

Year 7 Maths

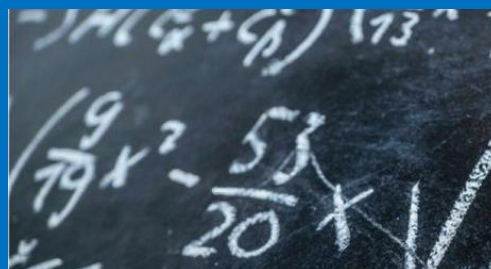
Knowledge Organiser

Term 1

Name:	Class:
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Keyword	Definition
Integer	A whole number
Ascending	Increasing in size, going up
Descending	Decreasing in size, going down
Decimal	A way of writing numbers which aren't whole. The whole number and the decimal fraction are separated by a decimal point.
Decimal Places	The numbers that come after a decimal point.
Factor	A number which the amount can be divided by without leaving a remainder.
Multiple	A number which is the result of multiplying an amount by an integer.
Prime	A number with only 2 factors.
Square (n)	A number formed by multiplying an amount by itself.
Cube (n)	A number formed by raising an amount to the power of 3.

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



Term 1 Overview

Big Questions for the term

Calculations and Accuracy

- What is place value, and what do we mean by 'base 10'?
- What if we worked in a different base?
- How can we put numbers in order?
- What is rounding?
- What is the quickest way to add/subtract numbers?
- How can we add/subtract with decimals?
- What is perimeter?
- When do we use negative numbers?
- How can we add/subtract with negatives?
- What is a linear sequence?

Integers, Powers and Roots

- What is multiplication, and how does it relate to division?
- How do we show our working out when multiplying larger numbers?
- How do we multiply decimals?
- When is a question asking us to multiply?
- What is a lowest common multiple?
- How do we show our working out when dividing numbers?
- When dividing, how do we know when to round up or round down?
- What is a factor? What is a highest common factor?
- What is a prime number?
- Can every number be written as a product of its prime factors?
- Can we use LCM/HCF to solve worded problems?
- How do we divide and multiply with negative numbers?
- How do we use the four operations with negative numbers?
- What does it mean to square or cube a number?
- What is the order of operations? How is it useful?

Knowledge Retrieval Questions

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 does HCF stand for?	Highest Common Factor
10	What does LCM stand for?	Lowest Common Multiple
11	What is a cube number?	The product of 3 equal numbers.
12	How do you divide by a fraction?	Multiply by its reciprocal (the fraction flipped over)

Term 1 Homework 1

#	Type	Question	Answer
1	Knowledge	What is the first step when trying to find the next term in a sequence?	Identify the pattern.
	Application 1	What is the next term in the following sequence 8, 15, 22, 29, 36?	43
	Application 2	What is the next term in the following sequence 16, 33, 50, 67, 84?	

2	Knowledge	What is a term-to-term rule?	A rule telling you how to get from one term to the next in a sequence
	Application 1	What is the term-to-term rule in the following sequence 8, 15, 22, 29, 36?	add 7
	Application 2	What is the term-to-term rule in the following sequence 16, 33, 50, 67, 84?	

3	Knowledge	How do you add decimals?	
	Application 1	Calculate $6.2 + 9.6$	15.8
	Application 2	Calculate $18.4 + 16.9$	

4	Knowledge	What is adding a negative number equivalent to?	
	Application 1	Evaluate $6 + (-10)$	-4
	Application 2	Evaluate $16 + (-18)$	

5	Knowledge	What is a linear sequence?	A number pattern which increases or decreases by the same amount each time.
	Application 1	Is the following sequence linear? 4, 6, 6, 8	No
	Application 2	Is the following sequence linear? 21, 44, 70, 93	

#	Type	Question	Answer
6	Knowledge	What does the word sum mean?	
	Application 1	What is the sum of 8 and 7?	15
	Application 2	What is the sum of 16 and 17?	

7	Knowledge	How do you divide a number by 10?	
	Application 1	Calculate 96 divided by 10.	9.6
	Application 2	Calculate 169 divided by 10.	

8	Knowledge	How do you multiply a number by 10?	
	Application 1	Evaluate 62 multiplied by 10.	620
	Application 2	Evaluate 184 multiplied by 10.	

9	Knowledge	What is subtracting a negative number equivalent to?	
	Application 1	Calculate $8 - (-9)$	17
	Application 2	Calculate $16 - (-17)$	

10	Knowledge	What does consecutive mean?	
	Application 1	Select 2 of these numbers which are consecutive: 8, 13, 9, 16.	8 and 9
	Application 2	Select 2 of these numbers which are consecutive: 16, 21, 18, 20.	

#	Type	Question	Answer
11	Knowledge	What should your answer be if the question tells you to calculate?	
	Application 1	Calculate 6 multiplied by 10	60
	Application 2	Calculate 16 multiplied by 2	

12	Knowledge	How do you find the difference between two numbers?	
	Application 1	What is the difference between 96 and 62?	34
	Application 2	What is the difference between 169 and 184?	

13	Knowledge	What should your answer be if the question tells you to evaluate?	
	Application 1	Evaluate $96 + 29$	
	Application 2	Evaluate $169 + 154$	323

14	Knowledge	In a sequence, what is meant by a term?	One of the numbers in the sequence
	Application 1	What is the third term in the following sequence? 96, 158, 220, 282, 344	220
	Application 2	What is the third term in the following sequence? 169, 353, 537, 721, 905	

15	Knowledge	How do you subtract decimals?	
	Application 1	What is the difference between 0.67 and 8.5	7.83
	Application 2	What is the difference between 1.41 and 16.2	

#	Type	Question	Answer
16	Knowledge	How do you work out the value of a digit in a long number?	Ignore every other digit (make them zeroes)
	Application 1	What is the value of the 1 in the number 20145?	100
	Application 2	What is the value of the 4 in the number 74385?	

Workings Space

Term 1 Homework 2

#	Type	Question	Answer
1	Knowledge	What is adding a negative number equivalent to?	
	Application 1	Evaluate $9 + (-3)$	6
	Application 2	Evaluate $18 + (-16)$	

2	Knowledge	How do you find the difference between two numbers?	
	Application 1	What is the difference between 63 and 13?	50
	Application 2	What is the difference between 185 and 185?	

3	Knowledge	In a sequence, what is meant by a term?	
	Application 1	What is the third term in the following sequence? 63, 76, 89, 102, 115	89
	Application 2	What is the third term in the following sequence? 185, 370, 555, 740, 925	

4	Knowledge	What should your answer be if the question tells you to calculate?	
	Application 1	Calculate 9 multiplied by 3	27
	Application 2	Calculate 18 multiplied by 2	

5	Knowledge	How do you multiply a number by 10?	
	Application 1	Evaluate 13 multiplied by 10.	130
	Application 2	Evaluate 185 multiplied by 10.	

#	Type	Question	Answer
6	Knowledge	What does the word sum mean?	
	Application 1	What is the sum of 9 and 9?	18
	Application 2	What is the sum of 12 and 19?	

7	Knowledge	How do you subtract decimals?	
	Application 1	What is the difference between 0.2 and 1.1	0.9
	Application 2	What is the difference between 1.39 and 11.4	

8	Knowledge	What is a term-to-term rule?	
	Application 1	What is the term-to-term rule in the following sequence 9, 18, 27, 36, 45?	add 9
	Application 2	What is the term-to-term rule in the following sequence 12, 31, 50, 69, 88?	

9	Knowledge	How do you work out the value of a digit in a long number?	
	Application 1	What is the value of the 4 in the number 53478?	400
	Application 2	What is the value of the 1 in the number 41052?	

10	Knowledge	What should your answer be if the question tells you to evaluate?	
	Application 1	Evaluate $63 + 31$	94
	Application 2	Evaluate $185 + 189$	

#	Type	Question	Answer
11	Knowledge	What is a linear sequence?	
	Application 1	Is the following sequence linear? 4, 6, 6, 8	No
	Application 2	Is the following sequence linear? 19, 42, 66, 89	

12	Knowledge	How do you divide a number by 10?	
	Application 1	Calculate 63 divided by 10.	6.3
	Application 2	Calculate 185 divided by 10.	

13	Knowledge	What is subtracting a negative number equivalent to?	
	Application 1	Calculate $9 - (-2)$	11
	Application 2	Calculate $12 - (-19)$	

14	Knowledge	What is the first step when trying to find the next term in a sequence?	
	Application 1	What is the next term in the following sequence 9, 18, 27, 36, 45?	54
	Application 2	What is the next term in the following sequence 12, 31, 50, 69, 88?	

15	Knowledge	What does consecutive mean?	
	Application 1	Select 2 of these numbers which are consecutive: 9, 14, 10, 17.	9 and 10
	Application 2	Select 2 of these numbers which are consecutive: 12, 17, 14, 16.	

#	Type	Question	Answer
16	Knowledge	How do you add decimals?	
	Application 1	Calculate $1.3 + 6.3$	7.6
	Application 2	Calculate $18.5 + 18.5$	

Workings Space

Term 1 Homework 3

#	Type	Question	Answer
1	Knowledge	How do you divide a number by 10?	
	Application 1	Calculate 76 divided by 10.	
	Application 2	Calculate 136 divided by 10.	

2	Knowledge	How do you find the difference between two numbers?	
	Application 1	What is the difference between 76 and 79?	
	Application 2	What is the difference between 136 and 136?	

3	Knowledge	What is a term-to-term rule?	
	Application 1	What is the term-to-term rule in the following sequence 5, 14, 23, 32, 41?	
	Application 2	What is the term-to-term rule in the following sequence 11, 22, 33, 44, 55?	

4	Knowledge	What is a linear sequence?	
	Application 1	Is the following sequence linear? 2, 4, 9, 11	
	Application 2	Is the following sequence linear? 24, 46, 63, 85	

5	Knowledge	How do you subtract decimals?	
	Application 1	What is the difference between 0.97 and 9.1	
	Application 2	What is the difference between 1.69 and 15.4	

#	Type	Question	Answer
6	Knowledge	What should your answer be if the question tells you to evaluate?	
	Application 1	Evaluate $76 + 50$	
	Application 2	Evaluate $136 + 195$	

7	Knowledge	How do you multiply a number by 10?	
	Application 1	Evaluate 79 multiplied by 10.	
	Application 2	Evaluate 136 multiplied by 10.	

8	Knowledge	What should your answer be if the question tells you to calculate?	
	Application 1	Calculate 5 multiplied by 8	
	Application 2	Calculate 11 multiplied by 2	

9	Knowledge	How do you work out the value of a digit in a long number?	
	Application 1	What is the value of the 2 in the number 31256?	
	Application 2	What is the value of the 5 in the number 85496?	

10	Knowledge	In a sequence, what is meant by a term?	
	Application 1	What is the third term in the following sequence? 76, 155, 234, 313, 392	
	Application 2	What is the third term in the following sequence? 136, 272, 408, 544, 680	

#	Type	Question	Answer
11	Knowledge	How do you add decimals?	
	Application 1	Calculate $7.9 + 7.6$	
	Application 2	Calculate $13.6 + 13.6$	

12	Knowledge	What does the word sum mean?	
	Application 1	What is the sum of 5 and 9?	
	Application 2	What is the sum of 11 and 11?	

13	Knowledge	What is subtracting a negative number equivalent to?	
	Application 1	Calculate $5 - (-6)$	
	Application 2	Calculate $11 - (-17)$	

14	Knowledge	What does consecutive mean?	
	Application 1	Select 2 of these numbers which are consecutive: 5, 10, 6, 13.	
	Application 2	Select 2 of these numbers which are consecutive: 11, 16, 13, 15.	

15	Knowledge	What is adding a negative number equivalent to?	
	Application 1	Evaluate $5 + (-8)$	
	Application 2	Evaluate $11 + (-16)$	

#	Type	Question	Answer
16	Knowledge	What is the first step when trying to find the next term in a sequence?	
	Application 1	What is the next term in the following sequence 5, 14, 23, 32, 41?	
	Application 2	What is the next term in the following sequence 11, 22, 33, 44, 55?	

Workings Space