

# Classical Counting



# Describing Numbers



We can describe numbers in lots of different ways.

3826

3 thousands, 8 hundreds, 2 tens and 6 ones.

38 hundreds and 26 ones.

3 thousands and 826 ones.

3 thousands, 82 tens and 6 ones.

# Numbers, Numerals and Numeral Systems

A numeral system is an agreed way of expressing numbers using digits or other symbols.

The numerals in a system represent different values.

0 1 2 3 4 5 6 7 8 9  
· Ⅰ Ⅱ Ⅲ Ⅳ Ⅴ Ⅵ Ⅶ Ⅷ Ⅸ Ⅹ  
I II III IV V VI VII VIII IX X  
௦ ௧ ௨ ௩ ௪ ௫ ௬ ௭ ௮ ௯  
൦ ൧ ൨ ൩ ൪ ൫ ൬ ൭ ൮ ൯  
௦ ൧ ൨ ൩ ൪ ൫ ൬ ൭ ൮ ൯  
〇 一 二 三 四 五 六 七 八 九

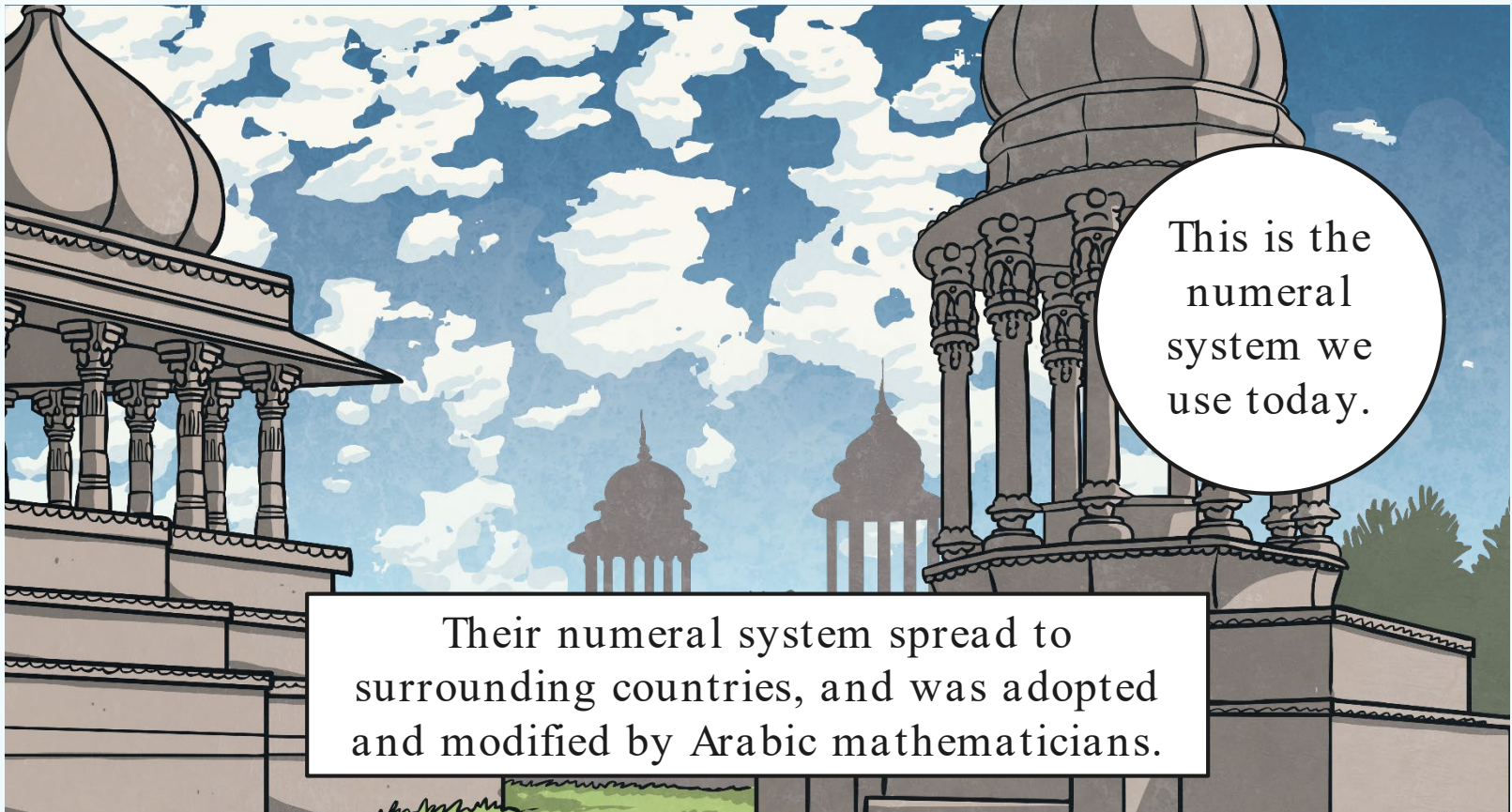
# Roman Numerals

The most commonly used numeral system is the Hindu-Arabic system.  
This is the numeral system that we use.



# Roman Numerals

The Hindu-Arabic numeral system was developed by two Indian mathematicians in the 5th century.





# Roman Numerals


There are many other numeral systems around the world  
and from different times:

Chinese



一 二 三 四 五 六 七 八 九 十

Mayan



• •• •• — —• —•• —••• =

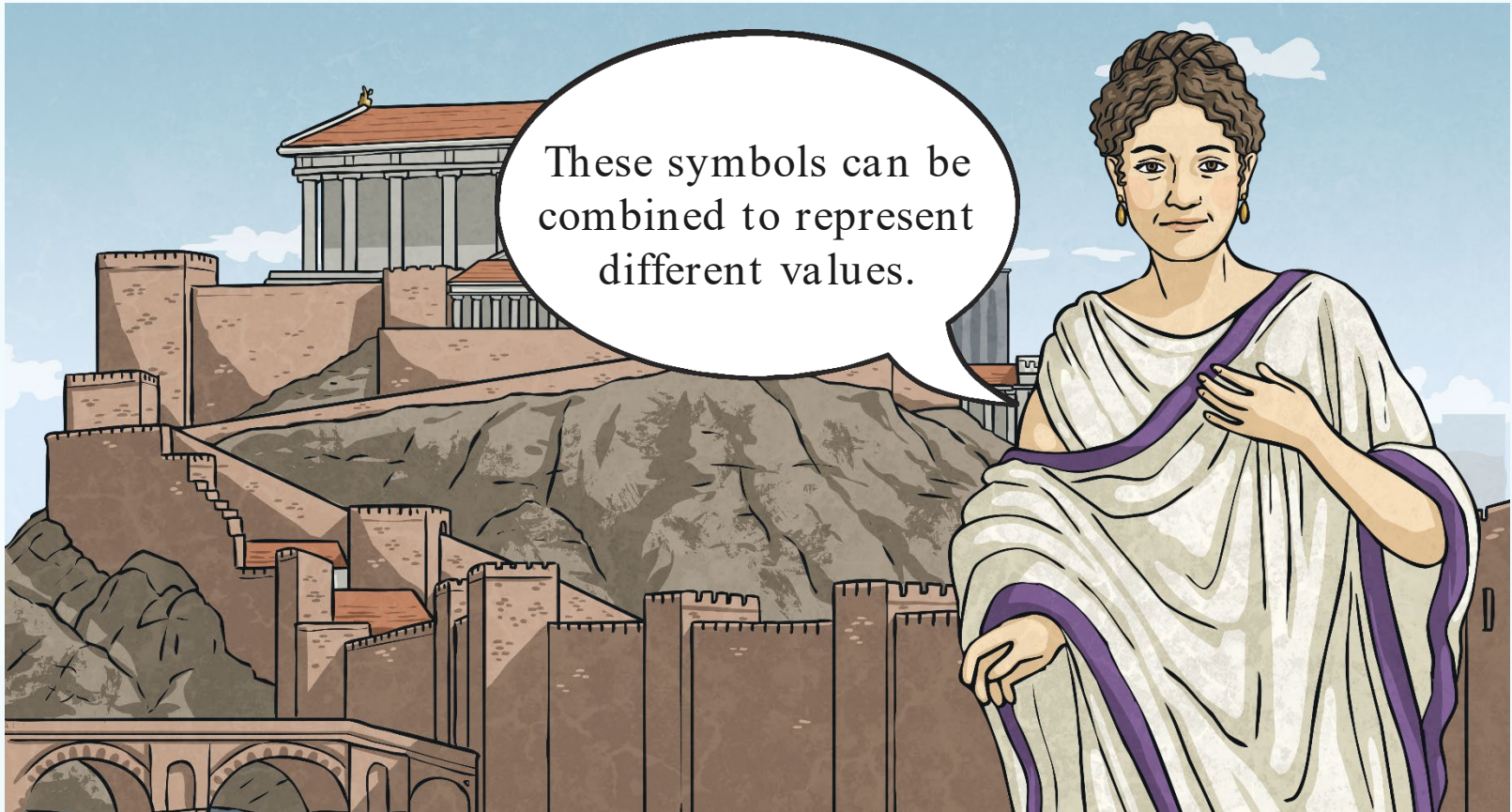
Roman



I II III IV V VI VII VIII IX X

# Roman Numerals

Roman numerals originated in ancient Rome.



# Roman Numerals

Roman numerals originated in ancient Rome.

This numeral system was used throughout Europe until the late Middle Ages.

Roman numerals are based on 7 symbols:

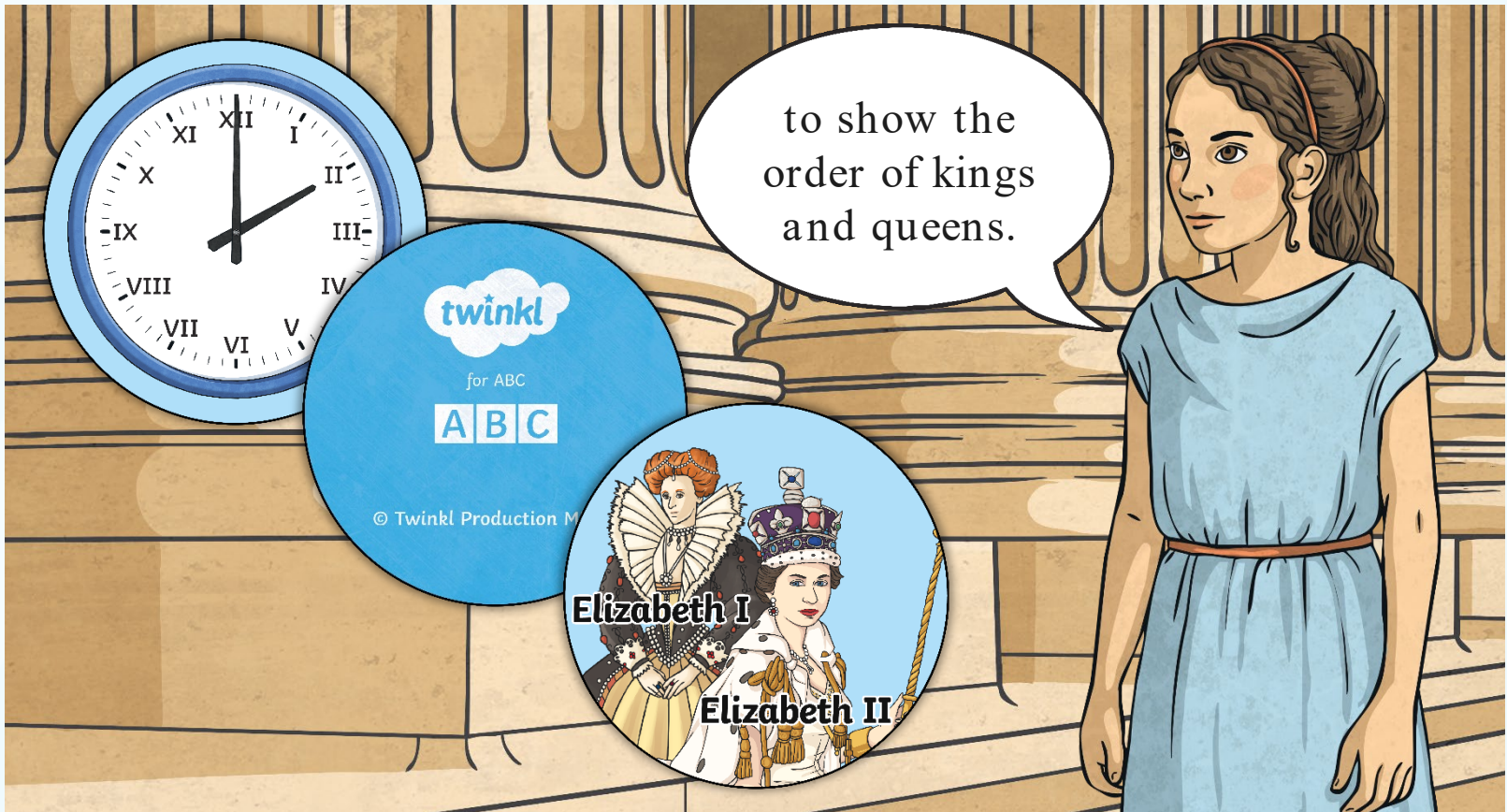
I, V, X, L, C, D and M

These symbols can be combined to represent different values.



# Roman Numerals

Today we see Roman numerals used in various places:



# Representing Numbers with Roman Numerals

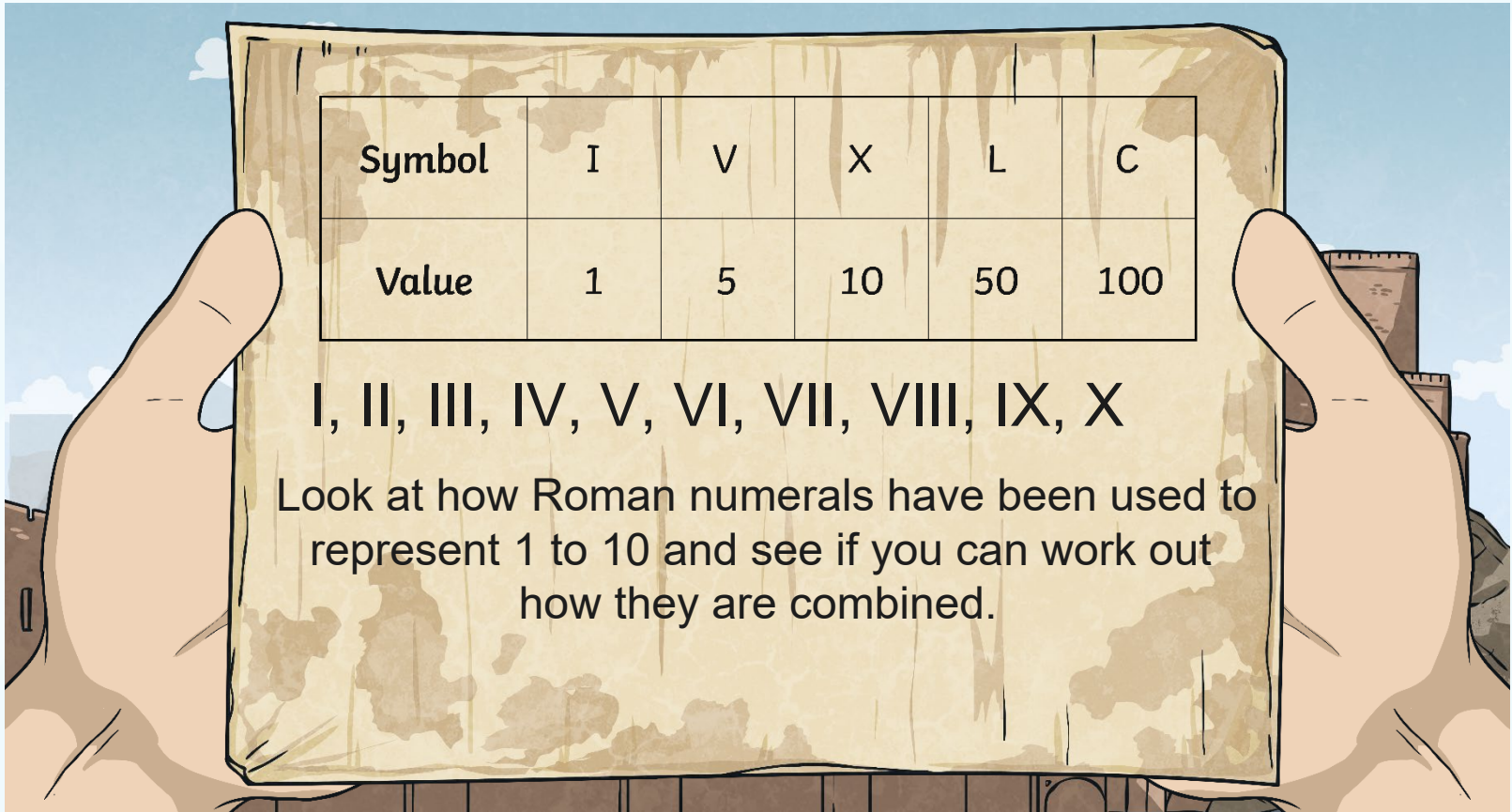


Let's look at how we can use the 7 symbols to represent numbers using Roman numerals.

Each of the 7 symbols represents a set value:

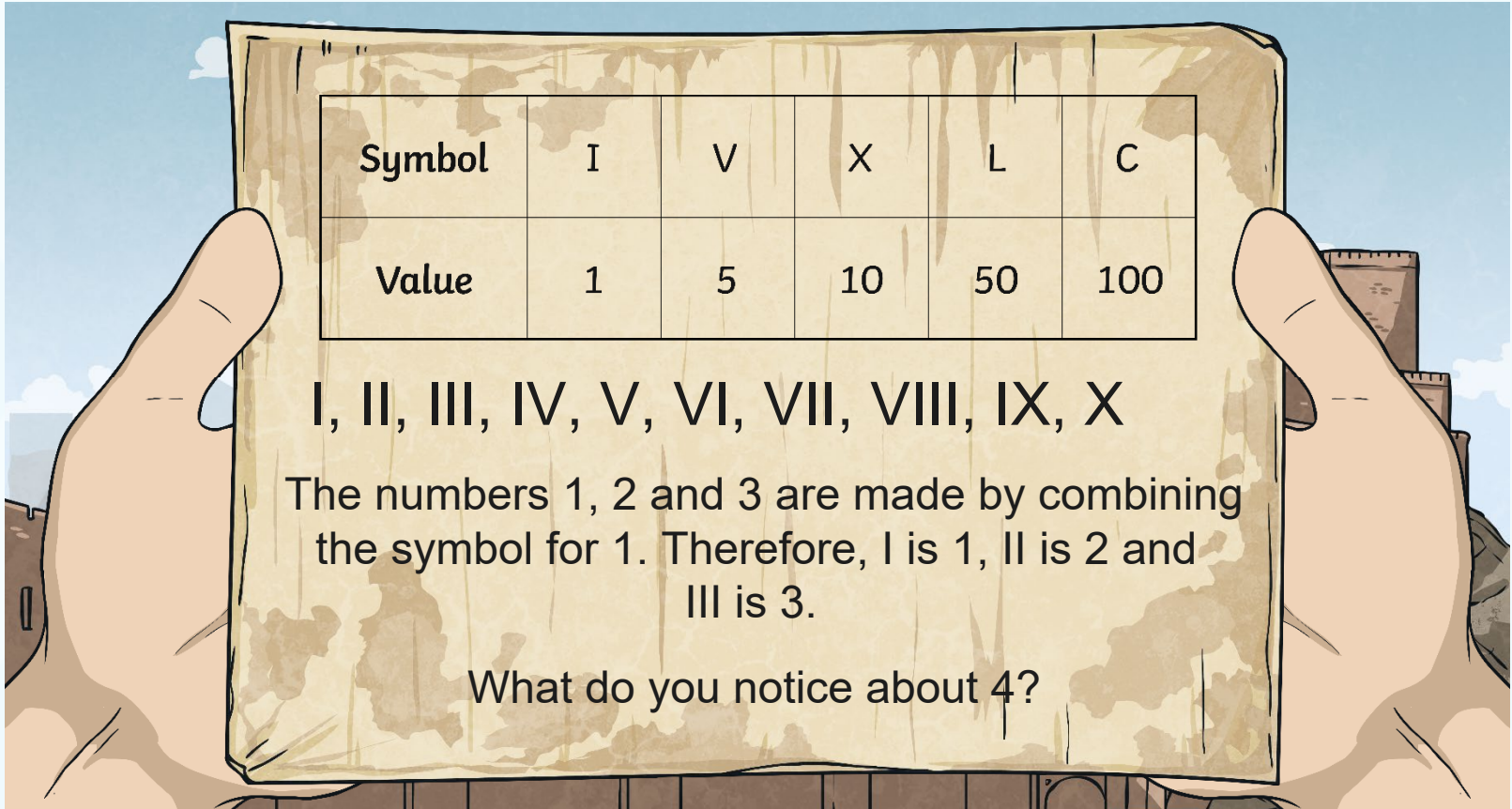
Symbol	I	V	X	L	C	D
Value	1	5	10	50	100	500

# Roman Numerals





# Subtractive Form Roman Numerals



The image shows a pair of hands holding a parchment scroll. On the scroll is a table of Roman numerals and some explanatory text. The table has two rows: 'Symbol' and 'Value'. The symbols listed are I, V, X, L, and C, with their respective values 1, 5, 10, 50, and 100. Below the table, the text lists the numbers I, II, III, IV, V, VI, VII, VIII, IX, and X. It then explains that the numbers 1, 2, and 3 are formed by combining the symbol for 1 (I), giving examples: I is 1, II is 2, and III is 3. Finally, it asks the reader to notice something about the number 4.

Symbol	I	V	X	L	C
Value	1	5	10	50	100

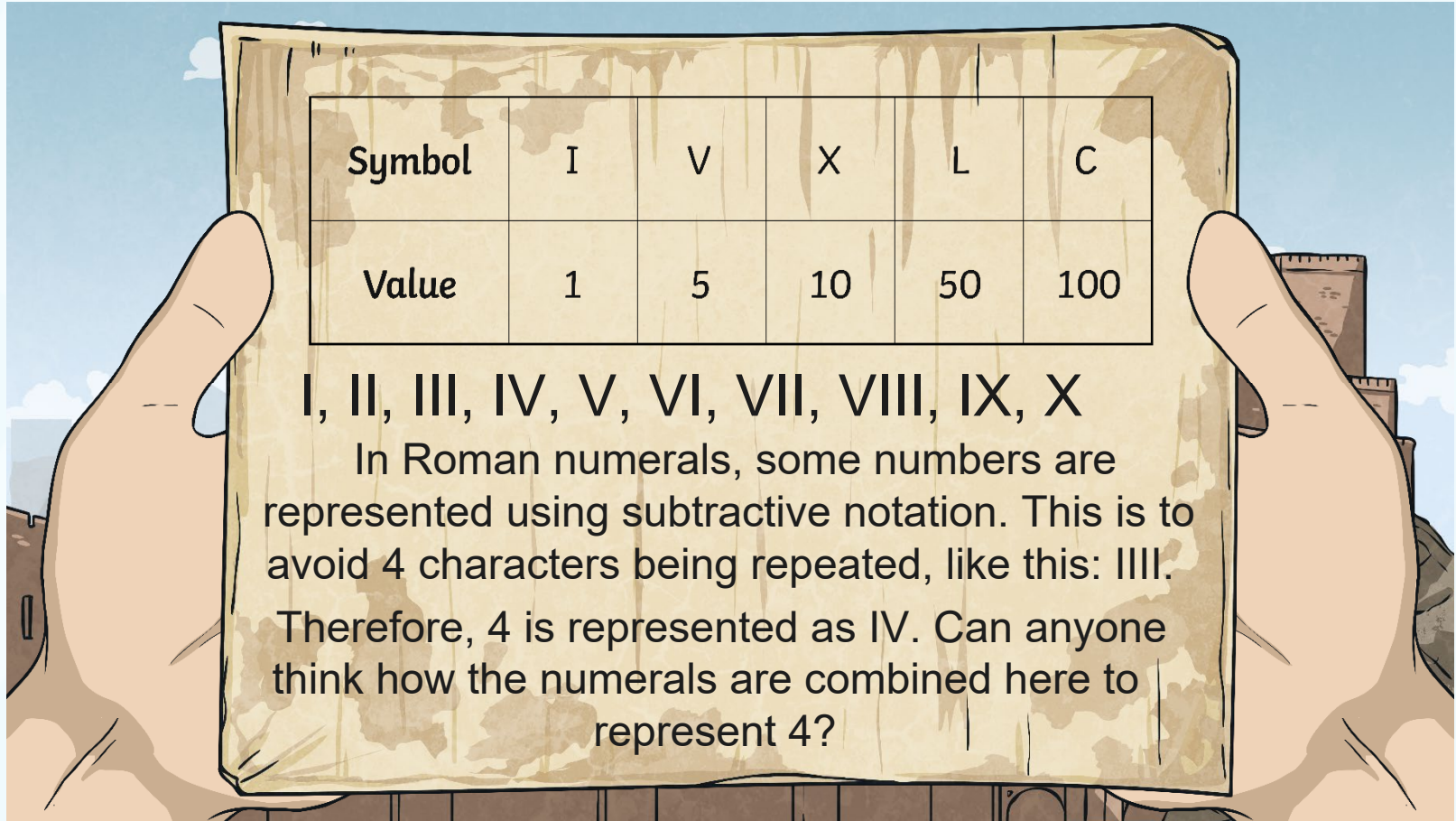
I, II, III, IV, V, VI, VII, VIII, IX, X

The numbers 1, 2 and 3 are made by combining the symbol for 1. Therefore, I is 1, II is 2 and III is 3.

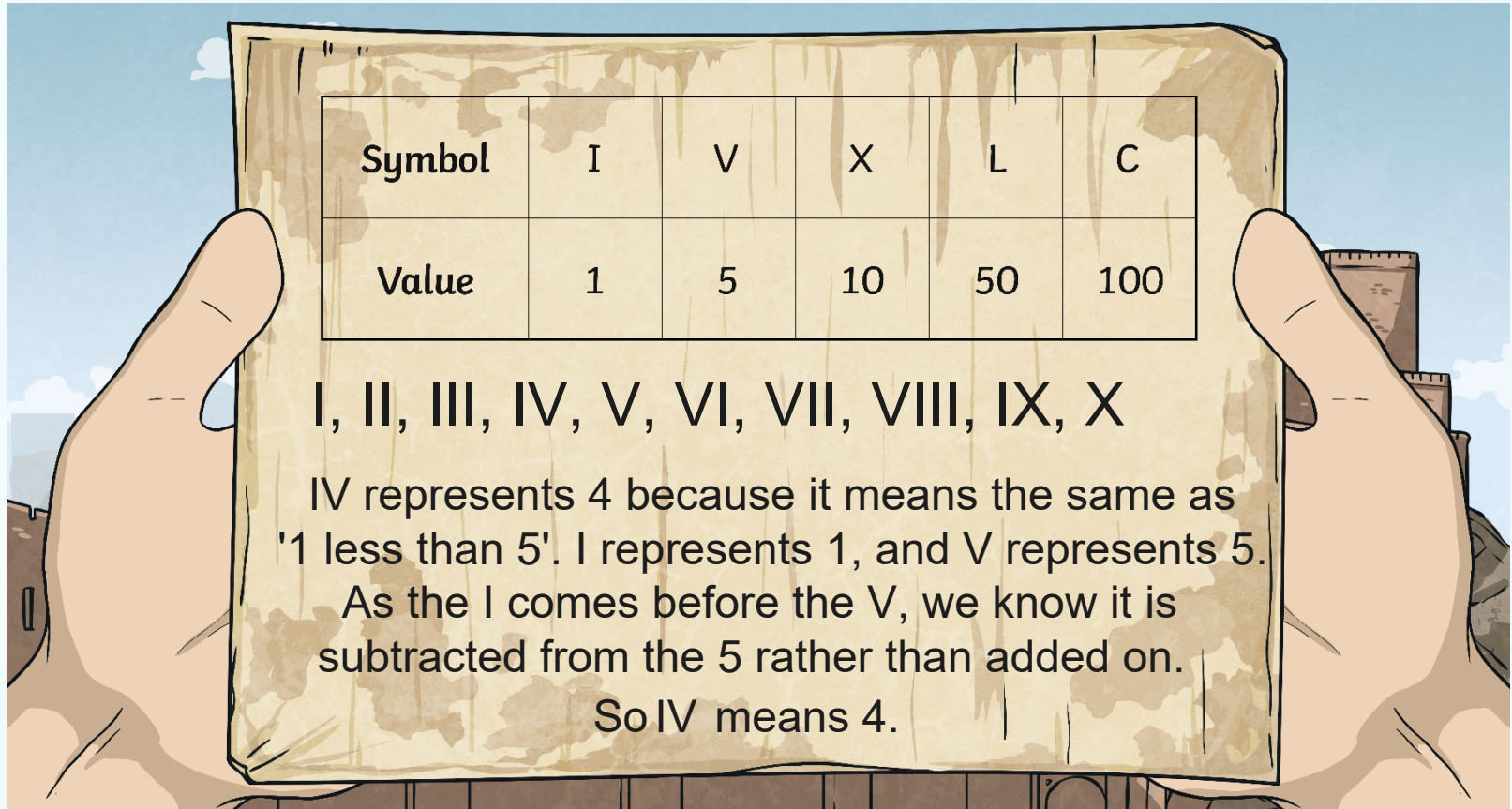
What do you notice about 4?



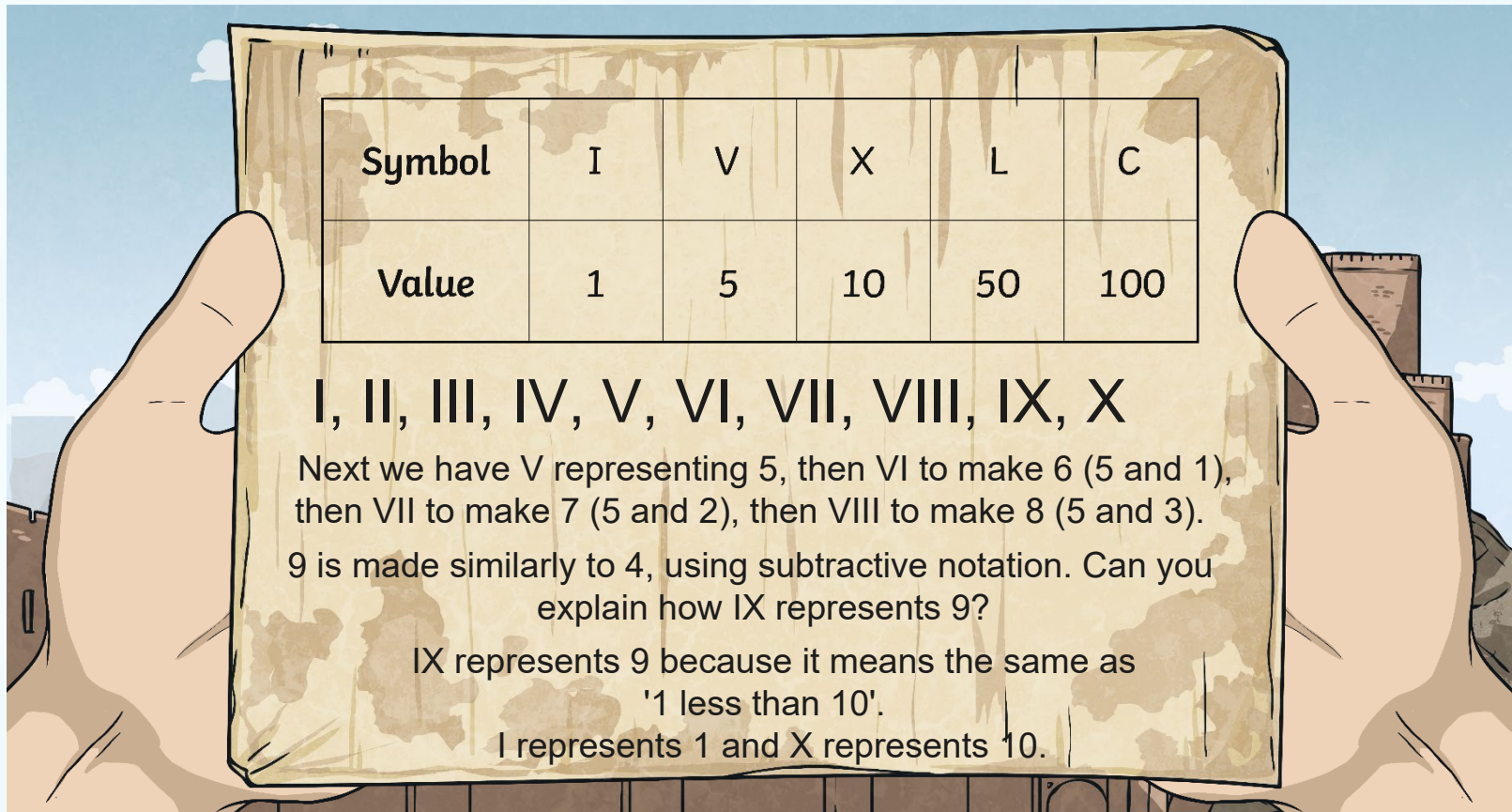
# Subtractive Form Roman Numerals



# Subtractive Form Roman Numerals



# Subtractive Form Roman Numerals



Symbol	I	V	X	L	C
Value	1	5	10	50	100

I, II, III, IV, V, VI, VII, VIII, IX, X

Next we have V representing 5, then VI to make 6 (5 and 1), then VII to make 7 (5 and 2), then VIII to make 8 (5 and 3).

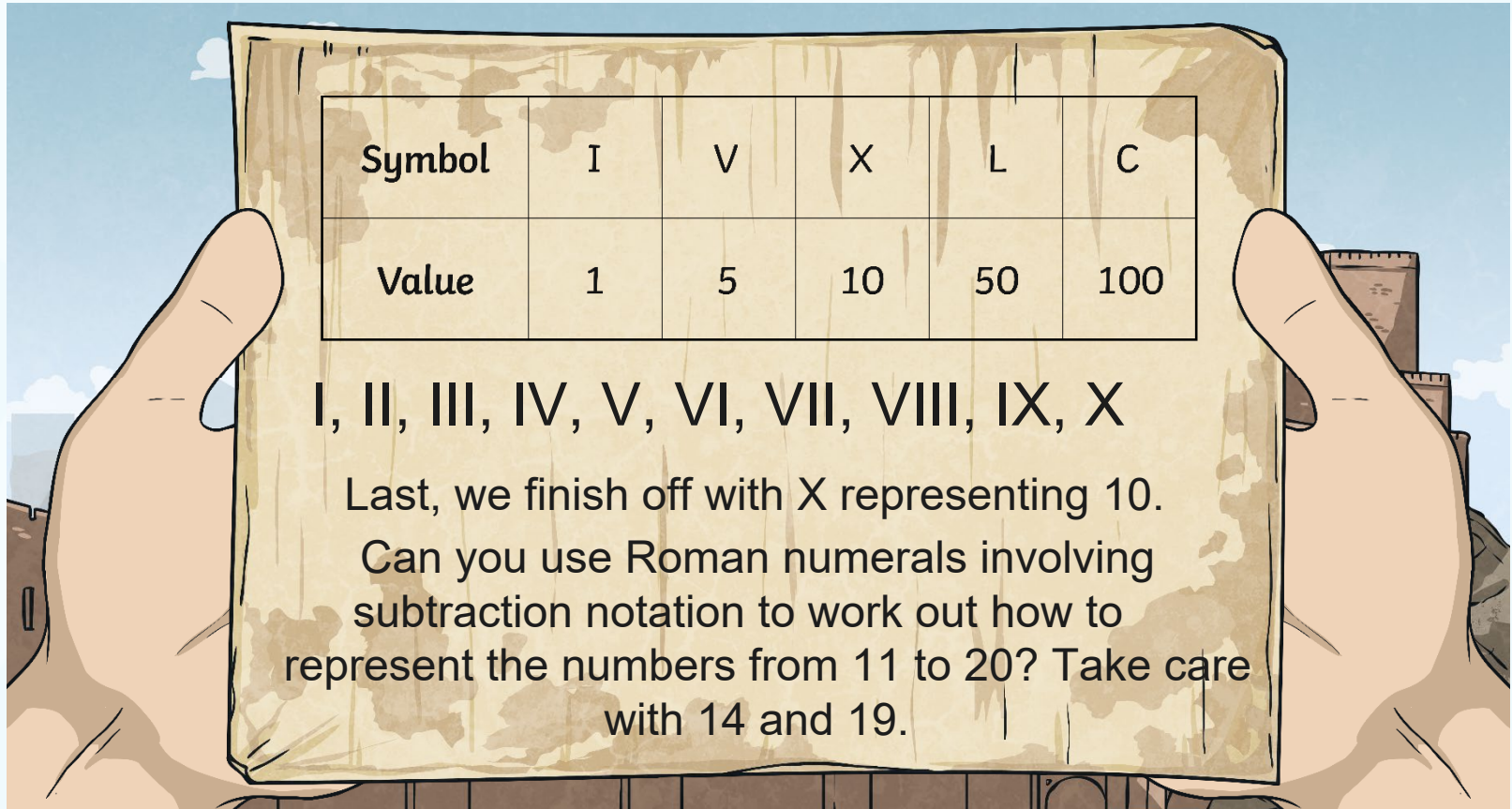
9 is made similarly to 4, using subtractive notation. Can you explain how IX represents 9?

IX represents 9 because it means the same as '1 less than 10'.

I represents 1 and X represents 10.



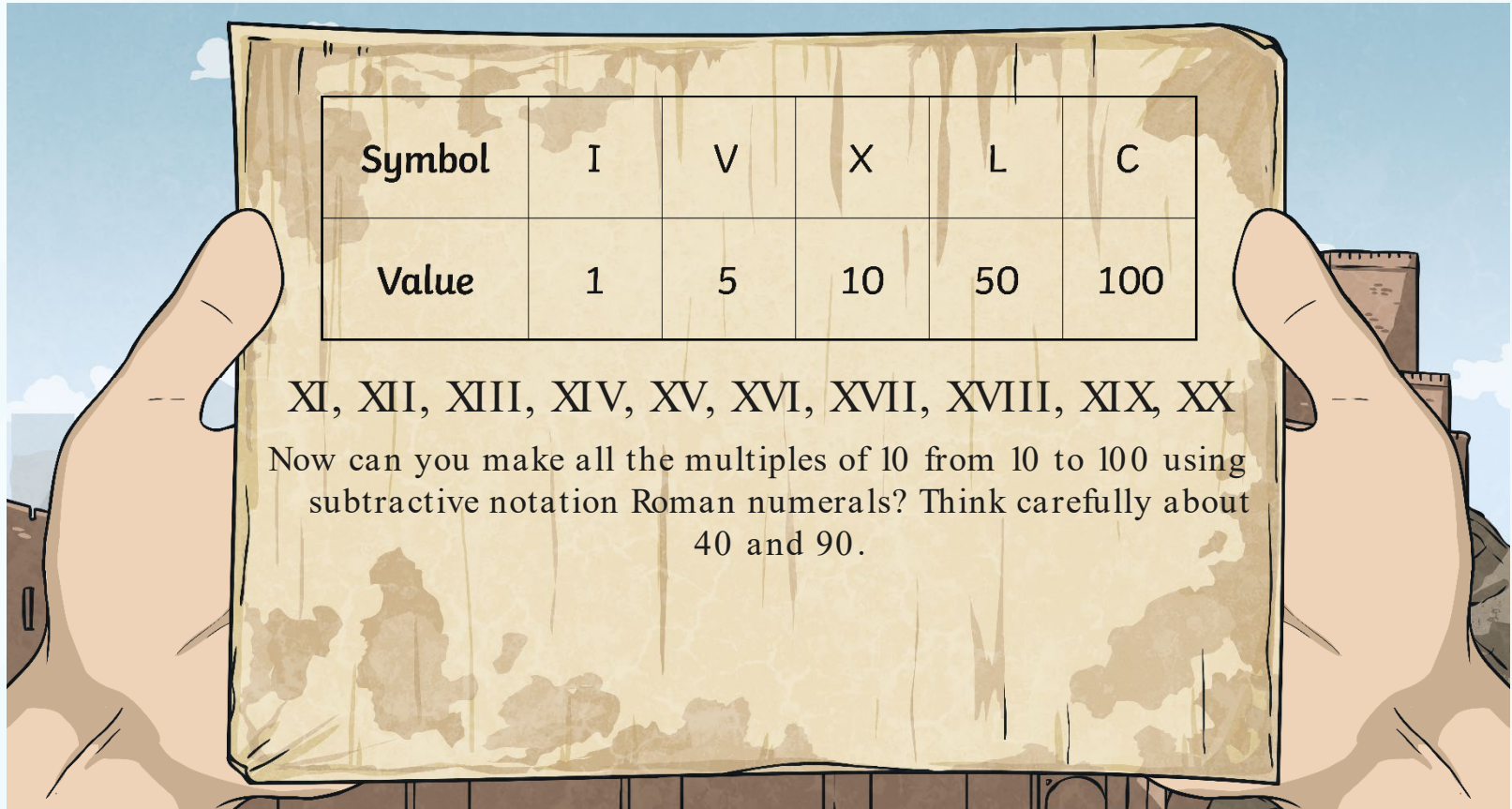
# Subtractive Form Roman Numerals





# Subtractive Form Roman Numerals

How did you do?



The illustration shows two hands holding a piece of aged, stained parchment. On the parchment is a table with two rows and six columns. The first row is labeled 'Symbol' and contains the Roman numerals I, V, X, L, and C. The second row is labeled 'Value' and contains the numbers 1, 5, 10, 50, and 100. Below the table, the text 'XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX' is written. At the bottom, a challenge is posed: 'Now can you make all the multiples of 10 from 10 to 100 using subtractive notation Roman numerals? Think carefully about 40 and 90.' The background of the parchment shows faint, dark stains and a small illustration of a stone wall on the right side.

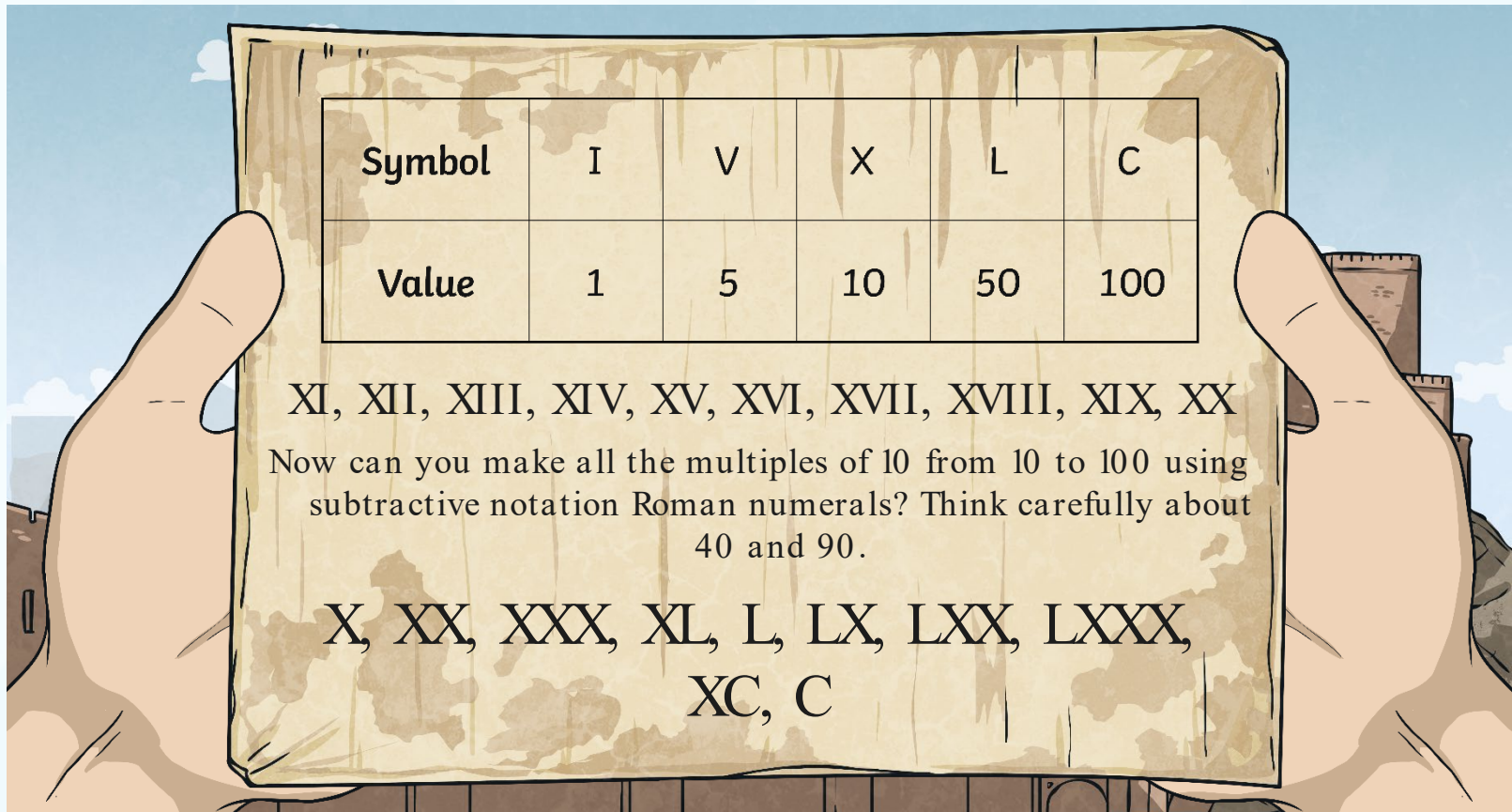
Symbol	I	V	X	L	C
Value	1	5	10	50	100

XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX

Now can you make all the multiples of 10 from 10 to 100 using subtractive notation Roman numerals? Think carefully about 40 and 90.

# Subtractive Form Roman Numerals

How did you do?



The illustration shows two hands holding a parchment scroll. On the scroll is a table with two rows and six columns. The first row is labeled 'Symbol' and contains the Roman numerals I, V, X, L, and C. The second row is labeled 'Value' and contains the numbers 1, 5, 10, 50, and 100. Below the table, the text 'XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX' is written. Below that is a paragraph: 'Now can you make all the multiples of 10 from 10 to 100 using subtractive notation Roman numerals? Think carefully about 40 and 90.' At the bottom, the text 'X, XX, XXX, XL, L, LX, LXX, LXXX, XC, C' is written.

Symbol	I	V	X	L	C
Value	1	5	10	50	100

XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX

Now can you make all the multiples of 10 from 10 to 100 using subtractive notation Roman numerals? Think carefully about 40 and 90.

X, XX, XXX, XL, L, LX, LXX, LXXX, XC, C

# Representing Numbers with Roman Numerals



Finally, can you make all the multiples of 100 from 100 to 1000?  
Take care with 400 and 900.

Symbol	I	V	X	L	C	D
Value	1	5	10	50	100	500

# Representing Numbers with Roman Numerals



Finally, can you make all the multiples of 100 from 100 to 1000?  
Take care with 400 and 900.

Symbol	I	V	X	L	C	D
Value	1	5	10	50	100	500

**C, CC, CCC, CD, D, DC, DCC, DCCC, CM**



# Matching Numerals and Numbers



Can you match the following Roman numerals with the numbers they represent?  
Click 2 boxes. If they match, they will turn the same colour.

You can use the Symbol and Value Grid to help you.

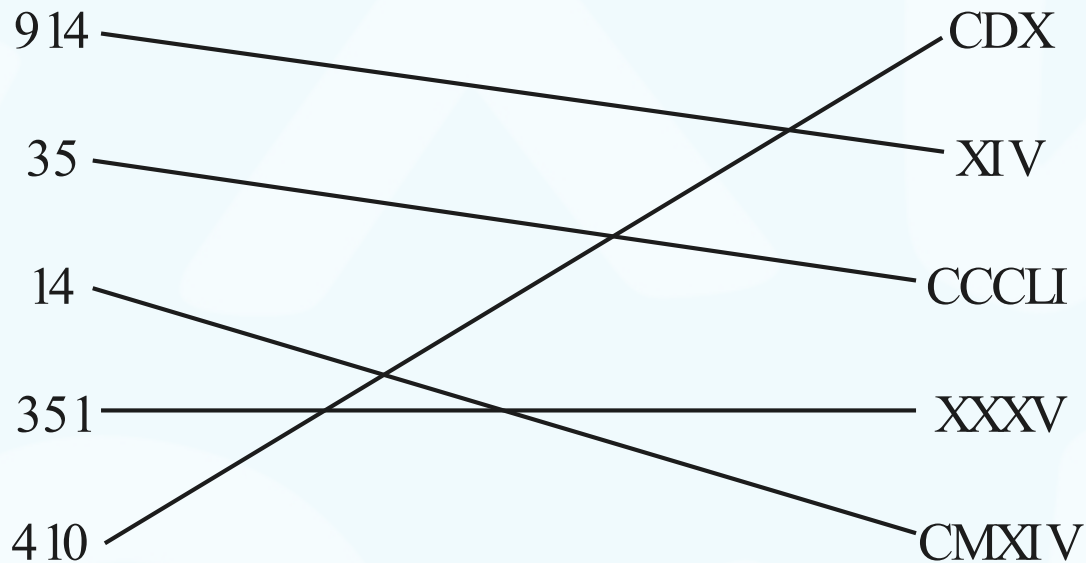
Symbol	I	V	X	L	C	D
Value	1	5	10	50	100	500

24	XCV	95	LVIII	113
CXIII	403	58	XXIV	CDIII

# Matching Mistakes



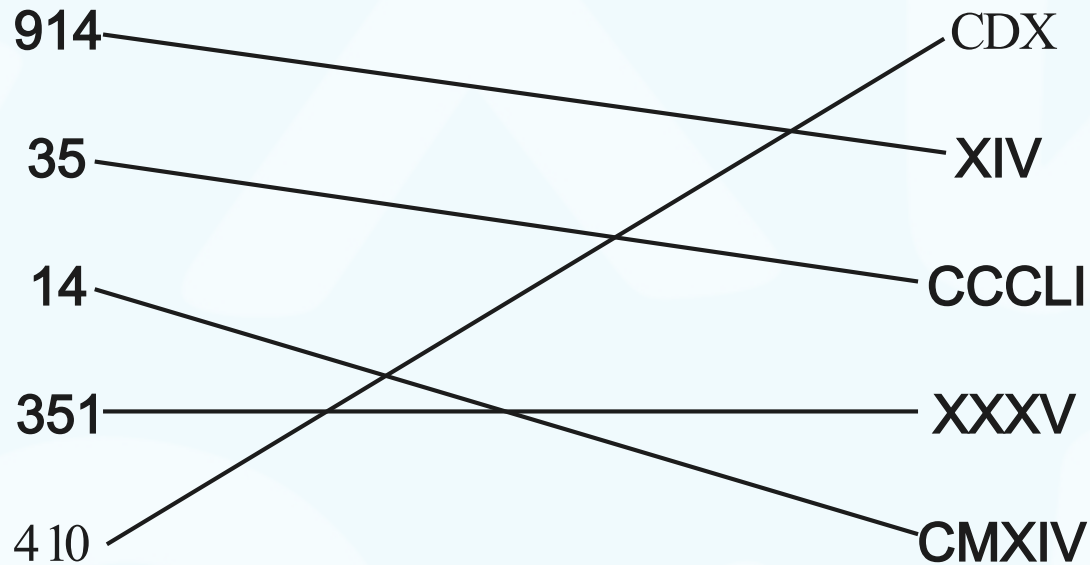
These Roman numerals have been matched with the numbers they represent. Some of them have been matched correctly, but some of them are wrong. Can you spot the mistakes?



# Matching Mistakes



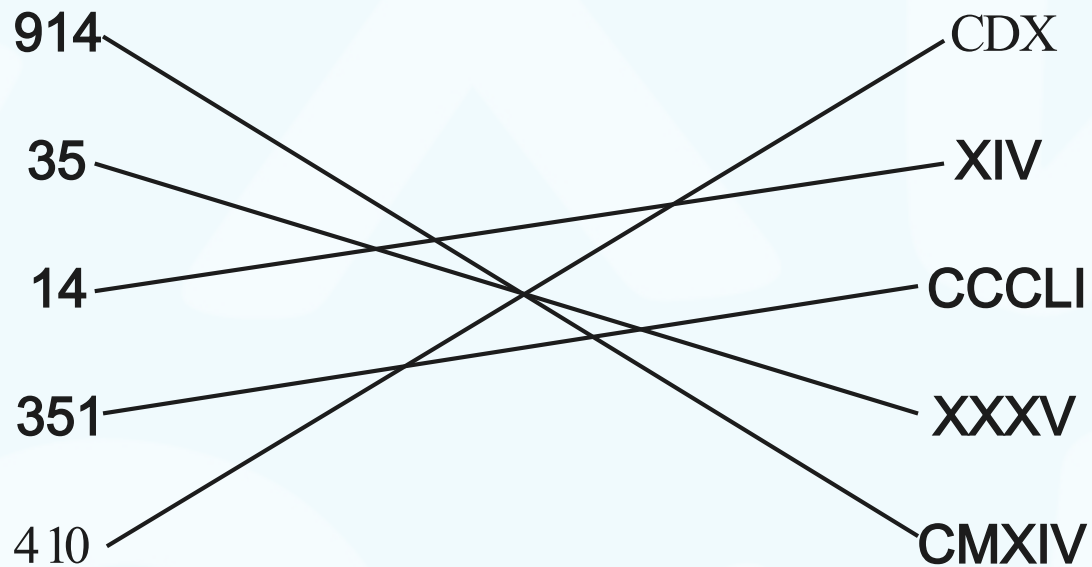
These numbers and Roman numerals have been incorrectly matched.  
Can you explain how they should be corrected?



# Matching Mistakes



They are now matched correctly.  
Did you explain it accurately?





# Roman Invasion



Each Roman centurion is numbered in Roman numerals.  
Click the one whose number is the same as 456.

If you choose correctly, the centurion will disappear.



DCLVI



DCLIV



CDLVI



CDVLI



CDLIV

# Roman Invasion



Click the centurion whose number is the same as 97.

If you choose correctly, the centurion will disappear.



XCVIII



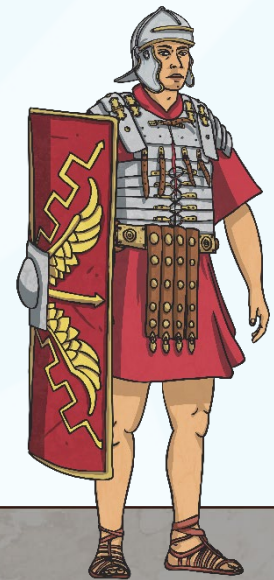
XCIIV



CXVII



VIIXC



CXIIV

# Roman Invasion



Click the centurion whose number is the same as 15.

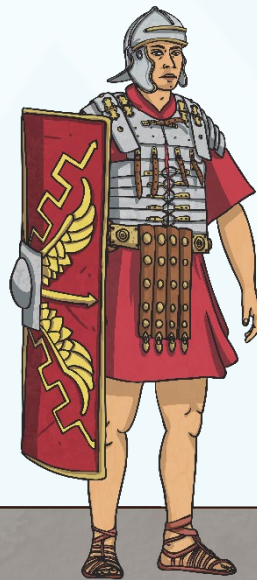
If you choose correctly, the centurion will disappear.



IIIIIX



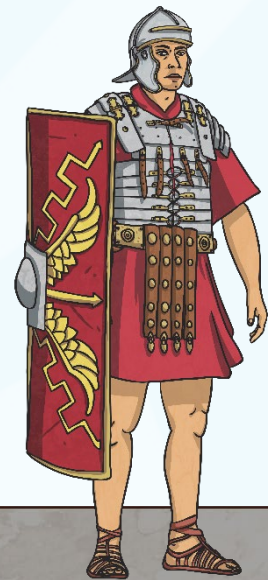
VX



XXXLV



XV



XIIII

# Roman Invasion



Click the centurion whose number is the same as 999.

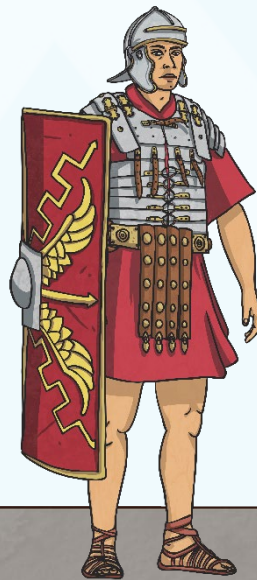
If you choose correctly, the centurion will disappear.



MCCXXI



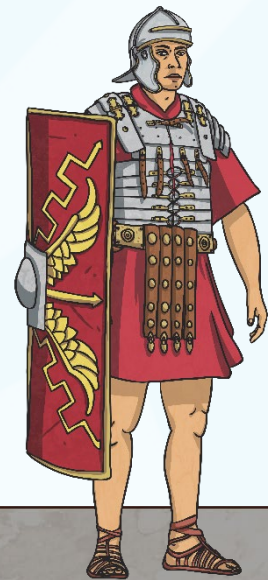
CMCXXI



CMXCXI



MCXCIX



CMXCIX

# Roman Invasion



Click the centurion whose number is the same as 273.

If you choose correctly, the centurion will disappear.



CCXXLIH



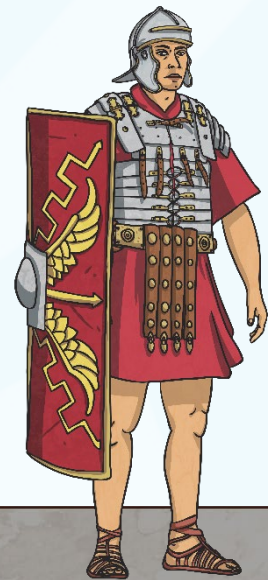
IIIXXLCC



CLXI



CCLXXXIII



CXCXLIH



# Release Date

Many films have the year they were released represented in Roman numerals shown on the end credits. This is the part at the end of the film where the cast and crew are listed.

Let's have a look at when some films were released!



# Release Date

**Toy Story** was released in MCMXCV.

We can work out what year this was by identifying the numbers represented by the Roman numerals.

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

# Release Date

Toy Story was released in MCMXCV.

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

We know  $M = 1000$ .

CM is 100 less than 1000. So  $CM = 900$ .

XC is 10 less than 100. So  $XC = 90$ .

$V = 5$ .

# Release Date

Use the **Symbol and Value Grid** to work out when each of the following films were released.

**Despicable Me** was released in MMX. What year was this?

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

# Release Date

It was released in 2010.

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

M = 1000

M = 1000

X = 10



# Release Date

**Trolls** was released in MMXVI. Work out what year this was.

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

# Release Date

It was released in 2016.

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

M = 1000

M = 1000

X = 10

VI = 6

# Release Date

**Finding Nemo** came out in MMIII. When was this?

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

# Release Date

It was released in 2003.

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

M = 1000

M = 1000

III = 3



# Release Date

**Frozen** was released in MMXIII. Work out what year this was.

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

# Release Date

It was released in 2013.

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

M = 1000

M = 1000

X = 10

III = 3

# Release Date

The Lion King was released in MCMXCIV. When was this?

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

# Release Date

It was released in 1994.

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

M = 1000

CM = 900

XC = 90

IV = 4

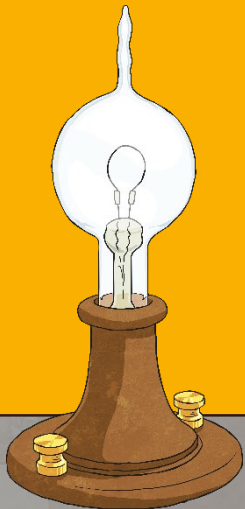


# Incredible Inventions

Many inventions have been made over the years that help to make our lives easier and more comfortable.

One incredible invention is the lightbulb. Another is the telephone.

Do you know when these items were invented?

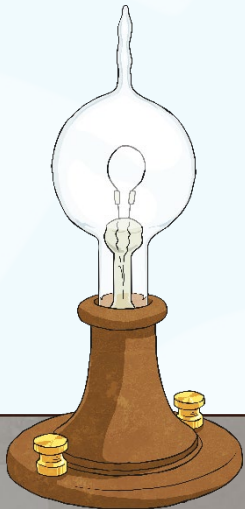


# Incredible Inventions

The modern lightbulb was invented  
by Thomas Edison in 1879.

The telephone was invented in 1876  
by Alexander Graham Bell.

Can you give these years in Roman numerals?



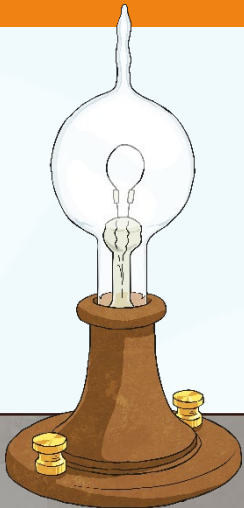
# Incredible Inventions

The modern lightbulb was invented by Thomas Edison in 1879.

The telephone was invented in 1876 by Alexander Graham Bell.

Can you give these years in Roman numerals?

MDCCCLXXIX



MDCCCLXXVI



