



“EEF: Envisioning our Education of the Future” 2019-1-ES01-KA101-060426

## ***DIDACTIC SEQUENCE***

<b>TITLE</b>	<p>MATHEMATICAL SCULPTURE</p> <p>The activity consists in creating and performing a mathematical sculpture. The final product will be a figure made by a 3D printer as well as a video describing it and explaining its construction.</p>
<b>TARGET STUDENTS/LEVEL</b>	2 <sup>nd</sup> ESO (13-14 y.o.)
<b>LANGUAGE/ LANGUAGES</b>	English Catalan
<b>CONTENTS WITHIN THE SUBJECT-AREA</b>	<p>3D Geometry: Basic shapes/3D axes system/Movements (translations, rotations)</p> <p>Programming</p>
<b>METHODOLOGY USED</b>	<p>CLIL STEAM (Math and Technology Project) Teamwork Math and Technology teachers working together in the classroom</p>
<b>RESOURCES</b>	<p>Some source of inspiration: examples of math sculptures <a href="https://www.pinterest.com/pin/716072409479222580/">https://www.pinterest.com/pin/716072409479222580/</a></p> <p>To learn and practice vocabulary <a href="https://www.mathsisfun.com/geometry/index.html">https://www.mathsisfun.com/geometry/index.html</a></p> <p>BlocksCAD software for 3D printer <a href="https://www.blockscad3d.com/editor/">https://www.blockscad3d.com/editor/</a></p>
<b>AIMS</b>	<p>Creativity and research</p> <p>Strengthen the Math contents involved: Geometry shapes, 3D coordinate system, spatial movements</p>

	<p>Promoting algorithmic reasoning when programming</p> <p>Oral expression and communication</p> <p>Linking different subjects</p>
<i>KEY COMPETENCES</i>	<ol style="list-style-type: none"> <li>1. Communication in foreign language</li> <li>2. Mathematical competence and basic competences in science and technology</li> <li>3. Digital competence</li> <li>4. Learning to learn</li> <li>5. Social and civic competence</li> <li>6. Sense of initiative and entrepreneurship</li> </ol>
<i>SEQUENCING OF ACTIVITIES &amp; TIMING</i>	<p><b>SESSION 1:</b> Introduction to the project. Making groups (in pairs). Research. Brainstorming. First sketch.</p> <p><b>SESSION 2:</b> Math theory about 3D shapes, 3D axes and spatial movements. Scaffolding: geometry vocabulary.</p> <p><b>SESSION 3:</b> Introduction to the BlocksCAD software at the computer room. Preliminary exercises to practice. Start with the figure design.</p> <p><b>SESSION 4:</b> Final session at the computer room to finish the figure design. Students can finish it at home if they need it.</p> <p><b>SESSION 5:</b> Preparing the video presentation in the classroom. Instructions. Rehearsal. Going over vocab and expressions. Scaffolding activities: Explaining mathematical movements in the space. Students will make the video at home.</p> <p><b>SESSION 6:</b> Screening videos and assessment.</p>
<i>EVALUATION: ACTIVITIES &amp; TOOLS</i>	<p>Recordings of daily work.</p> <p>Videos: math learnings and use of the English language</p>

