1086-K1-1020 Barbora Kamrlova^{*} (kamrlova@fmph.uniba.sk), FMFI, Comenius University, Mlynska dolina, 84248 Bratislava, Slovak Rep. When two colours suffice - even for children.

We emphasise the bridge between mathematical and artistic vision and perception of the world, allowing children to discover mathematical concepts as on hand means to achieve non-mathematical artistic objectives, to answer their questions, emerging when exploring artistic topics and tasks - the plane paving/mosaic to be coloured by only two colours without any neighbourhood of the same colour fields. We show the connection between mathematics and arts with the discoveries in mathematics, unusual in the typical lower secondary school maths world. The need of mathematics, the topology and graph theory basis, emerged in 10-13-years old children spontaneously. Children found the chessboard, discovered an importance of the parity of edges for each vertice, the basic rules for graphs and used Jordanian closed curves as interesting enrichments. Compared to some discoveries (Piaget, Swoboda&Jagoda), there were two approaches to the problem. One part used static, mentally prefabricated chessboard variation. The considerable part of children employed the dynamical approach – continual generation of the curves, following the given topological rules, including Jordanian closed curves. After achieving their creation, none of the children had had an impression to have done any mathematics. (Received September 18, 2012)