Year 6 Maths Home Learning -Revision

Maths- addition and subtraction

Calculate.

	3	4	6	2	1
+	2	5	7	3	4

	4	7	6	1	3	2	5
-		9	3	8	0	5	2

67,832 + 5,258   834,501 – 193, 642

? *What happens when there is more than 10 in a place value column?*

Activity 1   Add & Subtract Integers

Calculate.

	4	8	2	4	0	5
+	2	3	9	4	2	0

	8	3	7	0	1	0	5
-		5	6	0	1	7	3

	5	2	7	4	2	8	9
+		8	3	5	8	1	7

Activity 2   Add & Subtract Integers

A four-bedroom house costs £450,000. A three-bedroom house costs £199,000 less. How much does the three-bedroom house cost? What method did you use to find the answer?

Activity 2   Add & Subtract Integers

House A costs £750,000. House B cost £99,320 less. How much does house B cost? What method did you use?

? *When should we use our mental methods?*

Activity 3   Add & Subtract Integers

Calculate the missing digits. What do you notice?

	5	2	2	4	7	?
+	3	?	5	9	0	4

Activity 3   Add & Subtract Integers

Calculate the missing digits. What do you notice?

	4	?	2	8	4	9
+	2	5	2	4	0	?

Write the four missing digits to make this **addition** correct.

		6		8
+	3		9	
	9	0	1	9

The table shows the cost of a new football kit.

Item	Cost
Shirt	£8.75
Shorts (1 pair)	£5.95
Socks (1 pair)	£4.15

Altogether, how much does the complete football kit cost?

£ _____

Here are five digit cards.

1 2 3 4 5

Use all five digit cards once to make this sum correct.

+
6 0

This table shows the number of people living in various towns in England.

Town	Population
Bedford	82,448
Carlton	48,493
Dover	34,087
Formby	24,478
Telford	166,640

What is the **total** of the numbers of people living in Formby and in Telford?

Three whole numbers add up to 50

Seb says,

'*All three numbers must be even numbers.*'

Is Seb correct?
Circle **Yes** or **No**.

Yes / No

Explain how you know.

What is the **difference** between the numbers of people living in Bedford and in Dover?

The four sums below can be completed using only the numbers 1 to 8

Use each number **once** to complete the sums.

One sum has been done for you.

1   2   3   4   5̸   6̸   7   8

1 + 5 + 6 = 12

2 +   +   = 12

3 +   +   = 12

6 +   +   = 12

Maths- multiplication and division

Multiply Integers

Calculate.

	4	2	6	7
x			3	4

	3	0	4	6
x			7	3

5,734 x 26

? What is important to remember as we begin multiplying by the tens number.
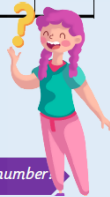
Activity 1 Multiply Integers

Calculate.

	2	4	0	5
x			2	7

	6	4	6	3
x			3	4

	7	1	4	8
x			5	5

	9	5	3	2
x			6	3

Activity 2 Multiply Integers

Leanna made cookies for a bake sale. She made 345 cookies. The recipe stated that she should have 17 chocolate chips in each cookie.

How many chocolate chips did she use altogether?

Activity 3 Multiply Integers

Work out the missing number.

6 x 35 = ___ x 5

? Can the inverse operation be used?

Activity 1 Short Division

Calculate using short division.

5	7	2	5

3	1	9	3	8

12	6	0	3	6

3,612 ÷ 14

List the multiples of the numbers to help you calculate.

? What is different between dividing by 1 digit and 2 digits?

Activity 2 Short Division

A limousine company allows 14 people per limousine. How many limousine are needed for 230 people?

? If the number does not divide into the ones, what do we do?

4

Activity 2 — Short Division

A rollercoaster allows 14 people per ride. There are 133 people in the queue, how many rides will it take for all the people to ride the rollercoaster?

Activity 3 — Short Division

Year 6 has 1,328 colouring pencils for the year.
They put them in bundles, with 12 in each bundle.
How many complete bundles can be made?

Activity 1 — Long Division (1)

Use this method to calculate:
765 ÷ 17   450 ÷ 15   702 ÷ 18

			3	6
12	4	3	2	
-		3	6	0	(x10)
			7	2
-			7	2	(x6)
				0

Multiples to help
12 x 1 = 12
12 x 2 = 24
12 x 5 = 60
12 x 10 = 120

How can we use our multiples to help us divide by a 2-digit number?
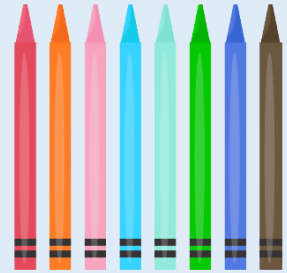
Activity 1 — Long Division (2)

Here is a division method.

		0	4	8	9
15	7	3	3	5	
-	6	0	0	0		(x400)
	1	3	3	5	
-	1	2	0	0		(x80)
		1	3	5	
-		1	3	5		(x9)
				0	

Use this method to calculate:
2,208 ÷ 16
1,755 ÷ 45
1,536 ÷ 16

How can we use our multiples to help us divide by a 2-digit number?

Activity 2 — Long Division (2)

There are 2,028 footballers in a tournament. Each team has 11 players and 2 substitutes.
How many teams are there in the tournament?

How can we use our multiples to help us divide by a 2-digit number?

Activity 1 — Long Division (3)

Malachi uses this method to calculate 372 divided by 15. He has used his knowledge of multiples to help.

		2	4	r	12
15	3	7	2		
-	3	0	0		
		7	2		
		6	0		
		1	2		

1 x 15 = 15
2 x 15 = 30
3 x 15 = 45
4 x 15 = 60
5 x 15 = 75
10 x 15 = 150

Use this method to calculate:
271 ÷ 17   623 ÷ 21   842 ÷ 32

How can we use our multiples to help us divide?

Long Division (3)

A school needs to buy 380 biscuits for parents' evening.
They come in packs of 12.
How many packets will the school need to buy?

? What happens if we cannot divide our ones exactly by our divisor?

Activity 1 Common Factors

Find the common factors of each pair of numbers.

24 and 36

20 and 30

28 and 45

? How do you know you have found all the factors of a given number?

10

| > | = | < |

Activity 1 Common Multiples

On a 100 square, shade the first 5 multiples of 7 and then the first 8 multiples of 5. What do you notice?

Choose 2 other times tables which you think will have more than 3 common multiples.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

? Is the lowest common multiple of a pair of numbers always the product of them?

Write the correct symbol in each box to make the statements correct.

11×12 ☐ 15×10

$90 \div 30$ ☐ $60 \div 20$

$120 \div 4$ ☐ $160 \div 8$

30×8 ☐ 100×10

17

There are 28 pupils in a class.

The teacher has 8 litres of orange juice.

She pours 225 millilitres of orange juice for every pupil.

How much orange juice is left over?

Show your method

19

Layla makes jewellery to sell at a school fair.

Each bracelet has **53** beads.

She makes **68** bracelets.

Each necklace has **105** beads.

She makes **34** necklaces.

How many beads does Layla use **altogether**?

Show your method

beads

Activity 1 — Primes to 100

List all of the prime numbers between 10 and 30.

? What is a prime number?

Activity 2 — Primes to 100

The sum of two prime numbers is 36.
What are the numbers?

? Are all prime numbers odd?

Activity 3 — Primes to 100

All numbers can be broken down into prime factors.
A prime factor tree can help us find them.
Complete the prime factor for 60.

60
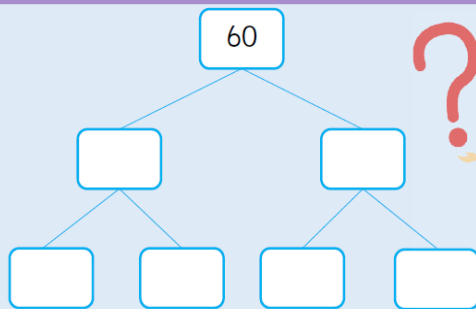
Activity 1 — Square & Cube Numbers

Use <, > or = to make the statements correct.

3 cubed ◯ 6 cubed

8 cubed ◯ 4 cubed

11 cubed ◯ 5 cubed

? What do you notice about the sequence of cube numbers?

Activity 3 — Square & Cube Numbers

Which square numbers are missing from the calculations?

$$\_\_\_ + 35 = 99$$

$$210 - \_\_\_ = 41$$

? Explore the pattern of the difference between the numbers.

BODMAS (brackets, order, division, multiplication, addition, subtraction)

Esin has 7 bags with 5 sweets in each bag.
She adds one more sweet to each bag.

Which calculation will work out how many sweets she now has in total?
Explain your answer.
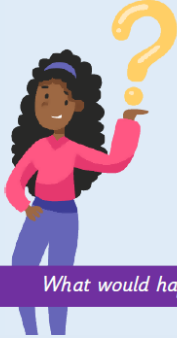
$7 \times (5 + 1)$

$7 \times 5 + 1$

? What would happen if we did not use the brackets?

Zach has completed the calculation and got an answer of 96.
Can you explain what he did and
where he made the mistake?

$2 (30 \div 5) + 14 = 96$

? Would the answer be correct?

Add brackets and missing numbers to make the
calculations correct.

$3 + \underline{} \times 5 = 25$

$25 - 6 \times \underline{} = 38$

? Would the answer be correct?

$4^3 + 15 \div 3 =$

$7 + 48 \div (18-16) =$

$64 \div (2 \times 8) + 5 =$

$99 \div (11 \times 3) =$

Algebra

1) $3n - 3 = 21$
2) $6n + 5 = 41$

3) $3n - 5 = 10$
4) $3n + 2 = 17$

5) $5n - 16 = n + 20$
6) $3n + 3 = 2n + 8$

1a. Complete the statements.

$\frac{3}{24}$ is equivalent to 0 . ▢ 2 ▢

$\frac{6}{16}$ is equivalent to 0 . 3 ▢

1b. Complete the statements.

$\frac{2}{16}$ is equivalent to 0 . ▢ ▢ 5

$\frac{12}{48}$ is equivalent to 0 . ▢ ▢

2a. True or false?

0.75 is equivalent to $\frac{36}{48}$.

2b. True or false?

0.875 is equivalent to $\frac{7}{8}$.

3a. Convert the fractions below to decimals.

A B $\frac{6}{8}$ C
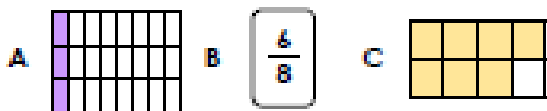
3b. Convert the fractions below to decimals.

A B $\frac{3}{8}$ C
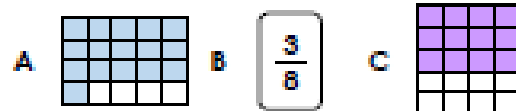
4a. Match the decimals to the equivalent image.

A   0.45

B   0.3

C   0.8
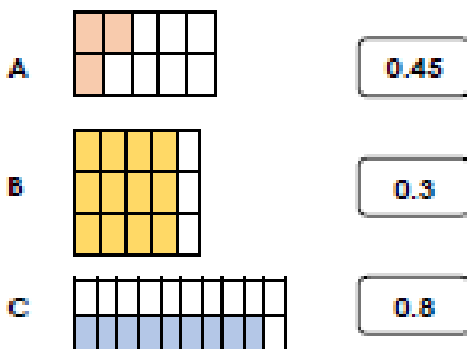
4b. Match the decimals to the equivalent image.

A   0.375

B   0.75

C   0.625
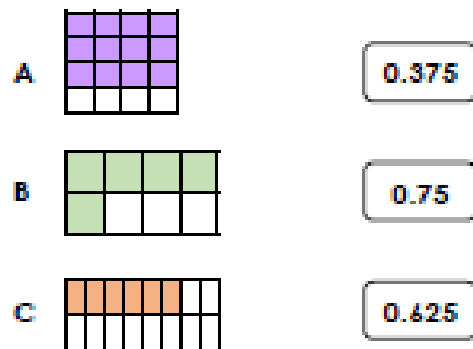
Fractions, decimals and percentages

Fill in the missing gaps in the table below- the first one has been done for you to refresh your memory (remember to convert your decimal to a fraction by converting it to a tenth or hundredth) Can you simplify the fraction?

Fraction	Decimal	Percentage
40/100	0.4	40%
5/10	0.5	
	0.25	25%
63/100		
2/10		20%
	0.1	
3/4		
	0.99	

1. Tom and Sam shared equally one quarter of a chocolate bar.

What percentage of the chocolate bar did each child get?

2. Sharif says:

"All you do when converting percentages to decimals is put '0.' in front of the number e.g. 78% is 0.78."

Do you agree? Prove it!

3. Three friends were competing in a race.

- Billy completed half of the race.
- Harrison completed 50% of what Billy completed
- Charlotte completed 0.25 of what Billy completed.

What fraction of the race did they each complete?

A jug contains some milk.

Josh pours $\frac{1}{2}$ of the milk into a glass.

Josh pours $\frac{3}{10}$ of the milk into another glass.

What fraction of the milk is left?

Use diagrams to show what happens when you try to add:

$$\frac{1}{5} + \frac{2}{10}$$

Show the different steps.

Work out the following:

1. $\frac{3}{4} + \frac{2}{5}$

2. $\frac{10}{12} - \frac{1}{3}$

3. $1\frac{6}{8} + 2\frac{3}{5}$

4. $4\frac{1}{8} - 1\frac{3}{4}$

5. $\frac{3}{7} - \frac{1}{5}$

6. $\frac{2}{10} + \frac{3}{8}$

7. $4\frac{4}{9} + 2\frac{5}{6}$

8. $5\frac{3}{7} - 2\frac{6}{5}$

Bashir says:

"I do not need to do any written calculations to solve $\frac{3}{8} + \frac{2}{4}$."

Do you agree?

Explain how you know.

Emily says:

"When you add fractions together the answer is actually smaller because when the numerator is a bigger number the piece is actually smaller."

What mistake has Emily made?

Explain your answer using a diagram.

Rajesh doesn't understand why the denominator doesn't change when adding fractions but the numerator does.

Can you explain why?

If the answer to a word problem involving subtracting fractions with different denominators is:

$$\frac{14}{32}$$

What could the question be?

Katie subtracted $\frac{3}{5}$ away from a fraction and her answer was $\frac{8}{45}$.

What was the original question?

11

Work out the following:

1. $\frac{1}{4} \times 5$ 2. $\frac{1}{12} \times \frac{1}{3}$ 3. $\frac{2}{6} \times 6$ 4. $\frac{4}{7} \times \frac{4}{5}$

5. $\frac{1}{5} \div 3$ 6. $\frac{1}{9} \div \frac{1}{3}$ 7. $\frac{1}{6} \div 8$ 8. $\frac{1}{7} \div \frac{1}{4}$

Use a diagram to represent multiplying fractions. For example: $\frac{1}{9} \times \frac{1}{9}$	Try to represent these calculations: $\frac{1}{4} \times \frac{1}{4}$ $\frac{1}{6} \times \frac{1}{6}$	Solve one seventh shared between 6
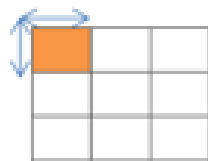
Reasoning

Ginny is multiplying the following sum: $\frac{1}{5} \times \frac{1}{6}$ The answer she gets is $\frac{2}{30}$ Explain what she has done.	Betty says: *"When you divide a fraction by a whole number the answer is bigger than the original fraction."* Is she correct? Convince me! (Hint: Use a diagram)	Draw a diagram to represent the calculation below. $\frac{1}{6} \times \frac{1}{8}$ Explain what you have drawn and why.

Problem Solving

Hanna has half a pizza. She cuts it into 4 slices. What fraction of the original pizza is each slice?	The shaded square in the grid below is the answer to a multiplying fractions question. If that is the answer, what is the question? **Explain your answer.**	Becky's mum ordered a pizza for her and her friends. By the time they arrived home there was only $\frac{7}{12}$ of it left. When she shared it among her friends they each got $\frac{7}{72}$. **How many friends did Becky have with her?**
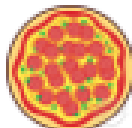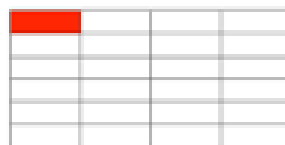
Fraction of amounts

2a. Match each calculation to the correct answer.

$\frac{1}{7}$ of 77 | 16

$\frac{1}{8}$ of 128 | 125

$\frac{1}{4}$ of 500 | 7

$\frac{1}{9}$ of 63 | 11

2b. Match each calculation to the correct answer.

$\frac{1}{5}$ of 60 | 30

$\frac{1}{8}$ of 296 | 12

$\frac{1}{4}$ of 120 | 48

$\frac{1}{6}$ of 288 | 37

3a. Complete each statement using <, > or =.

$\frac{1}{4}$ of 160 ☐ $\frac{1}{9}$ of 270

$\frac{1}{7}$ of 84 ☐ $\frac{1}{3}$ of 39

3b. Complete each statement using <, > or =.

$\frac{1}{9}$ of 54 ☐ $\frac{1}{5}$ of 80

$\frac{1}{3}$ of 990 ☐ $\frac{1}{10}$ of 900

4a. Complete the following statements.

$\frac{1}{5}$ of 95 = ☐

$\frac{1}{8}$ of 128 = ☐

4b. Complete the following statements.

$\frac{1}{9}$ of 72 = ☐

$\frac{1}{10}$ of 490 = ☐

Percentages

Reminders- to find 10% divide the whole number by 10, to find 1% divide the whole number by 100.

53% of 276

65% of 987

33% of 856

45% of 145

78% of 892

13% of 789

24% of 423

99% of 1932