

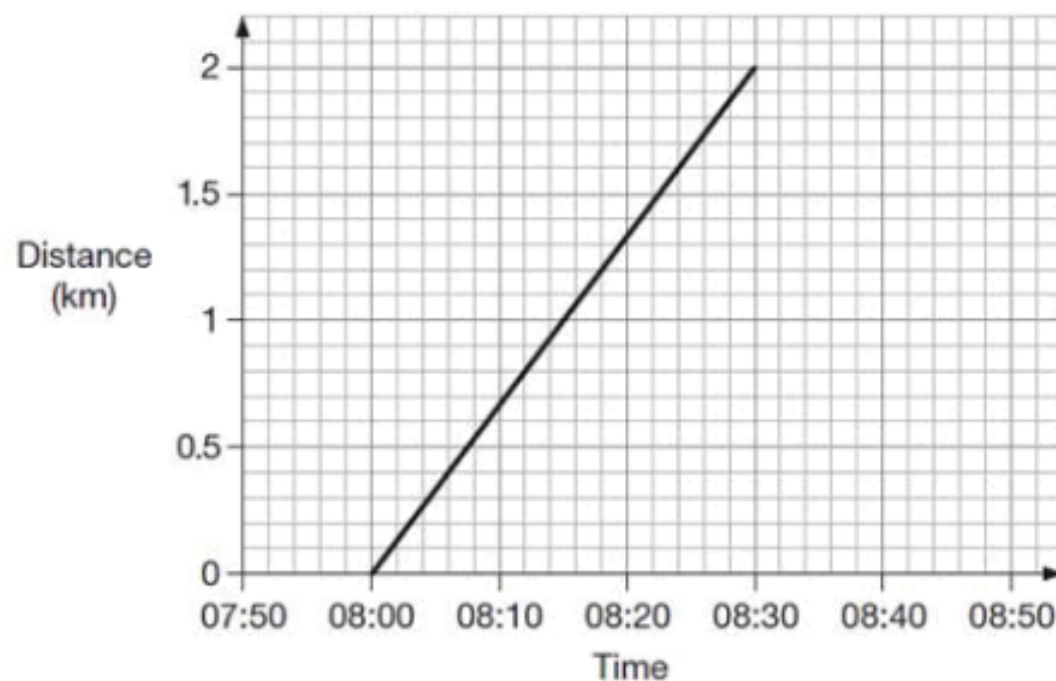


Thursday

Alfie and his brother walked from home to their school.

Their school is 2 kilometres from home.

The graph shows information about **Alfie's** journey.



- (a) How does the graph show that Alfie walked at a **constant speed** for all of his journey?



.....

- (b) Alfie's brother left home **10 minutes before** Alfie.

He arrived at school **20 minutes after** Alfie.

He walked at a **constant speed** for all of his journey.

At what time did Alfie overtake his brother?

L.O. Multiply fractions and give answers in their simplest form.

Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} =$

If 4×2 can be interpreted as:

4 multiplied by 2

4 times 2

4 lots of 2

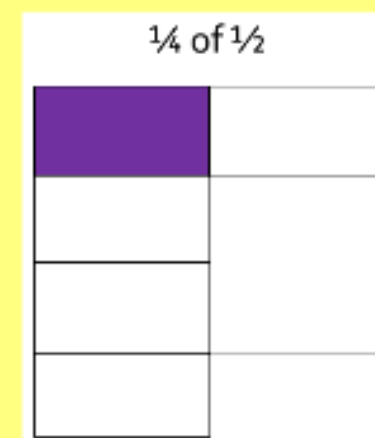
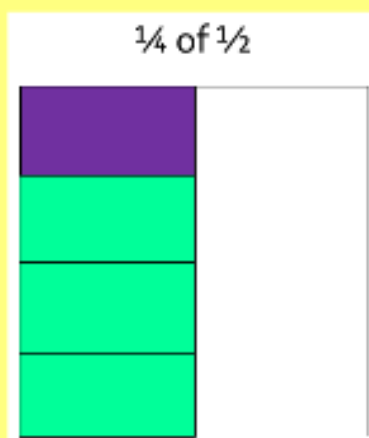
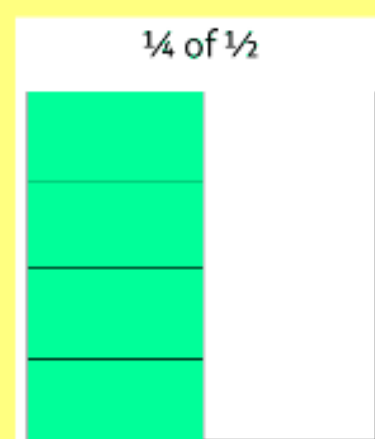
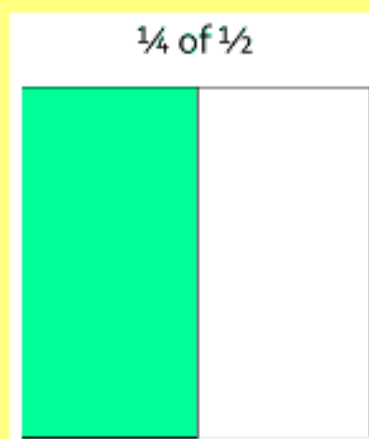
4 groups of 2

$\frac{1}{4} \times \frac{1}{2}$ can be interpreted as:

A quarter of a half (or vice versa)

$\frac{1}{4}$ of $\frac{1}{2}$

Can we use a fraction strip to model this?



*Draw fraction strips
to show $\frac{1}{3} \times \frac{1}{6}$?*

Multiplication of Fractions

Fractions \times Whole #s

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

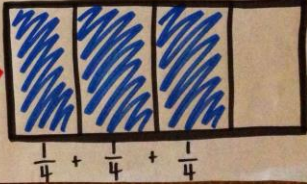
→ I've got one-fourth three times ←

REPEATED ADDITION:

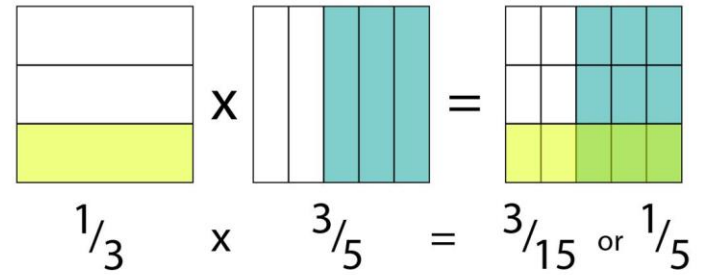
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$$

PICTURES:

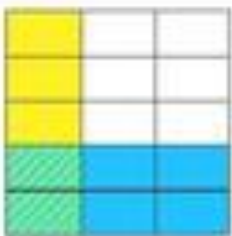

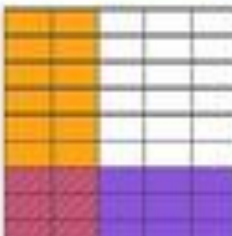
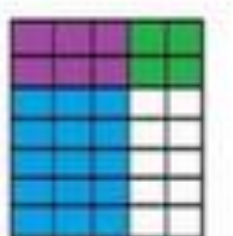

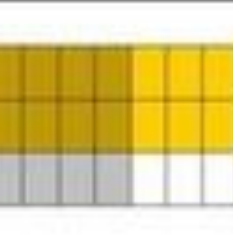
$\frac{3}{4}$ shaded



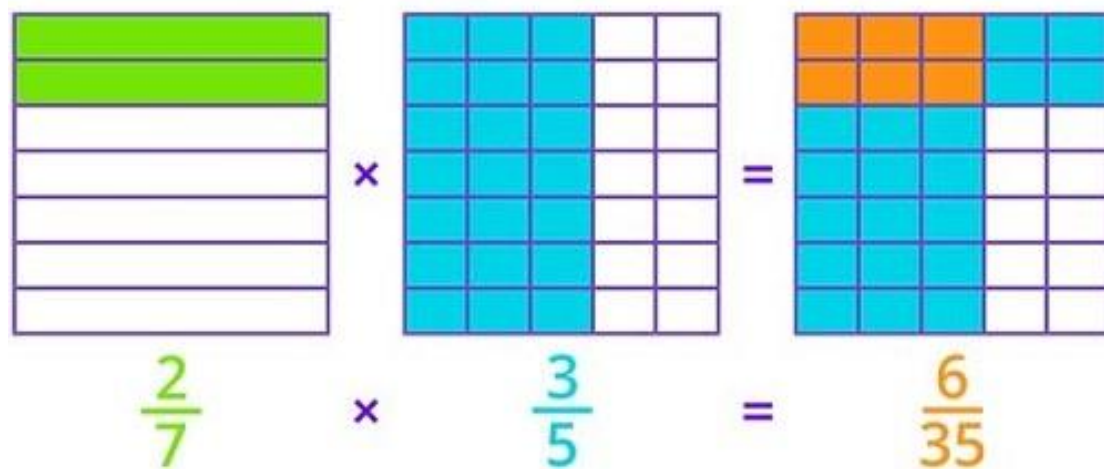
Transparent Models for



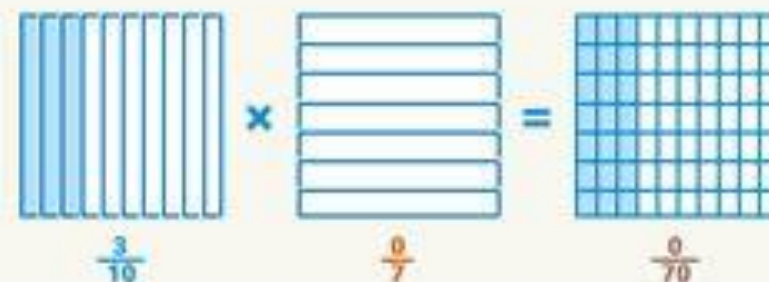
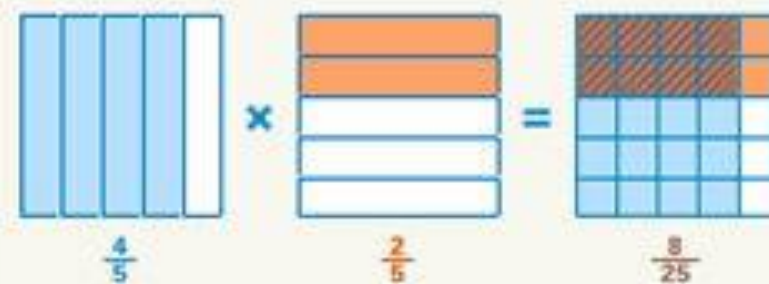
Fraction Multiplication

	$\frac{1}{3} \times \frac{2}{5}$		$\frac{1}{7} \times \frac{1}{5}$
	$\frac{2}{5} \times \frac{1}{3}$		$\frac{3}{5} \times \frac{2}{7}$
	$\frac{1}{8} \times \frac{4}{5}$		$\frac{4}{7} \times \frac{2}{3}$

Multiplying Fractions



Study each of the multiplication expressions and their products.



L.O. Multiply fractions and give answers in their simplest form

Multiply the numerators and then the denominators

Multiply then cancel.

[illegible]

[illegible]

L.O. Multiply fractions and give answers in their simplest form.

A

Work out

Copy and complete.

1 $\frac{1}{2} \times \frac{1}{5} = \frac{1}{\square}$

2 $\frac{1}{4} \times \frac{1}{6} = \frac{1}{\square}$

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

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

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

6 $\frac{1}{2} \times \frac{3}{4} = \frac{3}{\square}$

7 $\frac{1}{5} \times \frac{2}{3} = \frac{\square}{\square}$

8 $\frac{3}{4} \times \frac{1}{10} = \frac{\square}{\square}$

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

10 $\frac{1}{5} \times \frac{1}{10}$

11 $\frac{1}{2} \times \frac{1}{4}$

12 $\frac{1}{3} \times \frac{1}{5}$

13 $\frac{1}{2} \times \frac{5}{6}$

14 $\frac{1}{3} \times \frac{2}{3}$

15 $\frac{7}{10} \times \frac{1}{2}$

16 $\frac{3}{8} \times \frac{1}{4}$

B

Copy and complete.

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

2 $\frac{3}{4} \times \frac{4}{5} = \frac{12}{\square} = \frac{3}{\square}$

3 $\frac{1}{3} \times \frac{11}{12} = \frac{\square}{\square}$

4 $\frac{5}{6} \times \frac{4}{5} = \frac{\square}{30} = \frac{\square}{3}$

5 $\frac{3}{4} \times \frac{3}{8} = \frac{\square}{\square}$

6 $\frac{3}{6} \times \frac{4}{6} = \frac{\square}{\square} = \frac{\square}{\square}$

7 $\frac{9}{10} \times \frac{5}{12} = \frac{\square}{\square} = \frac{\square}{\square}$

8 $\frac{4}{5} \times \frac{3}{8} = \frac{\square}{\square} = \frac{\square}{\square}$

Multiply and then cancel as in METHOD 1.

9 $\frac{1}{2} \times \frac{4}{7}$

10 $\frac{2}{5} \times \frac{5}{6}$

11 $\frac{2}{3} \times \frac{3}{4}$

12 $\frac{4}{5} \times \frac{7}{12}$

13 $\frac{3}{4} \times \frac{4}{9}$

14 $\frac{3}{10} \times \frac{5}{10}$

15 $\frac{3}{5} \times \frac{5}{12}$

16 $\frac{2}{3} \times \frac{9}{10}$

Multiply and then cancel.

1 $\frac{3}{4} \times \frac{8}{9} = \frac{24}{36} = \frac{2}{3}$

2 $\frac{5}{12} \times \frac{3}{10} = \frac{15}{120} = \frac{1}{8}$

C

Cancel and then multiply as in METHOD 2.

1 $\frac{7}{10} \times \frac{4}{5}$

5 $\frac{3}{4} \times \frac{5}{12}$

2 $\frac{2}{5} \times \frac{3}{4}$

6 $\frac{3}{10} \times \frac{8}{9}$

3 $\frac{99}{100} \times \frac{2}{9}$

7 $\frac{7}{12} \times \frac{4}{7}$

4 $\frac{7}{8} \times \frac{2}{3}$

8 $\frac{5}{6} \times \frac{39}{100}$

Change the first number into an improper fraction and work out.

9 $1\frac{3}{8} \times \frac{6}{11}$

17 $2\frac{1}{12} \times \frac{4}{5}$

10 $3\frac{3}{5} \times \frac{1}{6}$

18 $5\frac{1}{4} \times \frac{6}{7}$

11 $3\frac{1}{3} \times \frac{2}{5}$

19 $6\frac{2}{3} \times \frac{9}{10}$

12 $4\frac{1}{2} \times \frac{11}{12}$

20 $2\frac{4}{9} \times \frac{5}{11}$

13 $5\frac{4}{7} \times \frac{2}{9}$

21 $4\frac{4}{5} \times \frac{3}{6}$

14 $2\frac{7}{10} \times \frac{2}{3}$

22 $3\frac{5}{9} \times \frac{7}{8}$

15 $3\frac{7}{11} \times \frac{5}{8}$

23 $6\frac{5}{12} \times \frac{8}{11}$

16 $3\frac{3}{8} \times \frac{4}{9}$

24 $8\frac{1}{6} \times \frac{3}{7}$

Paddy uses three-fifths of a pint of milk each day. How many days will a 4-pint container of milk last? How much milk will be used on the final day to empty the container?

What is the highest common factor of 12 and 18? How would you use this to simplify $\frac{12}{18}$?

What is the largest number between 70 and 100 that is **not** a multiple of 2, 3 or 5?

$1\frac{2}{5} + ? = 2\frac{1}{4}$ Explain how you would work out this calculation.

I'm thinking of a fraction. If you add 1 to my numerator, my value is $\frac{1}{3}$. If you add 1 to my denominator, my value is $\frac{1}{4}$. What is my number?

Coins on the table

Anna put some 10p coins on the table.
One half of them were tails up.



Anna turned over two of the coins, and then
one third of them were tails up.

How many coins did Anna put on the table?

Teaching objectives

Solve mathematical problems or puzzles.
Understand simple fractions.
Explain methods and reasoning.

Make five numbers

Take ten cards numbered 0 to 9.



Each time use all ten cards.

Arrange the cards to make:

- a. five numbers that are multiples of 3
- b. five numbers that are multiples of 7
- c. five prime numbers

Make up more problems to use all ten cards
to make five special numbers.

Teaching objectives

Solve mathematical problems or puzzles.
Know 3 and 7 times tables.
Recognise prime numbers.

A

- | | | | |
|-------------------------|-------------------------|--------------------------|--------------------------|
| 1 $\frac{1}{10}$ | 5 $\frac{4}{35}$ | 9 $\frac{1}{6}$ | 13 $\frac{5}{12}$ |
| 2 $\frac{1}{24}$ | 6 $\frac{3}{8}$ | 10 $\frac{1}{50}$ | 14 $\frac{2}{9}$ |
| 3 $\frac{1}{4}$ | 7 $\frac{2}{15}$ | 11 $\frac{1}{8}$ | 15 $\frac{7}{20}$ |
| 4 $\frac{1}{12}$ | 8 $\frac{3}{40}$ | 12 $\frac{1}{15}$ | 16 $\frac{3}{32}$ |

B

- | | | | |
|--------------------------|-------------------------|--------------------------|--------------------------|
| 1 $\frac{4}{9}$ | 5 $\frac{9}{32}$ | 9 $\frac{2}{7}$ | 13 $\frac{1}{3}$ |
| 2 $\frac{3}{5}$ | 6 $\frac{1}{3}$ | 10 $\frac{1}{3}$ | 14 $\frac{3}{20}$ |
| 3 $\frac{11}{36}$ | 7 $\frac{3}{8}$ | 11 $\frac{1}{2}$ | 15 $\frac{1}{4}$ |
| 4 $\frac{2}{3}$ | 8 $\frac{3}{10}$ | 12 $\frac{7}{15}$ | 16 $\frac{3}{5}$ |

C

- | | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| 1 $\frac{14}{25}$ | 6 $\frac{4}{15}$ | 11 $1\frac{1}{3}$ | 16 $1\frac{1}{2}$ | 21 $2\frac{2}{5}$ |
| 2 $\frac{3}{10}$ | 7 $\frac{1}{3}$ | 12 $4\frac{1}{8}$ | 17 $1\frac{2}{3}$ | 22 $3\frac{1}{9}$ |
| 3 $\frac{11}{50}$ | 8 $\frac{13}{40}$ | 13 $1\frac{5}{21}$ | 18 $4\frac{1}{2}$ | 23 $4\frac{2}{3}$ |
| 4 $\frac{7}{12}$ | 9 $\frac{3}{4}$ | 14 $1\frac{4}{5}$ | 19 6 | 24 $3\frac{1}{2}$ |
| 5 $\frac{5}{16}$ | 10 $\frac{3}{5}$ | 15 $2\frac{3}{11}$ | 20 $1\frac{1}{9}$ | |

ANSWERS