



Why STEAME is so Important



Experiences in Serbia

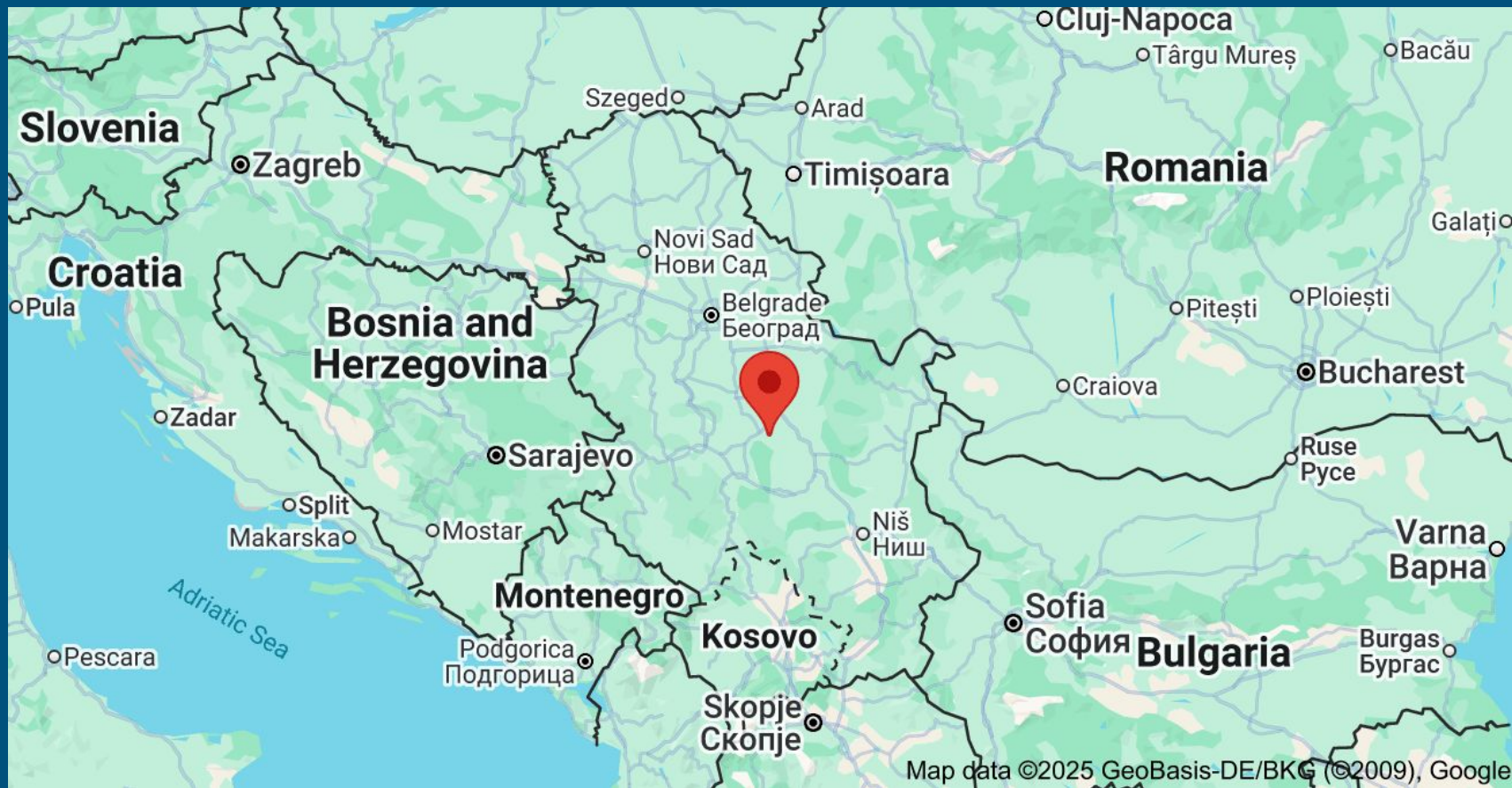


European Connections

[Scientix.eu](https://www.scientix.eu)



Serbia Refresher...



Started in Istanbul



Conference for the Serbian Advancement of Science



Maker Space

One maker space in every
high school in Serbia is
the goal.



Nordeus

Software Co

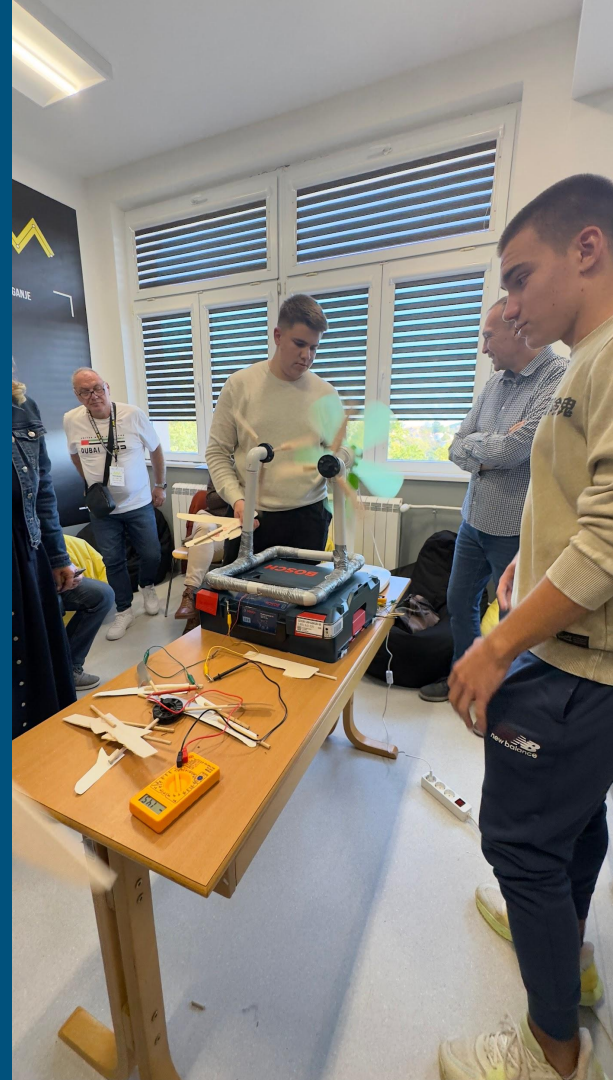
Providing

Financial backing



Windmill Lab with HS students and teachers





Rockets with Elementary





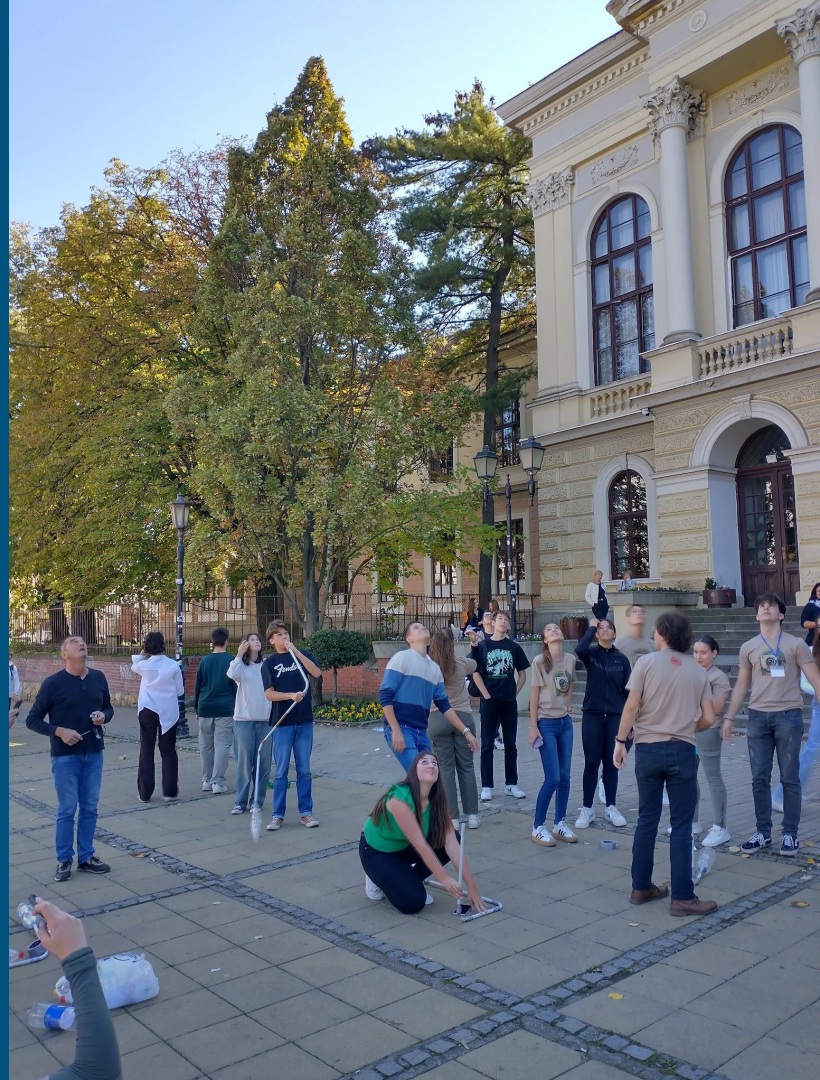
Rooftop launches



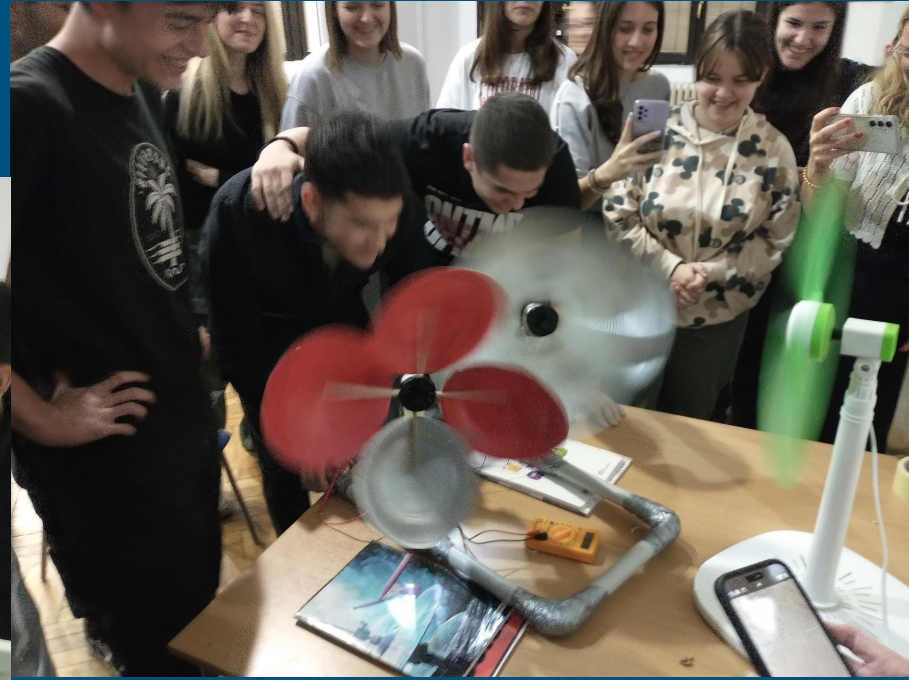
HS Rockets







HS Windmills



Many thanks to Kid Wind
kidwind.org



So how do we get STEM in the curriculum?

Start with the scientific method

The Scientific Method

Scientific Method

Purpose

Research

Hypothesis

Experiment

Analysis

Conclusion

Analysis

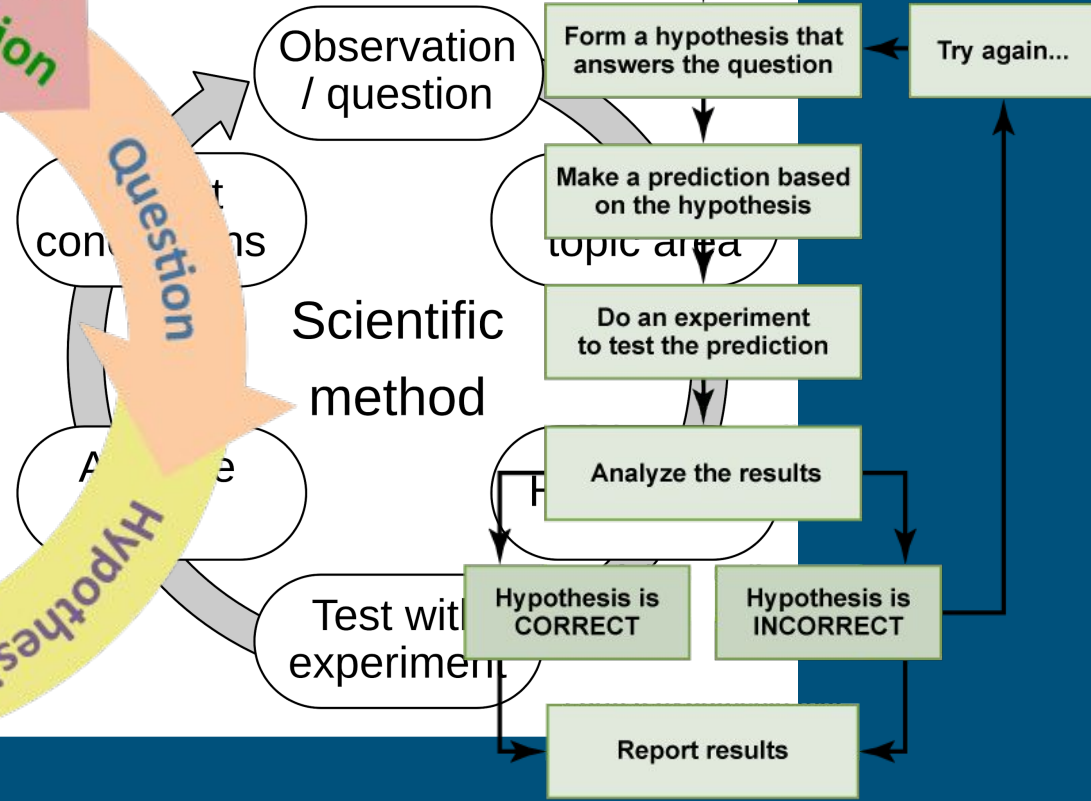
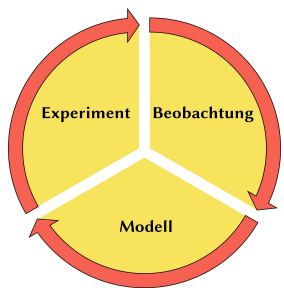
Observation

Question

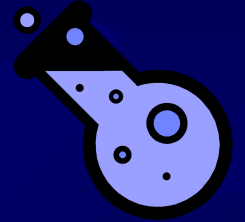
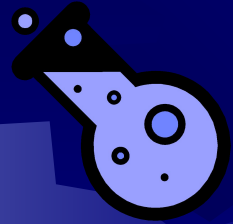
Hypothesis

Experiment

Conclusion

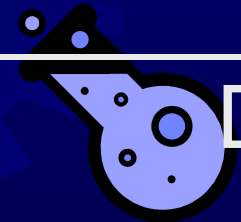


Make use of Research Questions for everyday labs...



Get your students to frame their labs in terms of dependent and independent variables using the research question format.

How does _____ affect _____ ?
IV DV





An Eight Part Framework

1. The Research Question – *“I wonder...”*
2. The Research Report – *“What else...”*
3. The Hypothesis – *“My guess is...”*
4. The Procedure- *“How can I...”*
5. The Results- *“My data shows...”*
6. The Conclusion- *“My hypothesis is...”*
7. The Project Display- *“Look at this...”*
8. The Oral Report- *“Here’s my story...”*

A Timeline Is Important

Research Question Due

Research Report Due

Hypothesis and Procedure Due

Project Display Due

Oral Report

*Over the course of one semester

Tips for Students

- ✦ Establish a personal timeline with checkpoints
- ✦ Encourage work a little bit over a long time instead of a lot of work over a short time.
- ✦ Be original – Be creative



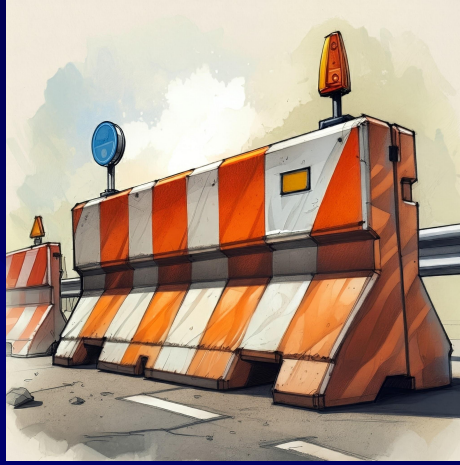
⚙️ If this is so great -

why doesn't
everybody do it?



We must address the barriers that keep
STEAME out of the classroom!

Do the



BARRIERS

outweigh the benefits?

*Not really, so...

Some Barriers to STEAME

- ✦ Too much effort / stress- students, teachers, parents
- ✦ Lack of resources
- ✦ Opportunities for plagiarism and made-up data.
- ✦ No “big test” assessment value

Number One Barrier....



Not Enough TIME!



So How Do We MAKE Time? We can't...

First take advantage of Professional Development. Work smart not hard.

STEAME Teachers MUST be lifelong learners.

Model that to your students

Cool PD





Read!

Subscribe to all kinds of literature /
magazines

Read newspapers and stay up to date so
you can connect current events to
STEAME.



Scientix / QuarkNet Works!

You also have an amazing group of educator supporters in the MetroPlex.

Lots of ready made STEM activities

Don't reinvent the wheel!



Consider next school year...

Integrate - don't add

Remember: Adding STEAME activities
DOES NOT WORK!

Integrate the STEAME into the program.



For Example:

$$d=rt$$

Lecture 30 min or

Give your students a stopwatch, toy car, and a measuring tape.

Ask them: What is the relationship between d , t , and r ?



Ask Yourself...

Could the educational standards (TEKS) for today's lesson, be taught differently using STEM?

Lab?

Demo?

Small groups?

PBL?

The Easy Answer....

Use AI !

For example: Write a prompt-

“You are an experienced educator. Create a lesson plan using curriculum standard ____ for high school students that includes a 40 minute hands-on / STEM activity with a 10 minute follow up in this form..._____”

AI Generated D=rt

<https://www.k12dive.com/news/how-can-ai-enhance-project-based-learning/752587/>



AI Prompt Form - Four Parts

Role - who is the AI supposed to imitate

Context - details surrounding the task

Task - what do you want it to do

Output - how the info is presented



When it comes to trying new
labs and activities...

Fail Fast!

Then move on

Save your successful activities for next
year - and you just saved yourself a lot of
time the next time this comes up!

It wasn't all STEAME Stuff

Did get a chance to
Explore Belgrade and
The surroundings.

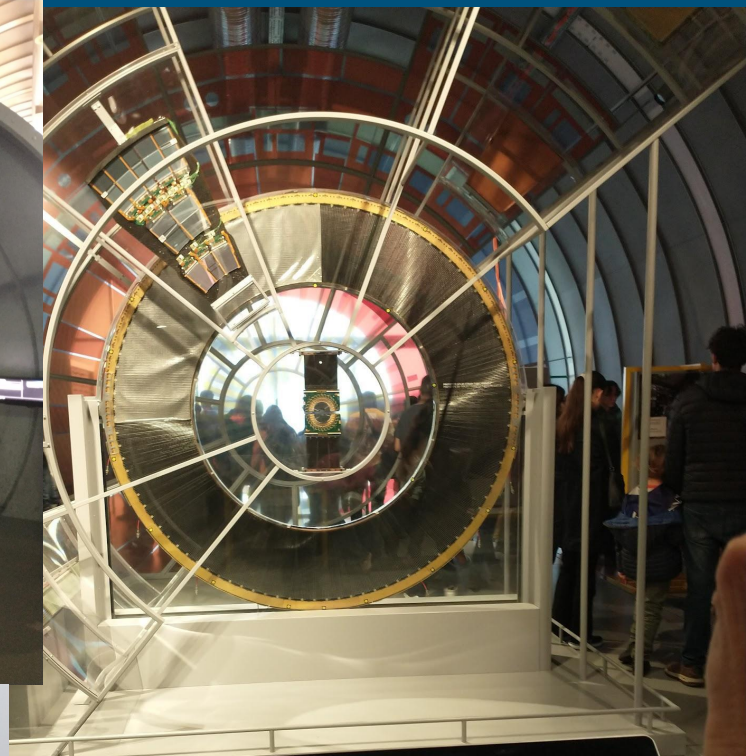
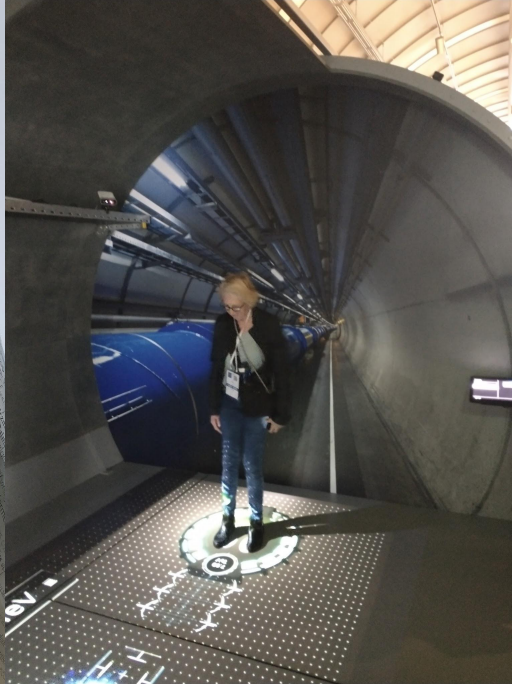
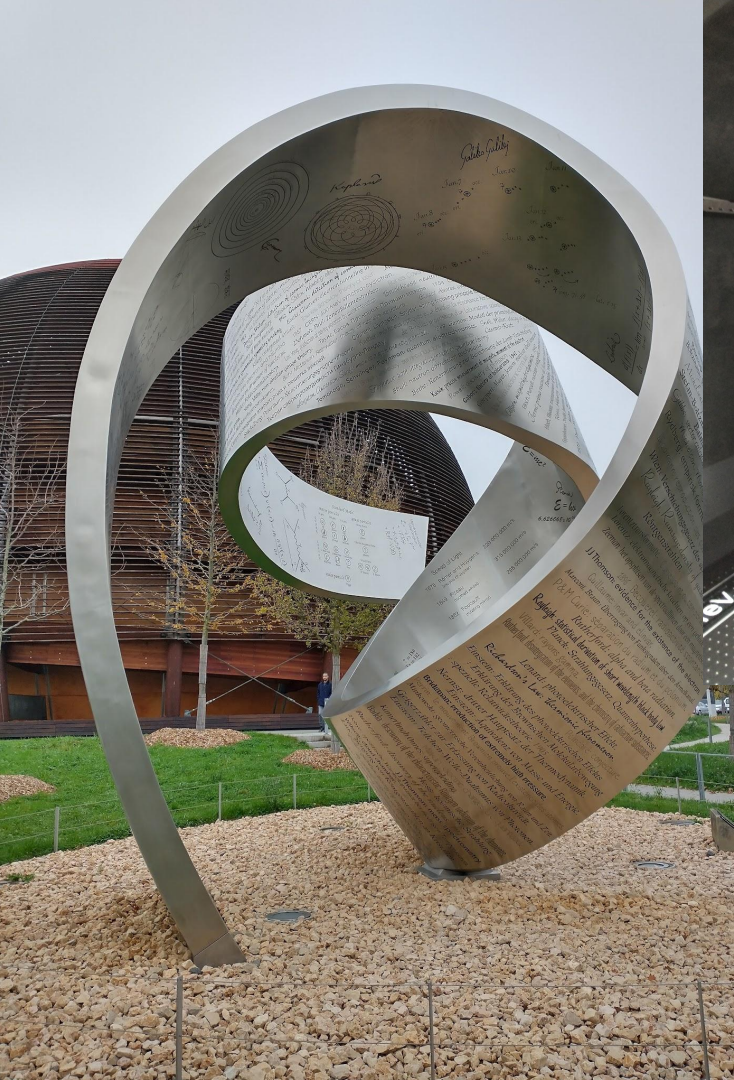






Brutalist Architecture





Resources

Keynote Presentation

https://docs.google.com/presentation/d/1eochWRbspknnOL-WqD8m-SKx5hnxxtl56MmN8lV3OWs/edit?usp=drive_link

Workshop Materials and Schedule

https://docs.google.com/document/d/1kTZfjl1drtruwlzmog3v_tTRcVDeI-3P7e3l0qWqzM/edit?usp=sharing

HyperProducts

https://drive.google.com/drive/folders/164ge3B02esrAPxT4bXG_eGRbLOu2o5Mk?usp=drive_link

Rocketry Materials

https://drive.google.com/drive/folders/1YgW-NT_22qDARout96FrLcTr613oOPr7?usp=drive_link

Alternative Energy / Windmills

https://drive.google.com/drive/folders/16lVcOTGPaPnHq938yzWcrDjP5U2OzlS3?usp=drive_link

Thanks for your attention

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For questions and to request other STEAME resources