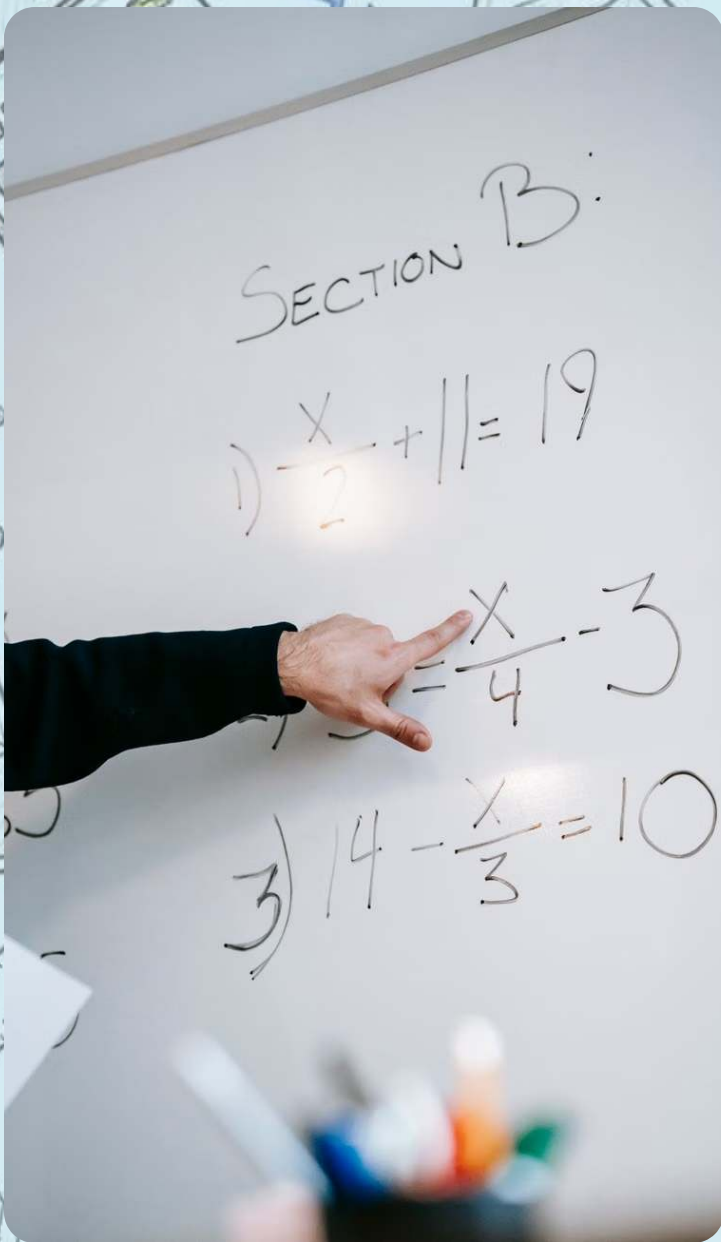




Comparing fractions with unlike denominators

Compare fractions with unlike denominators using benchmark fractions and common denominators

MATH · GRADE 4 · 45 MIN



TODAY

What we will do

Compare fractions with unlike denominators using benchmark fractions and common denominators

- 1 I can explain why two fractions with unlike denominators are hard to compare directly.
- 2 I can use the benchmark fraction one half to decide which of two fractions is greater.
- 3 I can find a common denominator to compare two fractions.
- 4 I can record a comparison using the symbols $>$, $=$, or $<$.
- 5 I can explain my reasoning using math vocabulary such as numerator, denominator, and equivalent fraction.

TURN AND TALK

Who ate more pizza?

Marisol ate $\frac{3}{4}$ of a pizza. DeShawn ate $\frac{5}{8}$. Which slice is bigger?



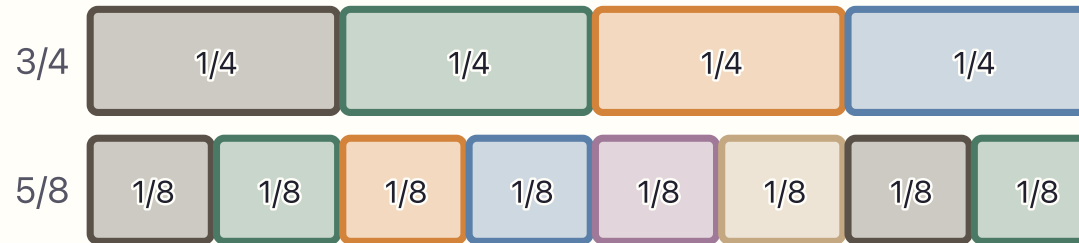
TALK *Defend your answer to your partner.*

THE PROBLEM

Different denominators mean different piece sizes

When the denominators differ, the pieces are different sizes and you cannot compare directly.

$\frac{3}{4}$ vs $\frac{5}{8}$



TWO STRATEGIES

Two ways to compare fractions

COMPARE UNLIKE DENOMINATORS

Benchmark fractions

Decide if each fraction is above or below $\frac{1}{2}$. The one further above wins.

Common denominator

Rewrite both fractions with the same denominator, then compare numerators.

Both strategies work. Pick the one that suits the numbers.

STRATEGY 1

Use the benchmark fraction $\frac{1}{2}$

If one fraction is above $\frac{1}{2}$ and the other is below, the larger one wins straight away.

Benchmark: $\frac{1}{2}$



$\frac{3}{4}$ VS $\frac{5}{8}$

$\frac{3}{4} > \frac{1}{2}$ and $\frac{5}{8} > \frac{1}{2}$, so benchmarks alone don't decide.
Move to Strategy 2.

⚠ WATCH OUT

Benchmarks only settle it when one fraction is above and one is below $\frac{1}{2}$.



STRATEGY 2

Find a common denominator

- 1 Find a number both denominators divide into. For $\frac{3}{4}$ and $\frac{5}{8}$, use 8.
- 2 Rewrite $\frac{3}{4}$ as $\frac{6}{8}$ (multiply top and bottom by 2).
- 3 Compare: $\frac{6}{8} > \frac{5}{8}$, so $\frac{3}{4} > \frac{5}{8}$.

pencil **RECORD IT** Write your answer using $>$, $=$, or $<$.

Your turn: compare fractions

Emerging

benchmark sort

Sort fraction cards as above or below $\frac{1}{2}$. Record one comparison.

_____ is greater than _____ because _____.

MATERIALS

fraction strips
fraction cards
recording sheet

Find a pair where both are above $\frac{1}{2}$.

Developing

choose your strategy

Compare four fraction pairs. Show the common denominator or benchmark you used.

_____ > _____ because the common denominator is _____.

MATERIALS

worksheet
mini whiteboard
fraction strips

Try a pair where benchmarks don't decide it.

Extending

design and compare

Create three fraction pairs that are tricky to benchmark. Compare using common denominators.

This strategy works because _____.

MATERIALS

blank task card
grid paper
vocab card

Write a rule: when must you use a common denominator?

Record every comparison with $>$, $=$, or $<$.



TODAY WE LEARNED

Three things to remember

- ✓ I can use $\frac{1}{2}$ as a benchmark to compare two fractions quickly.
- ✓ I can find a common denominator and compare numerators.
- ✓ I can record any comparison using the symbols $>$, $=$, or $<$.