

## GOOD PRACTICES IN STEM EDUCATION

<p><b>Title</b></p>	<p>Make Energy Real @ Education (M.E.R.E.)</p> <p>Make Energy Real @ Education</p>
<p><b>Brief description</b></p>	<p>The first step is forming groups; students are asked to focus on the concept of energy, distinguishing it in every aspect of everyday life, starting from their most direct environment, their school. The next step is to design and build their own models (experimental or full scale), in order to truly conceive the meaning of “energy”. Last step is the project presentation supported with all the necessary data (audio, video, PP presentation, animation, etc.)</p> <p><b>Duration:</b> 2 hours per week, in a 4-month schedule. Every student is to take part in two projects per year (larger projects could be divided into 2 parts, each on a 4-month based schedule).</p> <p><b>Goals:</b> Understanding the concept of “energy” (in every form that it can be found)</p> <p>Working in groups while taking up multiple duties (role playing).</p> <p>Developing communicative abilities (constructed dialogue, productive dialogue forming the right questions and answers, information diffusion among groups, corporative decision, identification and expression of feelings, etc.)</p> <p>Developing cooperative abilities (achievement of a common goal, helping one another, productive feedback, taking initiative, decision making though dialogue, etc.)</p> <p>Developing skills (data research, engineering, presenting results, etc.)</p>



<b>Level</b>	It's addressed to 3 <sup>rd</sup> Grade Junior High school students, already experienced at Learning by Acting and Doing School Subjects, as well as students at 1 <sup>st</sup> and 2 <sup>nd</sup> High School Grade, as a part of their Inquiring Projects Activities at school.
<b>Advantages</b> Why is it innovative/ attractive to students?	<p>This project is highly innovative because it combines education with real-life problems and situations. It promotes students' initiative and self-acting (fading scaffolding), is inter-disciplinary and highly interactive. Through it, students can "discover" knowledge on their own, scatter the data they find and reform it in a new-fresh way.</p> <p>This project is highly attractive because it combines playing/constructing with the educational process. Students take up multiple duties, use advanced technology in school and express their creativity and imagination through acting and doing.</p>
<b>Teachers' opinion</b>	I believe that every student will grow font of this project, because, being a part of it, they will be able to express all of their concerns, consideration, as well as their creativity regarding their surrounding environment, while producing something original and benefiting to their direct environment (rise of their environmental awareness).
<b>Students' opinion</b>	
<b>Difficulties</b>	Possible difficulties: educators' specific skills, large amount of space needed for constructions, specific equipment and high material cost.
<b>Further information / Case Studies</b>	Based on: Design and Technology, 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> Grade in Junior High School (data processing skills, technical skills, presentation skills. Most schools are equipped with D.T. workshops. High School Inquiry Projects, (group projects, role playing, research, etc).

<b>Partner / author</b>	Ioannis Tourlos, representing all the "Robotics and digital tools" team as formed in the Athens local workshop.
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