

Periodic Table: A New Perspective

Manuel Franco, Matthew Armijo, Richard Sisson, and Khalid Hattar
Ion Beam Laboratory, Sandia National Labs, Albuquerque, NM 87185



Coupling the modern periodic table to the chart of the nuclides to bring a tactile aspect to a static chart.

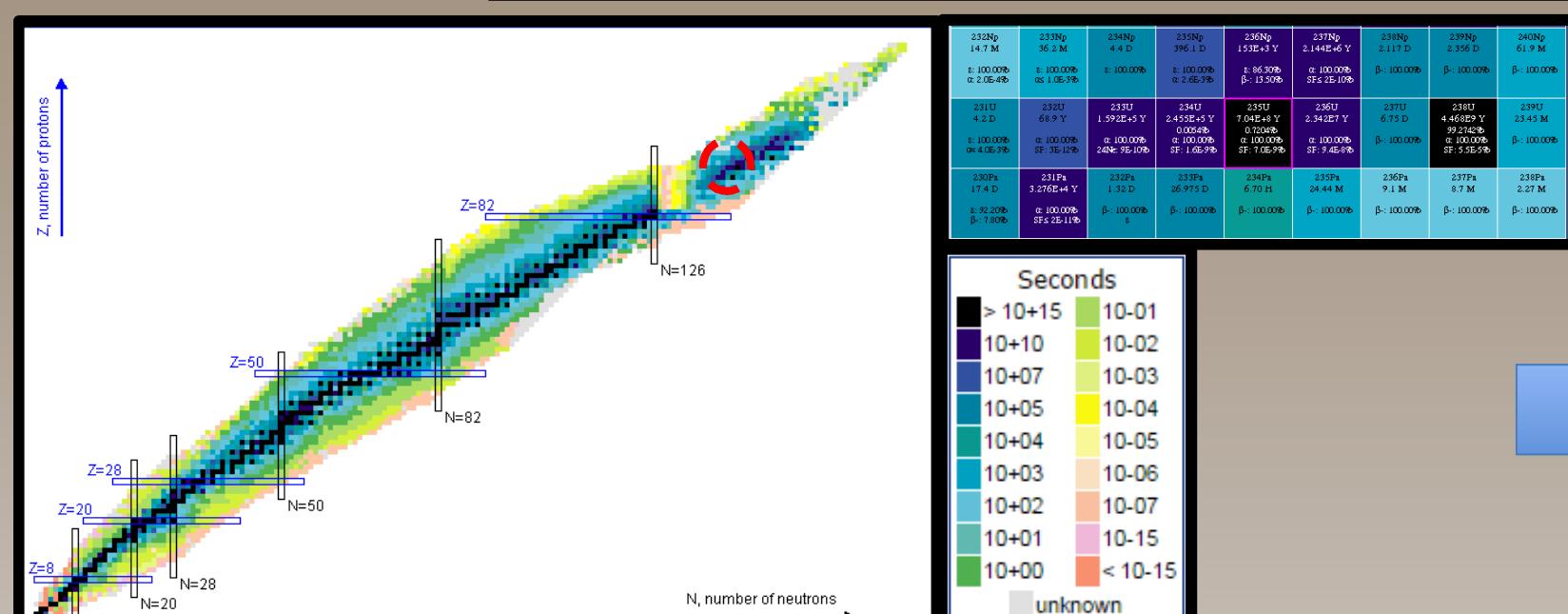
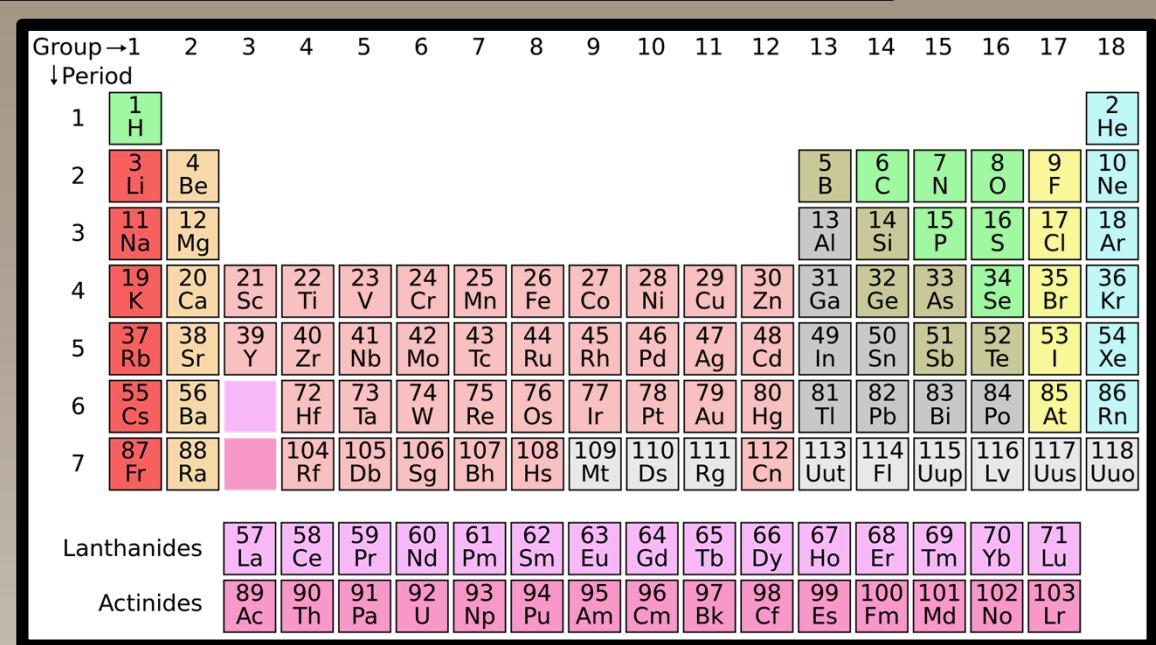
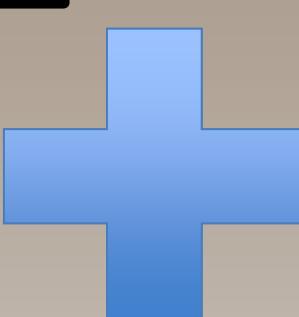


Chart of the nuclides with zoomed in view

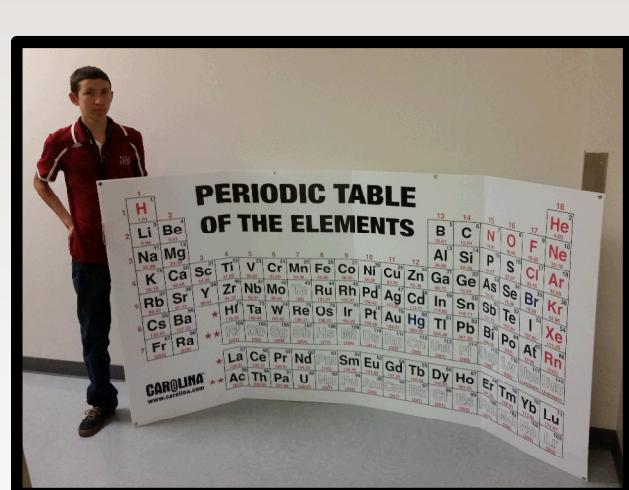


Modern periodic table

Isotope Rotation



Playground tic tac toe



Periodic table base for Tic Tac Toe display

Objective:

Improved data visualization method to aid those not familiar with nuclear nuclide data using the more familiar periodic table.

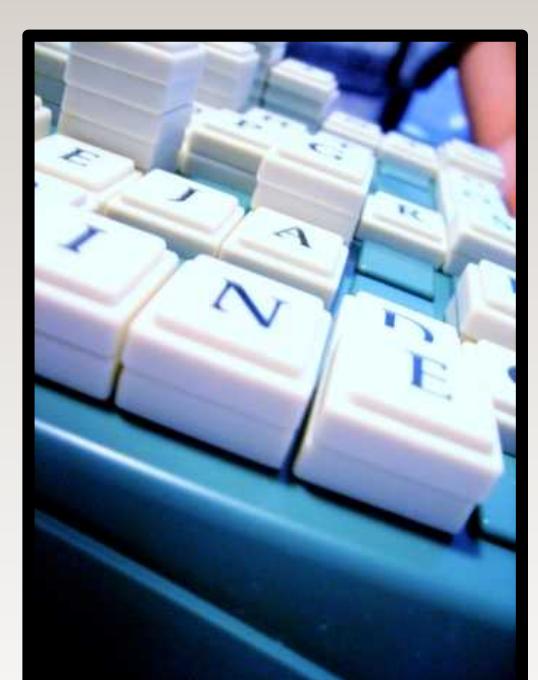
Development:

- Identify two different tactile experience to convey information
 - Upwords©
 - Tic Tac Toe
- Identify the amount of isotopes to use in combined chart
- Categorize isotopes by half life
- Prototype CAD models of each method

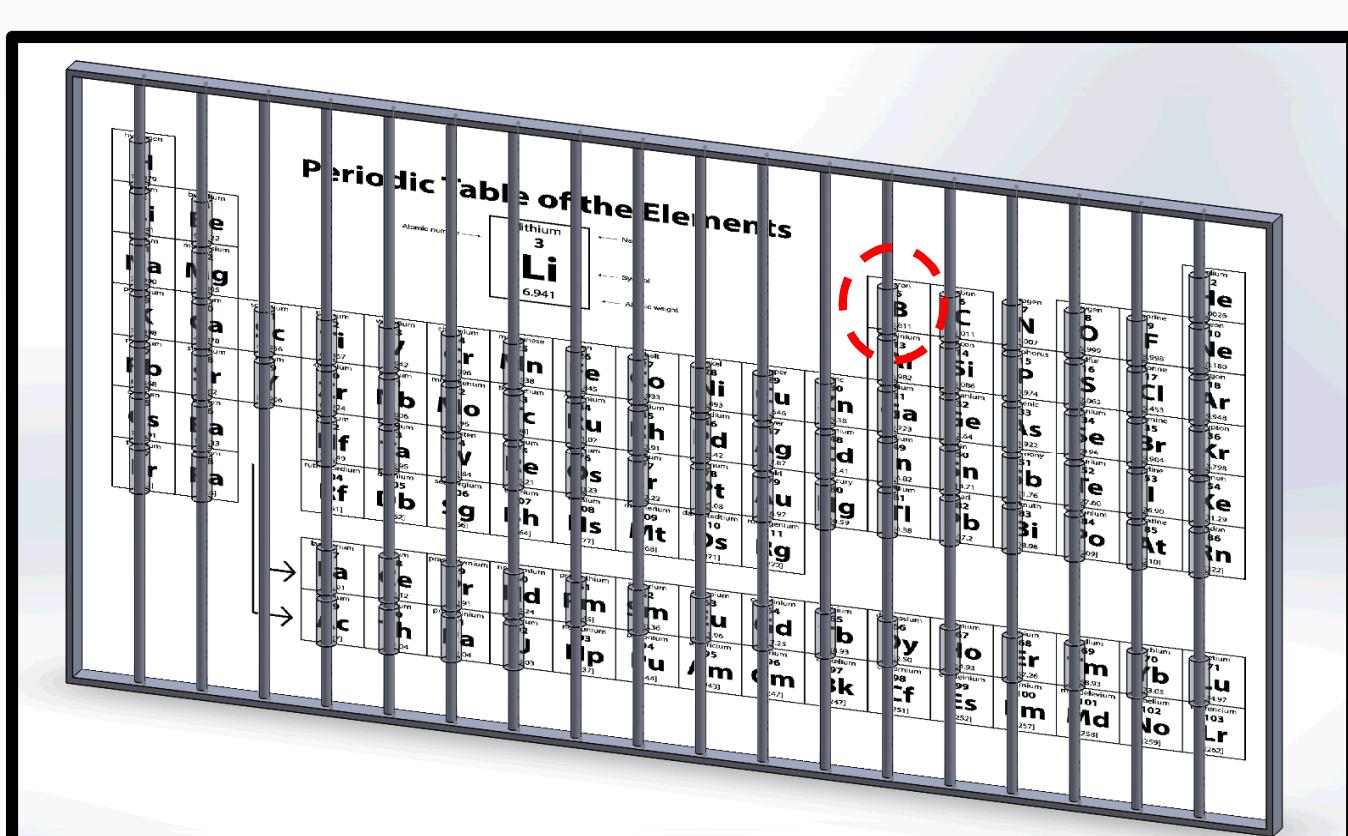
Future Work:

- Further isotopic information
- Construct the physical displays for each method

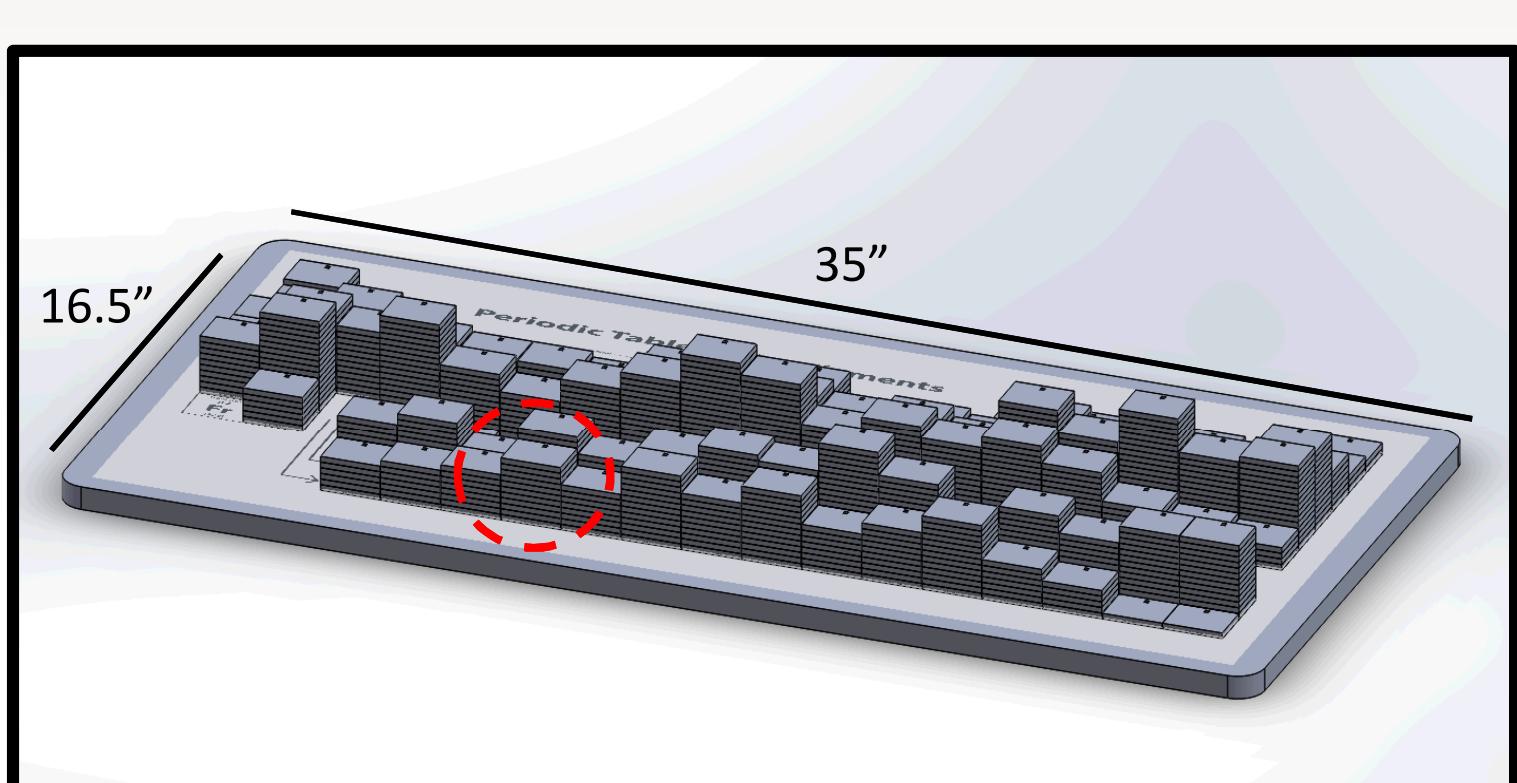
Isotope Stacking



Upwords© board game



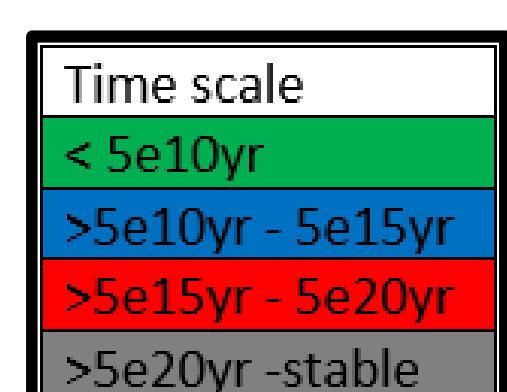
Current cylinder rotation CAD model



Current tile stacking CAD model



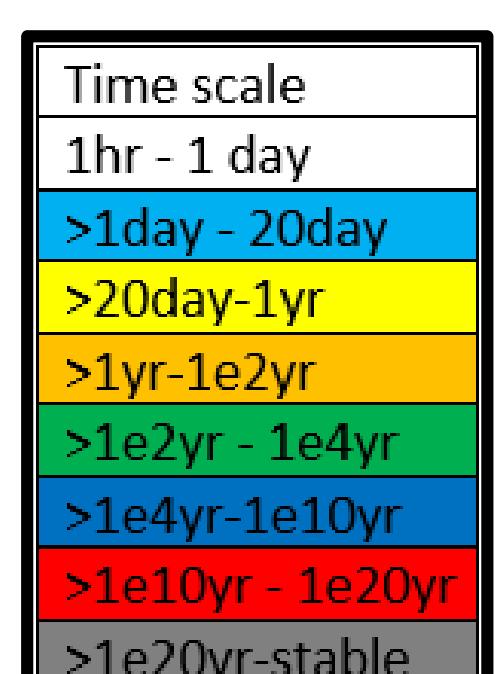
Example elemental cylinder containing all available isotopes of boron with abundance and half life



Color coded half life categories for future physical cylinder labels



Example isotope tile containing abundance and half life



Color coded half life categories for future physical tiles

These two new approaches present the periodic table in a way that also includes isotopic abundances, lifetimes and in the future decay modes.

Thank you to Carley Parriott and Dan Perry for their assistance getting supplies. In addition thank you as well to Dan Bufford, Brittany Muntifering, and Barney Doyle for their comments and suggestions for improvement.