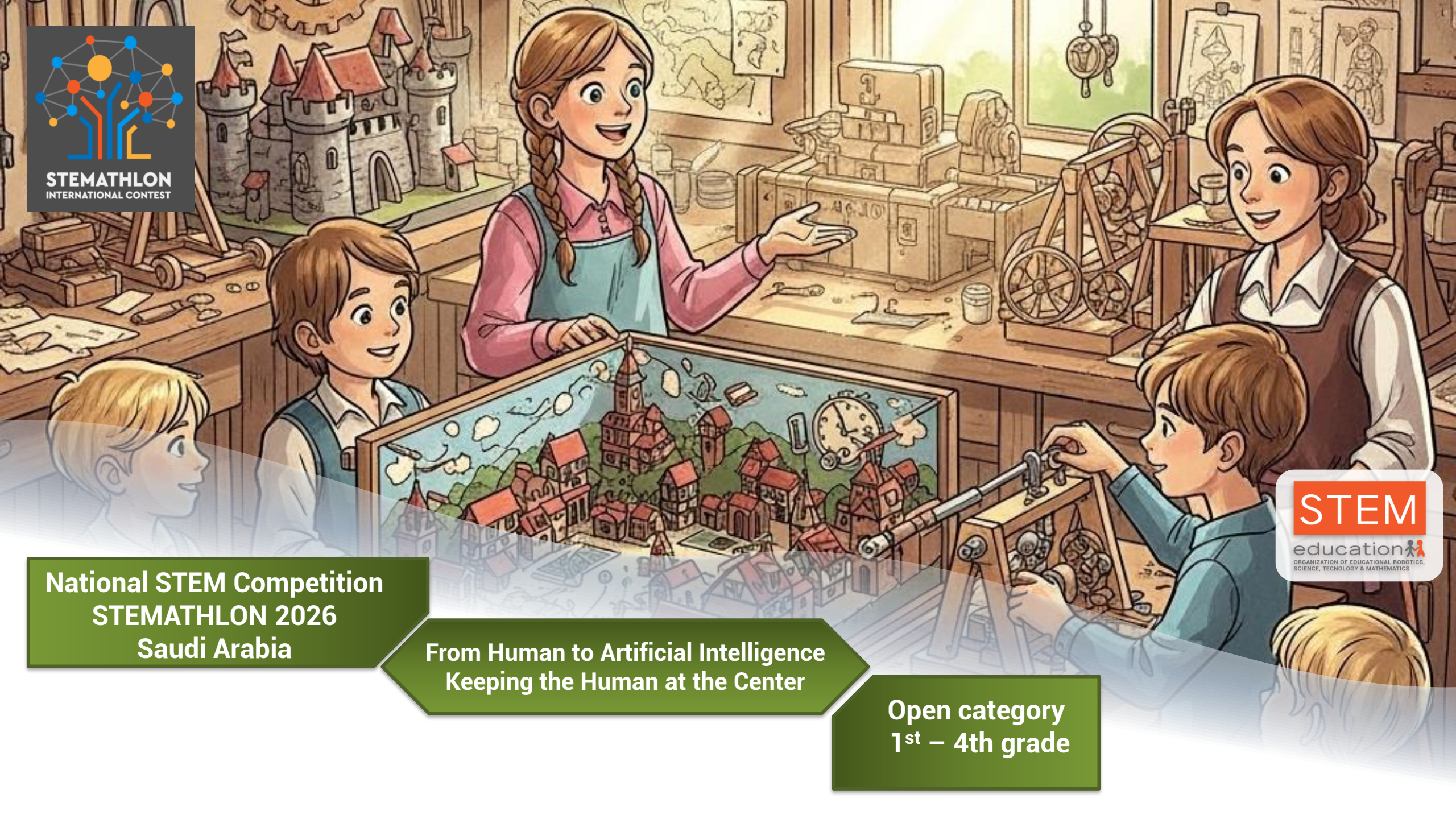
STEMATHLON
INTERNATIONAL CONTEST
National STEM Competition
STEMATHLON 2026
Saudi Arabia
From Human to Artificial Intelligence
Keeping the Human at the Center
Open category
1st – 4th grade
STEM
education
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INTERNATIONAL CONTEST

Open category 1rd-4th grade

What is the Open Category?

- Students create original solutions to real life problems.
- Students build 3 mechanisms using simple machines.
- The mechanisms must have moving parts.
- The mechanisms may be operated manually or by a motor.
- Team delivers the documentation before the competition.
- Students present their idea through a short story and demonstration.

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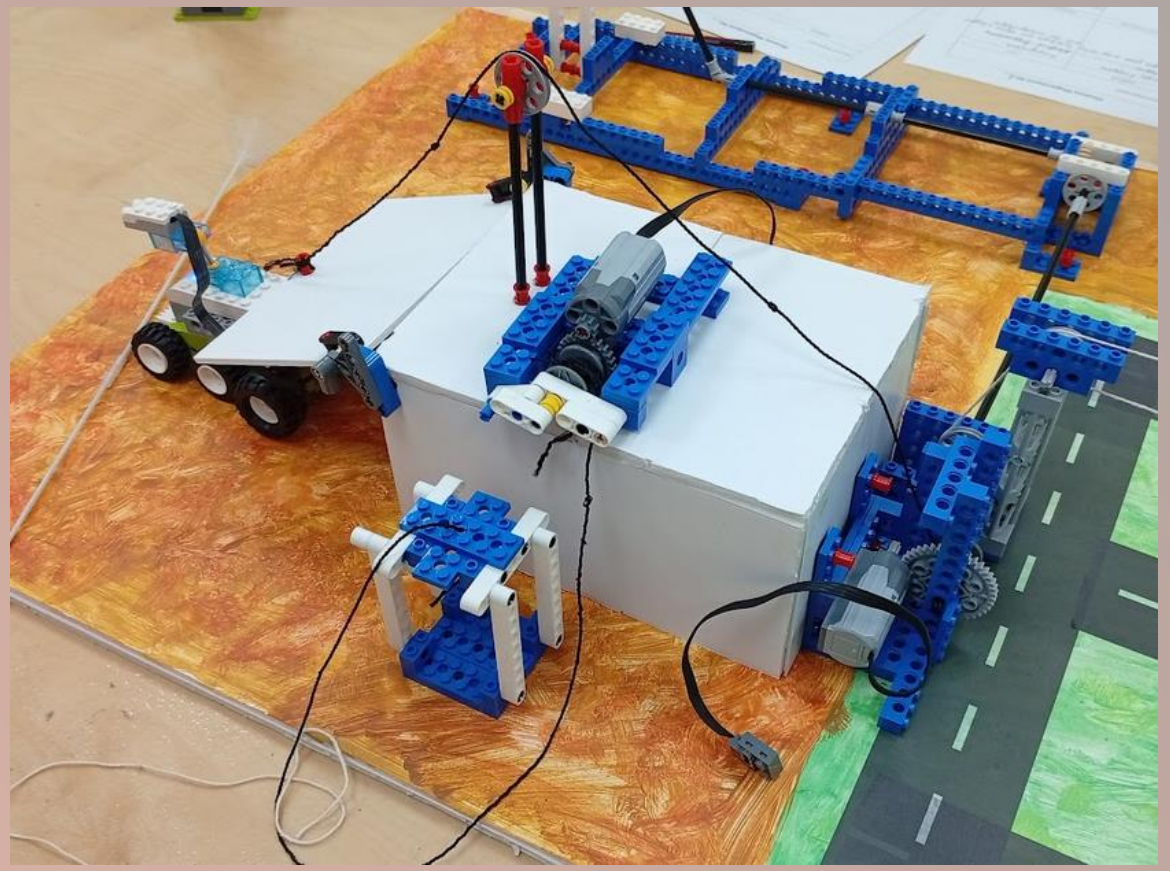
Who Can Participate?

- Teams of 3–6 students (Grades 1–4).
- One adult coach (over 20 years old).
- Teamwork and fair play are very important.



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What is the Goal of the Category?

Implement STEM education and help the students to Develop their Knowledge and Skills, through an AWESOME Experience!

- **Science, Maths and Technology**
  - Use the Simple Machines!
  - Understand the Mechanical Advantage you get out of them.
  - Set foundation for Perception in Physical Sciences.
  - Go beyond “Try & Error", Use the Math to predict and calculate.
- **Engineering**
  - Research the Subject of the year and locate Real Life Problems
  - Invent Solutions to these problems and make them better!
  - Students Develop the 4C Skills of the 21st Century

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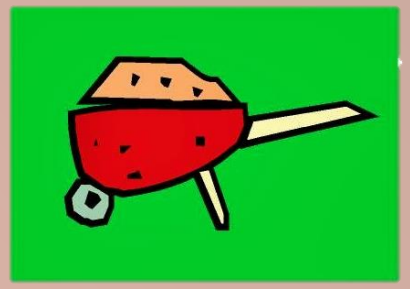
Meet the Simple Machines

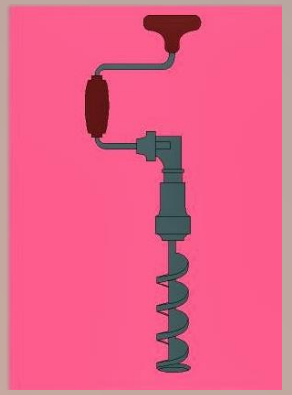
Lever

Wheel & Axle



Wedge

Screw



Pulley

Inclined Plane

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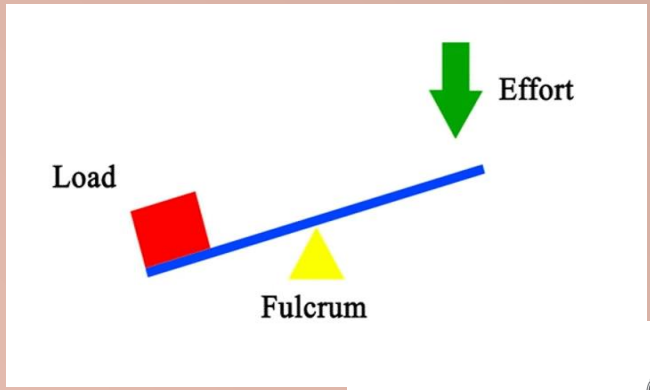
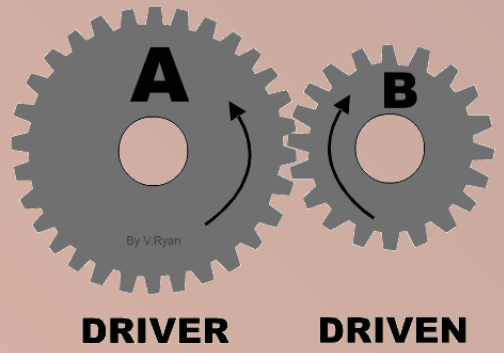
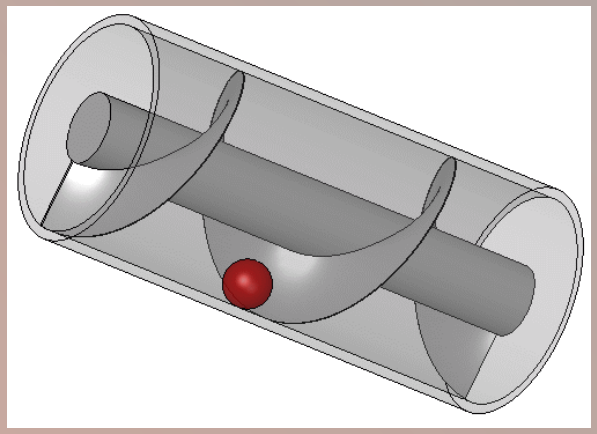
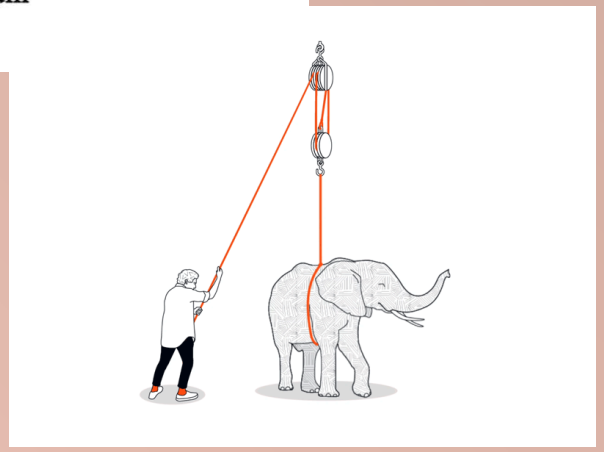
What is the Mechanical Advantage?

We have Mechanical Advantage, when we use a Tool to achieve our Goal.









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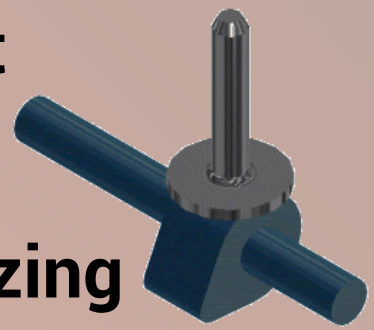
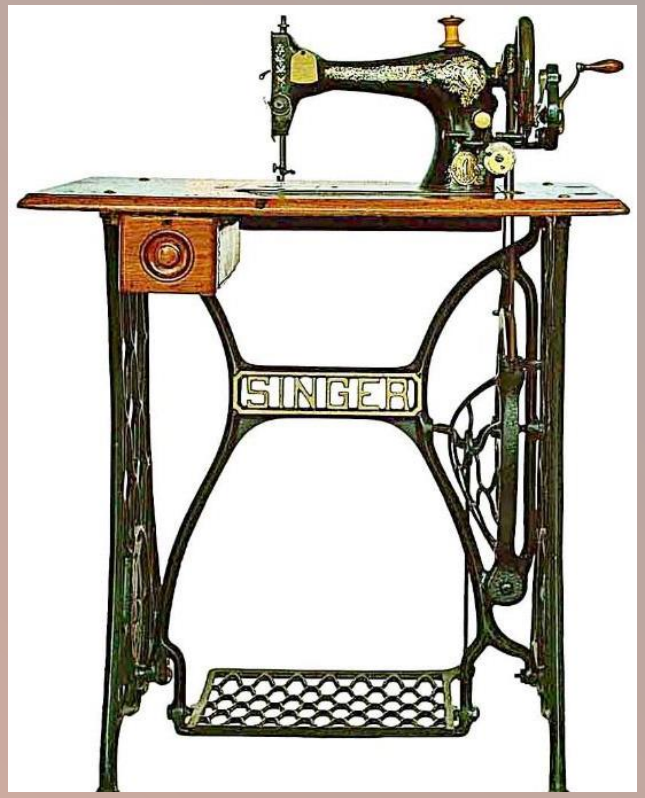
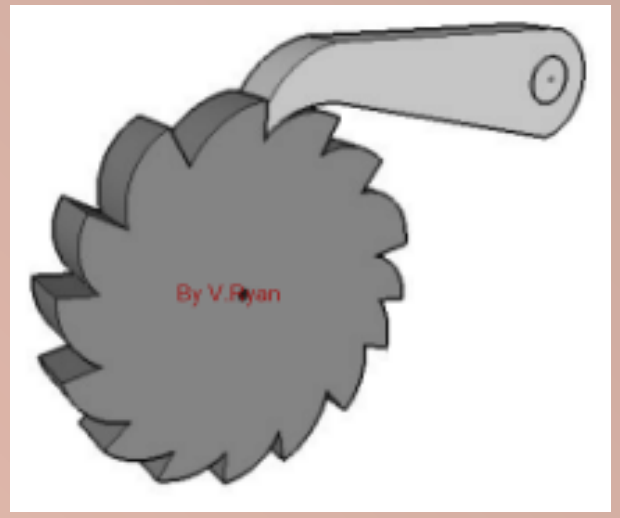
Discover the “Complex Machines”

- **Either Vice:**
  Combine the Simple Machines to get “Complex Machines”
- **Or Versa:**
  Understand the Complexity by analyzing through simplicity







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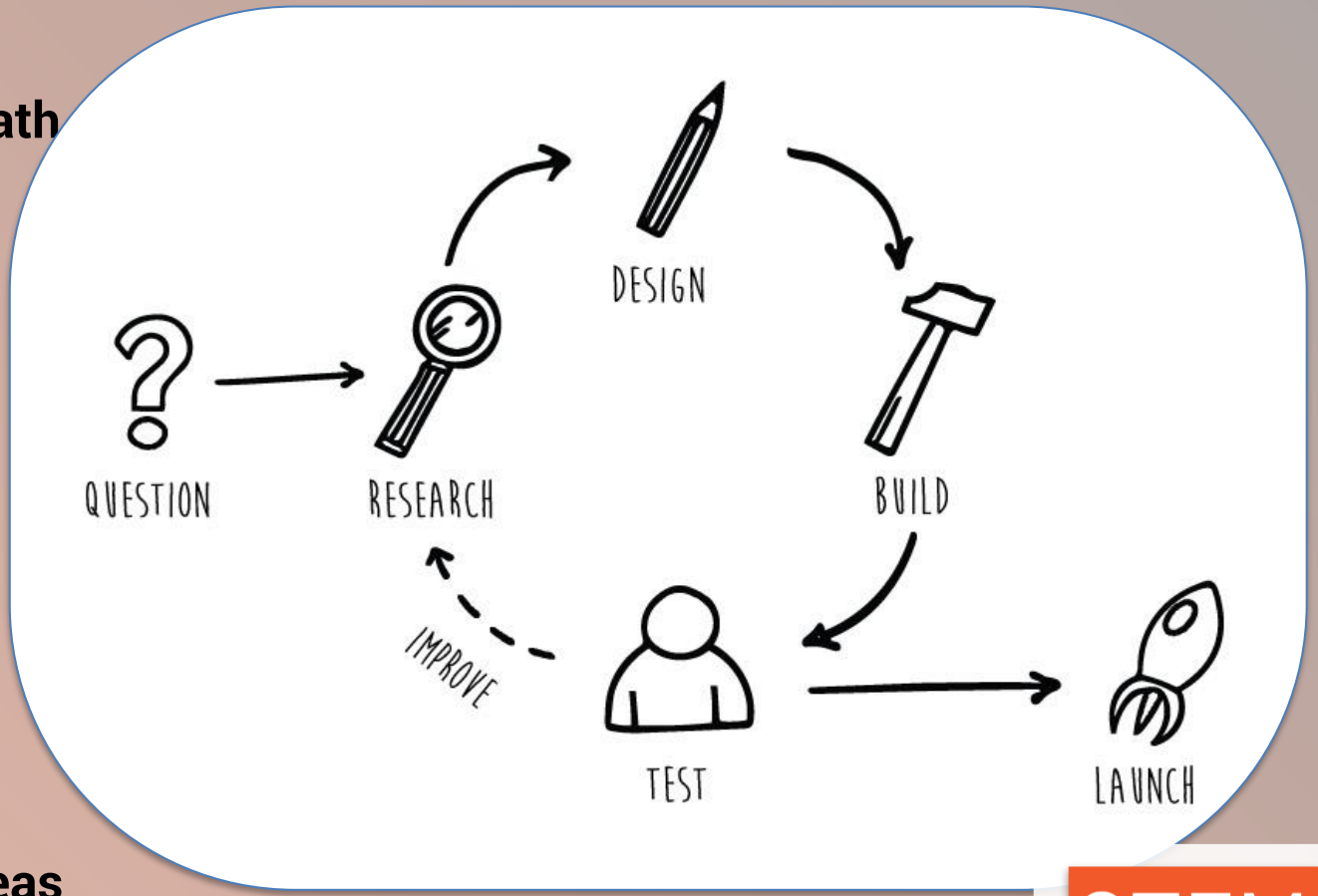
Engineering Design Process

- Coach:
  - Let the kids think BIG and decide the path
  - Guide the team through that path
  - Focus in small Challenges
  - Trust the Process !!!
- 4C Skills of the 21st Centrury:
  - Creativity:
    Think Out of the Box
  - Critical Thinking:
    Build students' self-Confidence
  - Collaboration:
    Build the team bond
    (confidence in the others)
  - Communicate the problem and your Ideas



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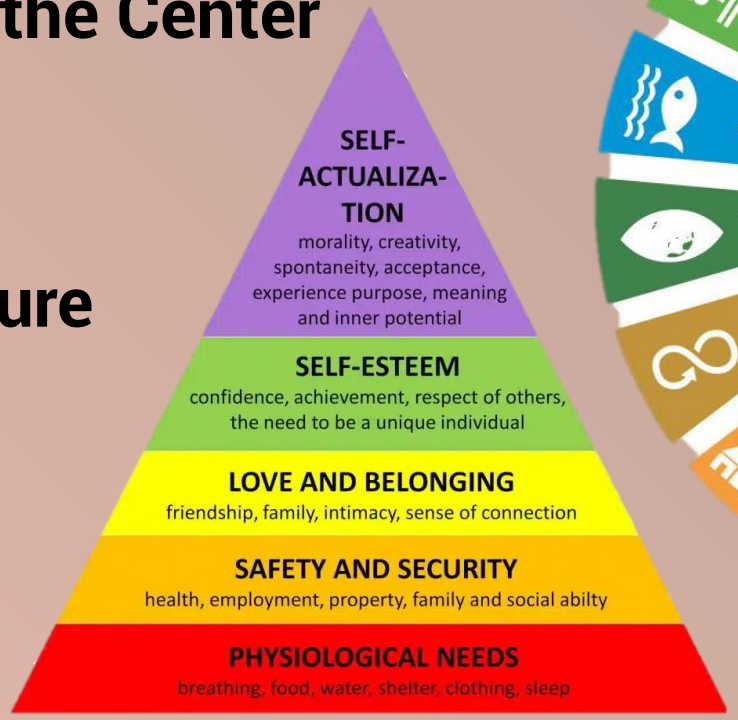
These Year's Subject…and themes

- **Subject:**
  - From Human to Artificial Intelligence
  - Keeping the Human at the Center
- **Choose a Themes:**
  - Food & Farming
  - Buildings & Infrastructure
  - Transportation
  - Safety
  - Well-being,
  - Play & Art



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The Big Challenge Part 1/2

- Phase 1 PLAN (1-2 weeks)
  - Choose a human need (food, safety, transport, energy, art).
  - Locate the problem and think of a solution.
  - Fill the Report Forms that you will find at the end of the Rules (Project Plan)
- Phase 2 Build (4-8 weeks)
  - Build 3 different mechanisms to show your idea.
  - Document the process with photos and videos.
  - Fill the Report Forms again with your final Builds and compare them with your initial PLAN

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The Big Challenge Part 2/2

- Phase 3 Prepare for the Competition (2-3 weeks)
  - Practice your presentation
  - Deliver the documentation (Team Portfolio)
    - Final Report Forms
    - Photos that show your Progress
    - Video of your practiced Presentation and maybe some moments from your Plan and Build Phases
- Phase 4 Competition (1 day)
  - Present your project to the judges and visit the other teams
  - Congratulations!!!

You learned, connected with others, and evolved!

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Specification on the Rules!

- Build 3 mechanisms, each mechanism must:
  - Use at least 2 simple machines
  - Move by hand or motor
  - One must use a motor with a switch
- Definition of a Mechanism:
  - A mechanism is a construction with moving parts.
  - It solves a problem.
  - It uses simple machines.

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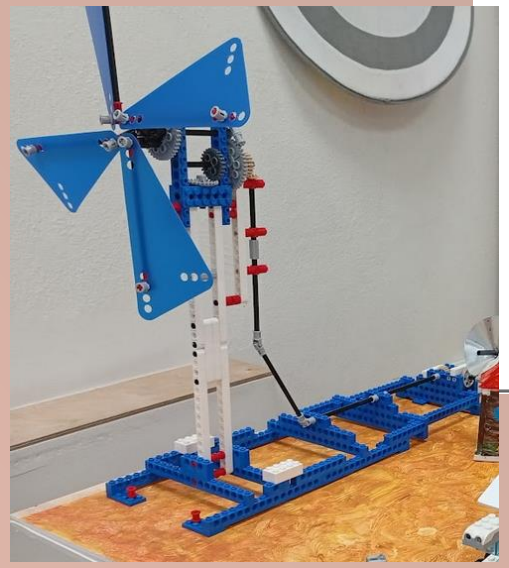
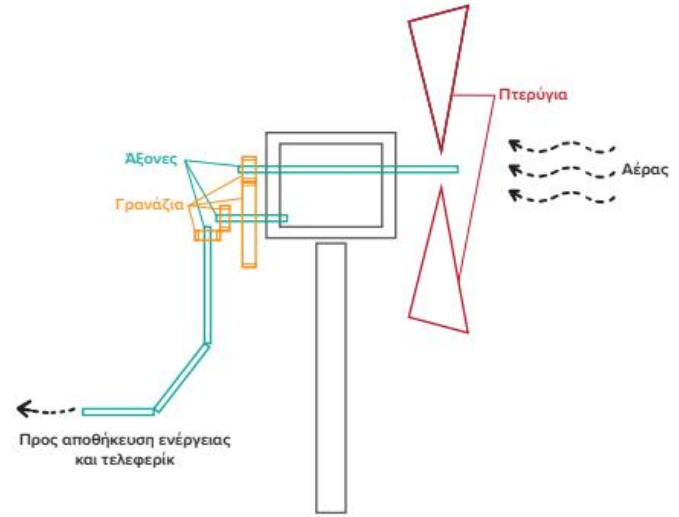
Team Portfolio

- **Photos of your project**
- **Sketches of mechanisms**
- **Videos showing how they work**
- **Team report forms**





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Presentation Moment!

- You have about 7 minutes:
  - 5 minutes to present
  - 2 minutes for judges' questions
- Show how your mechanisms work!

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What Do Judges Look For?

- **Check the scoring Table:**
  - Creative idea
  - Strong and working mechanisms
  - Clear sketches
  - Good teamwork and presentation

D.4 Scoring Criteria

Categories	#	Criteria	Points
Idea Conception & Innovation	A	**Total points: 60**	
	1	Idea and creativity	15
	2	Research and development of the idea	15
	3	Applicable and high-quality solution to the challenge	15
	4	Originality of the idea	15
Educational Engineering	B	**Total points: 60**	
	1	Structural stability, aesthetics	15
	2	Mechanical performance	15
	3	Correct identification and terminology of simple machines	15
	4	Functionality of the mechanism	15
Construction Sketches	C	**Total points: 40**	
	1	Accurate representation of the framework of the constructions	20
	2	Accurate representation of the simple machines and the moving parts of the constructions	20
Presentation & Team Spirit	D	**Total points: 40**	
	1	Quality of the presentation	15
	2	Communication skills, collaboration	15
	3	Booth decoration, video, posters	10
MAXIMUM SCORE:			**200**

- **Plus Delivered Documentation**

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Remember!

- Have fun!
- Be creative!
- Be proud of your invention!

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We are excited to see your projects!

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