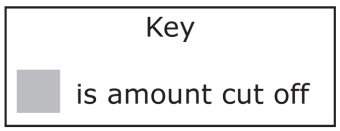
Formal Mathematical Language and Symbolic Notation

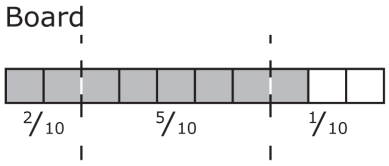
- Model
- Diagram/Key
- Area model
- Table
- Number line
- Numerator/Denominator
- Equivalent/Equal to
- Total/Sum
- Fraction
- 2/10, 5/10 ...
- Whole
- Ordinal numbers (1st, 2nd, 3rd ...)
- Greater than (>)/Less than (<)
- 50%
- Foot, feet, inches

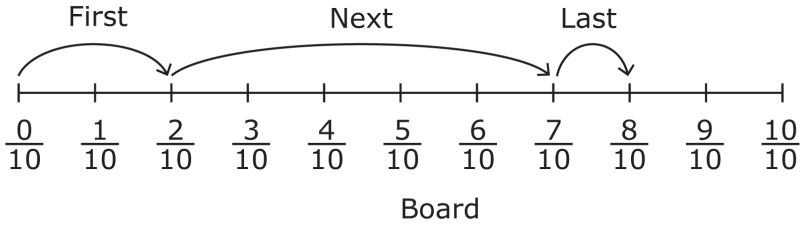
Possible Solution(s)

Gavin is correct.

Order	Amount Sawed	Total Sawed	Total Left
First	$\frac{2}{10}$	$\frac{2}{10}$	$\frac{8}{10}$
Next	$\frac{5}{10}$	$\frac{7}{10}$	$\frac{3}{10}$
Last	$\frac{1}{10}$	$\frac{8}{10}$	$\frac{1}{10}$







$$\frac{2}{10} + \frac{5}{10} + \frac{1}{10} = \frac{8}{10}$$

$$\frac{10}{10} - \frac{8}{10} = \frac{2}{10}$$

Possible Connections

Below are some examples of mathematical connections. Your students may discover some that are not on this list.

- Gavin saws the shortest piece of wood last.
- Gavin has $\frac{2}{10}$ or $\frac{1}{5}$ of the board left over.
- Gavin saws more off the board than is left on the board.
- $\frac{1}{2}$ is 50%.
- $\frac{8}{10}$ or $\frac{4}{5}$ of the board has been sawed off.
- Relate to a similar task and state a math link.
- Solve more than one way to verify the answer.
- 10 feet is 3 yards and 1 foot, or 120 inches.