

# Geodezija & Geodetska škola, Zagreb

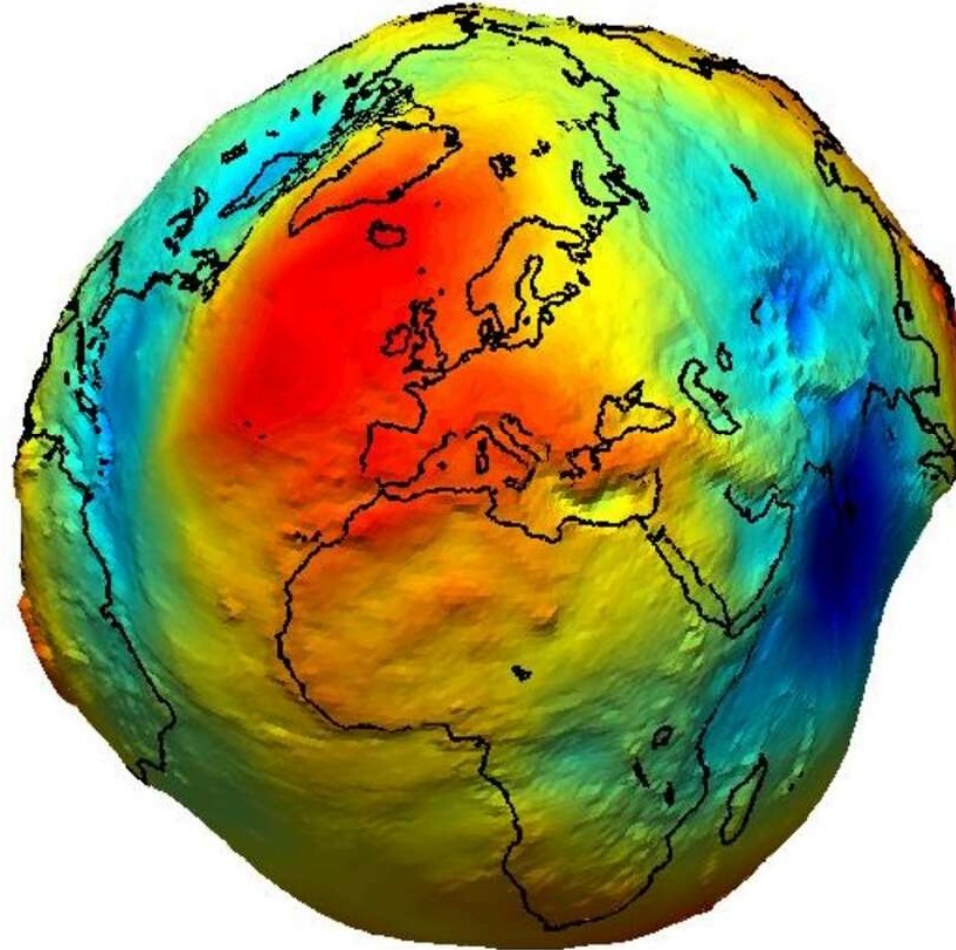
*A. Slaviček, 2022.*

# Earth

This is our earth.  
And where are we?



# True shape of the earth.



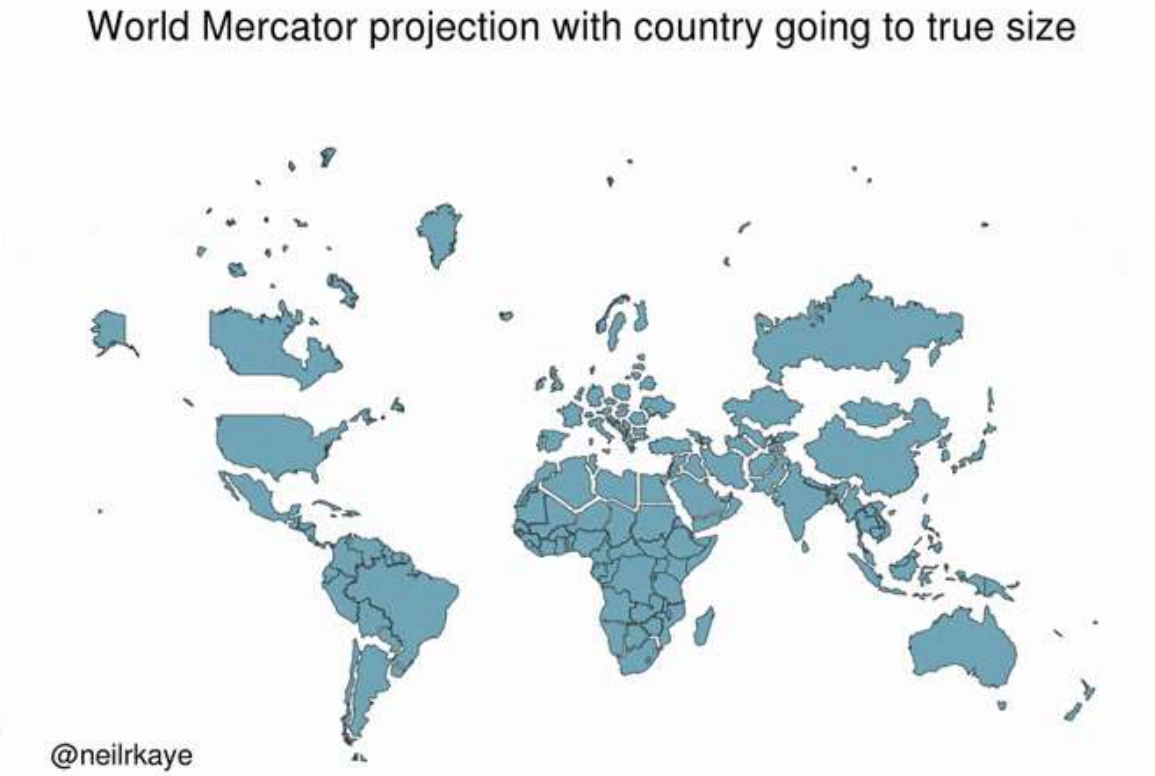
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In order to navigate the space, we need maps.

# True size of some countries



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# Who makes the maps?

## Surveyors

Our school,  
**Geodetska škola,  
Zagreb**, educates  
students for the  
profession of  
**geodesy and  
geoinformatics  
technician.**



# What is geodesy?

- **Geodesy** is a branch of applied mathematics and earth sciences, is the scientific discipline that deals with **measurement** and **representation** of the Earth.

Where does the word “Geodesy” come from?

- Geodesy came from the Greek word “Geodaisia”, literally “division of the Earth”.



# How was the Earth seen in the Hellenic world?



- The Earth was seen as a flat disc advocated by Homer and spherical body postulated by Pythagoras, an idea supported later by Aristotle.

*The Hellenic World, 507 BCE and 323 BCE.*



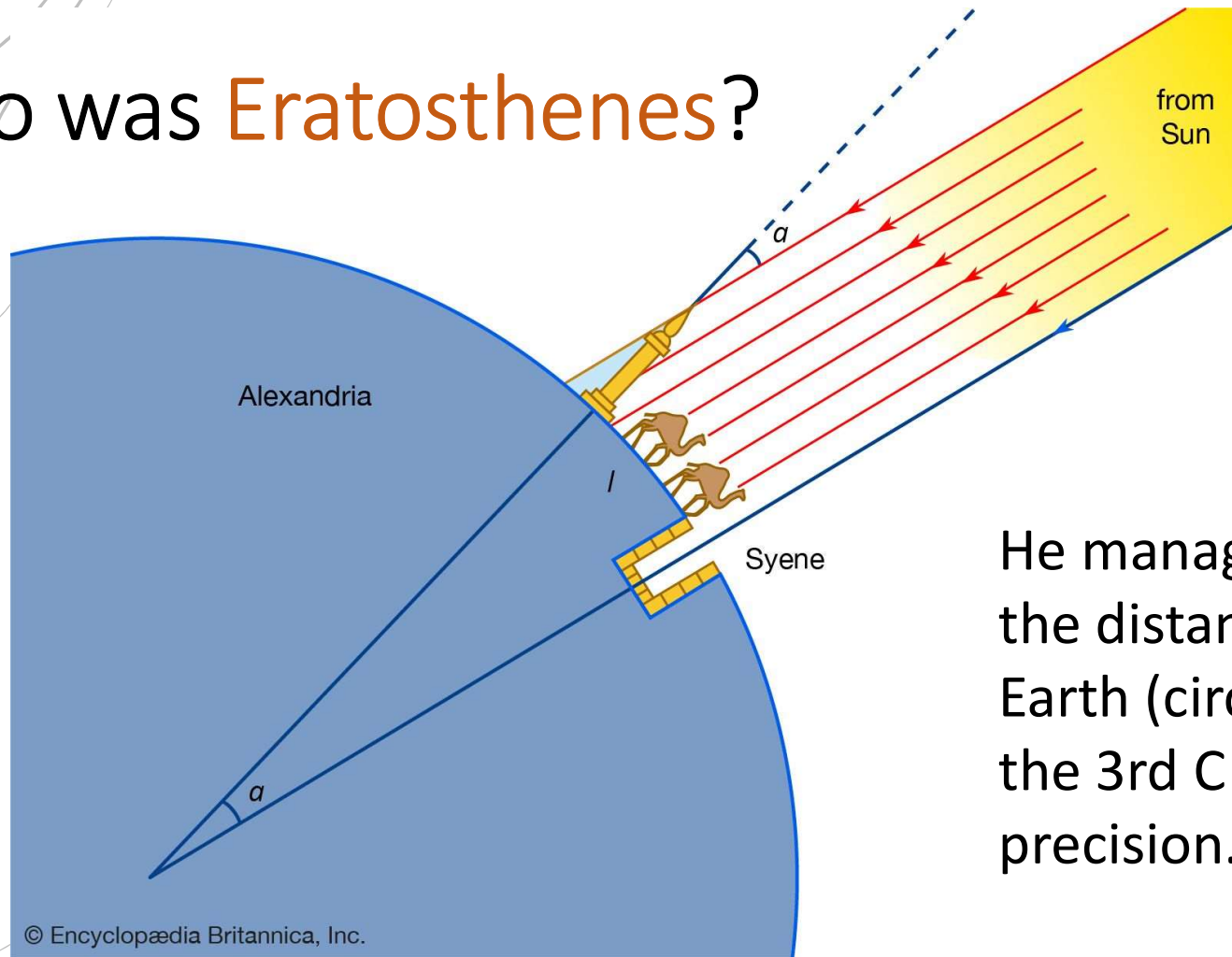
# The earth is round

Humans have known  
that Earth is round for  
more than 2,000  
years!



<https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-earth-58.html>

# Who was Eratosthenes?



He managed to calculate the distance around the Earth (circumference) in the 3rd C BC with high precision.

# What is surveying?

- Surveying or land surveying is the technique, profession and science of accurately **determining** the **position of points** and the distances and angles between them, commonly practiced by surveyors.



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# What is surveying?



- These points are often used to establish **maps** and **boundaries** for ownership, locations or other purpose required by government or civil law, such as property sales.

# What do surveyors use?

- Surveyors use elements of **mathematics, physics, engineering and the law.**
- **STEAMS**



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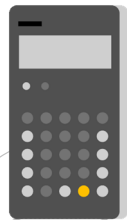
# Surveying equipment?

- Total stations, robotic total station, GPS receivers, prisms, 3D scanners, radios, handheld tablets, digital levels, drone, and surveying software.



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Calculating coordinates – every-day reality of our students



RAČUNANJE KOORDINATA POLIGONSKIH TOČAKA										Trig. obr. br. 19		
Broj točke	Prijelomni i vezni kutovi $\beta_n$			Smjerni kutovi $\nu_n = \nu_{n-1} + \beta_n \pm 180^\circ$			Duljine $d_n$	$\Delta E'_n = d_n \cdot \sin \nu_n$	$\Delta N'_n = d_n \cdot \cos \nu_n$	$E_n$	$N_n$	Broj točke
PT83	268	57	33	268	57	33				460,181.95	5,070,102.56	PT83
PT82	199	42	33	288	40	06	243.13	-230.34	77.82	459,782.35	5,070,095.30	PT82
101	291	02	30	39	42	36	191.99	-230.35	77.81	459,552.00	5,070,173.11	101
102	228	43	31	88	26	07	114.35	-230.35	77.81	459,674.65	5,070,320.80	102
G4051	163	42	52	72	08	59	112.56	122.66	147.70	459,788.95	5,070,323.92	G4051
K	96	26	09	348	35	08	38.72	114.31	3.12	459,896.09	5,070,358.41	K
A	112	11	12	280	46	21	92.91	-0.8	-0.5	459,888.42	5,070,396.37	A
106	257	17	40	358	04	01	147.94	-91.27	17.37	459,797.14	5,070,413.73	106
107	255	29	37	73	33	38	194.53	-0.8	-0.7	459,792.15	5,070,561.58	107
108	148	11	53	41	45	31	135.67	-0.8	-0.7	459,978.71	5,070,616.62	108
PT201	45	26	05	267	11	36		90.36	101.20	460,069.06	5,070,717.82	PT201
PT202										459,613.99	5,070,695.51	PT202
AS								I= 286.78	I= 622.58	Dozvoljena odstupanje za kutove		ASlavicek
							[d] = 1271.80	T= 286.71	T= 622.52			
								f <sub>E</sub> = -0.07	f <sub>N</sub> = -0.06			
	I= 267	11	35					f <sub>E</sub> = 0.09		Dozvoljena uzdužna pogreška		
	T= 267	11	36					Δ <sub>11</sub> = 0.59	2. kat			
	f <sub>E</sub> = 00	01		Δβ" = 142 "								
	V <sub>E</sub> = f <sub>E</sub> /n		0.1									

# Geodetska škola Zagreb

- **only geodetic school in the Republic of Croatia**
- four-year vocational school
- geodesy and geoinformatics technician





# Equipment and activities at school



measuring instruments



four computer classrooms



library

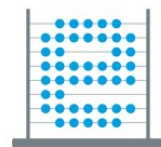
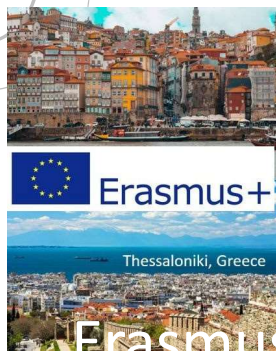


volunteer club



sports club

# School projects



e-Škole



- Erasmus+
- World Skills Croatia
- e-Škola
- The GLOBE program
- This is our time
- GRASS – Grading Soft Skills
- ...



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# Erasmus+

## Across the Borders



Across the Borders



Poster Download File



Terrasson - Berlin - Roma - Zagreb

2017.  
**HERE  
geoskola  
ZAGREB**



## STEAMS



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STEAMS - facebook

# STEAM Strengthens European Cultural Heritage

1.9.2020.-31.8.2022./31.8.2023.

## STEAM IN HERITAGE

[Home](#) [About](#) [Schools](#) [Project Meeting](#) [Students](#) [Documentation](#) [Contact](#)



Zagreb, Croatia



Porto, Portugal



Larnaca, Cyprus



La Sénia, Spain



Thessaloniki, Greece



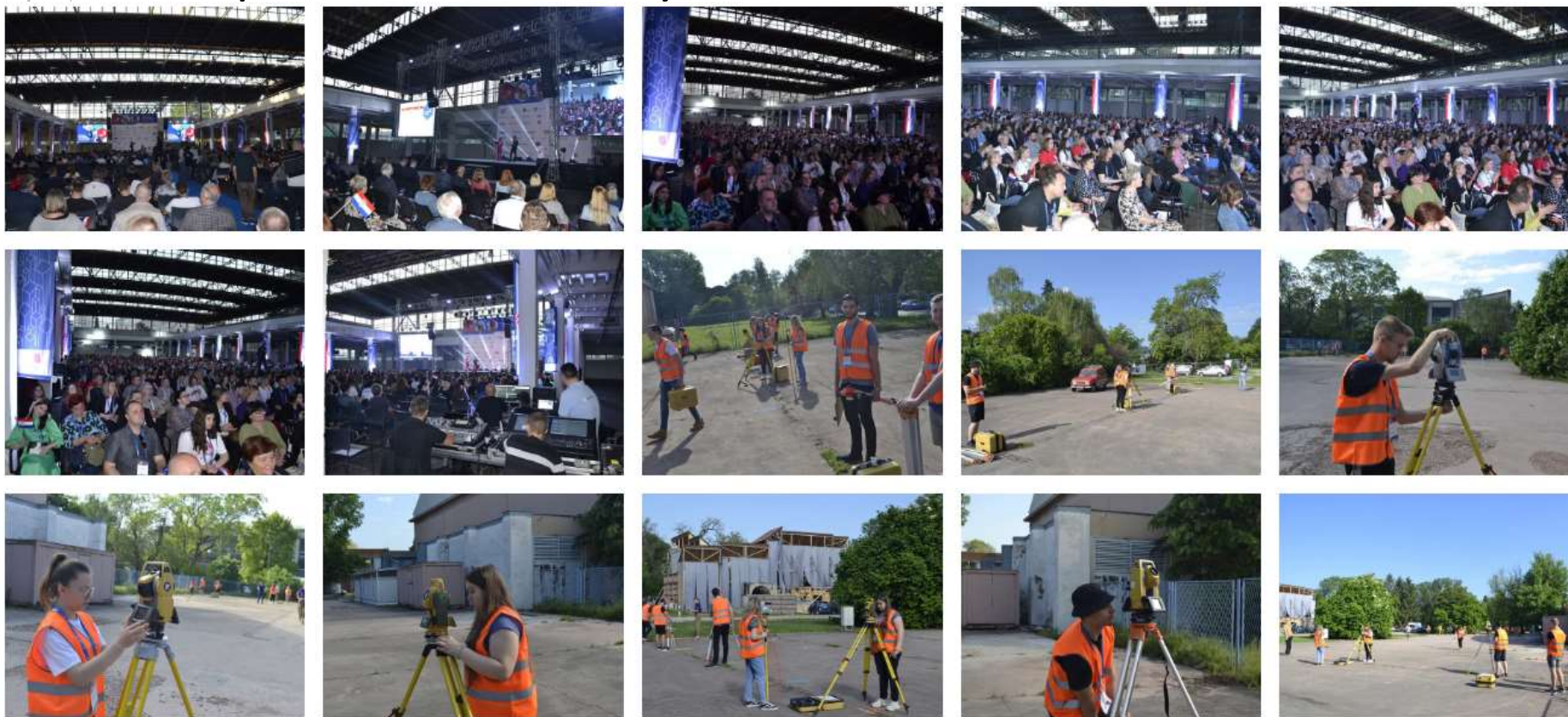
Lowicz, Poland

<https://steaminheritage.weebly.com/>

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# World Skills Croatia

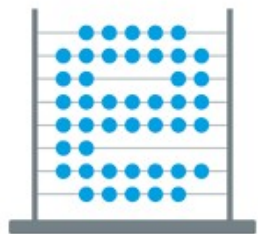
## State competition in Geodesy



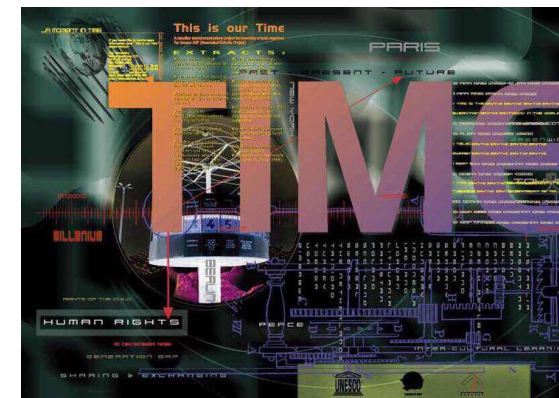
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# School projects



e-Škole





We have had our own internet domain since 1996.  
Our internet domain [geoskola.hr](http://geoskola.hr) is one of the first 50  
domains in Republica Croatia.

Picture of our students standing on specific points taken by the fire brigade.

# Welcome STEAMERS!







*Feel like at home in your  
own little house!*



*Erasmus STEAMS Team Croatia*

*Thank you for attention!*



*By the way, do you know that the fountain pen was patented by a Croatian Slavoljub Penkala?*