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Game-based materials to teaching and learning the periodic table

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Periodic Table is a cornerstone of the Chemistry that should be learnt by all the students in the school. However, it is a boring and tedious task because pupils do not find a connection between the chemical elements and their daily life. The use of educational games can make the learning process of this topic more creative and enjoyable for students. Motivation, emotion, attention, concentration, implication or co-operation are the main keys of the games that can contribute to learning. Different game-based materials that can help students learning the names and symbols of the elements, their uses and properties or understanding the Periodic Table are presented in this communication. Playing forming words with chemical symbols can become more familiar the names and chemical symbols. Drawing everyday life contexts as objects of a house, a class or a car is other alternative to learn the uses of the chemical elements. Playing with the chemical elements in a card game can help pupils learn the different families of elements and their properties. Playing with the pieces of a puzzle can help them understand how the different elements can combine forming chemical compounds. Finally, designing a chemical soccer team with the symbols of the elements and competing with them in the stages of the Soccer World Cup can help students understand the Periodic Table.

Biography

Antonio Joaquín Franco-Mariscal obtained his PhD in Chemistry from the University of Cádiz (Spain) in 2011. Now, he is a Lecturer at the University of Málaga (Málaga, Spain) and teaches Chemistry at Juan Ramón Jiménez School in Málaga (Spain). He is a Research Chemist with interests in didactic of chemistry and educational games for secondary school students (12–16 years old). He has published more than 70 papers in reputed journals and serves as an Editorial Board Member in *Revista Eureka sobre Enseñanza y Divulgación de las Ciencias*. He has received 2 Educational Innovation Awards in Spain (2004 and 2006) and 11 Research Awards.

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