

The conference „Visuality & Mathematics – Experimental Education of Mathematics through Visual Arts, Sciences and Playful Activities”



Name of the teacher:	Mirjana Jovanović
Name and address of the school:	”Isidora Sekulić” Grammar School, Vladike Platona 2, Novi Sad, Serbia
Theme of the lesson/tool:	Tessellation in art and everyday life
Place in curriculum: (type of school, grade)	Out of regular curriculum – project work, preparation for European Student Conference in Mathematics - Euromath 2013, that was held in Goteborgh in April, 2013.
Age of the students/pupils:	Two students of 18 years (12th grade) – Teodora Stajšić and Saša Vučković
Title of the lesson/tool:	Inspired by Escher

Description of the lesson or educational tool			
Time	Exercises, matters, parts of the lesson	Methods and forms of student activities	Developable competencies
<i>The whole project lasted about three month</i>	<ul style="list-style-type: none"> - <i>The topic of the paper is not the part of a regular curriculum, so the students were taught basics of tessellation and solving Diophantine equations</i> - <i>Teacher supplied them with some literature and referred them to search the internet to find some extra information about the topic and to make some photos from their environment (the paper is a)</i> - <i>When they got familiar with the topic, they were given the instructions on how to write a paper (structure of a paper) and how to present it (they chose PowerPoint for the purpose)</i> - <i>On our regular meetings we discuss the work they had done and made some corrections, if it was necessary</i> - <i>Before the Conference they present their work to their classmates in</i> 	<ul style="list-style-type: none"> - <i>Work in pair</i> - <i>Project work</i> - <i>Teacher as a mentor</i> 	<ul style="list-style-type: none"> - <i>To develop an understanding of math concepts that are not the part of a regular curriculum</i> - <i>To be able to communicate knowledge of math concepts using appropriate mathematical vocabulary</i> - <i>To consider the practical application of mathematics to real life</i> - <i>To improve presentation skills</i>

	<p><i>order to practise speaking in front of a public and to get the feedback from them (their classmates were very helpful in giving them advice on how to speak etc)</i></p> <ul style="list-style-type: none"> - <i>A few days later we have another rehearsal in front of the teachers and the principal of our school</i> - <i>Those rehearsals were extremely helpful to Sasa and Teodora and they drastically improved the experience</i> 		<ul style="list-style-type: none"> - <i>To organise knowledge and information - learn how to write a paper and present it in a given time – 20 minutes</i> - <i>Identify, locate and access appropriate information sources</i>
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Summary

As a mentor teacher I am very pleased with our project. I find it very good. One of the moderators, professor Michael Lambrou said that they took the audience to a nice trip from the very beginning of an art, through Diophantine equations and tessellation to contemporary artist – Dali and Escher. Sasa and Teodora apart from being excited, were extremely surprised by the fact that the other participants from all over the Europe were approaching them every single day and congratulating them on excellent and interesting presentation.

They were inspired by Escher, and I was inspired with the whole project and this year we went one step beyond, applied for MathFactor Competition (Le-Math Project that encourages students to present mathematical theorem, facts, concepts etc. to non mathematicians within maximum 3 minutes) and my third grade student (11th grade) Sandra Jelcic won the second prize. Her presentation "Sweet mathematics" is available on

<https://www.youtube.com/watch?v=CGf8lJ3Et8>

For this purpose we made some prototype models in three different shapes with circle holes inside, to save up time in the kitchen 😊.

Supplements

Used materials:	<i>The whole paper with references, as well as Power Point presentation are in attachment. The photos of pavements of Novi Sad are in there as well as some pictures they made in GeoGebra for the purpose of the part that refers to tessellation</i>
Photos:	<i>Photos they made for the paper are in the paper. We have a video recording of the presentation they made at the Conference – it is also in attachment</i>