## Maths Assessment Year 6: Fractions Term 2

## This assessment section is in two parts.

## Section A

1. Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
2. Compare and order fractions, including fractions $>1$.
3. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
4. Multiply simple pairs of proper fractions, writing the answer in its simplest form.
5. Divide proper fractions by whole numbers.

## Section B

1. Associate a fraction with division and calculate decimal fraction equivalents.
2. 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.
3. Multiply one-digit numbers with up to two decimal places by whole numbers.
4. Use written division methods in cases where the answer has up to two decimal places.
5. Solve problems which require answers to be rounded to specified degrees of accuracy.
6. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

## Maths Assessment Year 6: Fractions - Term 2 - Section A

1. Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
a) Simplify these fractions:

| $\frac{15}{20}$ |  |
| :---: | :--- |
| $\frac{3}{12}$ |  |
| $\frac{6}{10}$ |  |
| $\frac{2}{8}$ |  |
| $\frac{6}{18}$ |  |

b) Identify the equivalent fraction, using the denominators shown:

| $\frac{8}{10}$ | $=$ | $\frac{5}{5}$ |
| :---: | :--- | :--- |
| $\frac{14}{16}$ | $=$ | $\overline{8}$ |
| $\frac{4}{12}$ | $=$ | $\overline{6}$ |
| $\frac{10}{15}$ | $=$ | $\overline{3}$ |
| $\frac{6}{24}$ | $\overline{8}$ |  |

2. Compare and order fractions, including fractions $>1$.
a) Put these fractions in order, from smallest to largest:
$1 \frac{1}{2}$
$1 \frac{3}{4}$
$\frac{2}{3}$
$\frac{2}{5}$
$1 \frac{1}{6}$
$\frac{1}{4}$

smallest largest


b) Use the symbols < > or = to compare each pair of fractions:

|  | $\ll>$ or $=$ |  |
| :---: | :---: | :---: |
| $\frac{1}{4}$ |  | $\frac{3}{12}$ |
| $1 \frac{4}{5}$ |  | $\frac{8}{5}$ |
| $\frac{3}{2}$ |  | $1 \frac{1}{2}$ |
| $\frac{11}{6}$ |  | $1 \frac{3}{4}$ |
| $1 \frac{3}{4}$ |  | $\frac{5}{2}$ |
| $\frac{13}{10}$ |  | $\frac{2}{5}$ |

## 3. Add and subtract fractions with different denominators and mixed numbers, using

 the concept of equivalent fractions.a) Complete these addition calculations. Write the answer in its simplest form, using mixed numbers where needed.

| $\frac{3}{5}+\frac{2}{3}=$ |
| :--- |
| $1 \frac{3}{4}+\frac{3}{5}=$ |
| $\frac{7}{8}+2 \frac{1}{5}=$ |
| $\frac{9}{10}+\frac{1}{6}=$ |
| $2 \frac{7}{12}+1 \frac{1}{2}=$ |

b) Complete these subtraction calculations. Write the answer in its simplest form, using mixed numbers where needed.

| $\frac{2}{3}-\frac{1}{2}=$ |
| :--- |
| $1 \frac{3}{4}-\frac{3}{10}=$ |
| $2 \frac{1}{2}-2 \frac{1}{5}=$ |
| $\frac{17}{10}-\frac{5}{6}=$ |
| $2 \frac{1}{12}-1 \frac{1}{3}=$ |

4. Multiply simple pairs of proper fractions, writing the answer in its simplest form.
a) Match up these calculations to their correct answer:

| $\frac{3}{4} \times \frac{1}{2}=$ | $\frac{1}{4}$ |
| :--- | :--- |
| $\frac{5}{8} \times \frac{2}{3}=$ | $\frac{3}{8}$ |
| $\frac{3}{5} \times \frac{5}{12}=$ | $\frac{7}{16}$ |
| $\frac{7}{12} \times \frac{3}{4}=$ | $\frac{5}{12}$ |

b) Answer these calculations:

| $\frac{1}{3} \times \frac{4}{5}=$ |
| :--- |
| $\frac{3}{4} \times \frac{1}{6}=$ |
| $\frac{1}{10} \times \frac{3}{8}=$ |
| $\frac{7}{12} \times \frac{2}{5}=$ |

5. Divide proper fractions by whole numbers.
a) Draw a line to match up each calculation to its correct answer:

| $\frac{3}{4} \div 2=$ | $\frac{1}{15}$ |
| :--- | :--- |
| $\frac{5}{6} \div 4=$ | $\frac{3}{8}$ |
| $\frac{1}{5} \div 3=$ | $\frac{11}{60}$ |
| $\frac{11}{12} \div 5=$ | $\frac{5}{24}$ |

b) Answer these calculations:
$\frac{4}{5} \div 2=$
$\frac{7}{8} \div 7=$
$\frac{8}{9} \div 4=$
$\frac{5}{12} \div 10=$

## Maths Assessment Year 6: Fractions - Term 2 - Section B

1. Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.
a) Find $\frac{1}{5}$ of 180, showing the calculation(s) you would use:
b) Find $\frac{3}{4}$ of 140 , showing the calculation(s) you would use:
c) Convert $\frac{3}{8}$ to a decimal:

d) Convert 0.25 to a fraction, where the denominator is 16 .

2. 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.
a) In the numbers below, circle the digit that represents the place value written in words:

| 50.341 | tenths |
| :--- | :--- |
| 0.083 | hundredths |
| 193.745 | thousandths |
| 37.091 | hundredths |
| 4.582 | thousandths |

b) Write the value of the digit that is underlined:

| $10.5 \underline{\mathbf{2}} 4$ |  |
| :--- | :--- |
| $9.00 \underline{8}$ |  |
| $218 . \underline{\mathbf{8} 24}$ |  |
| $0.8 \underline{3} 5$ |  |
| $95 . \underline{3} 71$ |  |

d) Fill in the missing numbers in these calculations:

3. Multiply one-digit numbers with up to two decimal places by whole numbers.
a) Calculate $0.05 \times 24$.

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b) Calculate $0.007 \times 16$.

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4. Use written division methods in cases where the answer has up to two decimal places.
a) Use a written method to calculate the answer to this. Show your working out. $673 \div 4=$

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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b) Use a written method to calculate the answer to this. Write the remainder as a decimal. Show your working out.
$294 \div 8=$

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5. Solve problems which require answers to be rounded to specified degrees of accuracy.
a) A teacher asks some children to share a tray of felt-tip pens equally among 8 tables. There are 240 pens in the tray.
How many pens will each table be given?

b) A teacher, who has 27 children in his class, wants 5 pencils for each child for a term. The pencils come in packs of 12 . How many packs of pencils must he order?

c) The full price of a bicycle is $£ 209.50$. The price is reduced by $25 \%$. What is the new price, rounded to the nearest penny?

d) $£ 1$ buys 1.35436 Euros. A traveller buys $£ 200$ worth of Euros. How many Euros will they be able to buy, rounded to the nearest cent?

6. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
a) Fill in the missing information in this chart to identify the equivalent fractions, decimals and percentages:

| Fraction | Decimal | Percentage |
| :--- | :--- | :--- |
|  |  | $50 \%$ |
| $\frac{1}{3}$ | 0.6 |  |
|  |  |  |
| $\frac{1}{8}$ | 0.7 |  |
|  |  |  |
| $\frac{9}{25}$ |  |  |

b) A quarter of the children in a school join the school choir. What percentage of children do not join the choir?

c) $20 \%$ of the children in a school walk to school. What fraction of children do not walk to school?

d) James and Jackie compete in the standing long jump. James jumps of the distance that Jackie jumps. Jackie jumps exactly 1m. How far does James jump, to the nearest centimetre?



| question | answer | marks | notes |
| :--- | :---: | :---: | :---: |

3. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

| $\frac{3}{5}+\frac{2}{3}=1 \frac{4}{15}$ |  |  |
| :--- | :--- | :--- |
| $\frac{3}{4}+\frac{3}{5}=2 \frac{7}{20}$  <br> $\frac{7}{8}+2 \frac{1}{5}=3 \frac{3}{40}$ 5 <br> $\frac{9}{10}+\frac{1}{6}=1 \frac{1}{15}$  <br> $2 \frac{7}{12}+1 \frac{1}{2}=4 \frac{1}{12}$  <br> $\frac{2}{3}-\frac{1}{2}=\frac{1}{6}$ 5 <br> $1 \frac{3}{4}-\frac{3}{10}=1 \frac{9}{20}$ 5 <br> $2 \frac{1}{2}-2 \frac{1}{5}=\frac{3}{10}$  <br> $\frac{17}{10}-\frac{5}{6}=\frac{13}{15}$  <br> $2 \frac{1}{12}-1 \frac{1}{3}=\frac{3}{4}$  |  |  |

4. Multiply simple pairs of proper fractions, writing the answer in its simplest form.

| $\frac{3}{4} \times \frac{1}{2}=$ |  |  |  |
| :--- | :--- | :--- | :--- |
| $\frac{5}{8} \times \frac{2}{3}=$ |  |  |  |
| $\frac{3}{5} \times \frac{5}{12}=$ |  |  |  |
| $\frac{7}{12} \times \frac{3}{4}=$ | $\frac{1}{4}$ <br> $\frac{3}{8}$ <br> $\frac{7}{16}$ <br> $\frac{5}{12}$ | 4 |  |
| $\frac{1}{3} \times \frac{4}{5}=\frac{4}{15}$ |  |  |  |
| $\frac{3}{4} \times \frac{1}{6}=\frac{3}{24}$ or $\frac{1}{8}$ | 4 |  |  |
| $\frac{1}{10} \times \frac{3}{8}=\frac{3}{80}$ |  |  |  |
| $\frac{7}{12} \times \frac{2}{5}=\frac{14}{60}$ or $\frac{7}{30}$ |  |  |  |

5. Divide proper fractions by whole numbers.

|  |  |  | 4 |  |
| :---: | :---: | :---: | :---: | :---: |
| b | $\begin{aligned} & \frac{4}{5} \div 2=\frac{2}{5} \\ & \frac{7}{8} \div 7=\frac{1}{8} \\ & \frac{8}{9} \div 4=\frac{2}{9} \\ & \frac{5}{12} \div 10=\frac{1}{24} \end{aligned}$ |  | 4 |  |
|  |  | Section A Total: | 46 |  |


| question | answer | marks | notes |
| :---: | :---: | :---: | :---: |
| 1. Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. |  |  |  |
| a | $180 \div 5=36$ | 2 | Award two marks for a correct answer. |
| Award one mark for a correct method, |  |  |  |
| but incorrect answer. |  |  |  |

2. 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.


| question | answer | marks | notes |
| :---: | :---: | :---: | :---: |
| 3. Multiply one-digit numbers with up to two decimal places by whole numbers. |  |  |  |
| a | 1.2 | 1 |  |
| b | 0.112 | 1 |  |

4. Use written division methods in cases where the answer has up to two decimal places.

| a | 168.25 or 168 r 1 | 2 | Award 2 marks for a correct answer. <br> Award 1 mark for evidence of a correct <br> calculation, but an incorrect answer. |
| :---: | :--- | :---: | :--- |
| b | 36.75 | 2 | Award 2 marks for a correct answer. <br> Award 1 mark for evidence of a correct <br> calculation, but an incorrect answer. |
| Do not accept answers where the <br> remainder has not been written as a <br> decimal. |  |  |  |

5. Solve problems which require answers to be rounded to specified degrees of accuracy.

| a | 30 pens | 2 |
| :---: | :--- | :---: |
| b | 12 boxes | 2 |
| c | $£ 157.13$ | 2 |
| d | $€ 270.87$ | 2 |

Award 2 marks for a correct answer. Award 1 mark for evidence of a correct calculation, but an incorrect answer.
6. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

| a | Fraction | Decimal | Percentage | 6 | 1 mark for each correctly completed line. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\frac{1}{2}$ | 0.5 | 50\% |  |  |
|  | 1 | 0.33 | 33\% |  |  |
|  | 3 |  |  |  |  |
|  | $\frac{3}{5}$ or $\frac{6}{10}$ | 0.6 | 60\% |  |  |
|  | $\frac{1}{8}$ | 0.125 | 12.5\% |  |  |
|  | $\frac{7}{10}$ | 0.7 | 70\% |  |  |
|  | $\frac{9}{25}$ | 0.36 | 36\% |  |  |
| b | 75\% |  |  | 1 |  |
| C | $\frac{4}{5}$ |  |  | 1 |  |
| d | 67 cm |  |  | 1 |  |
| Section B Total: |  |  |  | 49 |  |
|  |  |  | Overall Total: | 95 |  |

