

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. You have probably also studied about prime and composite numbers. 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 Greece from 276 to 195 B.C. As an adult, he worked on ways to measure Earth. He observed and studied how Earth tilts on an axis. He even calculated the distance from Earth to the sun.

One of his discoveries was the need for a leap year to balance out the calendar year every fourth year. His measurements of very large distances were very accurate. Eratosthenes used a common measurement that was about as big as a city stadium to show distances as large as the circumference of Earth. He used his ideas to create an early world map. As the first geographer, he 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 he focused on was 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. 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 prime numbers.

Eratosthenes was a remarkable man. His discoveries as a geographer and mathematician were very important. He also excelled in other areas. History honors him as a geographer and mathematician, but also as an athlete, a poet, a musician and an astronomer.

Name _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

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

2) The many accomplishments of Eratosthenes are remembered many years after he was alive. What legacy would you like to leave for future generations?

3) In what country did Eratosthenes live?

4) What is the tool Eratosthenes developed for prime numbers?

5) 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?
