

Welcome to STEM Chem!

STEM Honors Chemistry is for the student who desires a more in-depth study of science that will incorporate various aspects of science and math with an emphasis on both mastery and critical thinking/application skills. This is a fast-paced course that requires **much outside** classroom preparation. This summer assignment is essential to a good foundation as we will be using these elements the ENTIRE SCHOOL YEAR! This class requires a **strong work ethic** and the ability to work independently. Let's start strong by getting a head start!

The elements on the periodic table are essential to everything we will do this school year in STEM Chemistry. Knowing the elements by NAME and SYMBOL is crucial to your success in **ALL future units**. Therefore, you are expected to MEMORIZE the following elements' names and corresponding symbols. There are practice pages at the end of this document to help as you prepare for the course. [Element Flash Cards](#) is also a GREAT website to help you learn the element names and symbols. Click the link to the [Element Flash Cards Website](#) and click "More options, please" and you can choose exactly what elements you want to study. **Do not wait until the end of the summer to begin this assignment!** Memorize a few elements every day.

Memorize the 81 required elements – expect an assessment the second full week of school over the required elements.

- You must memorize elements 1-95 on the periodic table (H through Am)
- You are NOT responsible for elements 58-71 (Ce through Lu)
- You must memorize symbol (capitalization is important) and correct spelling of the element
- You do NOT need to know the numbers nor the location of the elements.

Periodic Table of the Elements

1 H Hydrogen 1.01	2 He Helium 4.00																
3 Li Lithium 6.94	4 Be Beryllium 9.01											5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00	10 Ne Neon 20.18
11 Na Sodium 22.99	12 Mg Magnesium 24.31											13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.06	17 Cl Chlorine 35.45	18 Ar Argon 39.95
19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.88	23 V Vanadium 50.94	24 Cr Chromium 51.99	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.38	31 Ga Gallium 69.72	32 Ge Germanium 72.63	33 As Arsenic 74.92	34 Se Selenium 78.97	35 Br Bromine 79.90	36 Kr Krypton 84.80
37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.95	43 Tc Technetium 98.91	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.6	53 I Iodine 126.90	54 Xe Xenon 131.29
55 Cs Cesium 132.91	56 Ba Barium 137.33	57-71 Lanthanides	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.85	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.20	83 Bi Bismuth 208.98	84 Po Polonium [208.98]	85 At Astatine 209.98	86 Rn Radon 222.02
87 Fr Francium 223.02	88 Ra Radium 226.03	89-103 Actinides	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [269]	109 Mt Meitnerium [278]	110 Ds Darmstadtium [281]	111 Rg Roentgenium [280]	112 Cn Copernicium [285]	113 Nh Nihonium [286]	114 Fl Flerovium [289]	115 Mc Moscovium [289]	116 Lv Livermorium [293]	117 Ts Tennessine [294]	118 Og Oganesson [294]
57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium 144.91	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.06	71 Lu Lutetium 174.97			
89 Ac Actinium 227.03	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium 237.05	94 Pu Plutonium 244.06	95 Am Americium 243.06	96 Cm Curium 247.07	97 Bk Berkelium 247.07	98 Cf Californium 251.08	99 Es Einsteinium [254]	100 Fm Fermium 257.10	101 Md Mendelevium 258.10	102 No Nobelium 259.10	103 Lr Lawrencium [262]			

STEM Honors Chemistry- Summer Assignment

Practice Pages

These pages are to help you learn the required 81 elements. For each element 1-95 (excluding elements 58-71), you must correctly spell the name of the element and recall the element symbol with proper capitalization. These pages are not to be turned in. Making flashcards is also recommended as a study tool.

Name	Symbol	Name	Symbol
Hydrogen		Molybdenum	
Helium		Technetium	
Lithium		Ruthenium	
Beryllium		Rhodium	
Boron		Palladium	
Carbon		Silver	
Nitrogen		Cadmium	
Oxygen		Indium	
Fluorine		Tin	
Neon		Antimony	
Sodium		Tellurium	
Magnesium		Iodine	
Aluminum		Xenon	
Silicon		Cesium	
Phosphorous		Barium	
Sulfur		Lanthanum	
Chlorine		SKIP ELEMENTS 58-71	
Argon		Hafnium	
Potassium		Tantalum	
Calcium		Tungsten	
Scandium		Rhenium	
Titanium		Osmium	
Vanadium		Iridium	
Chromium		Platinum	
Manganese		Gold	
Iron		Mercury	
Cobalt		Thallium	
Nickel		Lead	
Copper		Bismuth	
Zinc		Polonium	
Gallium		Astatine	
Germanium		Radon	
Arsenic		Francium	
Selenium		Radium	
Bromine		Actinium	
Krypton		Thorium	
Rubidium		Protactinium	
Strontium		Uranium	
Yttrium		Neptunium	
Zirconium		Plutonium	
Niobium		Americium	

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Name	Symbol	Name	Symbol
	H		Mo
	He		Tc
	Li		Ru
	Be		Rh
	B		Pd
	C		Ag
	N		Cd
	O		In
	F		Sn
	Ne		Sb
	Na		Te
	Mg		I
	Al		Xe
	Si		Cs
	P		Ba
	S		La
	Cl	SKIP ELEMENTS 58-71	
	Ar		Hf
	K		Ta
	Ca		W
	Sc		Re
	Ti		Os
	V		Ir
	Cr		Pt
	Mn		Au
	Fe		Hg
	Co		Tl
	Ni		Pb
	Cu		Bi
	Zn		Po
	Ga		At
	Ge		Rn
	As		Fr
	Se		Ra
	Br		Ac
	Kr		Th
	Rb		Pa
	Sr		U
	Y		Np
	Zr		Pu
	Nb		Am

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	Be	Rhodium	
Boron			Pd
	C	Silver	
Nitrogen			Cd
	O	Indium	
Fluorine			Sn
	Ne	Antimony	
Sodium			Te
	Mg	Iodine	
Aluminum			Xe
	Si	Cesium	
Phosphorous			Ba
	S	Lanthanum	
Chlorine		SKIP ELEMENTS 58-71	
	Ar		Hf
Potassium		Tantalum	
	Ca		W
Scandium		Rhenium	
	Ti		Os
Vanadium		Iridium	
	Cr		Pt
Manganese		Gold	
	Fe		Hg
Cobalt		Thallium	
	Ni		Pb
Copper		Bismuth	
	Zn		Po
Gallium		Astatine	
	Ge		Rn
Arsenic		Francium	
	Se		Ra
Bromine		Actinium	
	Kr		Th
Rubidium		Protactinium	
	Sr		U
Yttrium		Neptunium	
	Zr		Pu
Niobium		Americium	

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	F	Tin	
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	Al	Xenon	
Silicon			Cs
	P	Barium	
Sulfur			La
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	K		Ta
Calcium		Tungsten	
	Sc		Re
Titanium		Osmium	
	V		Ir
Chromium		Platinum	
	Mn		Au
Iron		Mercury	
	Co		Tl
Nickel		Lead	
	Cu		Bi
Zinc		Polonium	
	Ga		At
Germanium		Radon	
	As		Fr
Selenium		Radium	
	Br		Ac
Krypton		Thorium	
	Rb		Pa
Strontium		Uranium	
	Y		Np
Zirconium		Plutonium	
	Nb		Am

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Krypton	Kr	Thorium	Th
Rubidium	Rb	Protactinium	Pa
Strontium	Sr	Uranium	U
Yttrium	Y	Neptunium	Np
Zirconium	Zr	Plutonium	Pu
Niobium	Nb	Americium	Am