Fractions

Year 6 Learning From Home

Fractions: Year 6 Learning From Home

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Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	Simplify Fractions	4	
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	Use Common Multiples	6	
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Compare and order fractions, including fractions > 1.	Compare Fractions	8-9	
	Order Fractions	10-11	
	Compare and Order Fractions	12-13	
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	Add Fractions	14-15	
	Subtract Fractions	16-17	
Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example;: $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)	Multiply Fractions	18-19	
Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$.	Divide Fractions Using a Grid	20	
	Divide Fractions	21	
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$].	Decimal Fraction Equivalents	22	

Fractions: Year 6 Learning From Home

Statutory Requirements	Worksheet	Page Number	Notes
Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.	Identify the Value of Decimal Digits	23-26	
	Multiply and Divide Decimals by 10, 100 and 1000	27-28	
Multiply one-digit numbers with up to two decimal places by whole numbers.	Multiplying Single Digit Decimals	29	
	Multiply Single Digit Decimals Word Problems	30	
Use written division methods in cases where the answer has up to two decimal places.	Written Division 2 Decimal Places	31	
Solve problems which require answers to be rounded to specified degrees of accuracy.	Rounding to Specific Degrees of Accuracy	32-33	
	Solve Problems to Specified Degree of Accuracy Word Problems	34	
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	Recall and Use Equivalences Word Problems	35	
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Simplifying Fractions

Using common factors, simplify the following fractions to their simplest form:

1. $\dfrac{4}{16}$ = ——

2. $\dfrac{14}{21}$ = ——

3. $\dfrac{6}{15}$ = ——

4. $\dfrac{18}{34}$ = ——

5. $\dfrac{9}{12}$ = ——

6. $\dfrac{36}{45}$ = ——

7. $\dfrac{12}{20}$ = ——

8. $\dfrac{42}{64}$ = ——

9. $\dfrac{15}{24}$ = ——

10. $\dfrac{15}{35}$ = ——

11. $\dfrac{14}{16}$ = ——

12. $\dfrac{3}{33}$ = ——

13. $\dfrac{9}{18}$ = ——

14. $\dfrac{9}{27}$ = ——

15. $\dfrac{15}{25}$ = ——

16. $\dfrac{18}{54}$ = ——

17. $\dfrac{6}{8}$ = ——

18. $\dfrac{42}{49}$ = ——

Simplify Fractions Using the Highest Common Factor

Simplify these fractions into the simplest form,
writing the highest common factor in the table. The first one is done for you.

Fraction	Highest Common Factor	Simplified Fraction
$\frac{4}{12}$	4	$\frac{1}{3}$
$\frac{3}{9}$		
$\frac{6}{8}$		
$\frac{10}{15}$		
$\frac{8}{14}$		
$\frac{10}{12}$		
$\frac{6}{18}$		
$\frac{9}{18}$		
$\frac{12}{16}$		
$\frac{6}{15}$		
$\frac{8}{24}$		
$\frac{6}{21}$		
$\frac{15}{25}$		
$\frac{12}{32}$		
$\frac{9}{45}$		
$\frac{21}{28}$		

Fraction	Highest Common Factor	Simplified Fraction
$\frac{16}{20}$		
$\frac{15}{18}$		
$\frac{18}{32}$		
$\frac{24}{32}$		
$\frac{15}{35}$		
$\frac{14}{22}$		
$\frac{6}{27}$		
$\frac{36}{63}$		
$\frac{15}{21}$		
$\frac{24}{48}$		
$\frac{50}{75}$		
$\frac{45}{75}$		
$\frac{24}{52}$		
$\frac{8}{44}$		
$\frac{35}{49}$		
$\frac{48}{84}$		

Use Common Multiples

Express all the fractions in each set in fractions with the same denominator.

1.

$\frac{3}{4}$	$\frac{2}{5}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{7}{10}$
$\frac{}{20}$	$\frac{}{20}$	$\frac{}{20}$	$\frac{}{20}$	$\frac{}{20}$

2.

$\frac{1}{3}$	$\frac{3}{4}$	$\frac{1}{6}$	$\frac{5}{6}$	$\frac{1}{4}$
$\frac{}{12}$	$\frac{}{12}$	$\frac{}{12}$	$\frac{}{12}$	$\frac{}{12}$

3.

$\frac{5}{8}$	$\frac{3}{4}$	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{3}$
—	—	—	—	—

4.

$\frac{7}{9}$	$\frac{1}{3}$	$\frac{5}{12}$	$\frac{2}{9}$	$\frac{3}{4}$
—	—	—	—	—

5.

$\frac{1}{12}$	$\frac{3}{10}$	$\frac{7}{8}$	$\frac{2}{3}$	$\frac{1}{4}$
—	—	—	—	—

Express Fractions

Express the following fractions with the same denominator.

$\frac{3}{4}$ and $\frac{7}{8}$	$\frac{6}{8}$ and $\frac{7}{8}$	$\frac{1}{6}$ and $\frac{7}{18}$	—— and ——	$\frac{3}{5}$ and $\frac{11}{20}$	—— and ——
$\frac{3}{8}$ and $\frac{17}{24}$	—— and ——	$\frac{1}{2}$ and $\frac{13}{16}$	—— and ——	$\frac{7}{12}$ and $\frac{5}{6}$	—— and ——
$\frac{7}{15}$ and $\frac{4}{5}$	—— and ——	$\frac{3}{16}$ and $\frac{3}{4}$	—— and ——	$\frac{17}{20}$ and $\frac{7}{10}$	—— and ——
$\frac{1}{8}$ and $\frac{7}{32}$	—— and ——	$\frac{5}{12}$ and $\frac{19}{36}$	—— and ——	$\frac{7}{10}$ and $\frac{23}{30}$	—— and ——
$\frac{4}{21}$ and $\frac{2}{3}$	—— and ——	$\frac{7}{24}$ and $\frac{1}{6}$	—— and ——	$\frac{8}{27}$ and $\frac{4}{9}$	—— and ——
$\frac{7}{28}$ and $\frac{3}{7}$	—— and ——	$\frac{4}{11}$ and $\frac{5}{44}$	—— and ——	$\frac{5}{8}$ and $\frac{1}{3}$	—— and ——
$\frac{2}{5}$ and $\frac{1}{2}$	—— and ——	$\frac{5}{6}$ and $\frac{3}{8}$	—— and ——	$\frac{1}{2}$ and $\frac{1}{6}$	—— and ——
$\frac{7}{12}$ and $\frac{5}{8}$	—— and ——	$\frac{11}{15}$ and $\frac{3}{4}$	—— and ——	$\frac{5}{12}$ and $\frac{3}{5}$	—— and ——
$\frac{7}{8}$ and $\frac{1}{5}$	—— and ——	$\frac{1}{7}$ and $\frac{3}{4}$	—— and ——	$\frac{2}{9}$ and $\frac{11}{15}$	—— and ——
$\frac{5}{6}$ and $\frac{10}{11}$	—— and ——	$\frac{1}{2}$ and $\frac{13}{15}$	—— and ——	$\frac{7}{9}$ and $\frac{5}{8}$	—— and ——
$\frac{7}{12}$ and $\frac{4}{7}$	—— and ——	$\frac{3}{15}$ and $\frac{7}{12}$	—— and ——	$\frac{11}{20}$ and $\frac{2}{3}$	—— and ——
		$\frac{11}{15}$ and $\frac{7}{8}$	—— and ——		

Compare Fractions

Use the symbols < > or = to compare these fractions.
You may need to rewrite the fractions with the same denominator.

1. $\dfrac{1}{3}$ ☐ $\dfrac{1}{4}$ ___ ___

2. $\dfrac{1}{5}$ ☐ $\dfrac{3}{15}$ ___ ___

3. $\dfrac{3}{5}$ ☐ $\dfrac{7}{10}$ ___ ___

4. $\dfrac{2}{7}$ ☐ $\dfrac{3}{8}$ ___ ___

5. $\dfrac{1}{2}$ ☐ $\dfrac{4}{8}$ ___ ___

6. $\dfrac{5}{3}$ ☐ $\dfrac{27}{16}$ ___ ___

7. $\dfrac{25}{9}$ ☐ $\dfrac{11}{4}$ ___ ___

8. $\dfrac{5}{12}$ ☐ $\dfrac{2}{5}$ ___ ___

9. $\dfrac{11}{15}$ ☐ $\dfrac{3}{4}$ ___ ___

10. $\dfrac{30}{24}$ ☐ $\dfrac{5}{4}$ ___ ___

Compare Fractions (2)

Use the symbols < > or = to compare these fractions.
You may need to rewrite the fractions with the same denominator.

1. $\dfrac{7}{9}$ ☐ $\dfrac{6}{7}$

___ ___

2. $\dfrac{11}{8}$ ☐ $\dfrac{99}{72}$

___ ___

3. $\dfrac{5}{6}$ ☐ $\dfrac{21}{25}$

___ ___

4. $\dfrac{44}{50}$ ☐ $\dfrac{7}{8}$

___ ___

5. $\dfrac{35}{50}$ ☐ $\dfrac{49}{70}$

___ ___

6. $\dfrac{6}{17}$ ☐ $\dfrac{2}{5}$

___ ___

7. $\dfrac{8}{9}$ ☐ $\dfrac{47}{53}$

___ ___

8. $\dfrac{24}{11}$ ☐ $\dfrac{51}{23}$

___ ___

9. $\dfrac{22}{13}$ ☐ $\dfrac{7}{4}$

___ ___

10. $\dfrac{56}{63}$ ☐ $\dfrac{77}{99}$

___ ___

Order Fractions

Order these fractions from smallest to largest.
You may wish to write the fractions with a common denominator.

1.
$$\frac{3}{8} \qquad \frac{1}{2} \qquad \frac{1}{4} \qquad \frac{3}{4} \qquad \frac{7}{8}$$

$$\frac{}{8} \qquad \frac{}{8} \qquad \frac{}{8} \qquad \frac{}{8} \qquad \frac{}{8}$$

smallest ⸺ ⸺ ⸺ ⸺ ⸺ largest

2.
$$\frac{7}{12} \qquad \frac{11}{12} \qquad \frac{2}{3} \qquad \frac{3}{4} \qquad \frac{5}{6}$$

$$\frac{}{12} \qquad \frac{}{12} \qquad \frac{}{12} \qquad \frac{}{12} \qquad \frac{}{12}$$

smallest ⸺ ⸺ ⸺ ⸺ ⸺ largest

3.
$$\frac{6}{5} \qquad \frac{17}{10} \qquad \frac{3}{2} \qquad \frac{9}{5} \qquad \frac{13}{10}$$

$$\frac{}{10} \qquad \frac{}{10} \qquad \frac{}{10} \qquad \frac{}{10} \qquad \frac{}{10}$$

smallest ⸺ ⸺ ⸺ ⸺ ⸺ largest

Order Fractions (2)

Order these fractions from smallest to largest.
You may wish to write the fractions with a common denominator.

1.

$\frac{5}{8}$ $\qquad$ $\frac{1}{2}$ $\qquad$ $\frac{1}{3}$ $\qquad$ $\frac{3}{4}$ $\qquad$ $\frac{3}{8}$

$\frac{}{24}$ $\qquad$ $\frac{}{24}$ $\qquad$ $\frac{}{24}$ $\qquad$ $\frac{}{24}$ $\qquad$ $\frac{}{24}$

smallest ___ ___ ___ ___ ___ largest

2.

$\frac{11}{4}$ $\qquad$ $\frac{31}{12}$ $\qquad$ $\frac{12}{5}$ $\qquad$ $\frac{8}{3}$ $\qquad$ $\frac{17}{6}$

___ ___ ___ ___ ___

smallest ___ ___ ___ ___ ___ largest

3.

$\frac{2}{7}$ $\qquad$ $\frac{1}{4}$ $\qquad$ $\frac{4}{9}$ $\qquad$ $\frac{1}{3}$ $\qquad$ $\frac{1}{8}$

___ ___ ___ ___ ___

smallest ___ ___ ___ ___ ___ largest

Compare and Order Fractions

1. Circle the larger fraction.

a. $\frac{5}{8}$ $\frac{7}{4}$

b. $2\frac{1}{5}$ $\frac{13}{6}$

c. $\frac{13}{8}$ $\frac{12}{7}$

d. $\frac{25}{6}$ $\frac{21}{5}$

2. Circle the smaller fraction.

a. $\frac{15}{8}$ $\frac{19}{10}$

b. $\frac{8}{3}$ $2\frac{4}{5}$

c. $\frac{24}{7}$ $\frac{13}{4}$

d. $\frac{19}{6}$ $\frac{17}{5}$

3. Use the correct sign to compare these fractions (<, > or =)

a. $\frac{9}{4}$ ☐ $\frac{7}{3}$

b. $2\frac{3}{7}$ ☐ $2\frac{1}{6}$

c. $\frac{9}{8}$ ☐ $\frac{8}{7}$

d. $\frac{9}{6}$ ☐ $\frac{12}{8}$

e. $\frac{17}{5}$ ☐ $3\frac{3}{10}$

f. $\frac{27}{4}$ ☐ $\frac{29}{7}$

g. $2\frac{3}{5}$ ☐ $\frac{26}{10}$

h. $\frac{28}{4}$ ☐ $\frac{42}{7}$

4. Order the following fractions from smallest to largest.

a. $\frac{3}{2}$ $\frac{5}{4}$ $\frac{4}{3}$

smallest   largest

b. $1\frac{3}{4}$ $\frac{8}{3}$ $\frac{11}{6}$

smallest   largest

c. $\frac{12}{5}$ $2\frac{1}{3}$ $\frac{11}{4}$

smallest   largest

d. $\frac{9}{2}$ $\frac{14}{3}$ $\frac{17}{4}$

smallest   largest

e. $3\frac{1}{6}$ $\frac{15}{4}$ $\frac{7}{2}$ $\frac{17}{5}$

smallest   largest

f. $\frac{24}{10}$ $\frac{7}{3}$ $\frac{9}{4}$ $\frac{5}{2}$

smallest   largest

g. $\frac{17}{12}$ $\frac{27}{20}$ $\frac{3}{2}$ $\frac{7}{5}$

smallest   largest

h. $\frac{28}{25}$ $\frac{51}{50}$ $1\frac{1}{10}$ $\frac{111}{100}$

smallest   largest

5.   Order the following 4 fractions from smallest to largest.

a. $\frac{5}{3}$ $\frac{6}{4}$ $1\frac{2}{5}$ $\frac{11}{8}$

smallest   largest

b. $\frac{15}{4}$ $\frac{14}{5}$ $\frac{8}{3}$ $\frac{9}{6}$

smallest   largest

c. $\frac{9}{5}$ $\frac{4}{3}$ $\frac{12}{6}$ $1\frac{1}{2}$

smallest   largest

d. $\frac{13}{10}$ $\frac{15}{12}$ $1\frac{1}{8}$ $\frac{11}{6}$

smallest   largest

6.   This list of numbers is in size order. Identify whether the largest number is at the beginning or at the end.

$\frac{26}{8}$ $\frac{10}{3}$ $\frac{17}{5}$ $\frac{24}{7}$

7.   This list of numbers is in size order from left to right. One number is in the wrong place. Circle the number that is in the wrong place.

$\frac{19}{4}$ $\frac{14}{3}$ $\frac{23}{5}$ $\frac{47}{10}$ $\frac{9}{2}$

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Add Fractions

Aim: to add fractions

Add the following fractions. You will need to convert the fractions so they all have the same denominator.

1.
$$\frac{3}{4} + \frac{5}{12} + \frac{1}{6} + \frac{2}{3} =$$

$$\frac{}{12} + \frac{}{12} + \frac{}{12} + \frac{}{12} = \frac{}{12}$$

2.
$$\frac{2}{9} + \frac{5}{18} + \frac{2}{3} + \frac{5}{6} =$$

$$\frac{}{18} + \frac{}{18} + \frac{}{18} + \frac{}{18} = \frac{}{18}$$

3.
$$\frac{7}{20} + \frac{4}{5} + \frac{3}{4} + \frac{6}{10} =$$

$$\frac{}{20} + \frac{}{20} + \frac{}{20} + \frac{}{20} =$$

4.
$$\frac{7}{24} + \frac{7}{12} + \frac{3}{8} + \frac{1}{4} =$$

$$\frac{}{} + \frac{}{} + \frac{}{} + \frac{}{24} =$$

5.
$$\frac{1}{6} + \frac{26}{30} + \frac{4}{15} + \frac{7}{10} =$$

$$\frac{}{} + \frac{}{} + \frac{}{} + \frac{}{} =$$

Add Fractions (2)

Aim: to add fractions

Add the following fractions. You will need to convert the fractions so they all have the same denominator.

1. $\dfrac{3}{5}$ + $\dfrac{5}{8}$ + $\dfrac{1}{10}$ + $\dfrac{1}{4}$ =

    $\dfrac{}{40}$ + $\dfrac{}{40}$ + $\dfrac{}{40}$ + $\dfrac{}{40}$ = $\dfrac{}{40}$

2. $\dfrac{2}{3}$ + $\dfrac{5}{9}$ + $\dfrac{1}{5}$ + $\dfrac{13}{15}$ = $\dfrac{}{}$

    $\dfrac{}{45}$ + $\dfrac{}{45}$ + $\dfrac{}{45}$ + $\dfrac{}{45}$ = $\dfrac{}{45}$

3. $\dfrac{7}{8}$ + $\dfrac{5}{6}$ + $\dfrac{1}{4}$ + $\dfrac{2}{3}$ = $\dfrac{}{}$

    $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ = $\dfrac{}{}$

4. $\dfrac{7}{16}$ + $\dfrac{7}{12}$ + $\dfrac{7}{8}$ + $1\dfrac{1}{6}$ = $\dfrac{}{}$

    $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ = $\dfrac{}{}$

5. $\dfrac{31}{18}$ + $\dfrac{5}{12}$ + $6\dfrac{1}{2}$ + $\dfrac{7}{9}$ = $\dfrac{}{}$

    $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ + $\dfrac{}{}$ = $\dfrac{}{}$

Subtract Fractions

Subtract the following fractions. You will need to convert the fractions so they all have the same denominator.

1. $\dfrac{2}{3}$ – $\dfrac{1}{2}$ = ―――

    $\dfrac{4}{6}$ – $\dfrac{3}{6}$ = ―――

2. $\dfrac{5}{8}$ – $\dfrac{1}{2}$ = ―――

    $\dfrac{}{8}$ – $\dfrac{}{8}$ = $\dfrac{}{8}$

3. $\dfrac{3}{8}$ – $\dfrac{1}{3}$ = ―――

    $\dfrac{}{24}$ – $\dfrac{}{24}$ = $\dfrac{}{24}$

4. $\dfrac{5}{6}$ – $\dfrac{1}{4}$ = ―――

    $\dfrac{}{12}$ – $\dfrac{}{12}$ = $\dfrac{}{12}$

5. $\dfrac{7}{10}$ – $\dfrac{2}{3}$ = ―――

    $\dfrac{}{30}$ – $\dfrac{}{30}$ = ―――

6. $\dfrac{3}{4}$ – $\dfrac{6}{10}$ = ―――

    $\dfrac{}{20}$ – $\dfrac{}{20}$ = ―――

7. $\dfrac{5}{12}$ – $\dfrac{1}{4}$ = ―――

    ―― – ―― = ――

8. $\dfrac{3}{8}$ – $\dfrac{1}{4}$ = ―――

    ―― – ―― = ――

9. $\dfrac{11}{12}$ – $\dfrac{3}{6}$ = ―――

    ―― – ―― = ――

10. $\dfrac{2}{3}$ – $\dfrac{3}{10}$ = ―――

    ―― – ―― = ――

Subtract Fractions (2)

Subtract the following fractions. You will need to convert the fractions so they all have the same denominator.

1. $\dfrac{7}{8} - \dfrac{1}{3} = \overline{}$

   $\dfrac{}{24} - \dfrac{}{24} = \dfrac{}{24}$

2. $\dfrac{9}{10} - \dfrac{3}{4} = \overline{}$

   $\dfrac{}{20} - \dfrac{}{20} = \dfrac{}{20}$

3. $\dfrac{2}{5} - \dfrac{1}{3} = \overline{}$

   $\dfrac{}{15} - \dfrac{}{15} = \overline{}$

4. $\dfrac{7}{12} - \dfrac{2}{5} = \overline{}$

   $\dfrac{}{60} - \dfrac{}{60} = \overline{}$

5. $\dfrac{16}{25} - \dfrac{3}{5} = \overline{}$

   $\overline{} - \overline{} = \overline{}$

6. $\dfrac{3}{4} - \dfrac{5}{7} = \overline{}$

   $\overline{} - \overline{} = \overline{}$

7. $\dfrac{3}{11} - \dfrac{1}{5} = \overline{}$

   $\overline{} - \overline{} = \overline{}$

8. $\dfrac{4}{9} - \dfrac{1}{4} = \overline{}$

   $\overline{} - \overline{} = \overline{}$

9. $\dfrac{1}{6} - \dfrac{1}{8} = \overline{}$

   $\overline{} - \overline{} = \overline{}$

10. $\dfrac{7}{8} - \dfrac{5}{6} = \overline{}$

    $\overline{} - \overline{} = \overline{}$

Multiply Fractions

Calculate the following. Give your answer in the simplest form.

1. $\dfrac{3}{4}$ × $\dfrac{1}{3}$ = —

2. $\dfrac{1}{2}$ × $\dfrac{2}{3}$ = —

3. $\dfrac{2}{5}$ × $\dfrac{1}{3}$ = —

4. $\dfrac{7}{12}$ × $\dfrac{2}{3}$ = —

5. $\dfrac{4}{5}$ × $\dfrac{1}{6}$ = —

6. $\dfrac{1}{4}$ × $\dfrac{5}{7}$ = —

7. $\dfrac{3}{8}$ × $\dfrac{4}{5}$ = —

8. $\dfrac{4}{9}$ × $\dfrac{1}{4}$ = —

9. $\dfrac{5}{6}$ × $\dfrac{3}{8}$ = —

10. $\dfrac{2}{5}$ × $\dfrac{5}{9}$ = —

Multiply Fractions

Cancelling Common Fractions

Calculate the following by cancelling the common factors first. Give your answer in the simplest form.

1. $\dfrac{2}{5} \times \dfrac{3}{8} = $ ——

2. $\dfrac{4}{5} \times \dfrac{1}{6} = $ ——

3. $\dfrac{1}{3} \times \dfrac{3}{5} = $ ——

4. $\dfrac{5}{12} \times \dfrac{2}{3} = $ ——

5. $\dfrac{2}{5} \times \dfrac{1}{8} = $ ——

6. $\dfrac{3}{4} \times \dfrac{5}{9} = $ ——

7. $\dfrac{1}{6} \times \dfrac{3}{5} = $ ——

8. $\dfrac{4}{5} \times \dfrac{1}{4} = $ ——

9. $\dfrac{5}{9} \times \dfrac{3}{10} = $ ——

10. $\dfrac{4}{5} \times \dfrac{5}{12} = $ ——

Divide Fractions Using a Grid

Use the number line to divide these fractions by whole numbers.

1. $\dfrac{3}{4}$ ÷ 2 =

Shade $\dfrac{3}{4}$ of the grid.

Divide the number of shaded sections by the divisor. This is your answer's numerator.

Count the total number of sections in the grid; this is denominator.

So the answer to $\dfrac{3}{4}$ ÷ 2 =

2. $\dfrac{1}{3}$ ÷ 4 =

Shade $\dfrac{1}{3}$ of the grid.

Divide the $\dfrac{1}{3}$ by 4. This is the answer.

3. $\dfrac{2}{5}$ ÷ 4 =

Shade $\dfrac{2}{5}$ of the grid.

Divide the $\dfrac{2}{5}$ by 4. This is the answer.

Divide Fractions

Calculate the following. Give your answer in the simplest form.

1. $\dfrac{3}{5} \div 2 =$

2. $\dfrac{1}{2} \div 2 =$

3. $\dfrac{3}{4} \div 6 =$

4. $\dfrac{5}{6} \div 2 =$

5. $\dfrac{5}{8} \div 4 =$

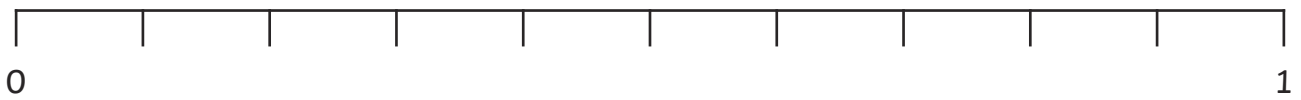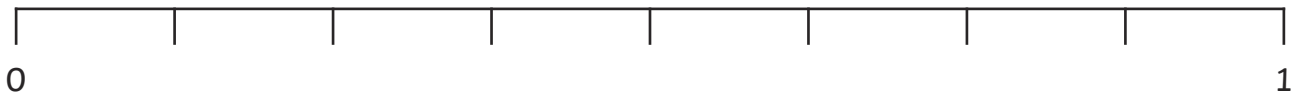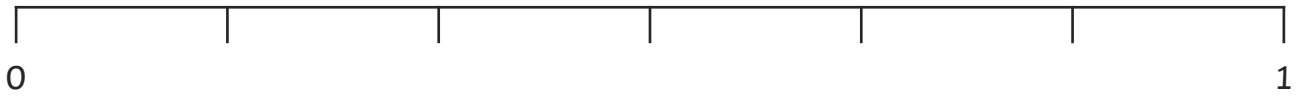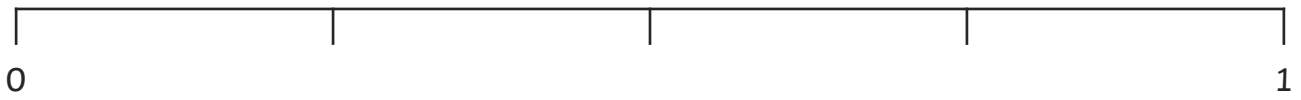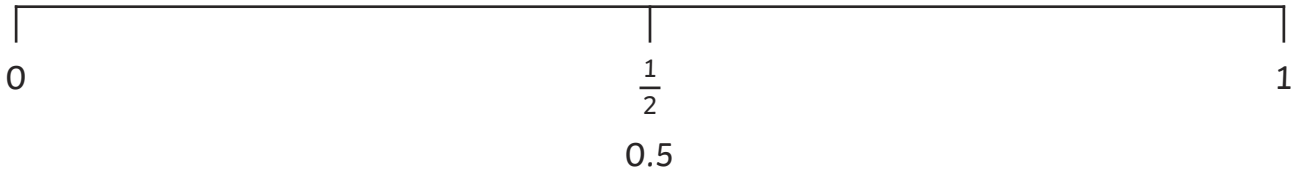6. $\dfrac{1}{4} \div 7 =$

7. $\dfrac{7}{8} \div 3 =$

8. $\dfrac{7}{9} \div 5 =$

9. $\dfrac{5}{12} \div 6 =$

10. $\dfrac{2}{5} \div 4 =$

Decimal Fraction Equivalents

Write the relevant fraction and decimal equivalents on the number lines:

0       $\frac{1}{2}$ 1

0.5

0   1

0   1

0   1

0   1

0   1

Identify the Value of Decimal Digits

Recognising the value of digits in numbers up to 2 decimal places.

0.14	0.4	0.56	0.63	0.41	0.42	0.36	0.87
0.24	0.08	0.13	0.51	0.96	0.73	0.59	0.86
0.77	0.1	0.12	0.6	0.17	0.74	0.29	0.34
0.67	0.01	0.22	0.69	0.55	0.61	0.26	0.33
0.28	0.79	0.03	0.54	0.61	0.09	0.66	0.5
0.07	0.52	0.19	0.72	0.56	0.42	0.78	0.05

1. Find all the numbers above that have the following:

7 in the tenths place	
4 in the hundredths place	
1 in the tenths place	
3 in the hundredths place	
5 in the tenths place	
9 in the hundredths place	
2 in the tenths place and 6 in the hundredth place	

2. Complete this Venn diagram with these numbers.

0.47   0.37   0.12   0.53   0.87   0.41   0.79   0.42   0.19

4 in the tenths place.
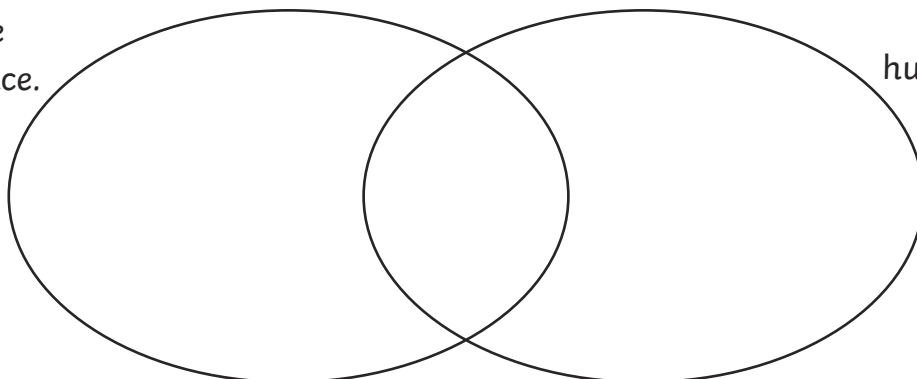
7 in the hundredths place.

Identify the Value of Decimal Digits

Complete the Carroll Diagram from these numbers.

0.43   0.33   0.98   0.99   0.69   0.89   0.07   0.97

0.81   0.96   0.91   0.93   0.19   0.36   0.16   0.56

0.22   0.52   0.31   0.24   0.15   0.85   0.25   0.62

	9 in the hundredths place	not 9 in the hundredths place
8 in the tenths place		
not 8 in the tenths place		

Identify the Value of Decimal Digits

Recognising the value of digits in numbers up to 3 decimal places.

0.28	0.6	0.62	0.772	0.989	0.095	0.139	0.774
0.453	0.223	0.919	0.397	0.343	0.005	0.107	0.216
0.54	0.694	0.716	0.27	0.564	0.539	0.805	0.229
0.635	0.61	0.316	0.169	0.416	0.614	0.873	0.655
0.82	0.822	0.786	0.601	0.916	0.428	0.189	0.874
0.449	0.746	0.636	0.774	0.663	0.666	0.525	0.991
0.65	0.485	0.015	0.969	0.083	0.063	0.558	0.005
0.639	0.053	0.169	0.766	0.148	0.5	0.74	0.129
0.288	0.818	0.859	0.792	0.299	0.852	0.213	0.984
0.915	0.378	0.303	0.167	0.364	0.552	0.557	0.838
0.775	0.223	0.205	0.572	0.376	0.736	0.01	0.503
0.047	0.732	0.592	0.907	0.643	0.987	0.423	0.048

Find all the numbers above that have the following:

|	
5 in the tenths place	
2 in the hundredths place	
1 in the thousandths place	
8 in the tenths place	
4 in the hundredths place	
9 in the thousandths place	
7 in the tenths place and 3 in the hundredths place	
3 in the hundredths place and 2 in the thousandths place	
2 in the tenths place and 9 in the thousandths place	
1 in the tenths place, 4 in the hundredths place and 8 in the thousandths place	

Identify the Value of Decimal Digits

Place the following numbers in the Venn diagram. Not all numbers will fit.

0.529	0.651	0.8	0.646	0.099	0.062	0.549	0.898
0.983	0.32	0.019	0.305	0.804	0.101	0.377	0.388
0.663	0.207	0.797	0.532	0.24	0.596	0.332	0.376
0.018	0.848	0.08	0.486	0.104	0.754	0.117	0.142
0.405	0.27	0.788	0.527	0.818	0.447	0.027	0.141
0.669	0.428	0.833	0.763	0.874	0.374	0.49	0.132

8 in the tenths place

0 in the hundredths place
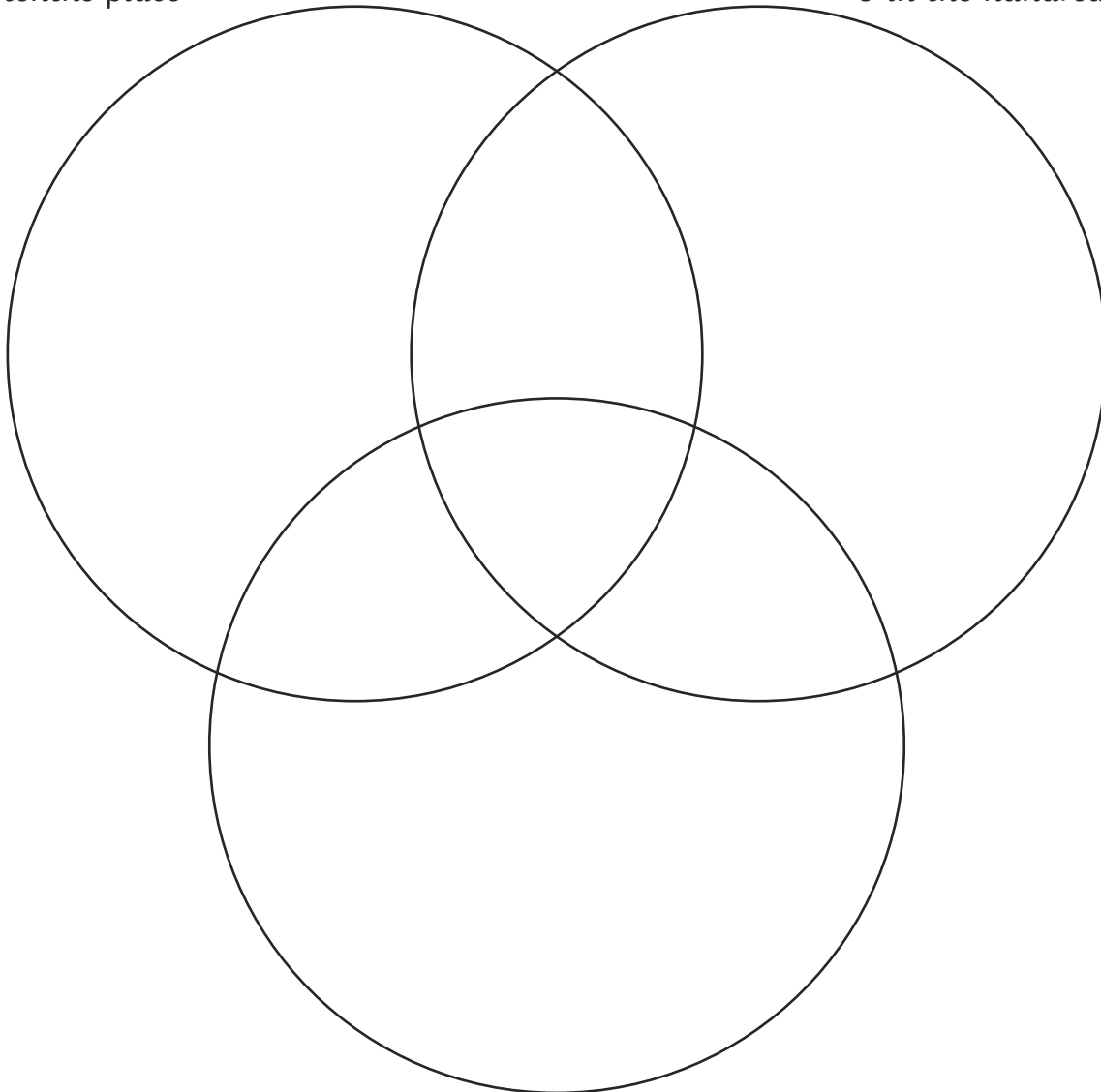
4 in the thousandths place

Multiplying and Dividing Decimals by 10, 100 and 1000

Aim: Multiply and Divide decimal numbers by 10, 100 and 1000

Multiply the following numbers by 10, 100 and 1000 to complete the table.

	× 10	× 100	× 1000
5.7			
23.02			
0.92			
0.306			
24.67			

Divide the following numbers by 10, 100 and 1000 to complete the table.

	÷ 10	÷ 100	÷ 1000
43			
219			
703			
64.8			
2560			

Complete the following table.

	× 10	÷ 10	÷ 100
507			
17.6			
			0.063
	2037		
		0.193	

Multiplying and Dividing Decimals by 10, 100 and 1000

Aim: Multiply and Divide decimal numbers by 10, 100 and 1000

Multiply the following numbers by 10, 100 and 1000 to complete the table.

	× 10	× 100	× 1000
4.02			
0.045			
34.094			
209.817			
0.006			

Divide the following numbers by 10, 100 and 1000 to complete the table.

	÷ 10	÷ 100	÷ 1000
56.9			
209			
4.56			
709.6			
0.072			

Complete the following table.

	× 1000	× 10	÷ 100
607			
4 901			
		0.8	
	17 809		
			0.37

Multiplying Single Digit Decimals

Calculate the following mentally:

0.1 × 8 =	0.03 × 4 =	9 × 0.5 =
7 × 0.05 =	6 × 0.8 =	0.02 × 9 =
0.7 × 8 =	0.05 × 7 =	0.06 × 6 =
7 × 0.9 =	0.6 × 7 =	4 × 0.02 =
0.06 × 3 =	8 × 0.8 =	0.08 × 8 =
1 × 0.05 =	0.4 × 7 =	6 × 0.09 =

Calculate the following, using a formal written method if required.

0.9 × 45 =	76 × 0.03 =	0.5 × 36 =
93 × 0.08 =	0.7 × 81 =	72 × 0.4 =
0.06 × 56 =	98 × 0.09 =	0.2 × 87 =

Multiply Single Digit Decimals Word Problems

Aim: to solve problems involving the multiplication of single digit decimals

1. Pencils cost a school £0.07 each. A box holds 12 pencils.
    How much do 2 boxes cost the school?

2. A set of miniature gauge railway track contains 18 pieces that are 0.3m long.
    How long would the railway be when all the peces of track are put together?

3. A shop buys a box of 72 mini chocolate bars from a wholesaler
    for £0.05 each. How much does the box cost?

4. Small boxes of sultanas weigh 0.06kg each. How much will 54 boxes weigh?

5. A stationery shop buys erasers for £0.03 each and sells them for £0.07. If
    the shop sells 123 in a month, what profit is made on the erasers?

6. A hospital buys bottles of medicine. Each bottle contains 0.6 litres of
    medicine. How much medicine will be in a case of 15 bottles?

Written Division

Calculate the following, giving answers with up to 2 decimal places:

1. 12 ÷ 5 =

2. 34 ÷ 3 =

3. 28 ÷ 8 =

4. 53 ÷ 4 =

5. 90 ÷ 8 =

6. 203 ÷ 5 =

7. 15 ÷ 6 =

8. 25 ÷ 4 =

9. 57 ÷ 5 =

10. 95 ÷ 3 =

11. 100 ÷ 9 =

12. 326 ÷ 8 =

13. 23 ÷ 4 =

14. 37 ÷ 2 =

15. 53 ÷ 3 =

16. 79 ÷ 5 =

17. 87 ÷ 6 =

18. 500 ÷ 3 =

Rounding to Specific Degrees of Accuracy

Round the following numbers to 1 decimal place.

1. 0.23 =

2. 0.79 =

3. 3.25 =

4. 9.205 =

5. 14.672 =

6. 24.535 =

Round the following numbers to 2 decimal places.

7. 0.284 =

8. 0.049 =

9. 7.725 =

10. 8.003 =

11. 14.562 =

12. 287.015 =

Rounding to Specific Degrees of Accuracy

1. A bicycle shop has a sale, and sells all its products with a 25% discount. Calculate the new prices of these items, rounding the answer to the nearest penny.

Item	Cost before 25% discount	Cost after 25% discount
Adult bicycle	£209.50	
Child's bicycle	£87.37	
Cycle helmet	£32.95	

2. A scientist collects 1 litre of river water to test for pollution and finds the following levels of chemicals. Calculate the percentage of each pollutant to 2 decimal places.

Pollutant	Amount	% of pollutant in 1 litre
Zinc	3.45ml	
Lead	5.82ml	
Copper	1.97ml	

3. A traveller wants to exchange some sterling for foreign currency for a journey. Using the exchange rates in the table below and the amounts required to be exchanged, calculate how much currency the traveller will be able to obtain to 2 decimal places.

Currency	£1 buys	Amount to exchange	Foreign currency
Euro	1.35436	£100	
Hungarian Forint	424.148	£30	
Swiss Franc	1.46594	£60	
Czech Koruna	36.6064	£40	

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Solve Problems to Specified Degree of Accuracy

1. Over a season, a football team scores 84 goals in 38 matches. What is the mean number of goals per game, rounded to one decimal place?

2. A school fruit shop takes £34.67 in one school week. Giving the answer to the nearest penny, what is the mean amount taken each day?

3. A cricket team needs to score 258 runs in 50 overs. What is the average run rate the team needs to score each over, rounding the answer to one decimal place?

4. There are 12 pizzas for a class party. Each pizza is cut into 8 pieces, and is to be shared among 28 children. If shared equally, how many pieces would each child have to eat, rounded to one decimal place?
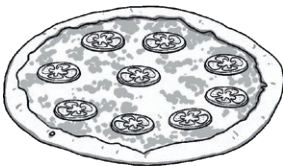
5. A farmer grows 2478kg of potatoes. He sells the crop equally between 5 local farm shops. What weight of potatoes will each shop get, to the nearest half a kilogram?

Recall and Use Equivalences

1. 25% of a class join the chess club. What fraction of children do not join the chess club?

2. A third of a box of crisps are salt and vinegar flavour. 50% are ready salted. The rest are cheese and onion. What fraction of the crisps are cheese and onion?

3. There are 30 children in a class, of whom twelve are boys. What fraction of the class are girls?

4. Seven tenths of a crowd at a football match support the home team. If the rest are all away fans, what percentage of the crowd support the away team?

5. There are 80 sweets in a bag. Complete the following table showing the number, fraction and percentage of each flavour.

Flavour	Number	Fraction	Percentage
Orange	20		
Strawberry	16		
Lime	44		

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Percentage and Decimal Equivalents

For each model, write the fraction and percentage of the cubes that are black.

1.

%

2.

%

3.

%

4.

%

5.

%

6.

%

7.

%

8.

%
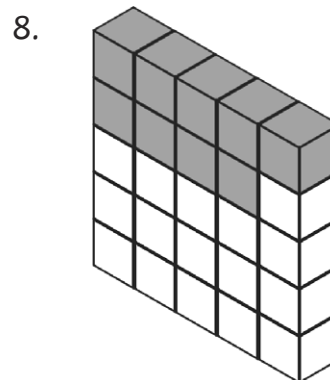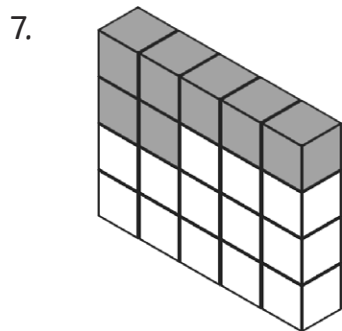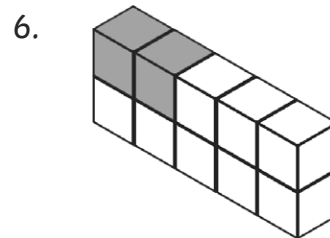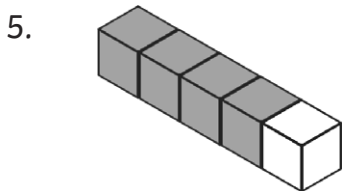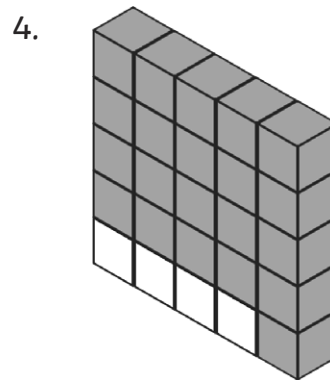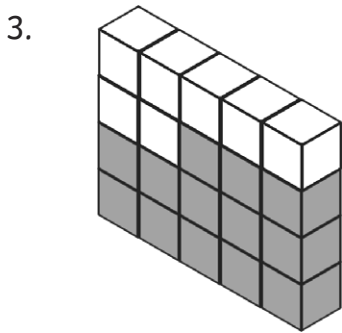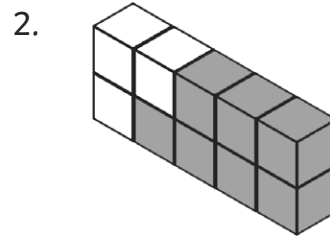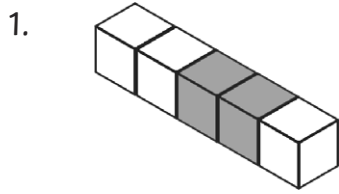
Calculate the values of the following and order them from smallest to largest.

9. a. 20% of 25

    b. $\frac{1}{2}$ of 24

    c. $\frac{2}{5}$ of 10

smallest   largest

10. a. $\frac{4}{5}$ of 35

    b. 75% of 32

    c. $\frac{1}{2}$ of 52

smallest   largest

11. a. 25% of 20

    b. 80% of 10

    c. $\frac{1}{20}$ of 80

smallest   largest
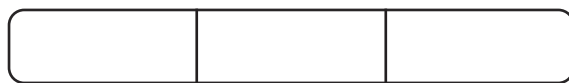
12. a. $\frac{1}{25}$ of 75

    b. $\frac{2}{5}$ of 15

    c. 40% of 10

smallest   largest

13. a. 12% of 50

   [ ]

   b. $\frac{1}{4}$ of 28

   [ ]

   smallest   largest

   c. $\frac{4}{5}$ of 10

   [ ]

14. a. 50% of 48

   [ ]

   b. $\frac{1}{5}$ of 125

   [ ]

   smallest   largest

   c. 30% of 70

   [ ]

15. a. $\frac{4}{5}$ of 45

   [ ]

   b. 25% of 140

   [ ]

   smallest   largest

   c. 60% of 55

   [ ]

16. a. 36% of 125

   [ ]

   b. $\frac{2}{5}$ of 105

   [ ]

   smallest   largest

   c. $\frac{3}{4}$ of 64

   [ ]

Calculate the values of the following and order them from smallest to largest.

	Fraction	Decimal Fraction	Percentage
17.			40%
18.		0.50	
19.	$\frac{1}{4}$		
20.			80%
21.		0.30	
22.	$\frac{1}{5}$		
23.		0.75	
24.	$\frac{7}{25}$		

Calculate the values of the following and order them from smallest to largest.

25. 80% =

26. $\frac{2}{5}$ =

27. 0.15 =

28. 92% =

29. $\frac{3}{10}$ =

30. 12% =

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