



BUILDING FLAGS

OPERATION B Use models to compose and decompose fractions with like denominators as a form of adding and subtracting fractions

STUDENT ACTIONS AND THINKING

POSSIBLE TEACHER RESPONSES

<p>Students (especially younger students) may initially struggle to cover the area and to rotate the shapes to fit.</p>	<p>Give time for students to explore the materials. Multiple attempts might be required, so make extra white paper available. Gluing the pieces down might also help students with fine motor/dexterity issues, or when the flag colours keep shifting around.</p>
<p>Some students may initially treat this as a set model. For example, a student who sees this as a set model will say that $\frac{2}{6}$ of the following flag is red:</p>  <p>If a student says $\frac{2}{6}$ is red, he or she is counting the individual pieces – 2 out of 6 pieces are red – and ignoring the attribute of area. (When considering the flag as an area model as the task intends, the red area of the flag would be $\frac{2}{8}$ or $\frac{1}{4}$.)</p>	<p>Suggest the student consider the flag to be an area model.</p> <p>A helpful question at this time might be:</p> <p><i>Can you show, by using your hands, what $\frac{1}{2}$ or $\frac{3}{4}$ of your flag looks like? (Hint card #3)</i></p>
<p>Watch for students that make non-symmetrical flags. They will likely have more difficulty seeing the fourths and then therefore seeing the eighths. Two examples of asymmetrical flag designs:</p> 	<p>“Seeing” how the flag could be potentially divided into fourths makes it easier to further partition into eighths (determine the unit fraction). A helpful question at this time could be:</p> <p><i>Could you rearrange your flag so your can better recognize the fractional amount? (Hint card #2)</i></p> <p>Note: Students should be encouraged to retain asymmetrical flags as they wish.</p>
<p>Some students may struggle to find the unit fraction and to see that the flag can be divided into fourths and eighths.</p>	<p>Helpful questions at this time:</p> <p><i>Can you tile the area of the entire flag with the one piece you chose? (Hint card #1)</i></p> <p><i>Choose one shape to help you determine how many parts in the whole. (Hint card #4)</i></p>