

HOMO SAPIENS AND THE GEOMETER'S SKETCHPAD IN VISUALIZING HUMAN DEVELOPMENT

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Abstract

At the beginning of the 20th century, the Scottish mathematician and biologist D'Arcy Thompson explored biological problems and interpreted them using mathematics. Today, mathematics and biology are taught separately, with few attempts to connect them. This raises the question: can we really teach in this way? The main idea is to demonstrate how to apply Thompson's transformation in a mathematical context by visualising changes in human development, specifically the evolution of the human skull. The mathematics underlying Thompson's idea, particularly the Thompson transformation, is not included in the high school curriculum, but it can be easily generalised using a powerful tool – a dynamic program, Sketchpad.

Integrating mathematics and biology teaching and learning through the use of Sketchpad promotes the development of student motivation, engagement, problem-solving skills, critical thinking, and the relevance of the concepts studied.

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