

ORDERING PARTS OF A WHOLE

Performance Standard 6.A

Divide and cut rectangles into halves, thirds, and fourths and arrange those pieces in order from smallest piece to largest accordingly:

- *Mathematical knowledge:* Cut the rectangles into halves, thirds, and fourths and label the pieces as such; order the pieces from smallest to largest.
- *Strategic knowledge:* Cut the pieces precisely by folding paper and/or using a ruler.
- *Explanation:* Explain completely and clearly what was done and why it was done.

Procedures

1. ***In order to demonstrate knowledge and use of numbers and their many representations in a broad range of theoretical and practical settings (6A)***, students should experience sufficient learning opportunities to develop the following:
 - Describe parts of a whole using $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$.
 - Order concrete representations of unit fractions.
2. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it. Have students complete this assessment task individually or in small groups. (You will need to be able to observe the strategy used to find the fractional pieces.)
3. Give students 6 paper rectangles, 3 of one color (blue) and 3 of another color (red). Ask them to cut the rectangles in half two different ways. They should cut 1 blue one in half, and 1 red one in half in a different way (e.g., on the diagonal, lengthwise, or widthwise).
4. Ask them to repeat the procedure with thirds using both colors and with fourths using both colors.
5. Ask students to choose one $\frac{1}{2}$ piece, one $\frac{1}{3}$ piece and one $\frac{1}{4}$ piece of the same color. Ask students to label the pieces with $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ and glue them in order from smallest to largest.
6. Have the students explain how they knew that the pieces were labeled correctly.
7. Evaluate each student's performance using the rubric as follows and the guide for the rubric to determine each student's performance level:
 - *Mathematical knowledge:* Observe the accuracy of the pieces cut, the labeling and the ordering of the pieces.
 - *Strategic knowledge:* Observe the strategy used to cut pieces. (A student who meets or exceeds the standard will attempt more precise divisions by folding or using the ruler. A student who is approaching the standard will use a more rudimentary estimation while a student who is starting to meet or not yet starting to meet will not even get the correct amount of pieces from the cuttings (e.g. will not get 3 pieces when cutting into thirds).)
 - *Explanation:* Listen to the explanations given. (The student who exceeds the standard will explain completely how the pieces were cut, why the fractions represent each piece, and why the pieces were placed in the order represented.)

Examples of Student Work not available

Time Requirements

- 15 - 20 minutes

Resources

- Assessment rectangles
- Glue and scissors
- Rulers available
- Mathematics Rubric