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## **1 INTRODUCTION**

The present work, “Interactive Periodic Table in Scratch: a mathematical approach to periodic properties in chemistry teaching” argues that it is no longer possible to separate education from the environment in which the student is inserted, that is, it is increasingly necessary to use of technological resources in teaching. However, it is important to emphasize that the use of technological resources needs to involve the student, showing him that technology is a resource that can enable the understanding of interrelated concepts of Chemistry and Mathematics, avoiding the simple memorization of concepts. In this context, the objective of the study was to discuss the contributions of using Scratch software in teaching science in the 9th grade of Elementary School through the construction of the interactive periodic table and interrelated concepts of Chemistry and Mathematics, seeking to provide students with the use of Scratch software theoretical and practical concepts to become fluent in digital technology and build an interactive periodic table; Help the student approach the periodic table to know and understand the structure of the periodic table and location of chemical elements; Elaborate and execute an investigative didactic sequence on interrelated concepts of Chemistry and Mathematics, on how to calculate the atomic mass and verify if the constructed periodic table will contribute and help the students in this step. The research was carried out with a group in the ninth year of elementary school at the Professor João Batista State School in the city of Tangará da Serra - MT. A didactic sequence was proposed that integrated the teaching of Chemistry and periodic

properties in an interdisciplinary, contextualized, and technological way, using the Scratch software to build the interactive periodic table. The didactic sequence consisted of steps that involved the theoretical exploration of Chemistry concepts related to periodic properties, followed by the use of Scratch software to build the interactive periodic table. The interdisciplinary approach was highlighted by relating the concepts of Chemistry with Mathematics, expanding students' understanding of the importance of calculating the atomic mass and applications of the periodic table. During the didactic sequence, students were encouraged to investigate and understand the relationships between chemical elements, their properties, and their positions in the periodic table, through programming and interaction with the software. The use of Scratch software stimulated the development of programming skills, logical reasoning, and creativity. The methodology used was qualitative, performing data collection through questionnaires, conversations, and observations. The inductive method was used to analyze the data. After completing the didactic sequence, students acquired solid knowledge about the periodic properties of chemical elements, in addition to having the ability to use the periodic table for consultation and analysis. Finally, the use of Scratch software in teaching Chemistry proved to be an important resource, allowing an interdisciplinary and technological approach that favors both the school context and the understanding of important concepts in the area of Chemistry and Mathematics.

**Keywords:** Interactive Periodic Table, Scratch, Chemistry teaching, Periodic Properties.