Year 5 maths – Summer 2 Week beginning: 29.6.20

Theme	Lesson 1 of 2 Roman Numerals To write Roman numerals to 1000	Lesson 2 of 2 Roman Numerals To write thousands numbers in Roman numerals	Lesson 1 of 12 CONSOLIDATION LESSON Formal methods Addition within 1,000,000	Lesson 2 of 12 CONSOLIDATION LESSON Formal methods Addition and subtraction	Lesson 3 of 12 CONSOLIDATION LESSON Word problems To solve addition and subtraction word problems
Factual fluency (to aid fluency)	**Practise comparing numbers using multiplication activity**	**Practise choosing multiples activity**	**Practise multiplication patterns activity**	**Practise estimating products activity**	**Practise estimating products activity**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** **LINK**	**(Lesson 1 resources below)** **MAKING LINKS:** Last week we solved problems involving volume. Today we will be writing Roman numerals up to 1000. **THINK: (support below)** Can you help me with this problem? My friend says all Roman numerals are based around just seven symbols, I, V, L, X, C, D and M. Is that true? Our problem is in the textbook on page 268. Look at it now. **SEE: (model below)** Check the solution on pages 268-269 of your textbook. **DO:** Use what you have learnt today to solve: PART 1: Do the questions on page 270 of the textbook Check your answers below before moving on to: PART 2: Complete worksheet 1, Chapter 14, page 181 of your workbook. If you would like further practice try these: https://www.knowtheromans.co.uk/roman-numerals/quiz/	**(Lesson 2 resources below)** **MAKING LINKS:** Yesterday we wrote Roman numerals up to 1000.Today we will be writing 1000s using Roman numerals. **THINK: (support below)** Can you help me with this problem? We sometimes see Roman numerals on buildings to show the year they were built. My friend saw this number, MDCCCXXV. Can you help him work out what year it shows? Our problem is in the textbook on page 271. Look at it now. **SEE: (model below)** Check the solutions for both methods on pages 271-272 of your textbook. **DO:** PART 1: Do questions on page 272-273 of the textbook. Check your answers below before moving on to: PART 2: Complete worksheet 2, Chapter 14, pages 182 - 183 of the workbook. If you would like further practice try these: https://www.knowtheromans.co.uk/roman-numerals/quiz/	**(Lesson 3 resources below)** **MAKING LINKS:** Earlier in the year we worked with formal addition methods. Today we will be continuing with that. **THINK: (support below)** Can you help me with this problem? My friend has digit cards: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. She makes two 5-digit numbers. What is the greatest sum, or total, she could make? What is the smallest total? *If you have online parent access this lesson is based on Year 5 textbook 5A, chapter 2, lesson 8.* **SEE: (model below)** Check here to recap the formal method from year 5 for addition. **DO:** PART 1: Complete the questions below. Remember to round each amount before you start. This will help you check that your answers make sense. Check your answers below before moving on to: PART 2: Complete the calculations below.	**(Lesson 4 resources below)** **MAKING LINKS:** Yesterday we worked with formal addition methods. Today we will be continuing with that. **THINK: (support below)** Can you help me with this problem? My friend has digit cards: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. He makes two 5-digit numbers. What is the smallest difference he can make? *If you have online parent access this lesson is based on Year 5 textbook 5A, chapter 2, lesson 10.* **SEE: (model below)** Check here to recap the formal method from year 5 for subtraction. **DO:** PART 1: Complete the questions below. Remember to round each amount before you start. This will help you check that your answers make sense. Check your answers below before moving on to: PART 2: Complete the calculations below.	**(Lesson 5 resources below)** **MAKING LINKS:** This week we worked with formal addition and subtraction methods. Today we will be using these to solve word problems **THINK: (support below)** Can you help me with this problem? Look at the chart below. The amounts are written in yen which is Japan's currency. After paying for rent and food, how much of her salary does Holly have remaining? *If you have online parent access this lesson is based on Year 5 textbook 5A, chapter 2, lesson 7.* **SEE: (model below)** Check here to recap the formal methods from year 5 for addition and subtraction. **DO:** PART 1: Complete the questions below. Remember to round each amount before you start. This will help you check that your answers make sense. Check your answers below before moving on to: PART 2: Complete the calculations below.
Methods, tips, clues & checks	**Day 1 resources and answers (below)**	**Day 2 resources and answers (below)**	**Day 3 resources and answers (below)**	**Day 4 resources and answers (below)**	**Day 5 resources and answers (below)**

See below for resources to support you to THINK-SEE-DO

DAY 1 RESOURCES:

THINK: Our problem is on textbook page 268.

My friend says all Roman numerals are based around just seven symbols, I, V, X, L, C, D and M.

Is that true?

DO: Use what you have learnt today to solve:

PART 1: Do the questions on page 270 of the textbook

Check your answers below before moving on to:
PART 2: Complete worksheet 1, Chapter 14, page 181 of your workbook.

If you would like further practice try these:
https://www.knowtheromans.co.uk/roman-numerals/quiz/

DEEPENING:

Complete the Mind Workout from your textbook, page 273.

SEE: Look at the different ways to solve the problem on page 268-269 of your textbook.

I = 1, V = 5, X = 10, L = 50, C = 100, D = 500, M = 1000

For these numbers you just have to repeat the symbols for 1, 10 or 100 as many times as needed. So, 30 = XXX because 3 is 3 × 10, or 3 tens.
1, 2, 3 = I, II, III
10, 20, 30 = X, XX, XXX
100, 200, 300 = C, CC, CCC

Something different happens when you write numbers above 3, 30 and 300.
To write 4 you need to write 1 less than 5. The symbol for 1 goes before the 5 to show it is 1 less than 5.
The same idea applies to 40 and 400 but it would be 10 or 100 less than 50 or 500.
4 is 1 less than 5 so **4 = IV**
40 is 10 less than 50 so **40 = XL**
400 is 100 less than 500 so **400 = CD**

To write numbers above 5, 50, 500 we combine the amounts to make the number. So, 700 = 500 + 100 + 100 and using Roman numerals that would be D + C + C = DCC
6, 7, 8 = VI, VII, VIII
60, 70, 80 = LX, LXX, LXXX
600, 700, 800 = DC, DCC, DCCC

To write 9, 90 and 900 we have to do something similar to how we write 4, 40 and 400. For these numbers we have to write the number as 1, 10 and 100 less than 10, 100 and 1000. So, 90 is 10 less than 100 and using Roman numerals that would be XC (X less than C).
9 = IX
90 = XC
900 = CM

DAY 2 RESOURCES:

THINK: Our problem is in the textbook on page 271.

We sometimes see Roman numerals on buildings to show the year they were built.
My friend saw this number, MDCCCXXV. Can you help him work out what year it shows?

Note: We call the digits we use nowadays, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, Arabic numerals (or Hindu-Arabic numerals).

DO: Use what you have learnt today to solve:

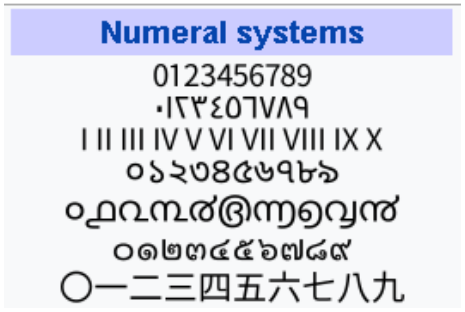
PART 1: Do questions on page 272-273 of the textbook.

Check your answers below before moving on to:
PART 2: Complete worksheet 2, Chapter 14, pages 182 - 183 of the workbook.

DEEPENING:

Complete the Mind Workout from your workbook, page 184.

Interesting!
You might find it interesting to see different numeral systems:



They are Arabic numerals, Eastern Arabic numerals, Roman numerals, Bengali–Assamese numerals, Malayalam numerals, Thai numerals and Chinese numerals.

SEE: Check the solution on pages 271-272 of your textbook.

Can you remember the symbols for these amounts in Roman numerals? Check on yesterday's resource page if you need a reminder.

1, 2, 3, 4, 5, 6, 7, 8, 9
10, 20, 30, 40, 50, 60, 70, 80, 90
100, 200, 300, 400, 500, 600, 700, 800, 900

Remember the 7 symbols:

I = 1, V = 5, X = 10, L = 50, C = 100, D = 500, M = 1000

To convert between Arabic numerals (digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9) and Roman numerals we partition the number, breaking it up into **thousands**, **hundreds** (including 500s and 100s), **tens** (including 50s and 10s) and **ones** (including 5s and 1s).

1888 = 1000 + 800 + 80 + 8
= 1000 + 500+100+100+100 + 50+10+10+10 + 5+1+1+1

Then we make each of those amounts with the correct combination of the 7 Roman numeral symbols.
= M + D + C + C + C + L + X + X + X + V + I + I + I
= MDCCCLXXXVII

We can create a 'Roman numeral place value chart' to convert between Roman numerals and Arabic numerals:

Thousands	Hundreds		Tens		Ones	
M = 1000	D = 500	C = 100	L = 50	X = 10	V = 5	I = 1
M	D	CCC	L	XXX	V	III
1000	500	100+100+100	50	10+10+10	5	1+1+1

DAY 3 RESOURCES:

THINK: *If you have online parent access this lesson is based on textbook 5A, chapter 2, lesson 8.*

My friend has digit cards: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. She makes two 5-digit numbers.

What is the greatest sum, or total, she could make?

What is the smallest total?

DO: Complete these:

PART 1:

a) 98642 + 17530 =
b) 90357 + 12 468 =
c) 70258 + 31469 =
d) 53 026 + 47 189 =

Check your answers below before moving on. Remember to estimate first.

PART 2:

68589 + 40968	24651 + 79654	76159 + 31553	24841 + 17161
35323 + 12298	79088 + 90079	70568 + 71530	70967 + 31178
73893 + 32815	88075 + 82081	19289 + 54768	80817 + 72618
78732 + 85614	81396 + 31369	47651 + 37183	23284 + 79185

DEEPENING:

Try the questions below. Check your answers with a calculator.

SEE: Check here to recap the formal method from year 5 for addition.

First, make two 5-digit numbers:

98,765 + 43,210

Then, estimate the total of the two numbers:

98,765 + 43,210 = 100,000 + 40,000 = 140,000

Next, calculate the sum using the formal method of addition:

```
  1 1
  98765
+ 43210
 141975
```

Add the ones.
Add the tens.
Add the hundreds.
Add the thousands.
Add the ten thousands.

If the total in the ones, tens, hundreds, thousands or 10 thousands place is 10 or more, rename it in the next highest place.

NOTE: Your parents may say 'carry the one' instead of saying 'rename'!

Try this one:

```
  97531
+ 86420
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-------
```

And check:

```
  1 1
  97531
+ 86420
 183951
```

Day 3 (continued):

Adding three amounts:

58875 26394 + 19706	82147 56171 + 81961	93856 44383 + 18490	62526 17097 + 42941
88337 12541 + 44393	65037 85925 + 79034	66290 27905 + 92556	56784 49022 + 82712
60367 64460 + 67237	51370 98616 + 56300	90868 44884 + 90086	38502 91958 + 23278
18903 56885 + 17310	63026 96498 + 84820	91502 81126 + 35905	24331 37367 + 33106

Adding four amounts:

25189 67853 30899 + 70137	43296 81977 21517 + 36410	99764 81614 23993 + 86780	49704 85693 50728 + 37482
66266 23410 53078 + 71823	53772 95144 99223 + 24348	91152 75681 37978 + 58602	89747 60832 71761 + 32909
11492 10550 17647 + 93701	37410 56771 99451 + 57643	71894 70153 35165 + 90264	17156 55743 95280 + 35787
50648 56575 86621 + 56357	79493 45567 39859 + 77412	22797 48366 24063 + 63381	19915 12676 48965 + 45567

DAY 4 RESOURCES:

THINK: *If you have online parent access this lesson is based on textbook 5A, chapter 2, lesson 10.*

My friend has digit cards: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
He makes two 5-digit numbers.
What is the smallest difference he can make?

Note: Estimating the difference before calculating will give us a really good idea of how small our answer will be.

DO: Complete these:

PART 1:

41 837 – 29 058 =

41 837 – 10 939 =

341 837 – 19 605 =

341 837 – 124 519 =

Check your answers below before moving on. Remember to estimate.

PART 2:

93159 - 41141	48357 - 45558	61714 - 53133	50876 - 40050
60819 - 31197	49128 - 18365	97177 - 78952	73336 - 29185
84635 - 77408	90736 - 79306	52951 - 25337	93485 - 23053
60830 - 20601	70964 - 56224	80843 - 33703	46398 - 31910

DEEPENING:

Try the questions below. Check to your answers to part 1 deepening answers with a calculator.

SEE: Check here to recap the formal method from year 5 for subtraction.

First, make two 5-digit numbers: **70,123 – 69,854 =**

Then, estimate the difference between the two numbers:

70,123 – 69,854 = 70,000 - 70,000 = 0

We know zero cannot be correct as we are not subtracting the same amount that we started with but it does tell us the answer is very small. In this case, we might decide the best way to calculate the answer is to count on rather than to formally subtract!

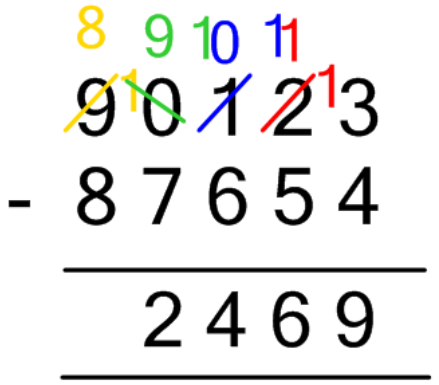
Let's try these amounts:

90,123 – 87,654 =

Then, estimate the difference between the two numbers:

90,123 – 87,654 = 90,000 – 88,000 = 2,000

Next, calculate the sum using the formal method of subtraction:



Subtract the ones.
Subtract the tens, the hundreds, the thousands and the10 thousands.
When there isn't enough to take from we must take and rename from the next higher place.
We need more ones so we **take and rename a ten**, leaving 1 ten left.
We need more tens so we **take and rename a hundred**, leaving 0 hundreds.
We need more hundreds so we try to **take and rename a thousand**. BUT we don't have any thousands to take and rename so we must **take a ten thousand and rename it as thousands.** Now we have enough thousands to **take and rename a thousand**, leaving 9 thousands left.
Finally we subtract our 10 thousands.

NOTE: Your parents may say 'borrow' or 'steal' instead of saying 'rename'!

Day 4 (continued):

Subtracting across zero:

57940 - 13823	90720 - 59113	20219 - 14002	45026 - 21705
60000 - 59798	20008 - 17550	30800 - 13687	40030 - 39101
80092 - 44401	54060 - 22404	92000 - 81183	30802 - 24261
98118 - 54003	89208 - 73055	54700 - 12286	23203 - 11170

Subtraction with missing numbers:

Take care – these problems include calculations that will need renaming to reach the answers.

35_4 - _202 = 302	97_7 - 7_74 = 247_	702_ - 25_2 = 4_28	22_9 - _566 = 683	7_11 - _7_6 = 400_
_268 - 92_0 = 58	59_0 - 3_28 = _50_	5_92 - 49_3 = 469	1986 - 14_0 = 496	8908 - 79_8 = 950
7_9_ - 7640 = 52	74_6 - 1_74 = 613_	26_6 - 2465 = 161	56_1 - 2_84 = 314_	8_14 - 336_ = 47_3

DAY 5 RESOURCES:

THINK: *If you have online parent access this lesson is based on textbook 5A, chapter 2, lesson 7.*
Look at the chart below. The amounts are written in yen which is Japan's currency.
After paying for rent and food, how much of her salary does Holly have remaining?

	Sam	Holly
 rent / month	225 000 yen	280 000 yen
 utilities / month	30 000 yen	Included in rent
 food / month	80 000 yen	65 000 yen
 salary / month	550 000 yen	600 000 yen

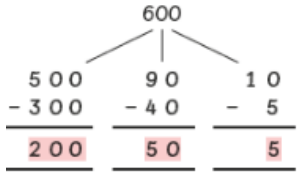
SEE: Refer to resources from day 3 and 4 to see our addition and subtraction methods.
Check here to recap the formal methods from year 5 for addition and subtraction.

$$\begin{array}{r} 280\,000 \\ +\ 65\,000 \\ \hline 345\,000 \end{array}$$

Holly spent 345,000 yen on food and rent.

$600\,000 - 345\,000 =$

Holly had 255,000 yen remaining.
You could use column subtraction.
Or you could subtract 10s, 100s, 1000s like this.



Remember also our strategies for solving word problems:
1. Read and understand the problem, first.
2. Plan a way to reach an answer, including what calculations you will need to do to find the answer.
3. Do the calculations.
4. Check the answer makes sense in the context of the questions. Writing our answering sentence or statement helps us to check that our calculation has answered the problem!

DO: PART 1:

99706 − 23064	26594 + 42181	24205 − 12152	25908 + 15280
57500 − 26428	31771 + 71161	36119 + 10264	92819 − 21706
95030 − 41802	68796 − 37370	80883 − 23300	57476 + 10517

Check your answers below before moving on to:
PART 2: Complete the word problems:
1. Brandon runs his own baking company. This morning, Brandon's workers baked 18,546 blueberry pies. They also baked some more after lunch. In total, they baked 26,039 blueberry pies. How many blueberry pies did Brandon's workers bake after lunch?

2. Claudia decided to close her comic book store, so she is selling some of her 61,002 comic books. She now has 2,948 comic books left. How many comic books has Claudia sold?

(**DO** continued)
3. So far, an orchard has sold a combined total of 20,001 kilograms of fresh and frozen fruit this season. If they have sold 5,942 kilograms of frozen fruit, how many kilograms of fresh fruit have been sold so far?

4. A monument was originally made with 34,161 sandstone blocks and 27,998 limestone blocks. If, during renovations, a combined total of 3,673 blocks were replaced how many of the original blocks remained?

5. Recently, the value of Dwaine's university savings fund decreased by £3,852. He also had to spend £1,230 of it on books. If his fund was worth £18,001 before, how much is it worth now?

DEEPENING:
Write your own 2-step problems (like those in question 4 and 5) and the solution to share with your teacher. Remember to use 5-digit numbers.

ANSWERS – part 1:

Day 1

Part 1:
Q.1: a) XXVII, b) CDXXVII

Q.2: CXXV

Q.3: 168

Day 2

Part 1:
Q.1: 2016
Q.2: a) 1454, b) 36 years old
Q.3 :

1908	4th MCMVIII
1948	14th MCMXLVIII
2012	30th MMXII

Day 3

Part 1:
a) 116 172
b) 102 825
c) 101 727
d) 100 215

Day 4

Part 1:

41 837 – 29 058 =	12 779
41 837 – 10 939 =	30 898
341 837 – 19 605 =	322 232
341 837 – 124 519 =	217 318

Day 5

Part 1:

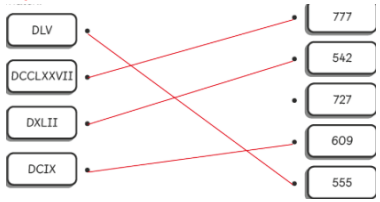
99706 - 23064 = 76642	26594 + 42181 = 68775	24205 - 12152 = 12053	25908 + 15280 = 41188
57500 - 26428 = 31072	31771 + 71161 = 102932	36119 + 10264 = 46383	92819 - 21706 = 71113
95030 - 41802 = 53228	68796 - 37370 = 31426	80883 - 23300 = 57583	57476 + 10517 = 67993

ANSWERS – part 2 and deepening:

Day 1

Part 2: Workbook,
Q.1:
a) XXVI, b) XXXIX, c) LIII,
d) LXXXVIII, e) CCL, f) CDXLIV,
g) DVII, h) DCXXI, i) DCCLXV,
j) CMXCIX.

Q.2:



DEEPENING:
III = IV – I
3 = 4 – 1

IX – VI = III
9 – 6 = 3

Day 2

Part 2: Workbook,
Q.1:
Newton = MDCXLII – MDCCXXVII
Einstein = MDCCCLXXIX – MCMLV
Piaget = MDCCCXCVI – MCMLXXX
Nash – MCMXXVIII - MMXV

Q.2:
In order:

Year of independence in Roman numerals
MCCXXXVIII
MDLXXXI
MDCCLXXVI
MCMI
MCMXLVII
MCMLXIII
MCMLXV
MMVI

DEEPENING:
MDCLXVI – MDCLXIV = II
1666-1664 = 2
The difference is 2, written as the Roman numeral II.

Day 3

Part 2:

68589 + 40968 = 109557	24651 + 79654 = 104305	76159 + 31553 = 107712	24841 + 17161 = 42002
35323 + 12298 = 47621	79088 + 90079 = 169167	70568 + 71530 = 142098	70967 + 31178 = 102145
73893 + 32815 = 106708	88075 + 82081 = 170156	19289 + 54768 = 74057	80817 + 72618 = 153435
78732 + 85614 = 164346	81396 + 31369 = 112765	47651 + 37183 = 84834	23284 + 79185 = 102469

DEEPENING:
Use a calculator to check your answers.

Day 4

Part 2:

93159 - 41141 = 52018	48357 - 45558 = 2799	61714 - 53133 = 8581	50876 - 40050 = 10826
60819 - 31197 = 29622	49128 - 18365 = 30763	97177 - 78952 = 18225	73336 - 29185 = 44151
84635 - 77408 = 7227	90736 - 79306 = 11430	52951 - 25337 = 27614	93485 - 23053 = 70432
60830 - 20601 = 40229	70964 - 56224 = 14740	80843 - 33703 = 47140	46398 - 31910 = 14488

DEEPENING:
Part 1: Use a calculator to check your answers.

Part 2:

3504 - 3202 = 302	9747 - 7274 = 2473	7020 - 2592 = 4428	2249 - 1566 = 683	7711 - 3706 = 4005
9268 - 9210 = 58	5930 - 3428 = 2502	5392 - 4923 = 469	1986 - 1490 = 496	8908 - 7958 = 950
7692 - 7640 = 52	7406 - 1274 = 6132	2626 - 2465 = 161	5631 - 2484 = 3147	8114 - 3361 = 4753

Day 5

Part 2:
1. 7,493 pies were baked after lunch.
2. Claudia has sold 58,054 comic books.
3. 14,059 kilograms of fresh fruit have been sold so far.
4. 58,486 of the original blocks remained.
5. Dwaine's university fund is now worth £12,919.

Deepening:
Share your problem and its solution with your teacher.