


**S.T.E.A.M. Children Engineer Academy-Greek lesson plans**

**LESSON PLAN: 2<sup>nd</sup> year – 16<sup>th</sup> lesson, Mar'19**

TITLE	<p>Pull robot creation able to move, equipped with a container for transferring objects.</p>  A LEGO WeDo 2.0 robot kit is shown pulling a green and yellow container. The robot is white and blue with a black cord attached to its top. It is connected to a green and yellow container by a chain. The container has several black slots on top.
THEME	Science/Technology/Art/Engineering
GRADES	5 <sup>th</sup> Grades
DURATION	90'(2X45 minutes)
REALIA-MATERIAS	<ul style="list-style-type: none"><li>• 8 Lego WeDo 2.0 Robot Kits</li><li>• 8 Tablets</li><li>• Interactive Whiteboard</li><li>• P.C.</li></ul>
OBJECTIVES	<p>Through the lesson, pupils will be able to:</p> <ol style="list-style-type: none"><li>1. Understand the concept of forces as well as the concept of opposing forces.</li><li>2. Become familiar with the need and way of transporting heavy objects.</li><li>3. Create a step-by-step pulling robot using Lego blocks</li><li>4. Make commands on the tablet</li><li>5. Try to change the speed and power of the robot</li></ol>

	<p>6. Experiment with the transfer of objects using different weights and observe/notice the differences.</p>
DESCRIPTION	<p>During the course, pupils will be given a problematic situation to find a solution and implement it. They will think that they will carry very heavy objects and will find cases on a daily routine of such needs. Step by step pupils , divided into groups of two or three, will create a pulling robot using Lego Blocks and then will try using tablets and programming commands, to put it into operation. They will place different weight objects within the transport frame and note the different function of the robot. With the help of their teacher, they will conclude why the robot reacts differently but will also identify the need to increase the power of the robot through engine commands.</p>
EVALUATION	<p>Evaluation indicators:</p> <p>At the end of the two-hour course pupils will have faced and resolved a problematic situation with the help of technology, IT and robotics. They will enter into the spirit of forces, opposing forces and the way of transporting very heavy objects.</p> <p>They will experience the need to change the power that each time needs to be exercised in some objects.</p> <p>They will be familiar with the Lego WeDo 2.0 environment as well as with the command blocks.</p> <p>They will create a program (algorithm) to solve a real problem.</p> <p>They will combine some STEM concepts into a two-hour teaching - science - technology - etc.</p> <p>Pupils will work in teams and will experience the benefits of group co-operation.</p>