Step 0 in Grade 5 Fractions: Pausing to See the Path

Step 0 is the moment before you grab your pencil — the thinking space where you scan the problem, recall what you know, and choose the best route.

Problem Prompt

$$\frac{2}{3} + \frac{3}{4} = ?$$

Step 0: Reflect

What is the problem asking?

We need to add two fractions with different denominators.

What do I know that might help?

- To add fractions, the denominators must be the same.
- The lowest common denominator (LCD) will make adding easier.

Which maths laws or methods might apply?

- **Equivalent fractions law**: multiplying numerator and denominator by the same number keeps the value the same.
- **Common denominator rule**: match the denominators before adding.

Visual Thinking

Picture **two rectangles**:

- The first one is divided into **3 equal parts** (thirds) and you shade **2 parts**.
- The second one is divided into **4 equal parts** (quarters) and you shade **3 parts**.
  You can't directly combine shaded parts because the pieces are different sizes — Step 0 tells you to first make the pieces the same size.

Step 1: Understand & Plan

- Find the LCD of 3 and 4 → 12.
- Rewrite both fractions so the denominator is 12.
- Add the numerators.

Step 2: Execute

1. Convert $\frac{2}{3}$ to twelfths: multiply top and bottom by 4 → $\frac{8}{12}$.
2. Convert $\frac{3}{4}$ to twelfths: multiply top and bottom by 3 → $\frac{9}{12}$.
3. Add numerators: $8 + 9 = 17$, keep denominator → $\frac{17}{12}$.

Step 3: Conclude & Check

- $\frac{17}{12}$ is an improper fraction.
- Convert to a mixed number: $1\frac{5}{12}$.

Answer: $1\frac{5}{12}$.

Why Step 0 Helps Grade 5 Learners

1. **Reduces rushing**: Students check "what's the same" and "what must be made the same" before starting.
2. **Connects to visuals**: The rectangle analogy helps them *see* the mismatch before they fix it.
3. **Links to maths laws**: Shows that rules aren't just "magic steps" — they have reasons.
4. **Promotes independence**: Over time, students ask these questions in their own heads before solving.