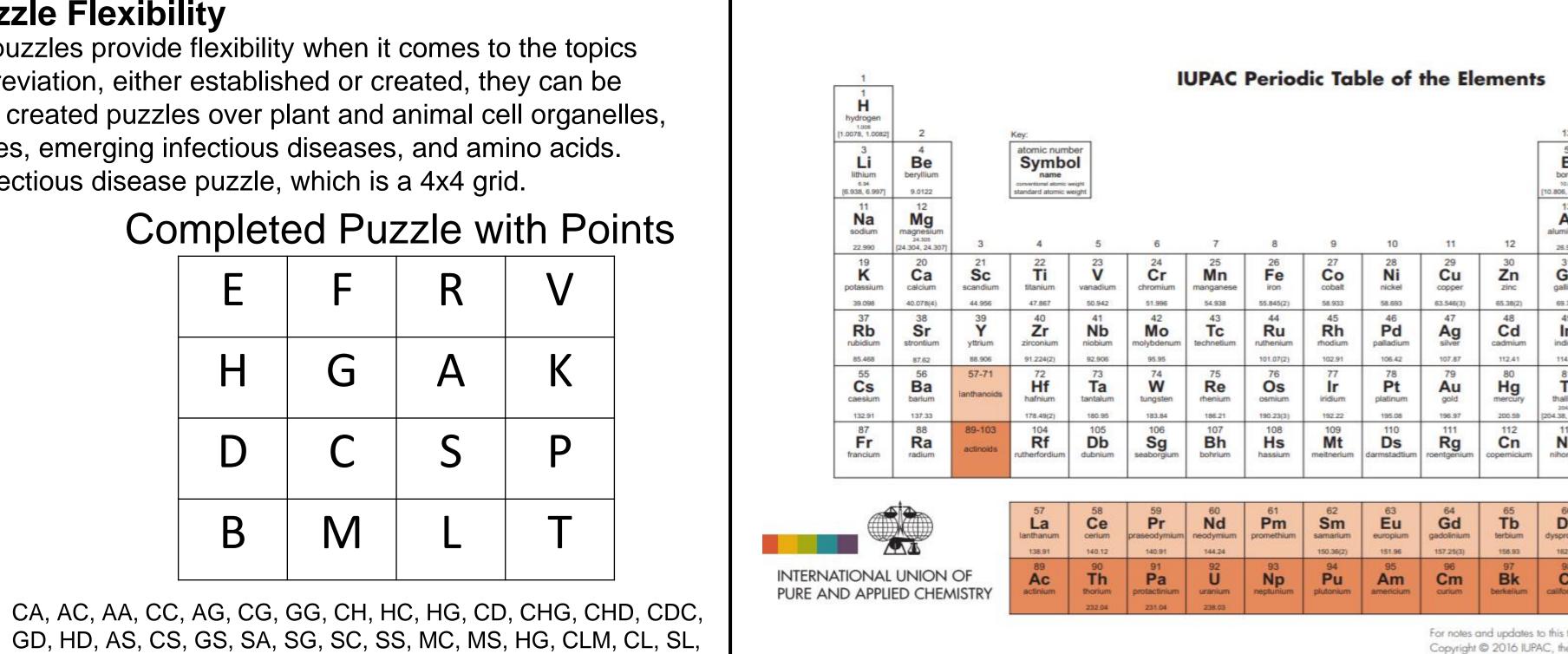


Puzzle Flexibility

Besides the periodic table, these grid puzzles provide flexibility when it comes to the topics that can be covered. If there is an abbreviation, either established or created, they can be used for any subject or topic. We have created puzzles over plant and animal cell organelles, the 50 states in the US, wildlife diseases, emerging infectious diseases, and amino acids. Here is an example of an emerging infectious disease puzzle, which is a 4x4 grid.

Beginning Puzzle

	Α	
С		



AP, CSP, LP, PS, PA, SP, TT, TP, TL, TS, ST, AF, CHF, HF, KA, AK, SCB, DB, BM, BC, BB, HE, GE, FR, SAR, KR, RF, RV, VV, KK (Total points = 59 pts)

Abbreviation Puzzles for the Pe

*Peyton Bellflower **Faculty Mentor: Thomas Manning Department of Chemistry**

*Thanks to the NSF Noyce Scholarship for the support

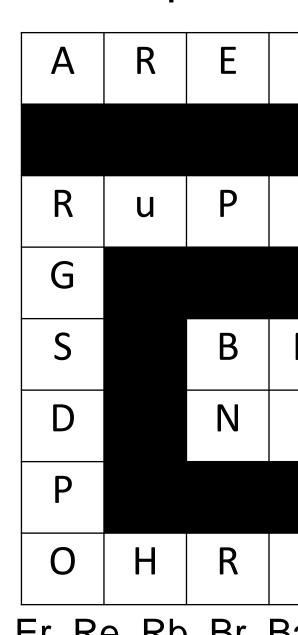
Puzzles can be used as an educational exercise for a number of reasons; they emphasize strategy and familiarize students with a new topic or new words. Crossword puzzles typically require prior knowledge on a topic while a Sudoku type puzzle is focused on developing strategy. A type of puzzle, based on abbreviations of the elements, is developed and presented as an educational exercise. It is not a single puzzle format but one that can be easily varied for students of different ages and students with different objectives. The goal is familiarization with the periodic table, its symbols, the groups as well as physical and chemical properties, using a strategic

Start w 4x4, etc

- The ins abbrev the list
- Differer 3. but this needec assigne highest

Unique Puzzle

Completed



Ar, Ra, Er, Re, Rb, Br, Ba Lu, Li, I, Ti, TI, CI, Cs, S, O, Po, P, Pd, Ds, Sg, Rg, Sm, Mt, Tm, Mo, No, Nb,

	Requirements for a Completed Puzzle Every time a letter is added it should result in a new element being identified. The rules are as follows: a. Only one letter per grid. b. Every square must contain a letter fo the puzzle to be considered complete. Letters must be added that increase the number of		
	elements. For example, in Puzzle 6, if X was added next to P forming a PX, it would not be allowed because there is no elemental symbol fo X, PX or XP. c. Abbreviations can be made as long a the squares touch each other, vertically, horizontally, diagonally, forward or reverse. 1x10 Puzzle		
ent scoring methods can be used is can result in additional time ed. A blank puzzle can be ned with the goal being the st score.			
Puzzle with Points	Completed Puzzle with Point		
RBACNANDYDLNDYDLNDYDLNSTOMTMLCTPBISTCCTPBISi, Bi, Pb, Pt, Tc, Cr, Rh, H, Ho,N, Ru, Pu, P, Np, Nd, Y, Dy, Sb,MnMTotal points = 55 pts)T	CREC, Co, Ho, O, H,HHe, Er, Re, Ca, Ar,Ra, At, Ta, Tb, BO(Total points = 15)CARATB		
13 14 15 16 17 4.0025 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 5 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 13 14 15 16 17 18 AI Si P Si CI Ar	Puzzle Competition nmer 2019, a puzzle competition was held at sta State University's Bailey Science Center. V d children of all ages, from 3 rd grade to adults, ete in various age group by completing the es. Certificates and recognition was given to the duals that acquired the most points per age		

