

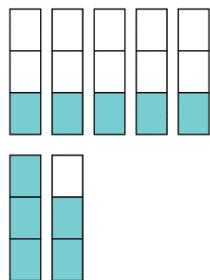
Activity 22 Assessment

Multiplying Fractions and Mixed Numbers

Multiplying Fractions and Mixed Numbers

Models multiplication of a fraction by a whole number

$$5 \times \frac{1}{3}$$

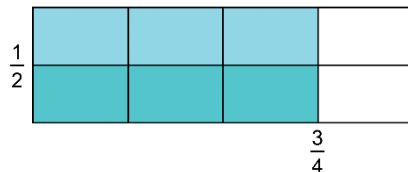


I divided one rectangle into 3 equal pieces and shaded 1 part of the rectangle. I repeated the process for a total of 5 of these rectangles. Altogether, these combined to

$$\frac{5}{3} \text{ or } 1\frac{2}{3}.$$

Models multiplication of fractions or mixed numbers

$$1\frac{1}{2} \times \frac{3}{4}$$



I drew a rectangle. Next, I drew a line to cut the width of the rectangle in half. Then I drew lines to cut the length into fourths. I shaded three-fourths of the rectangle light blue. Then I shaded one-half of the three-fourths a darker blue.

This showed 3 of 8 parts as shaded

$$\text{dark blue. So, } \frac{1}{2} \times \frac{3}{4} = \frac{3}{8}.$$

Applies a rule for multiplying fractions, including mixed numbers

$$1\frac{1}{2} \times 2\frac{5}{6}$$

I can write the mixed numbers as improper fractions, then multiply the numerators and denominators.

$$\begin{aligned} 1\frac{1}{2} \times 2\frac{5}{6} &= \frac{3}{2} \times \frac{17}{6} \\ &= \frac{3 \times 17}{2 \times 6} \\ &= \frac{51}{12} \\ &= 4\frac{3}{12} \\ &= 4\frac{1}{4} \end{aligned}$$

Solves a problem involving the multiplication of fractions or mixed numbers

A musician spends $3\frac{3}{8}$ h practicing scales each week. How many hours does the musician spend practising scales in $2\frac{1}{2}$ weeks?

$$\begin{aligned} 3\frac{3}{8} \times 2\frac{1}{2} &= \left(3 + \frac{3}{8}\right) \times \left(2 + \frac{1}{2}\right) \\ &= (3 \times 2) + \left(3 \times \frac{1}{2}\right) + \left(\frac{3}{8} \times 2\right) + \left(\frac{3}{8} \times \frac{1}{2}\right) \\ &= 6 + \frac{3}{2} + \frac{6}{8} + \frac{3}{16} \\ &= 6 + \frac{24}{16} + \frac{12}{16} + \frac{3}{16} \\ &= 6 + \frac{39}{16} \\ &= 6 + 2\frac{7}{16} \\ &= 8\frac{7}{16} \end{aligned}$$

The musician spends $8\frac{7}{16}$ h practising scales.

Observations/Documentation