

# PERIODIC TABLE ELEMENT DESIGN CHALLENGE

## PART TWO: FILLING THE GAPS

no. Z	Elements which still need a design submission are left unshaded in the Table below. Many creative possibilities are yet available!
m Y	Elements for which modifications to good design concepts are needed are lightly shaded. Anyone wishing to modify or enhance a design idea should contact Julie Abrahamson ( <a href="mailto:jabrahamson@chem.und.edu">jabrahamson@chem.und.edu</a> ). High quality designs are needed for the project.
q X	Elements for which submissions have been accepted are dark. No further submissions will be needed for these elements.

**Periodic Table of the Elements**

1 IA	2 IIA											13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIII	
1 H 1.008																		2 He 4.003
3 Li 6.939	4 Be 9.012											5 B 10.81	6 C 12.011	7 N 14.007	8 O 15.9994	9 F 18.998	10 Ne 20.18	
11 Na 22.99	12 Mg 24.305	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8	9 VIII	10	11 IB	12 IIB	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.453	18 Ar 39.95	
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.70	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80	
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (99)	44 Ru 101.07	45 Rh 102.91	46 Pd 106.4	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.69	51 Sb 121.75	52 Te 127.60	53 I 126.90	54 Xe 131.30	
55 Cs 132.91	56 Ba 137.33	57* La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.85	75 Re 186.21	76 Os 190.2	77 Ir 192.22	78 Pt 195.09	79 Au 196.97	80 Hg 200.59	81 Tl 204.37	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)	86 Rn (222)	
87 Fr (223)	88 Ra 226.03	89† Ac (227)	104‡ Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 Ds (271)	111 Uuu	112 Uub	113 Uut						

\*Lanthanide series:

58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.4	63 Eu 151.96	64 Gd 157.25	65 Tb 158.93	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.04	71 Lu 174.97
--------------------	--------------------	--------------------	-------------------	-------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

†Actinide series:

90 Th 232.04	91 Pa 231.04	92 U 238.03	93 Np 237.05	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (254)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (260)
--------------------	--------------------	-------------------	--------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	--------------------	--------------------	--------------------	--------------------

### Designs selected for inclusion should meet these criteria:

- Based on something about the element or its name
  - Fits an 8 x 8 inch square
  - Be judged as in good taste
  - Include the element symbol (1 or 2 letters), and atomic number
- Electronic submissions (pdf or jpg format) or on paper are acceptable
- \*\*\*\* **Submit designs by November 30.** \*\*\*\*

- \* Designs will be transferred to ceramic tiles with assistance from the Ceramics faculty of the UND Department of Art and Design.
- \* Design contributors will be acknowledged on an informational plaque.
- \* **Visit the lobby outside Abbott 101 to see where the UND Chemistry Periodic Table will be mounted. Some previously submitted designs are now displayed**

Send your creation or direct questions to  
**Dr. Julie Abrahamson**  
[jabrahamson@chem.und.edu](mailto:jabrahamson@chem.und.edu)

A project of the  
Undergraduate Chemistry Club  
Supported by the  
UND Chemistry Department

For more information, go to the Chemistry website: <http://arts-sciences.und.edu/chemistry/>