

Year 7 Maths

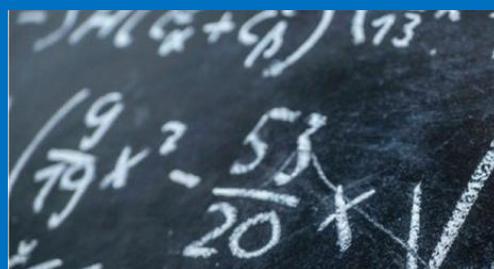
Knowledge Organiser

Term 2

Name:	Class:
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Keyword	Definition
Numerator	The top number in a fraction.
Denominator	The bottom number in a fraction.
Improper Fraction	A fraction where the numerator is not smaller than the denominator.
Mixed Number	A combination of a whole number and a fraction.
Product	The result of multiplication.
Percent	Out of 100
Simplify	To make simpler or easier to understand by reducing the size of numbers or the number of terms.
Reciprocal	The result of dividing 1 by the number.

Homework 1 due:	
Homework 2 due:	
Homework 3 due:	



Term 2 Overview

Big Questions for the term

Measures

- What are the metric units for length?
- What are the metric units for volume and mass?
- How do we convert time?

Fractions, Decimals and Percentages

- How do we represent fractions?
- What do we need to do to compare and order fractions?
- How do we convert between mixed number and improper fractions?
- How do I work out fraction of amounts?
- How do we add and subtract fractions?
- How do we multiply fractions by another fraction?
- How do we divide fractions by fractions?
- Where can we see fractions in other topics?
- What is a percentage?
- How can we use chunking to solve percentage problems?
- How can we convert numbers between fractions, decimals and percentages?

Knowledge Retrieval Questions – From Term 1

Unit 1 – Calculations and Accuracy

#	Question	Answer
1	What does the word sum mean?	The result of addition.
2	What does consecutive mean?	Following each other continuously.
3	How do you find the difference between two numbers?	Subtract the smaller number from the larger one.
4	What should your answer be if the question tells you to calculate?	A number
5	What should your answer be if the question tells you to evaluate?	A number
6	How do you divide a number by 10?	Move all the digits 1 place to the right
7	How do you multiply a number by 10?	Move all the digits 1 place to the left
8	What is subtracting a negative number equivalent to?	Adding a positive number
9	What is adding a negative number equivalent to?	Subtracting a positive number
10	What is a term-to-term rule?	A rule telling you how to get from one term to the next in a sequence
11	In a sequence, what is meant by a term?	One of the numbers in the sequence
12	What is the first step when trying to find the next term in a sequence?	Identify the pattern.
13	What is a linear sequence?	A number pattern which increases or decreases by the same amount each time.
14	How do you work out the value of a digit in a long number?	Ignore every other digit (make them zeroes)
15	How do you add decimals?	Same method as usual, lining up the decimal points
16	How do you subtract decimals?	Same method as usual, lining up the decimal points

Unit 2 – Integers, Powers and Roots

#	Question	Answer
1	What does the word product mean?	The result of a multiplication.
2	What sign would the product of 2 negative numbers have?	Positive
3	What sign would the product of a positive and a negative number have?	Negative
4	What sign would the answer to a negative number divided by a positive number have?	Negative
5	What is the definition of a square number?	The product of a number and itself
6	List the first 15 square numbers.	1,4,9,16,25,36,49,64,81,100,121,144,169,196,225
7	What is the definition of a factor?	A number which divides another number exactly.
8	What is the definition of a multiple?	A number in another number's times table.
9	What is the definition of a prime number?	A number with only 2 factors.
10	Why do we use BIDMAS?	Order of operations
11	How do you convert a mixed number to an improper fraction?	Multiply the whole number by the denominator and add it to the numerator
12	What does HCF stand for?	Highest Common Factor
13	What does LCM stand for?	Lowest Common Multiple
14	What is a cube number?	The product of 3 equal numbers.
15	How do you divide by a fraction?	Multiply by its reciprocal (the fraction flipped over)

Knowledge Retrieval Questions – Term 2

Unit 3 - Measures

#	Question	Answer
1	How do you convert millimetres to metres?	Divide by 1000
2	How do you convert metres to centimetres?	Multiply by 100
3	How do you convert metres to kilometres?	Divide by 1000
4	How do you convert hours into minutes?	Multiply by 60
5	How do you convert seconds into minutes?	Divide by 60
6	How do you convert kilograms into grams?	Multiply by 1000
7	How do you convert kilograms into tonnes?	Divide by 1000
8	How do you convert litres to millilitres?	Multiply by 1000

Unit 4 – Fractions, Decimals and percentages

#	Question	Answer
1	What is a numerator?	Top number in a fraction
2	What is a denominator?	Bottom number in a fraction
3	What operation does a fraction represent?	Division
4	Which operation do we use for the word 'of'?	Multiplication
5	What's the first step when adding or subtracting fractions?	Write the fractions with a common denominator
6	How do you multiply fractions?	Multiply the numerators and multiply the denominators.
7	How do you convert a decimal to a percentage?	Multiply by 100 (%)
8	How do you simplify fractions?	Divide both the numerator and denominator by a common factor.
9	How do you find an equivalent fraction?	Multiply or divide the numerator and denominator by the same number.
10	How do you find a fraction of an amount?	Divide the amount by the denominator and multiply by the numerator.
11	What does percent mean?	Out of 100
12	How do you convert a fraction to a decimal if the denominator is a factor of 100?	Write the equivalent fraction with a denominator of 100 (then divide by 100)
13	How do you convert a decimal to a fraction?	The numerator is the same digits without the decimal point, the denominator is the place value of the last digit.
14	How do you convert a percentage to a decimal?	Divide by 100 (%)

Term 2 - Homework 1

#	Type	Question	Answer
1	Knowledge	What is the definition of a multiple?	
	Application 1	Give an example of a multiple of 10	
	Application 2	Give an example of a multiple of 19	

2	Knowledge	What is the definition of a factor?	
	Application 1	Give an example of a factor of 27	
	Application 2	Give an example of a factor of 91	

3	Knowledge	How do you convert a mixed number to an improper fraction?	
	Application 1	Convert 9 and $\frac{8}{9}$ into an improper fraction.	
	Application 2	Convert 13 and $\frac{15}{16}$ into an improper fraction.	

4	Knowledge	What does the word product mean?	
	Application 1	What is the product of 8 and 10?	
	Application 2	What is the product of 9 and 19?	

5	Knowledge	What is a cube number?	
	Application 1	What is 2 cubed?	
	Application 2	What is 7 cubed?	

#	Type	Question	Answer
6	Knowledge	What sign would the product of a positive and a negative number have?	
	Application 1	What is the product of 8 and -10?	
	Application 2	What is the product of 15 and -10?	

7	Knowledge	Why do we use BIDMAS?	
	Application 1	Calculate $51 + 2 \times 8$	
	Application 2	Calculate $188 + 15 \times 17$	

8	Knowledge	What sign would the product of 2 negative numbers have?	
	Application 1	What is the product of -10 and -10?	
	Application 2	What is the product of -19 and -8?	

9	Knowledge	What does HCF stand for?	
	Application 1	What is the HCF of 12 and 6?	
	Application 2	What is the HCF of 72 and 80?	

10	Knowledge	What is the definition of a square number?	
	Application 1	What is the 10th square number?	
	Application 2	What is the 16th square number?	

#	Type	Question	Answer
11	Knowledge	How do you divide by a fraction?	
	Application 1	Calculate 2 divided by $\frac{1}{7}$	
	Application 2	Calculate 2 divided by $\frac{2}{5}$	

12	Knowledge	What sign would the answer to a negative number divided by a positive number have?	
	Application 1	Calculate -80 divided by 10	
	Application 2	Calculate -255 divided by 17	

13	Knowledge	List the first 15 square numbers.	
	Application 1	What is the 9th square number?	
	Application 2	What is the 20th square number?	

14	Knowledge	What is the definition of a prime number?	
	Application 1	Is the number 9 prime?	
	Application 2	Is the number 13 prime?	

15	Knowledge	What does LCM stand for?	
	Application 1	What is the LCM of 8 and 2?	
	Application 2	What is the LCM of 9 and 9?	

Workings Space

Term 2 - Homework 2

#	Type	Question	Answer
1	Knowledge	What is the definition of a factor?	
	Application 1	Give an example of a factor of 15	
	Application 2	Give an example of a factor of 126	

2	Knowledge	What sign would the product of 2 negative numbers have?	
	Application 1	What is the product of -8 and -7?	
	Application 2	What is the product of -14 and -3?	

3	Knowledge	What is a cube number?	
	Application 1	What is 2 cubed?	
	Application 2	What is 7 cubed?	

4	Knowledge	What sign would the product of a positive and a negative number have?	
	Application 1	What is the product of 3 and -7?	
	Application 2	What is the product of 17 and -7?	

5	Knowledge	What does HCF stand for?	
	Application 1	What is the HCF of 7 and 8?	
	Application 2	What is the HCF of 42 and 42?	

#	Type	Question	Answer
6	Knowledge	What is the definition of a multiple?	
	Application 1	Give an example of a multiple of 8	
	Application 2	Give an example of a multiple of 14	

7	Knowledge	How do you convert a mixed number to an improper fraction?	
	Application 1	Convert 5 and $\frac{3}{4}$ into an improper fraction.	
	Application 2	Convert 18 and $\frac{17}{18}$ into an improper fraction.	

8	Knowledge	What is the definition of a prime number?	
	Application 1	Is the number 5 prime?	
	Application 2	Is the number 18 prime?	

9	Knowledge	How do you divide by a fraction?	
	Application 1	Calculate 5 divided by $\frac{1}{6}$	
	Application 2	Calculate 5 divided by $\frac{2}{4}$	

10	Knowledge	What is the definition of a square number?	
	Application 1	What is the 4th square number?	
	Application 2	What is the 20th square number?	

#	Type	Question	Answer
11	Knowledge	What does LCM stand for?	
	Application 1	What is the LCM of 7 and 5?	
	Application 2	What is the LCM of 15 and 8?	

12	Knowledge	What does the word product mean?	
	Application 1	What is the product of 3 and 8?	
	Application 2	What is the product of 5 and 14?	

13	Knowledge	List the first 15 square numbers.	
	Application 1	What is the 7th square number?	
	Application 2	What is the 17th square number?	

14	Knowledge	What sign would the answer to a negative number divided by a positive number have?	
	Application 1	Calculate -21 divided by 7	
	Application 2	Calculate -187 divided by 11	

15	Knowledge	Why do we use BIDMAS?	
	Application 1	Calculate $75 + 1 \times 7$	
	Application 2	Calculate $150 + 20 \times 16$	

Workings Space

Term 2 - Homework 3

#	Type	Question	Answer
1	Knowledge	How do you find a fraction of an amount?	
	Application 1	Find $\frac{9}{11}$ of 77	
	Application 2	Find $\frac{20}{32}$ of 544	

2	Knowledge	How do you convert metres to kilometres?	
	Application 1	Convert 3000m into km	
	Application 2	Convert 16000m into km	

3	Knowledge	How do you find an equivalent fraction?	
	Application 1	State a fraction which is equivalent to $\frac{6}{89}$	
	Application 2	State a fraction which is equivalent to $\frac{15}{173}$	

4	Knowledge	How do you convert litres to millilitres?	
	Application 1	Convert 8.7 litres into millilitres	
	Application 2	Convert 13.7 litres into millilitres	

5	Knowledge	How do you convert a decimal to a percentage?	
	Application 1	Convert 0.85 into a percentage.	
	Application 2	Convert 0.154 into a percentage.	

#	Type	Question	Answer
6	Knowledge	How do you convert a decimal to a fraction?	
	Application 1	Write 0.30 as a fraction.	
	Application 2	Write 0.160 as a fraction.	

7	Knowledge	What operation does a fraction represent?	
	Application 1	What calculation would you do to write 7 tenths as a decimal?	
	Application 2	What calculation would you do to write 12 ninths as a decimal?	

8	Knowledge	How do you convert millimetres to metres?	
	Application 1	Convert 8700mm into metres	
	Application 2	Convert 13700mm into metres	

9	Knowledge	How do you simplify fractions?	
	Application 1	Fully simplify 10/24	
	Application 2	Fully simplify 72/108	

10	Knowledge	What does percent mean?	
	Application 1	Write 30% as a fraction.	
	Application 2	Write 160% as a fraction.	

#	Type	Question	Answer
11	Knowledge	How do you convert a fraction to a decimal if the denominator is a factor of 100?	
	Application 1	What is $\frac{1}{25}$ as a decimal?	
	Application 2	What is $\frac{7}{250}$ as a decimal?	

12	Knowledge	How do you convert seconds into minutes?	
	Application 1	Convert 240 seconds into minutes	
	Application 2	Convert 840 seconds into minutes	

13	Knowledge	Which operation do we use for the word 'of'?	
	Application 1	Write the calculation for 'Two thirds of 36'	
	Application 2	Write the calculation for 'Seven twelfths of 180'	

14	Knowledge	How do you convert hours into minutes?	
	Application 1	Convert 8 hours into minutes	
	Application 2	Convert 13 hours into minutes	

15	Knowledge	How do you convert kilograms into tonnes?	
	Application 1	Convert 8900kg into tonnes	
	Application 2	Convert 17300kg into tonnes	

Workings Space