# THE FIRST CALCULATION OF THE EARTH'S CIRCUMFERENCE <br> AND WHAT MADE IT POSSIBLE 

Erathostehens - oral presentation
(finishing sentences)
Showing places Google Maps:

1. Once upon the time there was a great Greek leader called He conquered a large part of all the way to the border of In Africa he conquered all the way to -
2. When he was a child, his father had appoined his teacher.

He was one of the most famous philosphers of all times. That was -
3. When A. undertook his conquests, he ofc chose his -

They were not only soldiers but also -
On his conquests, A. destroyed many but also he founded many -
They were mainly called -
4. The most famous of them was in It was a prosperous city, because of its position on and near -
The first ruler of the city was -
5. His city had also many significant -

One of them was -
but the most famous was -
6. It contained -

They gathered the scripts form everywhere by copying everything that arrived
to the city on -
It was also the center of -
Many -
gathered there.
So it was also a sort of
7. One of them was Eratosthenes, the father of -
and the person in charge of the library.
It was probably here that he learned that in Aswan (Syene) there is no at certain time of the year. SKETCH
We know today that on the whole northern hemisphere the Sun is at the highest point of its curve on -

As Aswan (Syene) is located on the -

## SKETCH

 there is absolutely no shadow at of that day.8. As a Greek from the 3 century $B C$ he thought that the Earth was and started wondering how big it was.
Then he started thinking what else he knew and what he can do.
So he found out how far Syene was from -
It was 800 km or 5000 stadia. SKETCH
This measure derives from the word -
The legend says that he calculated this distance from the knowledge of what distance can a caravan of -
cover in a day.
Ofc, he multiplied this distance with the number of needed to cover the distance.
Or the distance maybe from the Cadastral Survey by Ramsses II from the 13 century BC
9. If the Earth was round then he could measure the lenght of the shadow in SKETCH
and calculated the angle between - SKETCH
10. He also knew that the Sun's rays are - SKETCH
11. He envisaged - (How many) imaginary lines going further on through the Earth one of them intersecting the other two.
He concluded that these triangles were -
12. Then he put the numbers into scale.

Distance A-S 800 km
Distance around the Earth=x
EQUALS
angle in A 12,5 deg
the full circle 360 deg
His result was - 250.000 stadia or about 40.000 km (depending on which stadia you use - Greek or Egyptian)
and the circumference of the Earth over a meridian is $-40,004,423 \mathrm{~km}$
So basically he measured the circuference of the Earth with s stick not moving from Alexandria.


