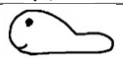
Egyptian Mathematics

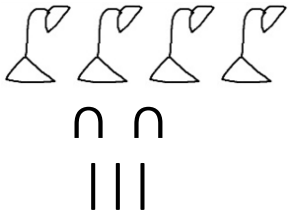
Lesson 1 of 4, work in pairs

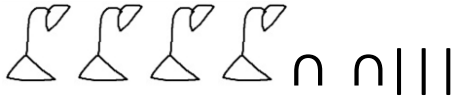
Materials Needed: Pencil
Math Journal or Notebook

The ancient Egyptians wrote numbers using symbols, or hieroglyphics. The symbols for numbers are shown in the table below.

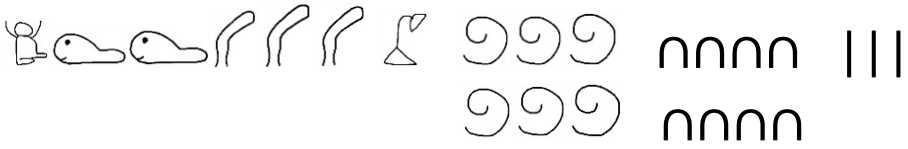
Number	Symbol	Description
1	|	Vertical stroke
10	∩	Heel bone
100		Scroll
1000		Lotus flower
10,000		Pointing finger
100,000		fish
1,000,000		Kneeling person

To write a number in ancient Egyptian symbols, you write down the right number of symbols. For example, 4,023 = 4 thousands, 2 tens, and 3 ones:



Or, we could write it all in a row instead of up and down. 

We could write 1,231,683 as 1 million, 2 hundred thousand, 3 ten thousands, 1 thousand, 6 hundreds, 8 tens, and 3 ones.



1. Write each of these numbers in ancient Egyptian symbols. Write the number and the Egyptian symbols in your math journal.

a. 529 b. 63 c. 4,401
d. 2,003,251

2. What number is represented by the symbols?

a. 

b. 

c. 

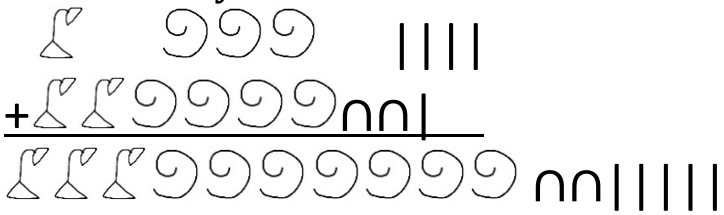
Standards: Number systems, place value

Egyptian Mathematics

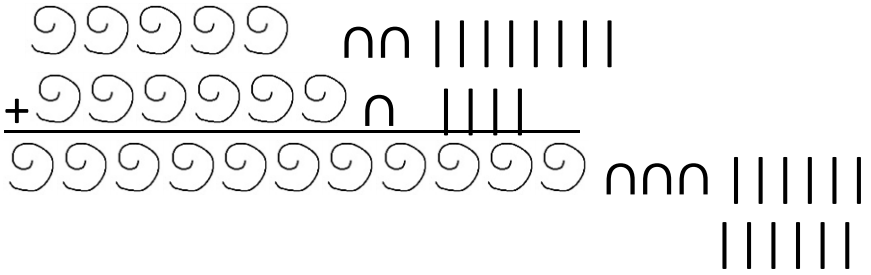
Lesson 2 of 4, work individually or in pairs

Materials Needed: Pencil
Math Journal or Notebook

Use the table of Egyptian numbers from Lesson 1 as you need it.
Addition and subtraction in ancient Egyptian symbols are similar to what they are in our numerical system.



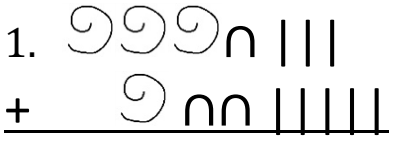
Sometimes you have to regroup. For example,



The answer is 11 hundreds, 3 tens, and 12 ones. Instead of 12 ones, we want to say that we have 1 ten and 2 ones. We also want to call the 11 hundreds 1 thousand and 1 hundred. We regroup ten of the ∩ and ten of the | to see that the answer really is

Practice ancient Egyptian addition. Write both the problem and solution in your math journal. Regroup if necessary. Check your answers with a teacher or a friend.

1.



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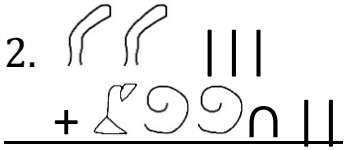

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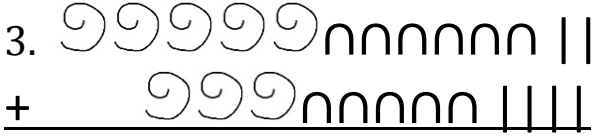

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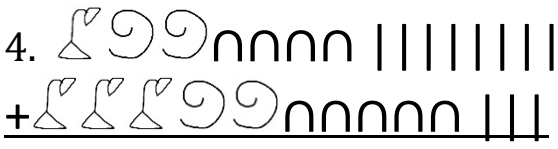


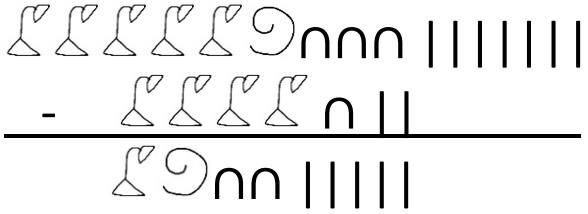
Standards: Number systems, place value

Egyptian Mathematics

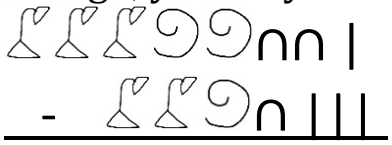
Lesson 3 of 4, work individually or in pairs

Materials Needed: Pencil
Math Journal or Notebook

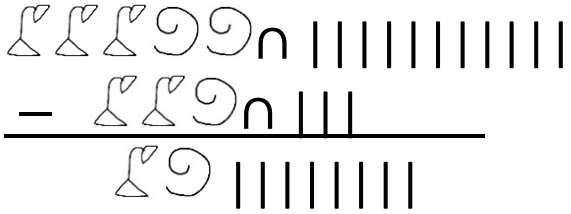
Subtraction in ancient Egyptian symbols is very similar to our subtraction today. For example, you can often just erase the symbols that get subtracted.



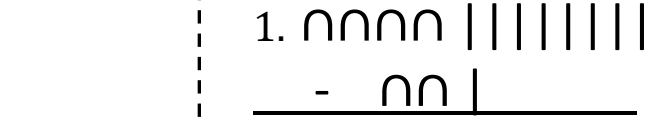
If you don't have enough symbols to erase, though, you may have to regroup.

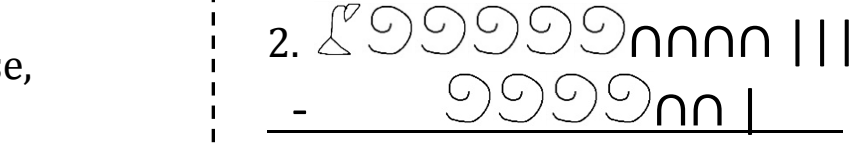


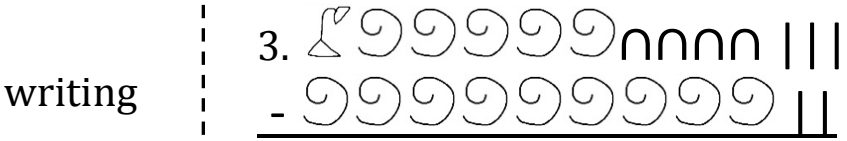
There aren't enough one's, so regroup by writing ∩ as ||||||||| and finish the subtraction.

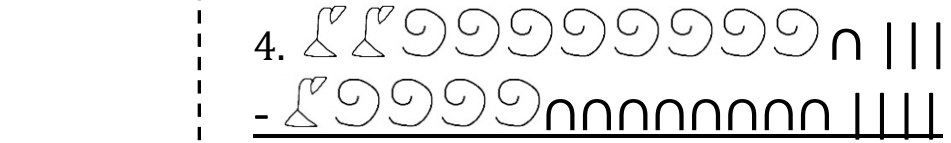


Practice subtracting in ancient Egyptian symbols, regrouping when needed. Write each problem and solution in your math journal.

1. 

2. 

3. 

4. 

Standards: Number systems, place value

Egyptian Mathematics

Lesson 4 of 4, work individually or in pairs

Materials Needed: Pencil
Math Journal or Notebook

In this lesson, you are going to compare ancient Egyptian arithmetic with our modern system of arithmetic.

1. **Compare** Look at problems 3 and 4 in lesson 2. Write these problems and their sum in our number system. Write two or three sentences to describe how the regrouping in ancient Egyptian addition is similar to or different from carrying in our arithmetic.

2. **Compare** Look again at problem 4 in lesson 3. Write out how you would subtract $2813 - 1484$ in our number system. Write 1-2 sentences describing the similarities and differences between ancient Egyptian subtraction and modern subtraction.

3. **Evaluate** One symbol the ancient Egyptians did not have was a symbol for 0. Did you wish you had a symbol for 0 while you were doing the problems? Why or why not?

4. **Independent Research** Our system of arithmetic, along with the ancient Egyptian number system, is called a decimal system because it is based on the number 10 (*decima* is Latin for tenth). Our numbers are called Hindu-Arabic numbers. Research other decimal systems or Hindu-Arabic numbers and prepare a presentation.

Standards: Number systems, place value