

# Searching for Chemical Elements: a multidisciplinary activity in the 150<sup>th</sup> anniversary of the Periodic Table of Chemical Elements

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**Abstract.** 2019 is the 150<sup>th</sup> anniversary of the Periodic Table of Chemical Elements and has therefore been proclaimed the "International Year of the Periodic Table of Chemical Elements (IYPT2019)" by the United Nations General Assembly and UNESCO [1].

A working tool very useful to various professionals and in diverse scientific areas, this table would not exist if someone had not distributed and ordered the chemical elements according to the value of their atomic weights. The father of the Periodic Table, the Russian chemist Dmitri Mendeleev (1834-1907), was so visionary that his Table allows housing not only the known chemical elements at that time but also the ones still unknown that came to be discovered or synthesized. When we come across this Table, with so many chemical elements, we ask ourselves how we use them and where we can find each of them, in our real world!

The outreach project Scientia.com.pt has been implementing regularly hands-on activities for children from 6 to 10 years under the name "Ciência p'ra que te quero" [2], since 2014. Each month, from October to July, in a public library, the Biblioteca Lúcio Craveiro da Silva (BLCS) in Braga, a set of 5 – 6 simple and small hands-on multidisciplinary experiments are offered to a

group of approximately 15 children. Such project, "Ciência p'ra que te quero", was recently distinguished by the Portuguese Environmental Fund and awarded with the "Good practice award for Municipal Public Libraries 2017". The success of the initiative boosted another edition in the academic year 2018-2019, with a renewed image and logo, the "Ainda mais... Ciência p'ra que te quero"

This work aims to describe "Searching for Chemical Elements", the session of "Ainda mais...Ciência p'ra que te quero" that occurred in May. It consisted of a set of didactic activities whose main goals were: (i) to make the Periodic Table of Chemical Elements more familiar, (ii) to highlight its applicability in our daily life, (iii) to show its chemical elements and the objects/ places where we can find many of them, as well as (iv) to promote multidisciplinary and transversal skills, and (v) to develop science education among 6–10 kids who are interested in playing extracurricular activities closely linked to their scientific curiosity.

The session "Searching for Chemical Elements" included: (1) a short initial presentation to the children about the Periodic Table of Chemical Elements, in order to contextualize the topic, making children familiar with some terms and definitions while understanding the practical

activities they will be enrolled on; (2) the construction of a "Periodic Table Alphabet" allied to a peddy-paper; (3) the naval battle game adapted to the Periodic Table and, finally; (4) a demonstration of the coloured "firework" that can be made with some chemical elements.

At the end of each session, children were asked to fill a questionnaire regarding their opinion about the session. The vast majority of children liked the peddy-paper activity related with the "Periodic Table Alphabet", except one child who did not like it. The "Coloured firework" was also very appreciated by all the kids. Although the "Naval Battle" game was not experienced by all the children, the four participants stated that they had "really enjoyed" playing the game. Overall, the majority of children rated the three activities very positively.

**Keywords.** Chemical element, hands-on activities, multidisciplinary activities, Periodic Table of Chemical Elements.

## References

- [1] UNESCO (2019) - International Year of the Periodic Table of Chemical. <http://www.unesco.org/new/en/brasil/ab-out-this-office/prizes-and-celebrations/2019-international-year-of-the-periodic-table-of-chemical-elements/>
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