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Science 9 – Chemistry Topic 2.2 - C1 Elements are the building blocks of matter.

Elements: The basic building blocks of matter

- Made up of one type of atom (cannot be broken down further)
- About 90 elements occur naturally (carbon, silver, oxygen)
- Some elements are synthesized in labs
- Have varying properties

Element Names and Symbols

Each element has a

- **Chemical name**
 - Based on Latin words, countries, names of famous scientists
- **Chemical symbol**
 - One or two letters (first letter is capitalized)
 - In the past, synthetic or unnamed elements have placeholder names or three - letter symbols.



Copper (Cu) is shiny and malleable. This means it can be hammered into thin sheets such as the copper leaf used on this car hood by B.C. artist Michael Nicoll Yahgulanaas. This piece is part of a series called *Coppers from the Hood*.



Examine the elements in Table 1, and see if you can recognize the rules he used to decide which letters are allowed, how many are permitted, and which should be capitalized.

Table 1 Some Elements and Their Symbols

Name	Symbol	Name	Symbol	Name	Symbol	Name	Symbol
aluminum	Al	chromium	Cr	indium	In	nobelium	No
antimony	Sb	cobalt	Co	iodine	I	oxygen	O
arsenic	As	copper	Cu	iron	Fe	palladium	Pd
barium	Ba	erbium	Er	krypton	Kr	phosphorus	P
beryllium	Be	europium	Eu	lead	Pb	platinum	Pt
bismuth	Bi	fluorine	F	lithium	Li	plutonium	Pu
boron	B	francium	Fr	manganese	Mn	polonium	Po
bromine	Br	gallium	Ga	magnesium	Mg	potassium	K
cadmium	Cd	germanium	Ge	mercury	Hg	radium	Ra
calcium	Ca	gold	Au	neon	Ne	radon	Rn
carbon	C	helium	He	nickel	Ni	scandium	Sc
chlorine	Cl	hydrogen	H	nitrogen	N	selenium	Se

Table 1 Some Elements and Their Symbols (continued)

Name	Symbol	Name	Symbol	Name	Symbol	Name	Symbol
silicon	Si	sulfur	S	titanium	Ti	ytterbium	Yb
silver	Ag	technetium	Tc	tungsten	W	yttrium	Y
sodium	Na	terbium	Tb	uranium	U	zinc	Zn
strontium	Sr	tin	Sn	xenon	Xe	zirconium	Zr

Rules for symbol

- The First letter is ALWAYS in Upper case (capitals).
The Second letter, if any, is ALWAYS in lower case.
e.g. Fe, Al, Pb, Li, C
- Some use the First and third letters of the element's name.
e.g. Cadium - Cd
- Some use the First and third letters because the first two letters have been used.
e.g. Ar = Argon
As = Arsenic
At = Astatin
- Some used to have three letters. As of 2018, these elements are now replaced with proper naming with two-letter symbols
e.g. Element 113 Ununtrium (Uu) (1979) → Nihonium (Nh) (2017)
- Some are derived from their Latin names.^{[1][2]}

Element	Latin name	Symbol
antimony	stibium	Sb
copper	cuprum	Cu
gold	aurum	Au
iron	ferrum	Fe
lead	plumbum	Pb
mercury	hydragyrum	Hg
potassium	kalium	K
silver	argentum	Ag
sodium	natrium	Na
tin	stannum	Sn

FREERICE Element Naming Game: Every question you answer correctly raises 10 grains of rice for people in need.

Basic Element: <https://freerice.com/categories/chemical-symbols-basic>

Can you get to 200 rice points? 400? Even higher? Show Mr. Cheung your highest score ^__^



Textbook Read p. 104 - 105

Do WB P. 57 - 58

H/W P. 56 WB