4.3.21 Fractions

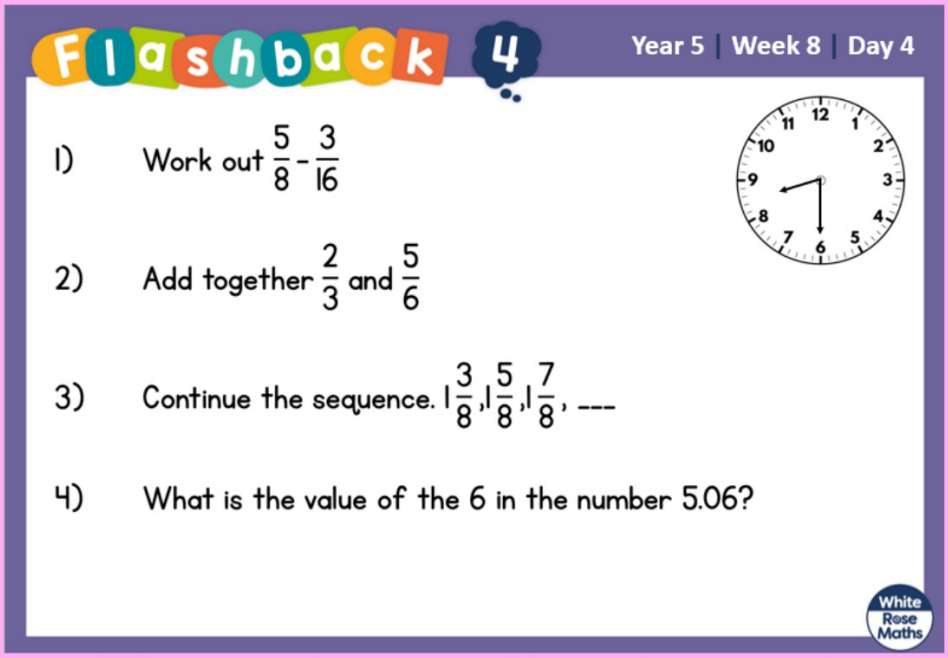
Learning Objective:
We are learning to multiply fractions.

I will be successful if:

- I can see multiplication as repeated addition.
- I can give my answer in the simplest form.
- I can use bar models to show multiplication of mixed numbers.

Key Vocabulary

- fractions as part of a whole
- equal
- representations
- numerator
- denominator
- non-unit and unit fractions
- improper fractions
- mixed number
- addition
- subtraction
- difference



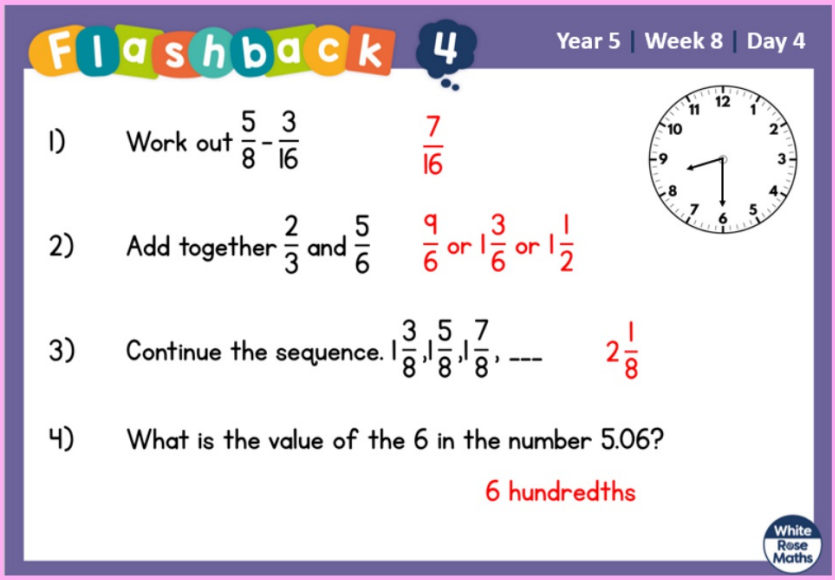
Challenge - What number lies halfway between these numbers?

5) 1.394 and 1.4

6) 5.46 and 5.51

7) 1.678 and 1.69

8) 0.132 and 0.552



Challenge - What number lies halfway between these numbers?

5) 1.397

6) 5.485

7) 1.684

8) 0.342

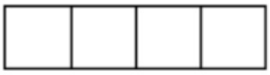
This week we have looked at a few different ways to multiply fractions.

Bar models

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

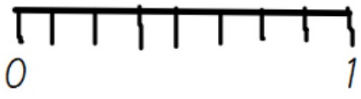
Single bar models

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

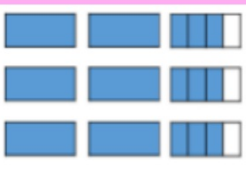


Number lines

$5 \times \frac{1}{8}$



Multiplying mixed fractions with bar models



$2 \times 3 = 6$

$\frac{3}{4} \times 3 = \frac{9}{4} = 2\frac{1}{4}$

$6 + 2\frac{1}{4} = 8\frac{1}{4}$

Use a method that you are confident with to answer the calculations.

1) $2 \times \frac{3}{11} =$

2) $2 \times 5 =$

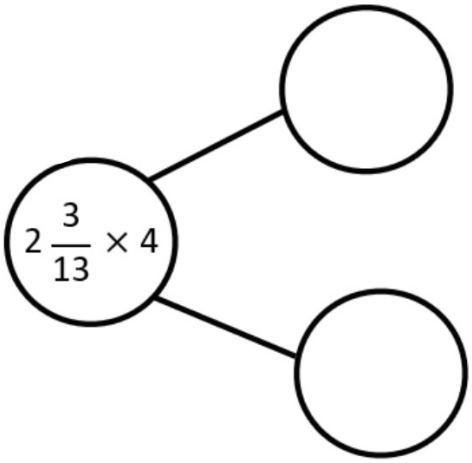
3) $2 \times 5\ \frac{3}{11} =$

4) $5\ \frac{1}{10} \times \square = 35\ \frac{7}{10}$

One bottle of milk contains $2\frac{3}{13}$ litres.

How much milk is in 4 bottles?

$$2\frac{3}{13} \times 4 =$$

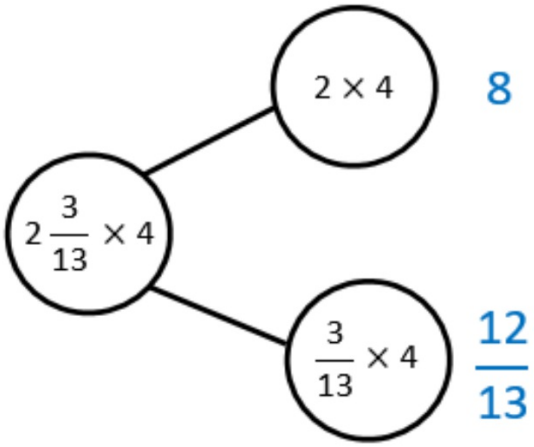


Answer

One bottle of milk contains $2\frac{3}{13}$ litres.

How much milk is in 4 bottles? $8\frac{12}{13}$ litres

$$2\frac{3}{13} \times 4 =$$



Choose an appropriate level of challenge for you and complete at least 1 column to practise multiplying fractions.

Column A

Copy and complete.

1. $\frac{1}{2} \times 9 = \frac{9}{2} = \square$
2. $\frac{3}{5} \times 4 = \frac{12}{5} = \square$
3. $\frac{7}{12} \times 3 = \frac{\square}{12} = \square$
4. $\frac{5}{6} \times 7 = \frac{\square}{6} = \square$

Work out

5. $\frac{2}{9} \times 5$
6. $\frac{3}{4} \times 11$
7. $\frac{9}{10} \times 6$
8. $\frac{5}{8} \times 2$
9. $\frac{2}{3} \times 10$
10. $\frac{6}{11} \times 4$
11. $\frac{4}{7} \times 3$
12. $\frac{2}{5} \times 8$

Column B

1. $2\frac{3}{4} \times 3 =$
2. $5\frac{1}{6} \times 9 =$
3. $4\frac{7}{10} \times 2 =$
4. $1\frac{4}{5} \times 6 =$
5. $1\frac{3}{8} \times 4$
6. $2\frac{2}{3} \times 12$
7. $1\frac{2}{7} \times 8$
8. $2\frac{3}{5} \times 2$
9. $1\frac{1}{2} \times 8$
10. $2\frac{11}{12} \times 3$
11. $1\frac{4}{9} \times 6$
12. $2\frac{1}{10} \times 4$
13. $2\frac{5}{6} \times 12$
14. $3\frac{1}{4} \times 6$
15. $1\frac{4}{11} \times 2$
16. $5\frac{1}{3} \times 9$

Column C

Work out

1. $3\frac{3}{4} \times 12$
2. $2\frac{1}{6} \times 8$
3. $7\frac{9}{10} \times 5$
4. $4\frac{2}{5} \times 3$
5. $7\frac{1}{2} \times 12$
6. $9\frac{7}{8} \times 4$
7. $4\frac{4}{7} \times 2$
8. $5\frac{2}{9} \times 6$
9. $3\frac{2}{3} \times 7$
10. $4\frac{3}{10} \times 8$
11. $2\frac{4}{5} \times 6$
12. $5\frac{1}{8} \times 12$
13. $8\frac{5}{12} \times 4$
14. $7\frac{1}{4} \times 8$
15. $3\frac{5}{6} \times 5$
16. $6\frac{4}{5} \times 9$

Reasoning challenges

1) What could the value of the missing digits be? Find two possible solutions.

$\square\frac{\square}{4} \times 3 = 2\frac{3}{\square} \times \square$ $\qquad$ $\square\frac{\square}{4} \times 3 = 2\frac{3}{\square} \times \square$

Jessie multiplies a non-unit fraction by an integer.

The fraction has a denominator which is a multiple of 5.

The product is greater than 1 but less than 2.

The integer is a factor of 20.

What could the calculation be? Find 4 possibilities. Remember to simplify the product where possible.

True or false? Explain your reasoning.

a) $\frac{3}{10} \times 3 = \frac{3}{20} \times 3$

b) $\frac{4}{11} \times 2 < 2 \times \frac{4}{11}$

c) $\frac{2}{15} \times 5 > \frac{2}{30} \times 3$