

# HOME LEARNING

## OAKS Maths- Home Learning 7

Focus for this week: Roman numerals, codes and algebra

Essential learning:	<ul style="list-style-type: none"><li>Identify Roman Numerals up to 10</li></ul>
Practising:	<ul style="list-style-type: none"><li>Identify Roman Numerals up to 50 then 100</li></ul>
Learning about:	<ul style="list-style-type: none"><li>Identify Roman Numerals up to 1000 then up to 10 000</li></ul>
Extension:	<ul style="list-style-type: none"><li>Decimal numbers into Roman numerals</li></ul>

### Contents:

- Worksheet 1** Roman numeral treasure hunt
- Worksheet 2** Code challenge: Roman numerals into Decimal numbers
- Worksheet 3** Where do 'our' numbers come from?
- Worksheet 4** Code challenge: Decimal numbers into Roman numerals
- Worksheet 5** Decimal numbers into Roman numerals

### Tasks:

- Look at the learning objectives, reflect on what you are already confident with, what you would like to practise and what you would like to learn this week
- Choose 2-3 worksheets to complete this week and email them to Mr. Croft
- Login to MyMaths and complete MyMaths tasks
- Spend 10 minutes a day on Times Table Rock Stars; Numbots OR Sumdog
- Please email a photo of any worksheets or poster you complete to the email address below.  
*This will earn you a golden token.*

### Additional activities:

- Play Maths games on MangaHigh (Maths games website) with this link: <https://app.mangahigh.com/register-student/41790?p=946671>
- Roman Numerals quiz: [https://www.transum.org/software/SW/Starter\\_of\\_the\\_day/Students/Roman\\_Numerals.asp](https://www.transum.org/software/SW/Starter_of_the_day/Students/Roman_Numerals.asp)
- Roman numerals memory game: <https://claritymaths.uk/games/memory/roman-numerals.html>
- Roman numeral convertor: <https://www.calculatorsoup.com/calculators/conversions/roman-numeral-converter.php>

If you have queries about this work, please contact me at [acroft@bower-grove.kent.sch.uk](mailto:acroft@bower-grove.kent.sch.uk)

**Worksheet 1** Roman numeral treasure hunt

**Task 1:** Search for as many items, or places which include roman numerals. Some places to look:

- Copyright at the end of a TV programme or film (fast forward to the end and look for them)
- Film name (e.g. Star Wars Episode IV)
- Some clocks
- Sometimes at the start of a book (pages i, ii, iii, iv...)
- Anything with the queen's name on it (Queen Elizabeth II (e.g. coins))
- Some buildings have the date they were built written as a roman numeral
- Plays (e.g. Act iii Scene 2)
- The names of some sporting events

Record what you found out below:

Item that has a roman numeral	The roman numeral	Equivalent number (if you know it or can find out)
Example: Star Wars Episode IV	IV	4

Email completed worksheets to me at [acroft@bower-grove.kent.sch.uk](mailto:acroft@bower-grove.kent.sch.uk) . Each good attempt earns a golden token.

## Worksheet 2 Code challenge: Roman numerals into Decimal numbers

Roman numerals are another numbering system that is still used today. They use only a few symbols:

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

Putting one or more lower numbers after a higher number means you add them. For example:

VI = 5+1 = 6                  XII = 10+1+1 = 12                  LXXX = 50+10+10+10=80                  DCCIII = 500+100+100+1+1+1=703

**Task 1:** Convert the following roman numerals into decimal numbers

- a) XI =                                  b) LXX =                                  c) CLX =
- d) VIII =                                  e) CXXIII =                                  f) MMM =
- g) MMD =                                  h) MMCCC =                                  i) CCCDV =
- j) MMXX =                                  k) MMXXV =                                  l) MLXVI =

Putting a lower number (only one this time) before a higher number means you subtract it from that number:

IV = 5-1 = 4                  IX = 10-1 = 9                  XC = 100-10 = 90                  CM = 1000-100 = 900

**Task 2:** Convert the following roman numerals into decimal numbers

- a) IL =                                  b) IC =                                  c) XL =
- d) CD =                                  e) IX =                                  f) IM =
- g) XM =                                  h) XD =                                  i) ID =

**Extension Task 3:** These can be combined together. Have a go at converting the following:

- a) XCV = 90 + 5 =                                  b) MCM = 1000 + 900 =                                  c) LIX = 50 + 9 =
- e)    f) MCMXCIX =

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### Worksheet 3 Where do 'our' numbers come from?

Numbers can be written in lots of different ways. Our number system (the decimal number system) is also called the Hindu-Arabic number system, because it was developed in the area around India and Iran in the 6<sup>th</sup> and 7<sup>th</sup> centuries.

0	1	2	3	4	5	6	7	8	9	<i>Hindu-Arabic</i>
۰	۱	۲	۳	۴	۵	۶	۷	۸	۹	<i>Eastern Arabic</i>
〇	一	二	三	四	五	六	七	八	九	<i>Chinese</i>
I	II	III	IV	V	VI	VII	VIII	IX		<i>Roman</i>

**Task:** Create a poster that shows what you know about how to write numbers using different numbering systems. You may want to research further into binary numbers (used inside computers); Cyrillic numbers (used in Russia) or counting further in Chinese or Eastern Arabic.

# ROMAN NUMERAL HIDDEN MESSAGE

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
910	150	120	12	14	1006	555	7	4	73	99	74	883	19	45	31	3	601	52	25	93	28	456	44	200	65

Use the table above and the questions below to find the hidden message.

For example CC = 200 , this would turn into the letter Y

## Roman Numeral Table

1	I	11	XI	21	XXI	31	XXXI	200	CC
2	II	12	XII	22	XXII	40	XL	300	CCC
3	III	13	XIII	23	XXIII	50	L	400	CD
4	IV	14	XIV	24	XXIV	60	LX	500	D
5	V	15	XV	25	XXV	70	LXX	600	DC
6	VI	16	XVI	26	XXVI	80	LXXX	700	DCC
7	VII	17	XVII	27	XXVII	90	XC	800	DCCC
8	VIII	18	XVIII	28	XXVIII	100	C	900	CM
9	IX	19	XIX	29	XXIX	101	CI	1000	M
10	X	20	XX	30	XXX	150	CL		

Not all the numbers are in the table, can you work out how the roman numbers work to crack the mystery quote from Julius Caesar.

IV XXV
IV LII
CL XIV XXV XXV XIV DCI
XXV XLV

CXX DCI XIV CMX XXV XIV
XXV VII CMX XIX
XXV XLV

LXXIV XIV CMX DCI XIX!
CXX DCI XIV CMX XXV IV XIX DLV

IV LII
XXV VII XIV
XIV LII LII XIV XIX CXX XIV

XLV MVI
LXXIV IV MVI XIV
. Quote by Julius Caesar

Extension: Make your own roman numeral code for someone else

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## Worksheet 5    Decimal numbers into Roman numerals

Use what you have learned in worksheets 2 and 3 to convert decimal numbers into roman numerals. The tasks get gradually more difficult.

### Task 1:

- |          |           |          |         |
|----------|-----------|----------|---------|
| a) 3 =   | b) 20 =   | c) 50 =  | d) 70 = |
| e) 200 = | f) 3000 = | g) 500 = | h) 80 = |

### Task 2:

- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| a) 13 =   | b) 12 =   | c) 150 =  | d) 170 =  |
| e) 1200 = | f) 3100 = | g) 1500 = | h) 1080 = |

### Task 3:

- |          |          |           |           |
|----------|----------|-----------|-----------|
| a) 43 =  | b) 312 = | c) 351 =  | d) 270 =  |
| e) 801 = | f) 537 = | g) 1278 = | h) 3888 = |

### Task 4:

- |          |          |           |           |
|----------|----------|-----------|-----------|
| a) 4 =   | b) 14 =  | c) 44 =   | d) 148 =  |
| e) 448 = | f) 299 = | g) 2009 = | h) 1994 = |

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