

NATURAL NUMBERS

Age of students: 12-13

Language Aims	Content Aims
• To present a lexical set of words for students to understand and work with Natural numbers • To practise pronunciation of the words with the class • To reinforce the language by providing students with tasks which invite them to use the language	• To introduce natural numbers and operations and their power with practical activities in order to engage the students

1. REMEMBER WHAT YOU ALREADY KNOW

Modeling new vocabulary

Positional system

2. OPERATIONS AND PROBLEMS WITH NATURAL NUMBERS

Adding

Subtracting

Multiplying

Dividing

3. TRY YOURSELF WITH A TEST

MODELING NEW VOCABULARY

WORK IN PAIRS

Vocabulary :

1. We are going to read the numbers and related vocabulary, after that we are going to repeat chorally and then individually:

1 2 3 4 5 6 7 8 9 0

add	/æd/
Subtract	/səb'trækt/
multiply	/ˈmʌl.tɪ.plaɪ/
divide	/dɪ'vaɪd/
equal	/ˈi:.kwəl/
similar, approximately	/ˈsɪm.ɪ.ləˈr/ /ə'prɒk.sɪ.mət.li/

2. Now you have to write down the respective symbol for each word:
-, =, +, ÷, × and ≈

Add	
Subtract	
Multiply	
Divide	
Equals	
Similar, approximately	

POSITIONAL SYSTEM

Keep in pairs and work together:

The numbers can be used for counting the fingers on your hand or for telling us how many people there are in the world. In all numbers the position of each figure shows its value. You can see how the value of the figure 3 changes in this box:

THOUSANDS	HUNDREDS	TENS	UNITS	HOW TO READ THE NUMBER
			3	Three
		3	0	Thirty
	3	0	0	Three hundred
3	0	0	0	Three thousand

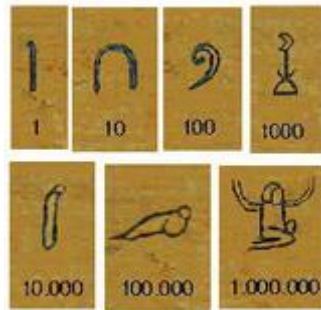
Complete both tables respectively with the numbers or words

THOUSANDS	HUNDREDS	TENS	UNITS	HOW TO READ THE NUMBER
			2	
		7	0	
	8	0	0	
4	0	0	0	

THOUSANDS	HUNDREDS	TENS	UNITS	HOW TO READ THE NUMBER
				Seventy-four
				Three thousand and forty-four
				Five thousand three hundred and twenty-six
				Eight hundred ninety-seven

WHAT THESE SYMBOLS MEAN?

Look at these symbols and try to answer the following questions:

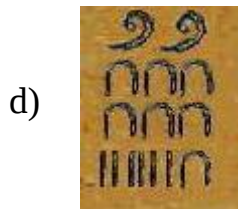


1. Write in both system numbers the next values:

- | | | |
|--------|---------|---------|
| a) 42 | b) 159 | c) 2185 |
| d) 580 | e) 1003 | f) 275 |

2. What number is written in each box?

- a) XLIX b) CCLX c) MCCCVI



3. Look at the next table and then answer the questions below:

TEN THOUSANDS	THOUSANDS	HUNDREDS	TENS	UNITS
	4	0		
	3	0	0	
2	0	0		
		5	0	0

- How many thousands are there in 40 hundreds?
- How many tens are three thousands?
- How many thousands are in two ten thousands?
- How many units are five hundreds?

OPERATIONS WITH NATURAL NUMBERS: ADDING

One of your peers has to read aloud the following text, after that you have to do in pairs the activities below.

Student: “ Grandad has to take some tablets everyday. He has to take two tablets early in the morning, one tablet after lunch, and three at night time. How many tablets does Grandad take each day?

Teacher: If you know how to add, all you have to say is, ‘2 plus 1 is 3, and 3 plus 3 is 6.’ So grandad takes 6 tablets every day.

Student: Adding is easy, even when the numbers seem to get big. Always start with the **Units column**, and then move to the **Tens**. Suppose we want to add 25 to 19. We **work it out** like this:

	TENS	UNITS	
	2	5	Add the Units column: $5 + 9 = 14$. Put the 4 in the units answer and carry the 1 (which is 1 Ten) to the Ten column. Now add 2 and 1 and the new 1 to obtain 4 for the Tens answer.
+	1	9	
	4	4	

Even if you are adding hundred or thousands, it is easy to start with the **Units** column and move to the **Tens** and so on.

Now try these working in pairs:

1.

H	T	U	H	T	U
2	5	4	3	6	8
+	1	7	+	2	5

Th	H	T	U	Th	H	T	U
1	1	8	6	2	7	4	4
+ 1	0	9	5	+ 1	8	3	7

Th	H	T	U	Th	H	T	U
5	2	3	9	8	2	4	0
+ 3	5	2	0	+ 5	4	0	7

2. In 2005 Mr. David picked 117 apples from his tree, and in 2006 he picked 138 apples. How many apples did he pick in the two years?
3. The Neira family had a Summer holiday that cost 475\$ and a short autumn break that cost 228\$. What was the total cost of their two holidays?
4. Paula sold 1028 ice cream cornets on Saturday and 1054 on Sunday. How many cornets did she sell that weekend?
5. Mrs. Blanca earned 1428\$ in January, 1297\$ in February, and 1985\$ in March. How much did she earn in those 3 months?

REMEMBER THAT BY ADDING, YOU HAVE TO CARRY OVER NUMBERS IF YOUR TOTAL FOR ANY COLUMN IS BIGGER THAN 9. GOOD LUCK!!

OPERATIONS WITH NATURAL NUMBERS: SUBTRACTING

One of you has to read the text aloud and then work in pairs:

Student: “Mum leaves 5 cakes on a plate in the kitchen. When she comes back from the phone there are only 4 cakes on the plate. 1 cake has been taken away! 5 minus 1 is 4.”

Teacher: Taking away and subtracting are the same. So we can say, ‘Subtract 1 from 5 and you get 4.’ We can also use the minus sign and say ‘5 – 1 is .’ The equal sign is very useful too, because we can now write **5 – 1 = 4**.

Student: Putting figures into columns can be very helpful, but what do you do if the top figure in the units column is smaller than the figure under it? Let’s look at this example:

	TENS	UNITS	
	4	6	Here the 6 is too small for you to take 9 away from it. So borrow 1 Ten from the top figure in the Tens column. This leaves 3 Tens. It also changes the 6 Units. Now you can take 9 from 16, to give 7. Finally, take 1 Ten from the remaining 3 Tens, to give 2 Tens.
+	1	9	
	2	7	

Try yourself in pairs with the next subtractions:

Th	H	T	U	Th	H	T	U
5	2	3	9	8	2	4	0
- 3	5	2	0	- 5	4	0	7

OPERATIONS WITH NATURAL NUMBERS: MULTIPLYING

One student will read aloud the next text and then you will be asked to do the activities in pairs:

Student: Fran wants to buy 2 notebooks. They cost 10\$ each. Fran will need 20\$ to buy them.

Teacher: You can get this answer saying 10\$times 2 is 20\$ or you can say $10\$ \times 2 = 20\$$. You can see that multiplying is a way of adding numbers that are all the same. When you have only two of them, like the notebooks at 10\$ each, adding is as easy as multiplying. We find the same **carry-over figures** than by adding when we are multiplying. Let's take, for example 49×2 .

TENS	UNITS	Multiply the 9 in the Units column by 2, to get 18. Put the 8 in the Units answer and carry the 1 to the Tens column. Now multiply 4×2 to get 8 and add the carried over 1 to give 9. So the answer is 98.
4	6	
$\times$	2	
9	8	

1. Try yourself with these exercises. Remember to carry the numbers over columns

Th	H	T	U	Th	H	T	U
		8	3			3	7
$\times$		2	6	$\times$		1	8
Th	H	T	U	Th	H	T	U
	2	1	3		3	2	7
$\times$	1	2	3	$\times$	2	4	5

OPERATIONS WITH NATURAL NUMBERS: DIVIDING

Teacher will read the next text, then you have to work in pairs and do the proposed activities:

Teacher: “You have 6 sweets to share with your friend. That’s 3 each, of course, because 6 divided by 2 is 3. You can write this as $6 \div 2 = 3$.

Student: The teacher of a class wants the 24 children to walk in pairs. How many pairs will there be? It is good to know the timetable up to the 10 or 12 timetable, because the 12 twos are 24, then you know that 24 children make 12 pairs. You can write this as $24 \div 2 = 12$. But if you had 7 sweets instead of 6 to share, there would be one sweet **left over**. This sweet is called the **remainder**. You can write this as $7 \div 2 = 3$ **remainder 1**.

Now follow the next example to do the activities below:

STEP 1: Set the numbers down like this

STEP 2: How many fours in 6? 1, remainder 2. Write 1, remainder 2. Write 1 above the 6, and 2 before the 8.

STEP 3: How many fours in 28? 7, no remainder. Write 7 above 8

STEP 4: How many fours in 4? 1, no remainder. Write 1 above 4.

$$\begin{array}{r} 171 \\ 4 \overline{) 684} \end{array}$$

1. Work in pairs now to solve these divisions: (Note: there are no remainders).

$$\begin{array}{r} 525 \quad \overline{) 75} \quad 165 \quad \overline{) 33} \quad 672 \quad \overline{) 84} \quad 56 \quad \overline{) 28} \end{array}$$

2.

$$\begin{array}{r} 15 \quad \overline{) 345} \quad 13 \quad \overline{) 299} \quad 14 \quad \overline{) 308} \quad 13 \quad \overline{) 368} \end{array}$$