



FIBONACCI SPIRAL IN SUNFLOWER WITH GEOGEBRA

Çiğdem Erol

Istanbul University, Department of Informatics
Istanbul, TURKEY
cigdems@istanbul.edu.tr

Şebnem Özdemir

Istanbul University, Department of Informatics
Istanbul, TURKEY
zsozdemir@istanbul.edu.tr

Zeki Özen

Istanbul University, Department of Informatics
Istanbul, TURKEY
zekiozen@istanbul.edu.tr

Emre Akadal

Istanbul University, Department of Informatics
Istanbul, TURKEY
emreakadal@gmail.com

Zerrin Ayvaz Reis

Istanbul University, Faculty of Education
Istanbul, TURKEY
ayvazzer@istanbul.edu.tr

Abstract

Mathematics, one of the ancient occupations through the history of humanity, is accepted as a discipline where abstract concepts are predominant and which contains generalities. When evaluated from the point of perception of abstract concepts and working with such concepts, it becomes evident that certain difficulties are experienced during learning and teaching process. One of methods used to overcome such difficulties is to correlate with everyday life and to present samples from real life to the individual. By this means, mathematical concepts can be materialised and lasting learning can be achieved. Even if we are not aware, almost every object or incident around us has a mathematical basis and a relation with mathematics. One of the most express examples to this relation is the Fibonacci numbers, observed in the order of plants, flowers, their leaves even their seed in the nature. This study includes the demonstration the compliance of relation between biology and mathematics, the order of seeds in the sunflower receptacle with the field of mathematics, taking the interdisciplinary study as basis, using Geogebra, one of the information technology tools developed for the field of mathematics and the evaluation of this practice developed by prospective teachers. Herewith it is aimed to emphasise the importance of interdisciplinary studies. In this study, the opinions of prospective biology and mathematics teachers are obtained and consequently it has been found out that they have positive opinion on the establishment of interdisciplinary relation. Furthermore, although it is not nominated as the main research question, it is understood that the information technology tools cannot be used only for materialisation of mathematics but also for establishment interdisciplinary relation.

Key Words: Fibonacci, Geogebra, Biology Education, Mathematics Education, Interdisciplinary Approach.