

# ASSESSMENT

## Multiplicative Relationships Between Fractions

Fractions and Decimals 8

We have included the starred Levels with a logical basis to the grade Level, in this assessment, allowing children to demonstrate their highest Level of understanding. If children are familiar with models other than these, they may demonstrate their understanding using those.

**FD 1 Halve shapes**

**FD 2 Halve groups**

half of 7 = 3 r 1  
 $\frac{1}{2}$  of 7 = 3 r 1

**FD 3 Quarter shapes**

**FD 4 Quarter groups**

quarter of 9 = 2 r 1  
 $\frac{1}{4}$  of 9 = 2 r 1

**FD 7 Meaning of denominator as the number we divided by**  
**FD 8 Multiplicative relationships between fractions**

	1			1		
half	$\frac{1}{2}$			$\frac{1}{2}$		
quarter	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
eighth	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{1}{4}$  is  $\frac{1}{4}$  of 1       $\frac{1}{8}$  is  $\frac{1}{8}$  of 1

$\frac{1}{4}$  is  $\frac{1}{2}$  of  $\frac{1}{2}$        $\frac{1}{8}$  is  $\frac{1}{2}$  of  $\frac{1}{4}$

$\frac{1}{8}$  is  $\frac{1}{4}$  of  $\frac{1}{2}$

**FD 9 Meaning of numerator as the number of parts we are concerned with**  
**FD 10 Unit and non-unit fractions on a number line**

**FD 13 Equivalent fractions and the relationship between numerator and denominator**

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8} = \frac{6}{12}$

$\frac{2}{3} = \frac{8}{12} = \frac{4}{6} = \frac{10}{18}$

**FD 14 Equivalent fractions on a number line**

**FD 20 Role of the vinculum as meaning divided by**

$\frac{1}{3} = 1 \div 3$        $\frac{2}{3} = 2 \div 3$        $\frac{2}{3} = 2 \div 3$

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

**FD 23 Add fractions with the same denominator**

$2\frac{2}{4} + 1\frac{3}{4} = 4\frac{1}{4}$

**FD 23 Subtract fractions with the same denominator**

$2\frac{2}{4} - 1\frac{3}{4} = 1\frac{1}{4}$

**FD 28 Fractions in their simplest form**

$\frac{4}{12} \div \frac{4}{4} = \frac{1}{3}$

**FD 29 Percentages as Hundredths, related to fractions and decimals**

ones    tenths    hundredths    thou

one  $\frac{1}{100}$  hundredth

1%    one hundredth

**FD 33 Add fractions with related denominators**

$\frac{3}{5} + \frac{7}{10} = \frac{3 \times 2}{5 \times 2} + \frac{7}{10} = \frac{6}{10} + \frac{7}{10} = \frac{13}{10} = 1\frac{3}{10}$

**FD 33 Subtract fractions with related denominators**

$\frac{7}{10} - \frac{2}{5} = \frac{7}{10} - \frac{2 \times 2}{5 \times 2} = \frac{7}{10} - \frac{4}{10} = \frac{3}{10}$

**Halves of Shapes and Groups**

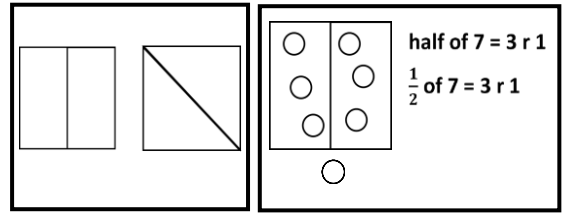
1. Divide a shape in half.
2. Collect some counters.
3. Place half of the counters onto each half of the shape.
4. Record a fraction number sentence.

**Quarters of Shapes and Groups**

1. Divide a shape in quarters.
2. Collect some counters.
3. Place quarter of the counters onto each quarter of the shape.
4. Record a fraction number sentence.

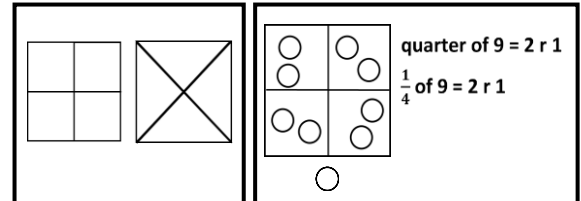
**Halves of Shapes and Groups**

1. Divide a shape in half.
2. Collect some counters.
3. Place half of the counters onto each half of the shape.
4. Record a fraction number sentence.



**Quarters of Shapes and Groups**

1. Divide a shape in quarters.
2. Collect some counters.
3. Place quarter of the counters onto each quarter of the shape.
4. Record a fraction number sentence.



**Multiplicative Relationships Between Fractions**

1. Divide a strip of paper in half.
2. Describe the fraction of 1.
3. Divide a strip of paper in quarters.
4. Describe the fraction of 1.
5. Describe the fraction of a half.
6. Continue building the fraction wall, describing the multiplicative relationships between fractions:
  - eighths, quarters and halves
  - tenths and fifths
  - sixths and thirds
  - twelfths, quarters, thirds, sixths, halves

<b>1</b>									
<b>half</b>				<b>1/2</b>					
<b>quarter</b>	<b>1/4</b>			<b>1/4</b>		<b>1/4</b>			
<b>eighth</b>	<b>1/8</b>	<b>1/8</b>	<b>1/8</b>	<b>1/8</b>	<b>1/8</b>	<b>1/8</b>	<b>1/8</b>		
<b>1/4</b>	<b>is</b>	<b>1/4</b>	<b>of</b>	<b>1</b>	<b>1/8</b>	<b>is</b>	<b>1/8</b>	<b>of</b>	<b>1</b>
<b>1/4</b>	<b>is</b>	<b>1/2</b>	<b>of</b>	<b>1/2</b>	<b>1/8</b>	<b>is</b>	<b>1/2</b>	<b>of</b>	<b>1/4</b>
					<b>1/8</b>	<b>is</b>	<b>1/4</b>	<b>of</b>	<b>1/2</b>