

MO 20 min A 30 min C/D 10 min 60 min	<p><b>Learning Goals</b></p> <p>Students will:</p> <ul style="list-style-type: none"> <li>develop flexibility in ordering fractions using a variety of considerations, including benchmarks.</li> <li>consider the role of the numerator and denominator, and the connection between the two when ordering fractions on a number line.</li> <li>explain and justify their reasoning about fractions.</li> </ul>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>½ pieces of chart paper, 1 per pair</li> <li>markers</li> </ul>
Minds On...	<p><b>Pairs → Review Activity</b></p> <p>Ask students to place the fractions <math>\frac{1}{4}, \frac{2}{3}, \frac{6}{6}, \frac{8}{16}, \frac{1}{9}</math> on a number line in their notebook that extends from 0 to 1.</p> <p><b>Whole Class → Preparation for Action!</b></p> <p>Post a class number line and ask individual students to place each of the five fractions appropriately. Highlight that each fraction represents a single numerical value and ask students to share their reasoning as they place each fraction in its place. Highlight common benchmarks that students refer to as they share their reasoning, such as <math>\frac{1}{2}</math> or <math>\frac{3}{4}</math>. Also ensure that students realize that one point on the number line can be identified using multiple equivalent fractions.</p>	
Action!	<p><b>Pairs → Activity</b></p> <p>Provide each pair with a prepared number line which has unlabelled hash marks from 0 through 4. Ask them to place each of the fractions on the number line, and prepare to explain and justify their placements.</p> <p><math>\frac{1}{2}, \frac{15}{20}, \frac{10}{3}, \frac{2}{2}, 1\frac{5}{6}, 2\frac{1}{4}, \frac{15}{4}, 1\frac{10}{20}, \frac{9}{3}, \frac{19}{7}, 2\frac{5}{7}, 3\frac{4}{5}</math></p> <p><b>Whole Group → Discussion</b></p> <p>Ask students to share a fraction and the corresponding placement. Probe student thinking by asking:</p> <ul style="list-style-type: none"> <li>What strategies did you use to place the numbers?</li> <li>Which ones were easier to place? How did you place these?</li> <li>Which ones were more difficult to place? How did you place these?</li> </ul>	<p>You may wish to provide scaffolding support to some students through the use of some of the following questions:</p> <ul style="list-style-type: none"> <li>It would be helpful to place a scale on your number line first. What information can help you do this?</li> <li>You may wish to sort the fractions first. How would you sort them?</li> </ul>
Consolidate Debrief	<p><b>Whole Group → Anchor Chart for Ordering Fractions</b></p> <p>Lead generation of an anchor chart to summarize their understanding of ordering fractions. See next page for a sample.</p>	
	<p><b>Home Activity or Further Classroom Consolidation</b></p>	

## BLM Sample Anchor Chart

Things we learned about ordering fractions

- Placing fractions on a number line is one way to think about ordering the fractions. The smaller the fraction, the farther to the left of the number line it will be; the larger the fraction, the farther to the right it will be.
- We can use a benchmark to place a fraction. Benchmarks include  $\frac{1}{2}$  and 1 whole.
- When a fraction has the same numerator and denominator it is equivalent to one. E.g.,  $\frac{2}{2}=1$ .
- As the numerator of a fraction gets closer to the denominator, the value of the fraction gets closer to the next whole number. E.g.,  $\frac{5}{7}$  is close to 1.
- Improper fractions are always greater than one. E.g.,  $19/5$  is greater than 1 and greater than 3.
- The greater the denominator the smaller the size of the parts of the whole are. E.g., the pieces of  $\frac{15}{20}$  are smaller than the pieces of  $\frac{1}{2}$ .
- There are a number of different ways to represent a value using fractions. E.g.,  $1\frac{10}{20}=1\frac{1}{2}=\frac{3}{2}$ .
- When using a number line to order a set of fractions, you first have to scale your number line. To do that: decide what the smallest and largest fractions are; make sure that your number line captures these numbers without a lot of length to spare; tick off benchmarks; label 0, 1, and any other whole numbers needed.
- You don't have to think about ordering the numbers in the sequence they are written in a list. It is strategic to order the easiest numbers first.