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Recreational Mathematics Colloquium IV – G4G Europe

BOOK OF ABSTRACTS

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Mathematics and fiber arts: knitting, crochet and cross-stitch

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Mathematics can be found all over the world, even in what could be consider an unrelated area like fiber arts. In knitting, crochet and counted-thread embroidery, we can study some concepts of algebra, graph theory, number theory, geometry of transformations and symmetry, as well as computer theory. For example, many fiber art pieces embody notions related with groups of symmetry.

In this work, we focus on two areas of Mathematics associated with knitting, crochet, and cross-stitch works - number theory and geometry of transformations - and show some curiosities connected with this subject.

Mathematics in the Making

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“MiMa - Mathematics in the Making” is an European Commission’s COMENIUS project that brings together the experiences of partners in five European countries: Portugal, Italy, England, Hungary and Germany (see www.mathematicsinthemaking.eu). Five professors of NOVA’s mathematics department constitute MiMa’s Portuguese team. The project focuses on the awareness that mathematics can be taught in a non-conventional way, involving young students collaborating in thinking, creating and evaluating mathematics, in a ludic way.

The MiMa project aims to develop ten different highly engaging hands-on activities, two proposals from each country, to be developed by primary school students (from eight to ten years old) and their teachers. This talk will describe these activities, focusing in the two Portuguese activities: “Frieze patterns” and “Modelling the solar system”.

Playing serious. . . maths, arts and life

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In the actual geopolitical context that appears as a scaring stage and chaotic chess game, we’ll essay trans-disciplinary navigation clues which include