SNC1W0 Presenting the non-metals Name: _____

Non-metals have some typical properties. But sometimes their properties can be similar to metals.

Metals have HIGH melting points … take a look at this list of melting points for metals

Metals have a shiny appearance (at least when freshly polished). Think of gold, silver, aluminum and copper.

Metals are conductive. Think of copper wire, gold components in electronics, and … did you know that homes used to have aluminum wiring, when the cost of copper became high?

Properties of non-metals

Below is a list of non-metal elements. For each element, colour in the squares according to the following code:

Red = property is typical of a non-metal Blue = property is typical of a metal

Element	Melting Point (°C)	Appearance	Electrical conductivity
Carbon (graphite)	Sublimes at high temp (3600)	Shiny grey solid	Very good
Oxygen	-219	Colourless gas	No
Hydrogen	-259	Colourless gas	No
Sulfur	115	Yellow solid	No
Nitrogen	-210	Colourless gas	No
Fluorine	-220	Colourless gas	No
Chlorine	-102	Pale yellow gas	No
Phosphorus	44	Red or white solid	No
Bromine	-7	Red-brown liquid	No
Iodine	114	Shiny grey solid	No
Selenium	221	Shiny grey solid	Fair
Silicon	1414	Shiny grey solid	Fair

Helium	n/a no solid form at standard pressure	Colourless gas	No
Argon	-189	Colourless gas	No
Neon	-249	Colourless gas	No
Xenon	-112	Colourless gas	No
Radon	-71	Colourless gas	No
Krypton	-157	Colourless gas	No

Now find these elements in the periodic table on the next sheet - colour in the squares according to the following code:

Red = property is typical of a non-metal Blue = property is typical of a metal

Questions for reflection:

1. Which elements have some properties of both metals and non-metals?
2. Is there a clear trend with their location in the periodic table? Explain your answer.

Periodic Table of the Elements

1A												3A	4A	5A	6A	7A	8A
1 **H** 1.00794	2A																2 **He** 4.002602
3 **Li** 6.941	4 **Be** 9.012182											5 **B** 10.811	6 **C** 12.0107	7 **N** 14.0067	8 **O** 15.9994	9 **F** 18.9984032	10 **Ne** 20.1797
11 **Na** 22.989769	12 **Mg** 24.3050	3B	4B	5B	6B	7B	8B			1B	2B	13 **Al** 26.9815386	14 **Si** 28.0855	15 **P** 30.973762	16 **S** 32.065	17 **Cl** 35.453	18 **Ar** 39.948
19 **K** 39.0983	20 **Ca** 40.078	21 **Sc** 44.955912	22 **Ti** 47.867	23 **V** 50.9415	24 **Cr** 51.9961	25 **Mn** 54.938045	26 **Fe** 55.845	27 **Co** 58.933195	28 **Ni** 58.6934	29 **Cu** 63.546	30 **Zn** 65.38	31 **Ga** 69.723	32 **Ge** 72.64	33 **As** 74.92160	34 **Se** 78.96	35 **Br** 79.904	36 **Kr** 83.798
37 **Rb** 85.4678	38 **Sr** 87.62	39 **Y** 88.90585	40 **Zr** 91.224	41 **Nb** 92.90638	42 **Mo** 95.96	43 **Tc** [98]	44 **Ru** 101.07	45 **Rh** 102.90550	46 **Pd** 106.42	47 **Ag** 107.8682	48 **Cd** 112.411	49 **In** 114.818	50 **Sn** 118.710	51 **Sb** 121.760	52 **Te** 127.60	53 **I** 126.90447	54 **Xe** 131.293
55 **Cs** 132.9054519	56 **Ba** 137.327	57-71 Lanthanides	72 **Hf** 178.49	73 **Ta** 180.94788	74 **W** 183.84	75 **Re** 186.207	76 **Os** 190.23	77 **Ir** 192.217	78 **Pt** 195.084	79 **Au** 196.966569	80 **Hg** 200.59	81 **Tl** 204.3833	82 **Pb** 207.2	83 **Bi** 208.98040	84 **Po** [209]	85 **At** [210]	86 **Rn** [222]
87 **Fr** [223]	88 **Ra** [226]	89-103 Actinides	104 **Rf** [267]	105 **Db** [268]	106 **Sg** [271]	107 **Bh** [272]	108 **Hs** [270]	109 **Mt** [276]	110 **Ds** [281]	111 **Rg** [280]	112 **Cn** [285]	113 **Uut** [284]	114 **Fl** [289]	115 **Uup** [288]	116 **Lv** [293]	117 **Uus** [294]	118 **Uuo** [294]

Lanthanides	57 **La** 138.90547	58 **Ce** 140.116	59 **Pr** 140.90765	60 **Nd** 144.242	61 **Pm** [145]	62 **Sm** 150.36	63 **Eu** 151.964	64 **Gd** 157.25	65 **Tb** 158.92535	66 **Dy** 162.500	67 **Ho** 164.93032	68 **Er** 167.259	69 **Tm** 168.93421	70 **Yb** 173.054	71 **Lu** 174.9668
Actinides	89 **Ac** [227]	90 **Th** 232.03806	91 **Pa** 231.03588	92 **U** 238.02891	93 **Np** [237]	94 **Pu** [244]	95 **Am** [243]	96 **Cm** [247]	97 **Bk** [247]	98 **Cf** [251]	99 **Es** [252]	100 **Fm** [257]	101 **Md** [258]	102 **No** [259]	103 **Lr** [262]

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