Subatomic Particles

1. a) How can you use the periodic table to determine the number of protons in an atom?

   b) How can you tell the atomic number from the atomic mass on the periodic table?

2. a) How can you determine the number of electrons in an atom?

   b) Why do the number of electrons and protons have to be equal?

3. a) What's the difference between the atomic mass and the mass number?

   b) How can you determine the number of neutrons in an atom?

   c) How can you be sure which number is the atomic number and which number is the atomic mass?

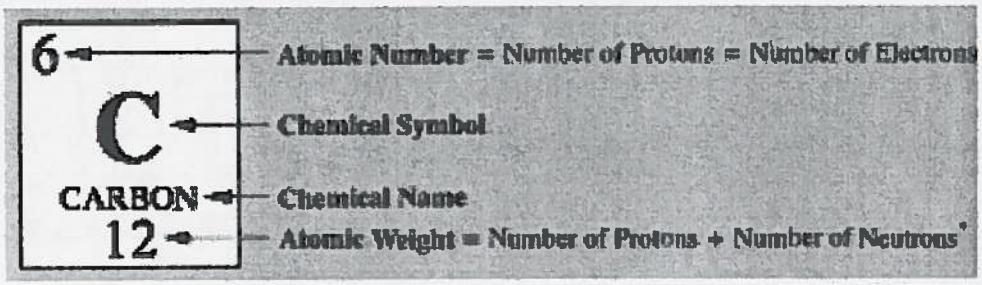
4. Use the periodic table to complete the table below with the correct information for each atom. Round atomic mass to the nearest whole number to obtain the mass number.

Element name	Element symbol	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
hydrogen						
helium						
lithium						
beryllium						
boron						
carbon						
nitrogen						
oxygen						
fluorine						
neon						
sodium						
magnesium						
aluminum						
silicon						
phosphorus						
sulfur						
chlorine						
argon						
potassium						
calcium						

Elements

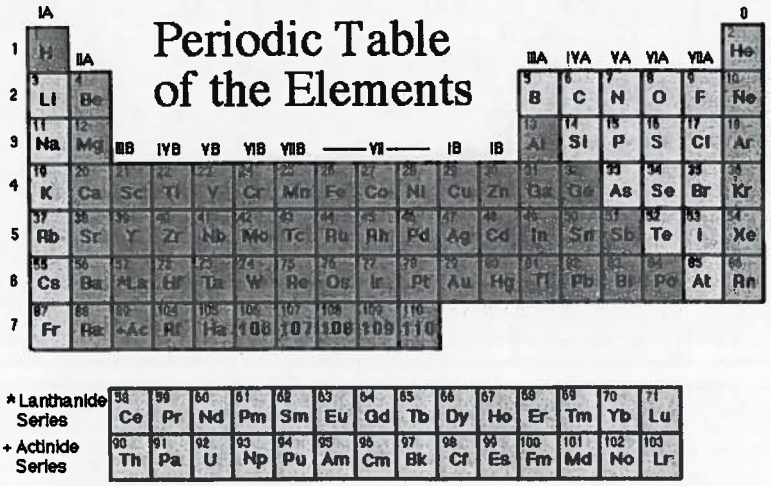
Elements in the Periodic Table are identified by their chemical symbol:

the first letter is capitalized; if a second letter is present, it is lowercase.



The rows of the Periodic Table are called **periods**

The columns are called **groups or families**.

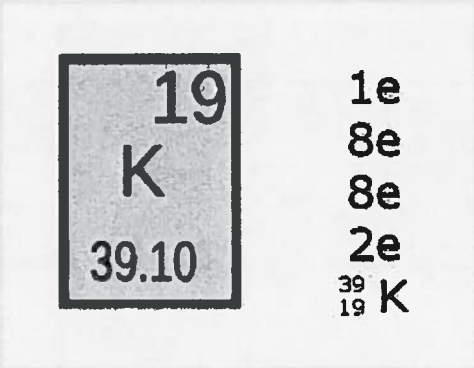


Bohr's Model of the Atom

Bohr's model:

-electrons orbit the nucleus like planets orbit the sun

-each orbit can hold a specific maximum number of electrons



Bohr's Model of the Atom

Bohr's model:

-electrons orbit the nucleus like planets orbit the sun

-each orbit can hold a specific maximum number of electrons

orbit	maximum # electrons
1	2
2	8
3	8
4	18

Review of Grade 9 Chemistry

SNC2D

184-186

Refer to p. ~~140~~ – 148.

1. Matter is anything that has _____ and takes up _____.

2. Classify each of the following properties as either physical (P) or chemical (C):

____ colour	____ boiling point	____ flash point
____ flammability	____ malleability	____ solubility
____ state	____ reaction with water	____ conductivity

3. Match each of the following terms to its definition:

_____ compound	A. matter made up of only one kind of particle
_____ element	B. a mixture that looks the same throughout
_____ heterogeneous mixture	C. a pure substance made from two or more elements
_____ homogeneous mixture	D. a homogeneous mixture of a substance in a liquid
_____ mixture	E. a pure substance made from only one kind of atom
_____ pure substance	F. a mixture in which different parts are visible
_____ solution	G. a cloudy liquid mixture in which particles may be seen i
_____ suspension	H. a combination of pure substances

4. Complete the following table:

Atomic Particle	Symbol	Mass (amu)	Charge	Location
Proton				
		1	0	
				in shells surrounding the nucleus

5. Explain what determines the atomic number of an element:

_____

Explain what determined the atomic mass number of an element:

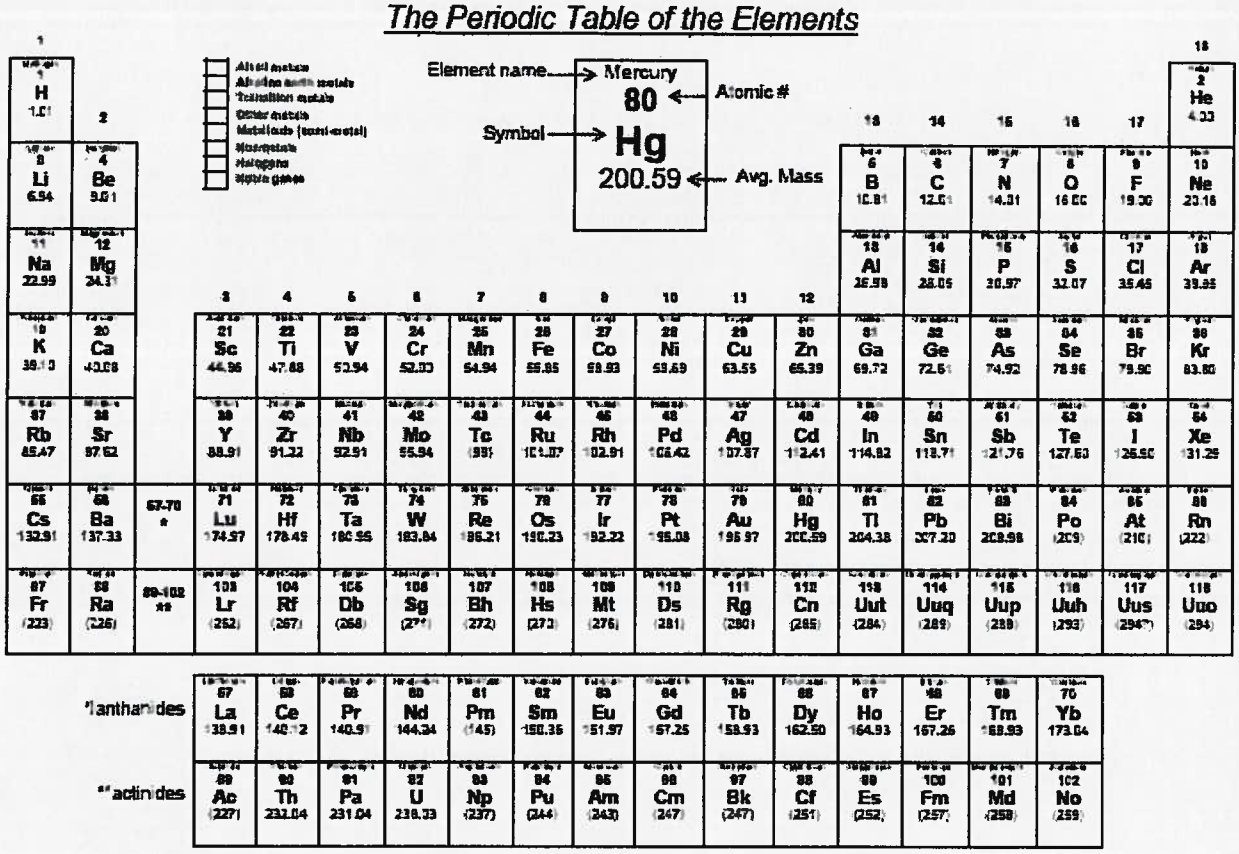
_____

6. Complete the following table:

Name	Symbol	Atomic Number	Atomic Weight	Number of Protons	Number of Electrons	Number of Neutrons
Carbon	C	6	12			
Sodium						
	F					
		1				
Neon						
		13				
	Mg					
		18				
Silicon						
	K					
		3				
Calcium						
		17				
	P					
Gold						

Note: You *can* have a different number of neutrons in the nucleus without changing the type of element; these atoms with different numbers of neutrons are called *isotopes*.

7. In the periodic table below, colour the metals green, the metalloids purple, and the non-metals yellow.



8. Metals may be found on the _____ side of the periodic table.

Non-metals may be found on the _____ side of the periodic table.

The horizontal rows of the periodic table are called _____.

Elements in the same row have the same number of _____.

The vertical columns of the periodic table are called _____.

Elements in the same column have the same number of _____.

Which column contains the most reactive metals? What is the name for these elements?

_____

Which column contains that most reactive non-metals? What is the name for these elements?

_____