

# Use of cell division graphics as a tool for teaching Environmental Toxicology

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The teaching of Toxicology in general, and Environmental Toxicology in particular, seems to be reserved for higher educational levels. Nevertheless, there are more studies that support an education in context and applied to everyday situations of the learner. However, the teaching of contents on cell divisions in high school are reiterated and extremely theoretical and abstract, far from being put into practice in order to solve problems.

Our team has been working for some time on detecting problems in the teaching of cell division in teacher training and in high school students. During this time, we have developed didactic proposals that require the mobilisation of contents on cell division for the resolution of practical cases related to cancer treatments or reproductive problems arising from environmental pollution.

In this paper, we present some examples of activities in which cell divisions are contextualised in topics related to genotoxicology and environmental mutagenesis. All of them encourage the use of evidence and arguments based on realistic images and tables and graphs.

In general, the activities present a problem image and a thought-provoking question. From it, they mobilise their previous knowledge, their mental models, which are captured and shared. Group work leads to discussions to build a common explanatory model (formulation of hypotheses). Moreover, we also sometimes provide them with graphs and tables to assess how they extract information, compare it and use it to formulate arguments and complement the hypothesis. With all this, we can analyse what scientific-mathematical knowledge and skills (mainly research) they bring into play when solving problems associated with images, graphs and tables, and detect the most frequent limitations they show when interpreting data of scientific-mathematical origin.

Overall, this action is a didactic resource of interest that brings Toxicology closer to the classroom for different educational levels, from secondary school to university, and promotes an integrated strategy of scientific training in the field of human and environmental health and mathematics within the framework of STEAM.