

Review Booklets

Follow the directions in *italics*

Copy everything in **bold**

Page One

Matter: Anything that has mass and takes up space *Draw some examples of things with matter*

Volume: The amount of space something takes up *Draw a picture to represent volume*

Mass: How much stuff (atoms) an object is made of. *Draw a picture of an object and that atoms that make up that object*

Density: The amount of mass in a certain amount of space. Calculated with $D = \text{Mass} / \text{Volume}$

Draw the density column like the demonstration

Page Two

Atoms: The smallest unit of matter.

Draw a large bohr model of any element you chose and label the following:

Electrons: Negatively charged part of an atom that rotate around the nucleus on energy shells

Protons: Positively charged part of an atom found in the nucleus

Neutrons: Neutrally charged (no charge) part of the atom found in the nucleus

Nucleus: Center of the atom where the mass of the atom is stored (protons and neutrons)

Page Three

The periodic table: founded by Demetri Mendeleev to organize elements by their atomic number or amount of protons

Draw one element with its atomic number on top and mass on the bottom and label the following:

Atomic number: Tells you how many protons the element has

Atomic mass: Tells you how many protons + neutrons the element has. Subtract the atomic mass minus the atomic number to get just the neutrons.

Draw an outline of the periodic table with 18 groups and 7 periods and label the following

Groups: the vertical columns. 18 total. Groups determine how many valence electrons an element will have and certain characteristics like reactivity.

Periods: The horizontal rows. 7 total. Periods tell how many shells will be on the atom.

Shade the metals dark, lightly shade the metalloids and leave the nonmetals unshaded and label metal, nonmetal, and metalloid in a key.

Page Four

Bohr Model: A diagram of the atom that shows subatomic particles and energy shells.

Draw a Bohr model and label the following:

Valence Electrons: Electrons on the outer energy shell

Energy Shells: Hold the electrons around the nucleus.

Lewis Dot Diagram: a diagram with the chemical symbol surrounded by the valence electrons

Draw an example of a lewis dot diagram

Page Five

Split the page into two sides **Physical properties and Chemical Properties**

Side one: Physical Properties: A characteristic of a substance that does not change the substance when observed

Write the following and draw a picture to represent each

Solubility: ability to dissolve

Malleability: ability to be rolled into sheets

Density: closeness of particles

Ductility: ability to be a wire

Conductivity: ability to let heat/electricity pass through

Side two: Chemical properties: a characteristic of a substance that changes the chemical makeup when observed

Write the following and draw a picture to represent each

Reactivity: ability to react

Flammability: ability to catch on fire

Signs of a chemical change: Gas release, color change, smell, fire/light

Page Six

Ionic Bonding: The chemical bond between a metal (cation-giver) and a nonmetal (anion-taker).

Ions: when an atom gives or takes electrons

Oxidation Number: The amount of electrons given or taken. Giving makes it positive, taking makes it negative.

Draw a picture of Na + Cl bonding. (Lewis dot with arrows to show the electrons being given)

Covalent bonding: The chemical bond between two nonmetals that involves the sharing of electrons.

Draw a picture of H + O bonding. (Bohr models with the outer shell going through the shared electrons)

Page Seven

Balancing equations

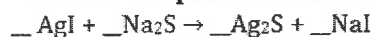
Write the following equation and label it with:

Subscript: the number below the element that tells us how many atoms there are

Coefficient: the number we place in front of the element that we multiply by the subscript

Reactants: The part of the reaction that we start with

Product: The part of the reaction that we end with



Balance the equation^