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**The same mathematical structure in various disciplines. (Una stessa struttura matematica in settori diversi.)**

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In searching essential means that can change a student into an autonomous student we have found a procedure which goes across the disciplines. Here we report about an experience made with 17-18 years old students of a scientific lyceum; this experience goes across sciences, music, art and mathematics through symmetry which played an important role in the works of M.C. Escher and J.S. Bach. Following the different stages of the class-room work, we see how the symmetry can help the students to catch a visual representation useful in successive steps of the work. Then it is shown how the same logic procedure is used in mathematics and in other disciplines and how the above-mentioned visual representation is a good reference frame for understanding that procedure. (Authors' summary)

*Classification:* G10

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