Periodic Table for Visually Impaired

A tangible interface to learn chemical elements for middle and high school students

Education across all levels needs to be inclusive of students with all sorts of abilities and backgrounds. Students with visual impairments have often been underserved in the design of educational technologies. To combat this, many researchers and professionals have identified the need to translate visual stimuli for theoretical advancement in general education and the sciences into other modalities that allow all students to learn the content.

Currently, there have been more blind and visually impaired students in schools, which requires teachers to make their lessons more accessible. Chemistry being mostly visual, is a particularly challenging subject to teach. Learning and using the periodic table is one of the most vital aspects of chemistry and is highly reliant on visual depictions.

We demonstrate a novel design to effectively communicate the immense amount of information that is embedded in the visual structure of the periodic table. Our technique focuses on mapping these visual variables of the table to tactile variables that visually impaired students can more easily perceive and learn. These design features can help create a more accessible and enjoyable learning experience for students with visual impairments while learning chemistry.