

Subatomic particles

Proton
Electron
Neutron
Electron Shells/orbitals/energy levels
Nucleus

6	Atomic number
C	Symbol
Carbon	Name
12.011	Average Atomic Mass

Partial Periodic Table of the Elements

1A								8A		
1 H Hydrogen 1.0079								2 He Helium 4.0026	1	
2A		3A	4A	5A	6A	7A				
3 Li Lithium 6.941	4 Be Beryllium 9.0122	5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.0067	8 O Oxygen 15.9994	9 F Fluorine 18.9984	10 Ne Neon 20.1797	2		
11 Na Sodium 22.9898	12 Mg Magnesium 24.3050	13 Al Aluminum 26.9815	14 Si Silicon 28.0855	15 P Phosphorus 30.9738	16 S Sulfur 32.066	17 Cl Chlorine 35.4527	18 Ar Argon 39.948	3		

RED = proton

YELLOW = electron

BLUE = neutron

Using the atom building model or laminated atom model, build each of the following atoms of elements. Alternate with your seat partner. You build an atom and then your partner builds one.

- | | | |
|-------|-------|--------|
| 1. H | 5. Mg | 9. Ne |
| 2. He | 6. O | 10. Cl |
| 3. N | 7. Na | 11. Al |
| 4. Si | 8. C | 12. Li |

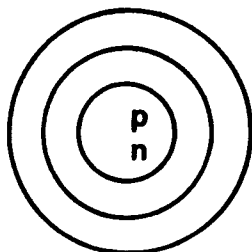
QUESTIONS: After you build the atoms of the different elements, answer the questions.

- In a "happy" atom, (neutral, no charge) the # of protons = the # of _____. Why?
- How is hydrogen (H) different from the other elements? (If you don't know the answer, build the atom again for a clue.)
- Notice the difference in mass between H and He. Why is this?
- Look at all 18 elements in your partial periodic table above. What is the relationship between the atomic number and atomic mass for each element except hydrogen?
- Move on to the next activity: **Drawing atoms**. Get this from teacher.

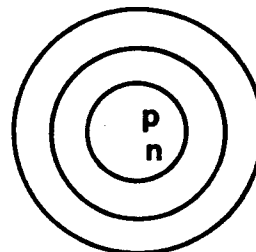
ATOMIC STRUCTURE

Use the information provided for each element to complete the diagrams. Draw the electrons in their proper shells, and place the correct numbers in the nucleus to indicate the number of protons and the number of neutrons. [Remember: The first electron shell holds up to 2 electrons before it is filled. The 2nd and 3rd shells hold up to 8 electrons before they are filled.]

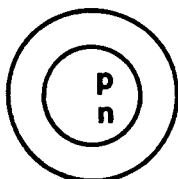
1. Sulfur: atomic number 16
atomic mass 32



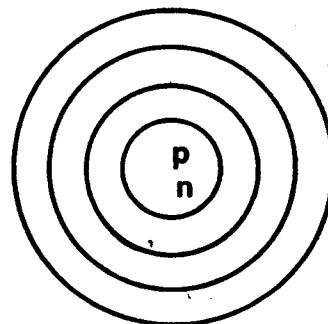
4. Sodium: atomic number 11
atomic mass 23



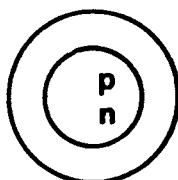
2. Beryllium: atomic number 4
atomic mass 9



5. Potassium: atomic number 19
atomic mass 39



3. Nitrogen: atomic number 7
atomic mass 14



6. Argon: atomic number 18
atomic mass 40

