**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_**

**Short Cycle Assessment #1 Review (9/11, 9/12)**

**Tested TEKS:**

**8.1A** demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards

**8.1B** practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials

**8.4 B** use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher

**8.5 A** describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud

**8.5 B** identify that protons determine an element’s identity and valence electrons determine its chemical properties, including reactivity

**8.3 B** use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature

**8.3 C** identify advantages and limitations of models such as size, scale, properties, and materials

**8.3 D** relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content

**Vocabulary:**

**Atom –** the smallest particle of an element that still retains the properties of that element

**Nucleus –** the center of the atom

**Proton –** the positively charged particle located in the atom’s nucleus

**Neutron –** the particle with a neutral or zero charge located in the atom’s nucleus

**Electron** – the negatively charged particle located outside the atom’s nucleus

**Valence Electrons –** electrons located in the outermost shell or energy level/orbital of an atom

**Mass – the amount of matter in an object**

**Atomic Number –** the number of protons in an atom of an element

**Reactivity –** describes how a substance combines with another substance (element or compound ‘personality’)

**Structure –** in chemistry this is the manner in which atoms are joined together or bonded

**Electron Cloud –** model of the atom that says the electrons are outside the nucleus in a cloud-like are

**Periodic Table –** the chart that organizes all of the elements according to theirproperties

**Period –** in chemistry, this is a row of elements in the periodic table (it tells you how many energy levels or orbitals an atom has in its atomic structure)

**Element –** a pure substance that cannot be separated into simpler substances (organized on the periodic table)

**Metals –** elements that are solid at room temperature, good electrical conductors, ductile, and has luster (most of the elements on the periodic table are metals)

**Ductile –** a physical property of matter that describes the ability to be pulled into a wire

**Malleable –** a physical property of matter that describes the ability to be pounded into thin sheets

**Beaker** – A wide cylindrical glass vessel with a pouring lip, used as a laboratory container and mixing jar

**Graduated Cylinder** – a narrow, cylindrical container marked with horizontal lines to represent units of measurement and used to precisely measure the volume of a liquid.

Flammability –

**Contamination** – to make impure or unsuitable by contact or mixture with something unclean, bad, etc

**Corrosive** – Corrosive refers to a substance that has the power to cause irreversible damage or destroy another substance

**Toxic** – poisonous

**Lab Safety Notes**:

* Report all accidents, injuries, and breakage of glass or equipment to instructor immediately.
* Keep pathways clear by placing extra items (books, bags, etc.) on the shelves or under the work tables. If under the tables, make sure that these items cannot be stepped on.
* Long hair (chin-length or longer) must be tied back to avoid catching fire.
* Wear sensible clothing including closed-toe footwear. Loose clothing should be secured so they do not get caught in a flame or chemicals.
* Work quietly — know what you are doing by reading the assigned experiment before you start to work. Pay close attention to any cautions described in the laboratory exercises
* Do not taste or smell chemicals. Only when directed by the instructor, use the wafting motion.
* Wear safety goggles to protect your eyes when heating substances, dissecting, etc.
* Do not attempt to change the position of glass tubing in a stopper.
* Never point a test tube being heated at another student or yourself. Never look into a test tube while you are heating it.
* Unauthorized experiments or procedures are prohibited.
* Keep solids out of the sink.
* Leave your work station clean and in good order before leaving the laboratory.
* Do not lean, hang over or sit on the laboratory tables.
* Do not leave your assigned laboratory station without permission of the teacher.
* Learn the location of the fire extinguisher, eye wash station, first aid kit and safety shower.
* Fooling around or "horse play" in the laboratory is absolutely forbidden. Students found in violation of this safety rule will be barred from particpating in future labs and could result in suspension.
* Do not lift any solutions, glassware or other types of apparatus above eye level.
* Follow all instructions given by your teacher.
* Learn how to transport all materials and equipment safely.
* Always use two hands when carrying a microscope or triple beam balance.
* No eating or drinking in the lab at any time!

**Atomic Structure Notes**:

* An atom is the smallest unit of an element that retains all of the properties of that element.
* Atoms are made up of subatomic particles called electrons, protons, and neutrons.
* Protons and neutrons are located in the center of the atom, called the nucleus, and determine the mass of an atom.
* Neutrons (located in the nucleus) are neutral so they have no electrical charge. They have a mass of about 1 atomic mass unit (amu).
* Protons have a positive electrical charge and they also have a mass of about 1 amu. An element can be identified by its atomic number, or the number of protons located in its nucleus.
* Electrons are located outside of the nucleus of an atom in the “electron cloud.” There are a certain number of electrons that each energy level of the electron cloud can hold. They have a negative electrical charge. They are smaller and have less mass than protons and neutrons and therefore contribute very little to the overall mass of an atom.
* Protons and electrons determine the overall electrical charge of an atom.
* Atoms that have the same number of protons and electrons do not have an electrical charge.
* Valence electrons are the electrons located in the outermost energy level of an atom. They can be transferred or shared by atoms and thus determine the reactivity of an atom. The reactivity of an atom is how easily and readily its valence electrons interact with the valence electrons of other atoms.
* Atoms can gain or lose valence electrons, which change the electrical charge of the atom. Charged atoms are called ions.
* The number of protons in the nucleus of atom are used to determine the identity of elements on the periodic table.
* The reactivity of an atom is how easily and readily its valence electrons interact with the valence electrons of other atoms. Atoms can gain or lose valence electrons, which change the electrical charge of the atom. Charged atoms are called ions.
* The most dense area of the atom is the nucleus (most mass) and the most volume of an atom in the electron cloud.