

Element Guide

Name: _____ Hour: _____

1. Name the 2 elements that make up the highest percentage of the Earth's crust and their mass percent abundance

	Element	Symbol	% Abundance by Mass
1	Oxygen	O	46.6%
2	Silicon	Si	27.7%

2. Name the 4 most common elements in the human body with their mass percent abundance

	Element	Symbol	% Abundance by Mass
1	Oxygen	O	65.0%
2	Carbon	C	18.5%
3	Hydrogen	H	9.5%
4	Nitrogen	N	3.2%

Chlorine - Cl

Atomic #

17

What family elements is chlorine a part of?

Halogens

What does chlorine look like?

Pale green gas

The most common compound with chlorine is sodium chloride, also called table salt.

What is an example of a household product made with chlorine?

Many cleaning products on this list – bleach

Carbon - C

Atomic #

6

What are the three forms that carbon can take?

Diamond, Graphite, Buckminster Fullerenes (bucky balls)

What is the subdiscipline of chemistry focused on the study of Carbon-based compounds called?

Organic Chemistry

Copper - Cu	Atomic #	29
<p>Why is copper often mixed with other metals? To make it stronger and more durable</p> <p>What is bronze made of? Copper and Tin</p> <p>What is brass made of? Copper and Zinc</p> <p>Why is copper used in electrical wires? It is cheap, malleable, and a great conductor of electricity</p>		

Gold - Au	Atomic #	79
<p>Why is the symbol for gold Au? Comes from the Latin word "Aurum" meaning "gold".</p> <p>Why does gold keep its luster (shine)? Gold's electron configuration makes it fairly non-reactive</p> <p>What is Gold leaf? How thick is it? Gold that has been hammered into a thin sheet 1/8000 mm to 1/10000 mm thick (3 micro inches)</p>		

Hydrogen - H	Atomic #	1
<p>Hydrogen is diatomic. What does this mean? It forms molecules in pairs like H₂</p> <p>Hydrogen is the most <u>abundant</u> element in the universe.</p> <p>Our sun fuses Hydrogen atoms together to produce <u>Helium</u>.</p> <p>What does the name Hydrogen mean? "Water Creator" (from the Greek ύδρο- hydro meaning "water" and -γενής genes meaning "creator")</p>		

Iron - Fe	Atomic #	26
<p>Iron is most abundant in what part of the Earth? The core</p> <p>Why was Iron a popular material for the construction of early tools? It is malleable and can be easily formed when heated up.</p> <p>What is steel made of? Iron and Carbon</p> <p>Rust is created when Iron reacts with <u>Oxygen</u>.</p>		

Sulfur - S	Atomic #	16
<p>In what type of geological region are you most likely to find sulfur? Hot springs and volcanic regions</p> <p>What does hydrogen sulfide smell like? Rotten Eggs</p> <p>Name a common household product which contains sulfur Matches</p>		

Nitrogen - N	Atomic #	7
<p>Nitrogen is an important ingredient in what invention by Alfred Nobel? Dynamite and Nitroglycerin</p> <p>Why is Nitrogen important to living things? Nitrogen is a primary component of amino acids, the building blocks of all proteins.</p> <p>What temperature is required to support liquid Nitrogen? -196°C (-321°F)</p>		

Oxygen - O	Atomic #	8
<p>Where does most of the Oxygen in our air come from?</p> <p>Photosynthesis from plant life. Most of it actually comes from the algae in the oceans</p> <p>What is combustion?</p> <p>Process of burning in an oxygen rich environment</p> <p>What is oxidation?</p> <p>Loss of electrons (usually by a metal). Rusting is an example of oxidation</p>		

Silicon - Si	Atomic #	14
<p>What form does most of the Silicon on Earth take?</p> <p>Silicon Dioxide – aka Sand</p> <p>Silicon is the most famous of the semi-conductors. Its properties as part of this category make it ideal for what important application?</p> <p>Electronics – specifically transistors</p>		

Lithium - Li	Atomic #	3
<p>What element family is Lithium a member of?</p> <p>Alkali metals</p> <p>Lithium is often used as a medication for what disease?</p> <p>Mental disorders: bipolar disorder, depression, schizophrenia</p> <p>There is a growing concern that there isn't enough Lithium supply to support this new(ish) application:</p> <p>Lithium batteries (primarily for electric vehicles)</p>		