

Integrated Science - Phusikos 1 - 4
(Atomic Structure, Valence Electrons & Periodic Table, Lewis Dot, Bonding)

Phusikos 1 - 4:

List of reference material and practice sheets: (*collect all of these materials...*)

Phusikos 1 (Atomic Structure)

What is an atom notesheets (Phusi 1 Notes: Part 1, Periodic Table)

Phusi 1 Practice 1 (shell diagram)

Phusi 1 Practice 2 (shell diagram)

Orbitals notesheets, "Box" representations (Phusi 1 Notes: Part 2)

~~Phusi 1 Practice 3 (build a model)~~

Phusi 1 Practice 4 (box diagrams)

Phusikos 2 (Valence Electrons)

The elements and valence electrons (Classifying Elements: Phusi 2 Notes)

Valence electrons notesheets (Phusi 2 Notes)

Phusi 2 Practice 1 (highlight-y thing on P1P4)

Phusi 2 Practice 3 (valence electrons)

Phusi 2 Practice 4 (valence electrons)

Phusi 2 Practice 5 (PT and valence electrons)

Phusikos 3 (Lewis Structures for atoms)

Introduction notesheets (Phusi 3 Notes)

Phusi 3 Practice 1 (Lewis structures for atoms - back of the notesheet)

Phusi 3 Practice 2 (Lewis structures for atoms)

Phusikos 4 (Bonding)

Bonding notesheet (Phusi 4 Notes, plus the examples sheet(s))

Phusi 4 Practice 1 (atom, atom, bonded - Lewis diagrams)

Phusi 4 Practice 2 (Lewis diagrams of bonding)

Phusi 4 Practice 3 (Lewis diagrams of bonding, compare and contrast)

Key terms and concepts

atom	diagram an atom
element	shell diagram
nucleus	box (orbital) diagram
proton	
atomic number	
neutron	
mass number	
electron	
shell	
orbital	

outershell
outershell electrons
valence electrons
full outer shell
 number of electrons to lose / gain to get a full outer shell

Lewis Dot Structures for atoms

metal atoms lose electrons
nonmetal atoms “want” more electrons
chemical bond
covalent bond
 sharing electrons b/w atoms
 share enough pairs to get FOS
 electrons shared in pairs
 can share one pair (single bond), two pairs (double bond), three pairs (triple bond)
ionic bond
 transferring electrons ... from metal atom to nonmetal atom
 positive ion
 negative ion
 opposites attract
nonmetal atom + nonmetal atom - covalent bond
metal atom + nonmetal atom - ionic bond

Shell diagrams
 for atoms
 for bonded atoms and ions
Lewis structures
 for atoms
 for bonded atoms and ions