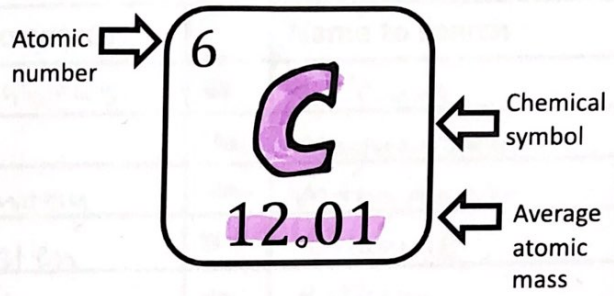
Kate

Background

The elements

The periodic table organizes all 118 known elements and provides information for each one. You can find the chemical symbol, the average atomic mass, and the atomic number for each atom.

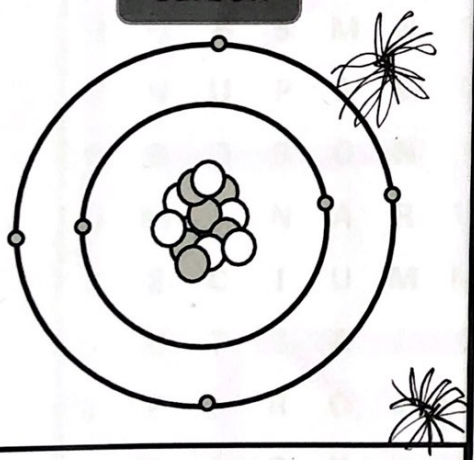


Organization

The periodic table is organized in such a way that many patterns emerge. One of the first patterns that we can see relates to the little number located at the top left of each chemical symbol square. This number is referred to as the atomic number, and it represents the number of protons in each element. If the atomic number is 1, then the element is Hydrogen, with a chemical symbol of H. The periodic table is arranged by increasing atomic number.

The average atomic mass also increases as you move along the table. It is called average, because in nature, atoms have different masses. Just like people weigh different amounts. You can estimate that if the average mass of Carbon is 12.01 amu (that is atomic mass units), then most Carbon atoms found in nature will have a mass of 12 amu.

Carbon



How do I know this is a Carbon atom? If you count the protons, you will see that there are 6 of them. This number is the same as the atomic number. In the periodic table you will find that the element with an atomic number of 6 is carbon.

Subatomic particles

An atom is made up of 3 subatomic particles.

If you look in the middle of an atom, you will find the nucleus. The nucleus is made up of protons and neutrons. The protons have a positive charge. The neutrons have a charge of 0. Together they make up an atom's mass.

Electrons orbit around the nucleus. They are tiny and not not contribute to mass. However, they have a negative charge that is important. If an atom has the same number of protons and electrons, it will be considered neutral and will have a charge of 0.

Electron – negative charge
Proton – positive charge
Neutron – no charge

Element Symbols - Word Search

Name: Kate Date: march 27 Period: 3

	Name to search		Name to search		Name to search
Na	Sodium	P	Phosphorus	Ca	Calcium
K	Potassium	Sn	Tin	Mg	magnesium
Fe	Iron	Sb	antimony	Mn	manganese
Cu	Copper	W	Tungsten	Cl	Chlorine
Si	silicon	Co	Cobalt	He	Helium
S	Sulfur	Pb	Lead	Kr	Krypton

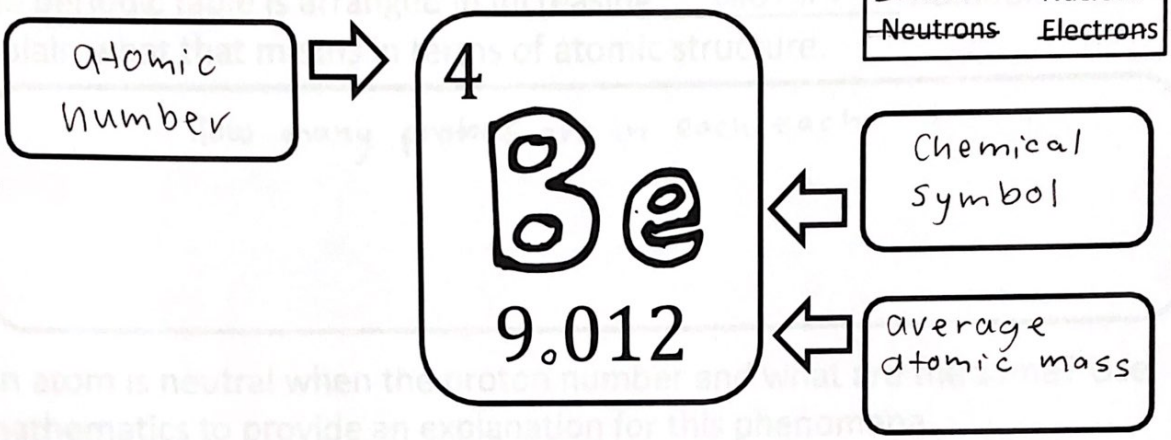
E A C R U F L U S H Y D R O G E N M
T N N P I K A C H N A M E T H A A T
P T I T A B L E O Y N O M I T N A T
H E T R P P U C P L T O E S G P R U
O S R H O G I R O M Y N Y A N E O N
S I I E D L E M K A R S N E O N O G
P R T H I T H E E G A E A R T T U S
H O E S M N E C M N S N A L P Y O T
O N U P R M L H O E N T E Y T R I E
R B O R O N I I N S Y S R I L E H N
U M I N A R U G G I T K N E G Y X O
S E C I U M M H O U A D M U I D O S
D U T C A L C I U M U R A N I U M G
E F L R O S I L V E R G O L D N L O
N E A O Y P O T A S S I U M E S E R
S I B M T O P F L A H M U I L L A T
I L O I U M S E L E N U M T I N D I
T C C A R B O N R X E N O N N E O N

Element Symbols

Name: Kate Date: 3/27 Period: 3

Word bank:
~~Average atomic mass~~
~~Atomic Number~~
~~Chemical Symbol~~
~~Protons~~ ~~Nucleus~~
~~Neutrons~~ ~~Electrons~~

Instructions: Label the parts for the element below.



What is the name of the element with the label Be?

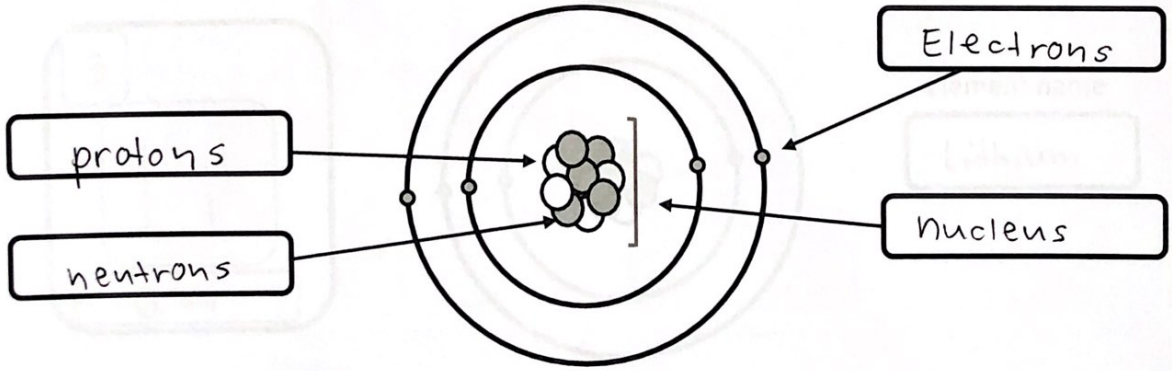
Beryllium

The atomic number refers to the number of what subatomic particle?

protons

Atomic mass refers to which subatomic particles?

protons + neutrons



Element Questions

Name: Kate Date: _____ Period: __

Instructions: Answers the questions below.

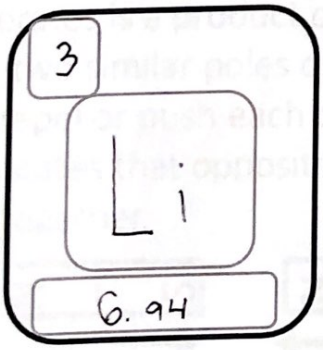
The periodic table is arranged in increasing atomic number. Explain what that means in terms of atomic structure.

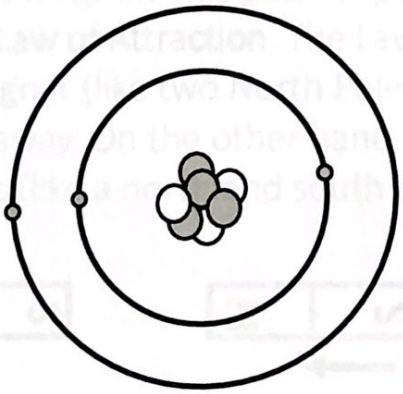
How many protons are in each each

An atom is neutral when the proton number and what are the same? Use mathematics to provide an explanation for this phenomena.

electron number are the same.

Instructions: Identify the element represented in the diagram. Fill out the periodic table square with the correct information found in the periodic table.





Element name

Lithium