

4th Grade Homework #16 Student Name: _____

Eratosthenes - Geographer & Mathematician **Cross-Curricular Focus: History/Social Sciences & Mathematics**



You have probably studied about how to locate places on Earth using lines of latitude and longitude, and you have probably studied about prime and composite numbers. But did you know that both of those important ideas came to us from the mind of one ancient Greek man? His name was Eratosthenes.

Eratosthenes lived in the city of Cyrene in the nation of Greece from 276 to 195 B.C. Long before any of us was anything but a distant glimmer in the future, he was busy measuring Earth and observing how it tilts on an axis. He even figured out a way to calculate the distance from Earth to the sun, and discovered the need for a leap year to balance out the calendar year every 4th year. His measurements of very large distances were incredibly accurate. He repeatedly applied a common measurement that was roughly equal to the size of a city stadium to show distances as great as the circumference of Earth. He even used his ideas to create an early world map. He became the first geographer, and even invented the word geography, which is the study of Earth's physical features.

In addition to his studies of Earth, Eratosthenes was an accomplished **mathematician**. One area of math that he focused on was working with prime and composite numbers. He used a number chart, which became known as the Sieve of Eratosthenes. He used the chart to cross off multiples of numbers, beginning with 2 and working his way up. He knew that if a number was a multiple of another number, it could not be a prime number, because the number it was a multiple of would be a factor of it. By crossing off all the multiples, Eratosthenes was left with only prime numbers on the chart. He circled these, then made a list of prime numbers. This tool is still used today to find smaller primes.

Eratosthenes was a remarkable man not just because of his discoveries as a geographer or mathematician. He was remarkable because of the many areas in which he excelled. History will remember him, of course, as a geographer and mathematician, but also as an athlete, a poet, a musician, and an astronomer.

1) In your opinion, what was the greatest work of Eratosthenes? Why?

2) It seems unusual to measure things based on the size of the city stadium. What common item or building might be used if you were going to do a similar thing today?

Writing Assignment: The many accomplishments of Eratosthenes are remembered many years after he was alive. What legacy would you like to leave for future generations? Why? On a separate sheet of lined paper, write a paragraph of 5-8 sentences that provides evidence from the passage to support your thinking. Pay attention to spelling, capitalization, and punctuation, and make sure that your work is neat and easy to read. You should have a title, and a proper heading in the top right corner (name, group, date, assignment).

Academic Vocabulary:

1. List two pieces of **information** about your school: _____

2. What **evidence** could you find that it had rained the night before? _____

3. Complete the sentence: It was **evident** to me that my friend had been crying because

_____.

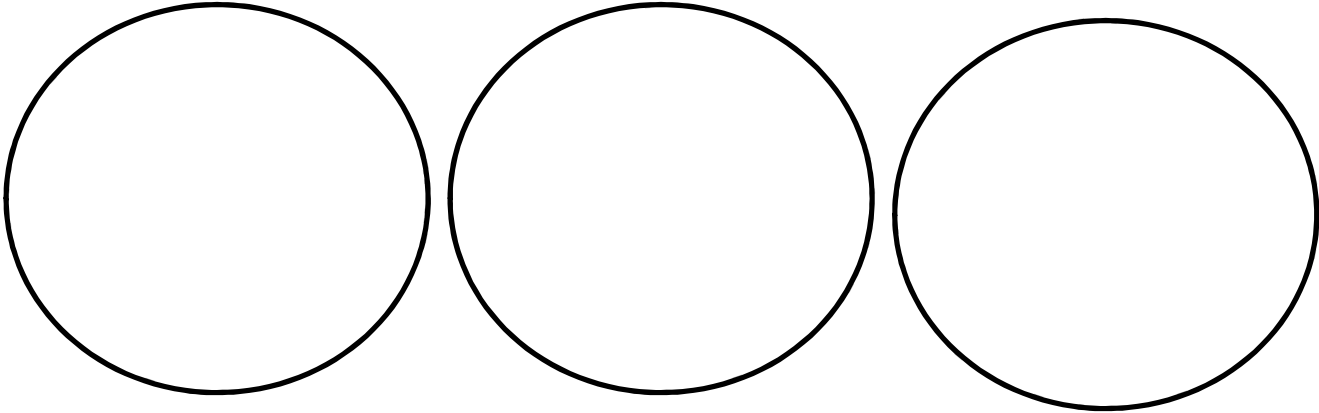
4th Grade Homework #16 Due:

Math: Current Skills Practice. Use Base-10 Blocks to help you divide.

$$453 \div 3$$

First, draw 453 with base-10 blocks:

Next, share the blocks evenly with the three groups:



The answer is the amount in ONE of the circles: _____

Math Review : Use an area model to multiply.

$$\begin{array}{r} 49 \\ \times 6 \\ \hline \end{array}$$



Multiplication Facts/Fact Families
Daily Practice – 15 minutes

Mon.	
Tues.	
Weds.	
Thurs.	

Home Reading Log:

Read 30 min. daily.

Book Title

Chapter(s)

Parent Initials

Mon.			
Tues.			
Weds.			
Thurs.			