Comparing Fractions Mentally
Another Approach

Many adults have learned the method of finding a common denominator when comparing fractions. To find a common denominator change each fraction into an equivalent fraction so the new fractions have the same denominator.

Consider using this method to compare four sevenths and six thirteenths. In this problem the lowest common denominator is the least common multiple of 7 and 13, which is 91. To get an equivalent fraction, multiply both the numerator and denominator of the fraction by the same number. Then compare the new fractions.

$\frac{4}{7}$ $\frac{6}{13}$ $\frac{4}{7}\ \frac{(x\ 13)}{(x\ 13)} = \frac{52}{91}$ $\frac{6}{13}\ \frac{(x\ 7)}{(x\ 7)} = \frac{42}{91}$ $\frac{52}{91} > \frac{42}{91}$ So $\frac{4}{7} > \frac{6}{13}$

Finding a common denominator is an accurate and useful procedure, but not always the most efficient. For example, you could compare the above fractions without finding a common denominator if you recognize that four sevenths is greater than one half and six thirteenths is less than one half. This is also an accurate and useful strategy.

Students who know a variety of reasoning strategies for ordering fractions can flexibly approach problems and solve problems accurately and efficiently. Learning a variety of reasoning strategies also helps deepen students' understanding of fractions and helps students recognize when answers make sense.