



AQA Maths Unit Award Scheme Unit 1: Number Structure and Calculation

Unit 1
Booklet

AQA Maths Unit Award Scheme

Unit 1: Number Structure and Calculation

Student Full Name

Student Date of Birth

Parent Full Name

Parent Email Used to Join Academy



Hello!

Welcome to the AQA course! We hope you enjoy it and find it valuable as you prepare for your GCSEs. It will help to lay the foundations towards GCSE success!



Be sure to keep up to date with top tips, free resources and information on our training courses via our social media platforms. Just click your favourite icon below!

From, *Katie*



Thank you for purchasing this product. This product is for personal use only.

You cannot:

- ▶ Claim this work as your own, alter the files in any way, or remove copyright / watermarks.
- ▶ Sell the files or combine them into another unit for sale / free.
- ▶ Post this document for sale / free elsewhere on the internet (this includes Google Doc links on blogs).
- ▶ Make copies of purchased / free items to share with others. It is strictly forbidden and is a violation of the TOU / law.



© 2023 Neuro Diversity Trust
Dyscalculia Academy is a part of the Neuro Diversity Trust
info@dyslexia-academy.co.uk



Written by Katie Nelson

Designed and created by Julia Erin - Get in touch: <https://www.linkedin.com/in/juliaerin/>

Unit 1: Session 1

Aims:

- Order at least three positive and negative integers, decimals on at least two occasions using the symbols =, \neq , $<$, $>$, \leq , \geq

Ordering Numbers:



Helpful Tool:

Thousands	Hundreds	Tens	Units	Tenths	Hundreths

1. Put these in order from smallest to largest:

134

140

138

151

129

--	--	--	--	--

2. Put these in order from smallest to largest:

6701

6221

6710

6320

--	--	--	--

3. Put these in order from largest to smallest:

8701

8665

8623

893

--	--	--	--

4. Put these in order from largest to smallest:

10006

11029

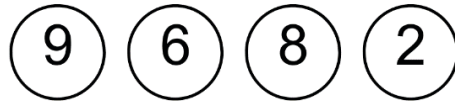
10100

11667

--	--	--	--

Extension Questions:

How many different numbers can you make using these 4 digits? Put them in order smallest to largest.



Now you try these: (write them out in a place value chart or lined up)

Write these decimals in order from smallest to largest:

a) 0.32, 0.102, 0.622, 0.2, 0.02

b) 1.392, 1.39, 1.93, 1.29, 1.309

c) 6.43, 6.03, 6.004, 6.4, 6.304

d) 0.99, 0.9, 0.099, 0.909, 0.91

Now you try these:

Put these numbers in order from smallest to largest:

a) -3 0 8 -8

--	--	--	--

b) 1 -6 3 -2

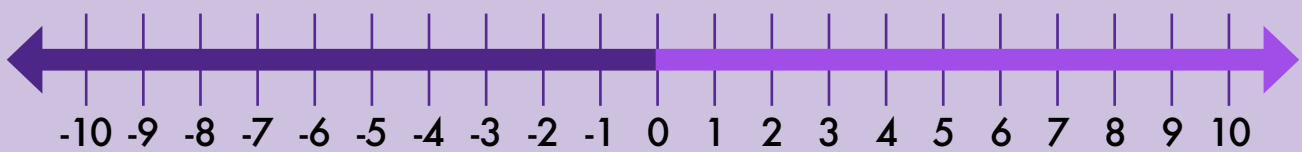
--	--	--	--

c) -1.3 0.2 4.5 -2.6

--	--	--	--



Helpful Tool:



Comparing Numbers:



Key Symbols:

$<$ less than

$>$ greater than

$=$ equal to

\leq less than or equal to

\geq greater than or equal to

\neq not equal to

Try these:

Circle true or false for each:

$3 < 7$ true false	$0.6 = 0.60$ true false	$2.58 \neq 2.580$ true false
$0.66 > 0.67$ true false	$1.22 \geq 1.41$ true false	$6 \leq 6.98$ true false
$0 > -5$ true false	$11.2 \neq 11.23$ true false	$-2 < -6$ true false

Lets play a game! Click on the link:

<https://wordwall.net/resource/35694739/math/math-ordering-numbers-true-false>

Was that easy? Now try this one with much bigger numbers!

<https://wordwall.net/resource/14211323/maths/compare-the-numbers-by-choosing-the-correct-symbol>

Unit 1: Session 2

Aims:

- Order at least three fractions on at least two occasions using the symbols =, \neq , $<$, $>$, \leq , \geq

Fractions:

Before the session

Open the following links:

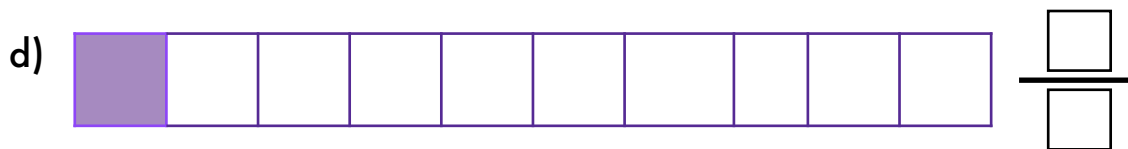
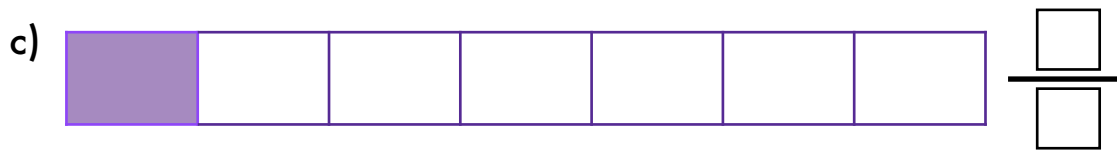
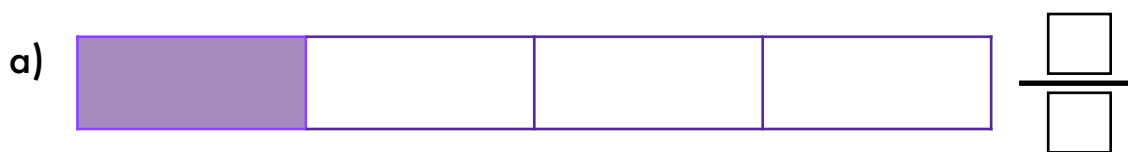
- <https://www.didax.com/apps/fraction-number-line/>
- <https://mathsbot.com/manipulatives/fractionWall>

Try these questions:

Put these fractions in order from smallest to largest:

$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{6}$ $\frac{1}{7}$ \rightarrow

What fraction of each bar is shaded?



Now try these questions:

In the circle, put a < (less than) or > (greater than) symbol to make the number sentence correct:

$$\frac{1}{5} \bigcirc \frac{1}{4}$$

$$\frac{1}{4} \bigcirc \frac{1}{7}$$

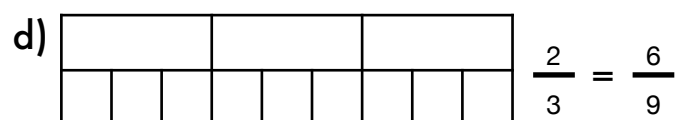
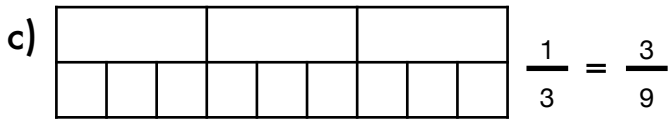
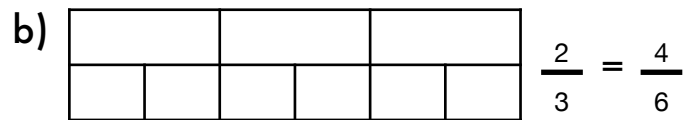
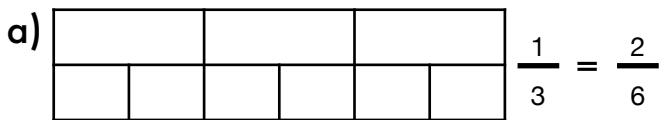
$$\frac{1}{7} \bigcirc \frac{1}{10}$$

$$\frac{1}{7} \bigcirc \frac{2}{10}$$

Circle true or false for each:

$\frac{1}{8}$ is less than $\frac{3}{8}$ true false	$\frac{1}{5} > \frac{3}{5}$ true false	$\frac{5}{10} > 1$ true false
$\frac{4}{10}$ is more than $\frac{3}{10}$ true false	$\frac{5}{3} > \frac{2}{3}$ true false	$\frac{9}{9} > \frac{1}{9}$ true false
$1\frac{1}{5}$ is more than 1 whole true false	$\frac{3}{3} = 1$ true false	$\frac{5}{5} > 1\frac{1}{5}$ true false

Shade the bar model to show equivalent fractions:



Work out which fraction is largest in each pair:

a) $\frac{5}{8}$ or $\frac{3}{4}$

b) $\frac{3}{7}$ or $\frac{7}{21}$

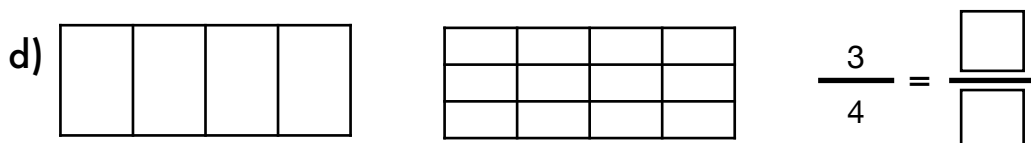
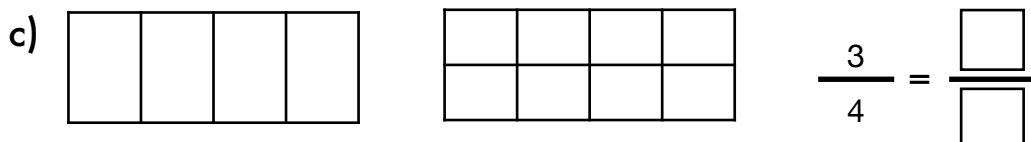
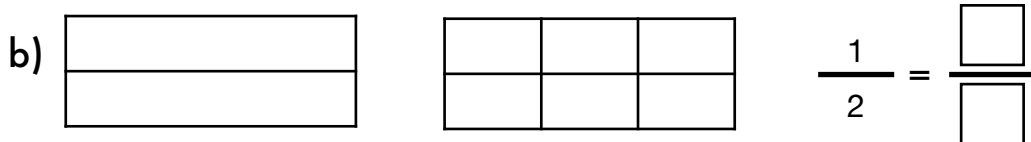
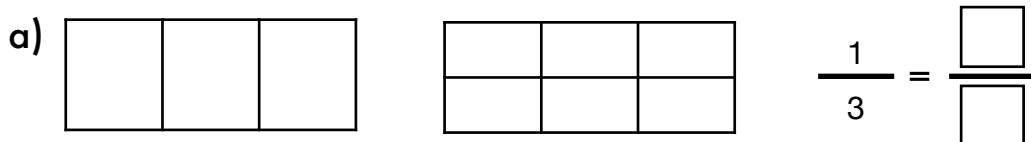
c) $\frac{14}{18}$ or $\frac{5}{6}$

d) $\frac{1}{4}$ or $\frac{3}{8}$

e) $\frac{7}{10}$ or $\frac{2}{3}$

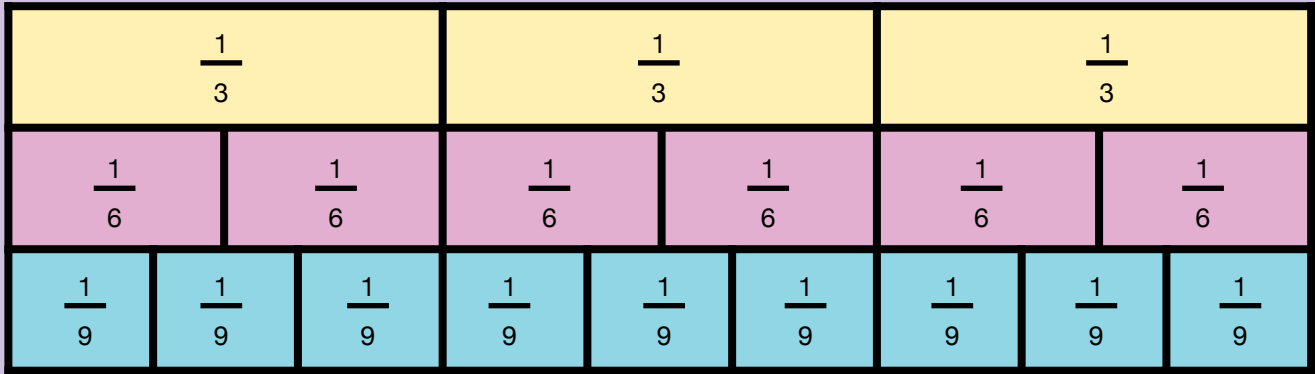
f) $\frac{7}{10}$ or $\frac{11}{20}$

Shade the shapes to help you complete equivalent fractions:





Helpful Tool:



Use the fraction wall (above) to complete the equivalent fractions:

a) $\frac{1}{3} = \frac{\square}{6}$

b) $\frac{1}{3} = \frac{\square}{9}$

c) $\frac{2}{3} = \frac{4}{\square}$

d) $\frac{2}{3} = \frac{6}{\square}$

e) $\frac{4}{6} = \frac{6}{\square}$

f) $\frac{1}{3} = \frac{\square}{6} = \frac{\square}{9}$

Insert one of the symbols $<$ $>$ $=$ to make a true statement:

a) $\frac{4}{5} \bigcirc \frac{1}{2}$

b) $\frac{3}{7} \bigcirc \frac{1}{2}$

c) $\frac{5}{10} \bigcirc \frac{1}{2}$

d) $\frac{9}{20} \bigcirc \frac{1}{2}$

e) $\frac{6}{9} \bigcirc \frac{1}{2}$

f) $\frac{7}{13} \bigcirc \frac{1}{2}$

Put these fractions in order, from smallest to largest:

$\frac{2}{3}$ $\frac{1}{3}$ $\frac{3}{5}$ $\frac{6}{15}$ \rightarrow

Put these fractions in order, from largest to smallest:

$\frac{1}{2}$ $\frac{2}{7}$ $\frac{5}{14}$ $\frac{7}{75}$ \rightarrow

Unit 1: Session 3

Aims:

- Apply the four operations to given positive integers on at least two occasions

Number Bonds:

Before the session

Open the following link:

- <https://mathsbot.com/manipulatives/blocks>

Try these questions:

Solve for ? :



1) $3 + ? = 10$ _____

2) $2 + ? = 10$ _____

3) $5 + ? = 10$ _____

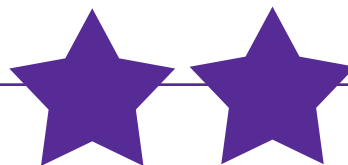
4) $6 + ? = 10$ _____

5) $1 + ? = 10$ _____

6) $? + 8 = 10$ _____

7) $? + 7 = 10$ _____

8) $? + 4 = 10$ _____



1) $60 + ? = 100$ _____

2) $45 + ? = 100$ _____

3) $68 + ? = 100$ _____

4) $73 + ? = 100$ _____

5) $? + 81 = 100$ _____

6) $26 + ? = 100$ _____

7) $? + 13 = 100$ _____

8) $? + 34 = 100$ _____

Addition:

Work out the answers to the following:

a) $51 + 37 =$ b) $27 + 21 =$ c) $37 + 44 =$ d) $84 + 19 =$

e) $48 + 48 =$ f) $39 + 21 + 43 =$ g) $75 + 56 =$ h) $93 + 84 =$

Work out these additions:

a) $123 + 564 =$ b) $557 + 61 =$ c) $839 + 152 =$ d) $357 + 368 =$

e) $940 + 346 =$ f) $382 + 121 + 85 =$ g) $948 + 253 =$ h) $777 + 444 =$

Subtraction:

Work out the answers to the following:

a) $68 - 32 =$ b) $98 - 21 =$ c) $51 - 24 =$ d) $70 - 38 =$

e) $46 - 28 =$ f) $81 - 43 =$ g) $94 - 67 =$ h) $85 - 56 =$

Work out these subtractions:

a) $785 - 512 =$ b) $548 - 26 =$ c) $839 - 152 =$ d) $557 - 319 =$

e) $940 - 236 =$ f) $888 - 192 =$ g) $603 - 381 =$ h) $800 - 118 =$

Extension Puzzle:

Arrange the Digits - In each box, arrange the digits to make the calculation true:

2	6		
7	7		
		+	
		9 4	


4	5		
8	9		
		+	
		1 5 2	


0	1		
2	4		
8		+	
		2 0 4	


1	2		
3	7		
9		+	
		2 6 5	

Multiplication:

Answer the following multiplication questions:

	
1)	$78 \times 5 = \underline{\quad}$
2)	$84 \times 6 = \underline{\quad}$
3)	$67 \times 5 = \underline{\quad}$
4)	$95 \times 3 = \underline{\quad}$

	
1)	$32 \times 14 = \underline{\quad}$
2)	$28 \times 16 = \underline{\quad}$
3)	$34 \times 21 = \underline{\quad}$
4)	$47 \times 24 = \underline{\quad}$


	
1)	$325 \times 15 = \underline{\quad}$
2)	$245 \times 26 = \underline{\quad}$
3)	$323 \times 37 = \underline{\quad}$
4)	$502 \times 16 = \underline{\quad}$


Work out the answers to the following:


- | | | | |
|--------------------|--------------------|--------------------|--------------------|
| a) $32 \times 3 =$ | b) $15 \times 5 =$ | c) $23 \times 4 =$ | d) $19 \times 3 =$ |
| e) $47 \times 2 =$ | f) $6 \times 21 =$ | g) $35 \times 5 =$ | h) $59 \times 4 =$ |
| i) $7 \times 28 =$ | j) $62 \times 6 =$ | k) $74 \times 5 =$ | l) $53 \times 9 =$ |
| m) $7 \times 66 =$ | n) $83 \times 8 =$ | o) $96 \times 9 =$ | |

Division:

Answer the following division questions:


1) $24 \div 3 = \underline{\quad}$
2) $36 \div 6 = \underline{\quad}$
3) $40 \div 8 = \underline{\quad}$
4) $64 \div 8 = \underline{\quad}$


1) $192 \div 6 = \underline{\quad}$
2) $189 \div 9 = \underline{\quad}$
3) $245 \div 7 = \underline{\quad}$
4) $310 \div 5 = \underline{\quad}$


1) $432 \div 18 = \underline{\quad}$
2) $578 \div 17 = \underline{\quad}$
3) $840 \div 24 = \underline{\quad}$
4) $1242 \div 27 = \underline{\quad}$

Work out the answers to the following:

- | | | | |
|------------------|------------------|------------------|------------------|
| a) $84 \div 4 =$ | b) $52 \div 2 =$ | c) $72 \div 3 =$ | d) $75 \div 5 =$ |
| e) $54 \div 3 =$ | f) $68 \div 4 =$ | g) $90 \div 5 =$ | h) $84 \div 6 =$ |

Work out the answers to the following divisions:

- | | | | |
|-------------------|-------------------|-------------------|-------------------|
| a) $236 \div 2 =$ | b) $156 \div 3 =$ | c) $108 \div 4 =$ | d) $235 \div 5 =$ |
| e) $260 \div 4 =$ | f) $222 \div 3 =$ | g) $545 \div 5 =$ | h) $312 \div 6 =$ |

Unit 1: Session 4

Aims:

- Apply the four operations to given negative integers on at least two occasions

Negative Integers:

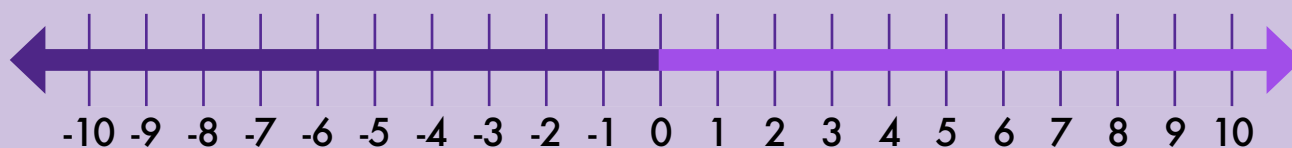
Before the session

Open the following link:

- <https://www.didax.com/apps/number-line/>



Helpful Tool:



Addition and Subtraction of negative integers:

1) $-2 + 4 = \underline{\quad}$
2) $-4 + 9 = \underline{\quad}$
3) $-5 + 4 = \underline{\quad}$
4) $-1 + 5 = \underline{\quad}$

1) $4 - 5 = \underline{\quad}$
2) $2 - 7 = \underline{\quad}$
3) $-3 - 6 = \underline{\quad}$
4) $1 - 5 = \underline{\quad}$

1) $2 + -4 = \underline{\quad}$
2) $-3 + -1 = \underline{\quad}$
3) $7 + -5 = \underline{\quad}$
4) $1 + -3 = \underline{\quad}$

Work out the answers to the following:

a) $4 - (-1) =$ b) $6 + (-3) =$ c) $3 + (-2) =$ d) $7 + (-4) =$

e) $2 + (-5) =$ f) $3 + (-3) =$ g) $4 + (-6) =$ h) $1 + (-4) =$

Work out the answers to the following:

a) $(-1) + 7 =$ b) $(-2) + 5 =$ c) $(-4) + 4 =$ d) $(-3) + 6 =$

e) $(-5) + 2 =$ f) $(-5) + 1 =$ g) $(-4) + 1 =$ h) $(-6) + 5 =$

Work out the answers to the following:

a) $2 - 5 =$ b) $3 - 4 =$ c) $1 - 6 =$ d) $1 - 5 =$

e) $(-1) - 3 =$ f) $(-4) - 3 =$ g) $(-2) - 2 =$ h) $(-6) - 1 =$

Work out the answers to the following:

a) $2 - (-4) =$ b) $1 - (-2) =$ c) $5 - (-1) =$ d) $3 - (-3) =$

e) $(-3) - (-5) =$ f) $(-1) - (-4) =$ g) $(-6) - (-2) =$ h) $(-5) - (-2) =$

Extension Puzzle:


Missing Signs - Write an addition (+) or subtraction (−) symbol in the boxes to complete the calculations:

a) $3 \square (-5) = -2$ b) $(-3) \square 3 = -6$ c) $4 \square (-4) = 0$


d) $(-4) \square 1 = -3$ e) $(-1) \square (-8) = 7$ f) $(-2) \square (-2) = -4$

g) $2 \square (-3) = 5$ h) $(-7) \square 6 = -1$ i) $0 \square (-5) = -5$


Multiplication and Division of negative integers:



1) $2 \times -2 =$ _____
2) $6 \times -5 =$ _____
3) $1 \times -4 =$ _____
4) $-1 \times -3 =$ _____
5) $-2 \times -8 =$ _____
6) $3 \times -5 =$ _____
7) $8 \times -3 =$ _____
8) $2 \times -9 =$ _____



1) $24 \div -8 =$ _____
2) $-48 \div 6 =$ _____
3) $-21 \div -7 =$ _____
4) $50 \div -10 =$ _____
5) $-25 \div 5 =$ _____
6) $-66 \div -6 =$ _____
7) $72 \div -8 =$ _____
8) $-63 \div 9 =$ _____



1) $6 \div -2 =$ _____
2) $3 \times -5 =$ _____
3) $-16 \div -4 =$ _____
4) $-8 \times -5 =$ _____
5) $-4 \times 9 =$ _____
6) $-81 \div -9 =$ _____
7) $-64 \div 8 =$ _____
8) $-7 \times -7 =$ _____

Extension Puzzle:

Negative Number Countdown - In each section, use the four numbers on the left to make the target number on the right. You do not need to use all the numbers and you can only use each number once. You can add, subtract, multiply or divide in any order.

-5 -1 2 3

target

-14

-4 -3 -2 -1

target

-10

-4 -3 -2 -1

target

9