

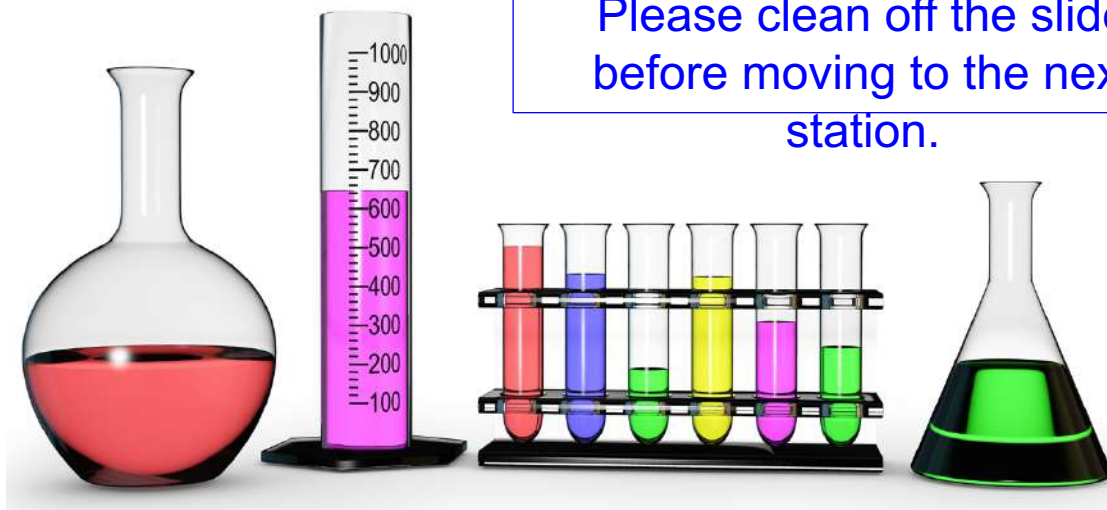
Lab Station #1

Directions: Chemistry is the study of the composition, structure, and properties of matter, the processes that matter undergoes, and the energy changes that accompany these processes. All substances have characteristic properties. These properties are used to describe matter and to reveal the identities of unknown substances.

Task: What is the difference between a chemical and physical property?

Procedure:

1. Locate the small stoppered flask. Describe the contents.
2. Place a strong magnet against the side of the flask. Describe what happens.
3. Are the properties you just observed physical properties or chemical properties? Explain your answer.
4. Locate the microscope slide, starch solution and iodine solution. Place several drops of the starch solution onto the microscope slide. Add one drop of iodine. Describe what happens.
5. Are the properties you just observed physical properties or chemical properties? Explain your answer.

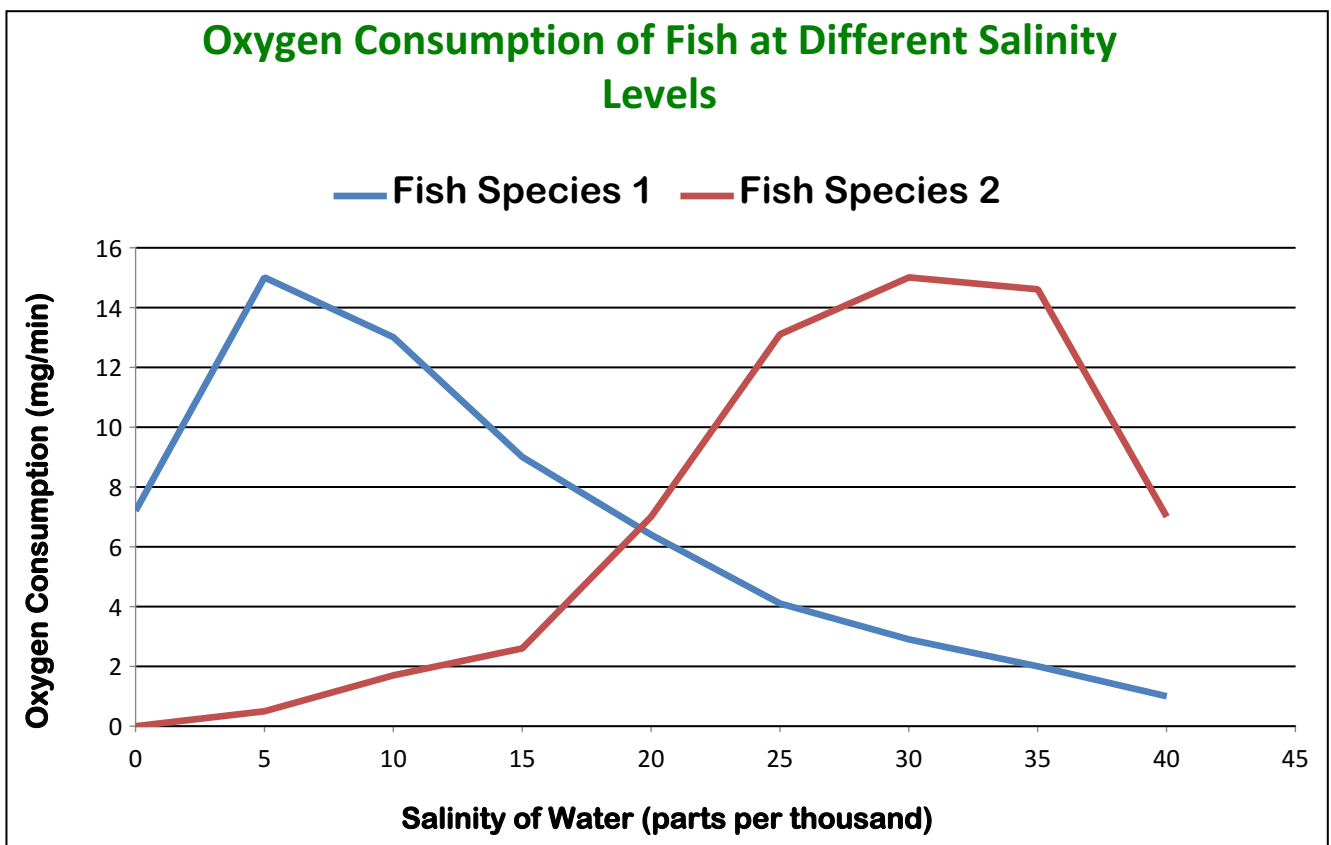


Please clean off the slide
before moving to the next
station.

Lab Station #2

Directions: Collecting, organizing and graphing data is an extremely important skill in a science class. Viewing data in various graphical formats allows a scientist to make comparisons, identify similarities and differences, and form conclusions. Study the graph below to get an idea of the data being presented. Then answer the questions on your Chemistry Chat handouts.

Task: Study the graph and complete the questions on your Chemistry Chat handout.



Lab Station #3

Directions: The periodic table is broadly divided into metals and nonmetals. The metals are found on the left side of the periodic table and the nonmetals are found to the right side of the periodic table. A few elements have characteristics of both metals and nonmetals. You will notice that a variety of elements have been placed at this station. Can you determine which are metals and which are nonmetals? What are the characteristics of metals and nonmetals?

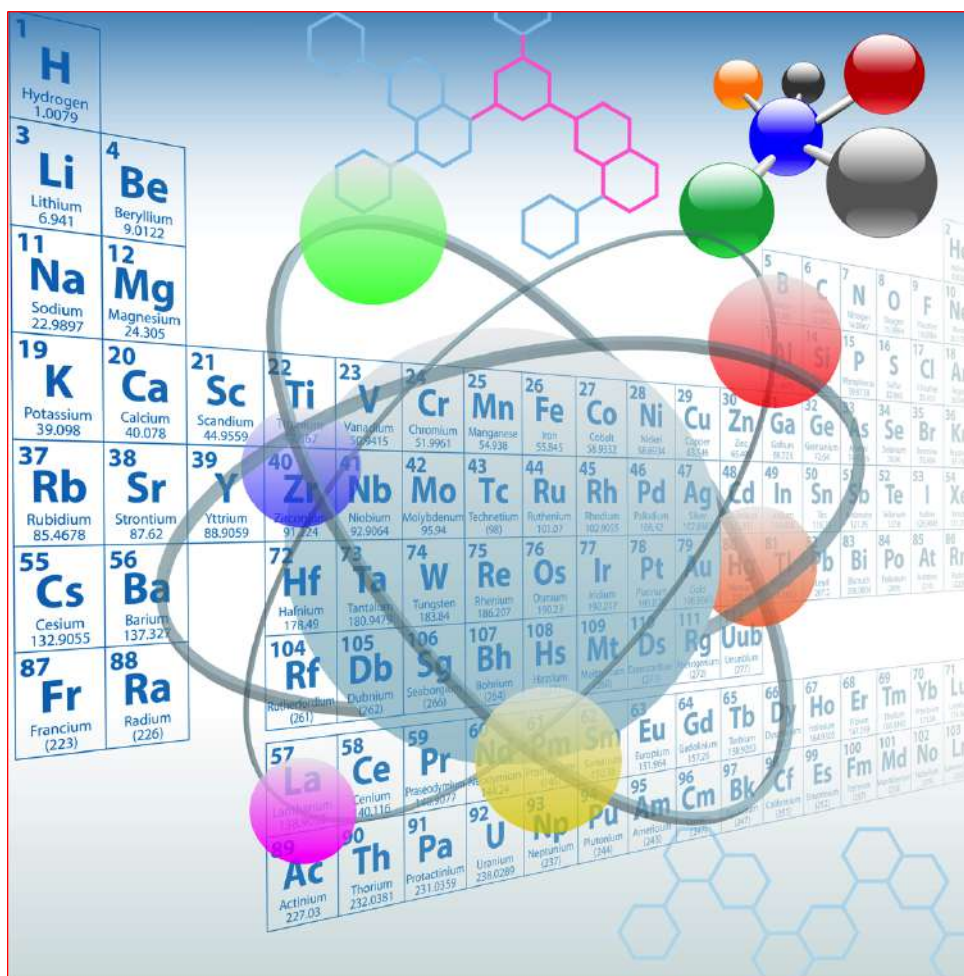
Task: Determine the characteristics of metals and nonmetals.



Lab Station #4

Directions: The elements are organized into groups based on similar chemical properties. This organization of elements is known as the periodic table. You will be VERY familiar with the periodic table and all it has to offer before you leave this class at the end of the year. Can you remember some basic traits about the periodic table?

Task: Answer the questions on your Chemistry Chat handout using the periodic table found at this lab station.



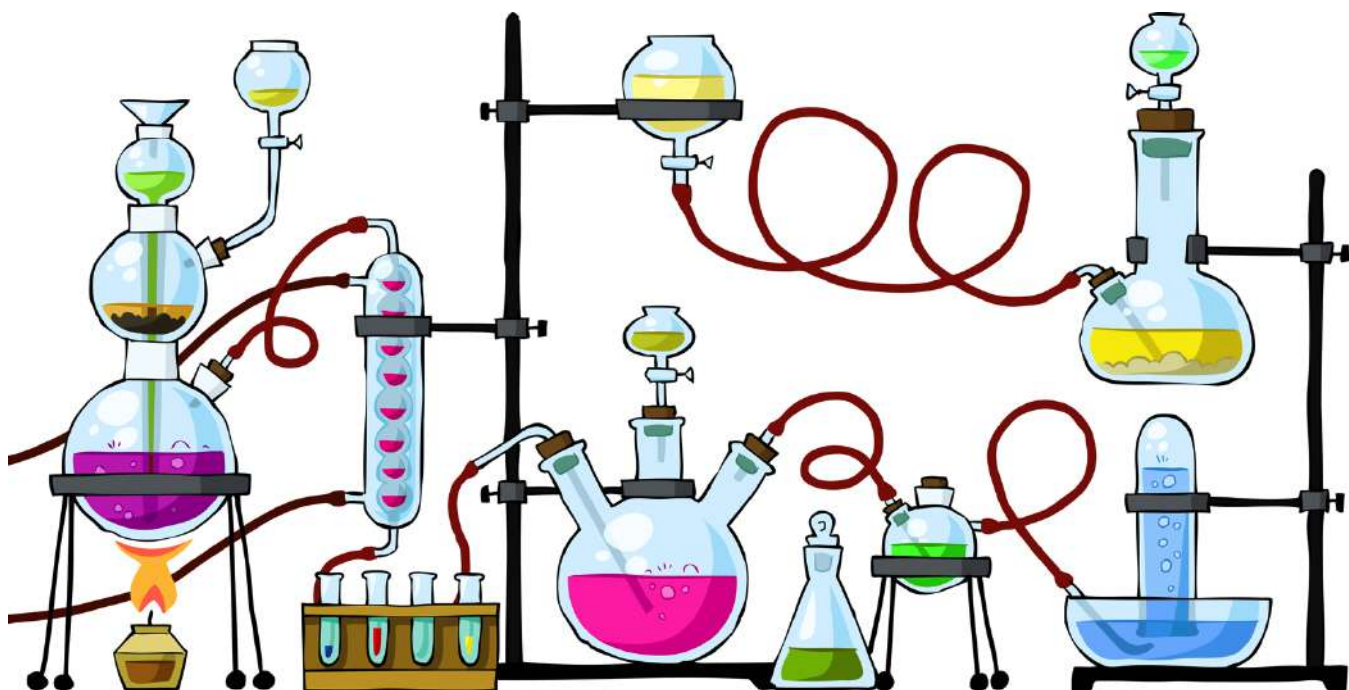
The image shows a periodic table of elements with a stylized atomic model overlaid. The atomic model features a central nucleus with protons (red) and neutrons (black), surrounded by three electron shells containing electrons (blue, green, and red spheres). The periodic table is color-coded by groups: Group 1 (purple), Group 2 (orange), Transition Metals (blue), Groups 13-18 (green, yellow, orange, red, pink), and Lanthanides/Actinides (purple, blue, green, yellow, orange, red, pink). The table includes element symbols, names, and atomic numbers.

1 H Hydrogen 1.0079																	2 He Helium 4.0026											
3 Li Lithium 6.941	4 Be Beryllium 9.0122															5 B Boron 10.81	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180							
11 Na Sodium 22.9897	12 Mg Magnesium 24.305															13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.06	17 Cl Chlorine 35.45	18 Ar Argon 39.948							
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.9559	22 Ti Titanium 47.88	23 V Vanadium 50.9415	24 Cr Chromium 51.9961	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.9332	28 Ni Nickel 58.6934	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.630	33 As Arsenic 74.9216	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.798											
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.9059	40 Zr Zirconium 91.224	41 Nb Niobium 92.9064	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.9055	46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.757	52 Te Tellurium 127.6	53 I Iodine 126.905	54 Xe Xenon 131.29											
55 Cs Cesium 132.9055	56 Ba Barium 137.327	57 La Lanthanum 138.905	72 Hf Hafnium 178.49	73 Ta Tantalum 180.9479	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.222	78 Pt Platinum 195.084	79 Au Gold 196.967	80 Hg Mercury 200.59	81 Tl Thallium 204.387	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [209]	85 At Astatine [210]	86 Rn Radon [222]											
87 Fr Francium (223)	88 Ra Radium (226)	89 La Lanthanum (138.905)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (277)	109 Mt Meitnerium (268)	110 Ds Darmstadtium (271)	111 Rg Roentgenium (272)	112 Uub Ununbium (277)	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.930	70 Yb Ytterbium 173.054	71 Lu Lutetium 174.967								
		58 Ce Cerium 140.116	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.242	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.930	70 Yb Ytterbium 173.054	71 Lu Lutetium 174.967	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (260)
		89 Ac Actinium 227.03	90 Th Thorium 232.0381	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (260)												

Lab Station #5

Directions: A good scientist must be able to use scientific tools to make accurate observations. While studying science in this class, you will be required to use many pieces of lab equipment to help you collect data and to make observations. It is essential that you be able to use each piece of equipment accurately and safely. Today you will be identifying the 5 pieces of equipment you see at this lab station.

Task: Identify each piece of lab equipment that is used to make measurements. What does it measure and in what unit?



Lab Station #6

Directions: This is a lab-oriented course and a considerable amount of our time will be spent in the lab. Laboratory investigations are designed to give you a "hands-on" knowledge of science. However, any lab-science course has certain potential dangers. Most of these are easily coped with if the teacher and the student exercise careful planning and develop good safety habits. At this station you will observe the safety features of this lab. Look around the lab and identify as many lab safety features as possible. Choose five safety features and list them on your handout. Answer the questions on your Science Chat handout.

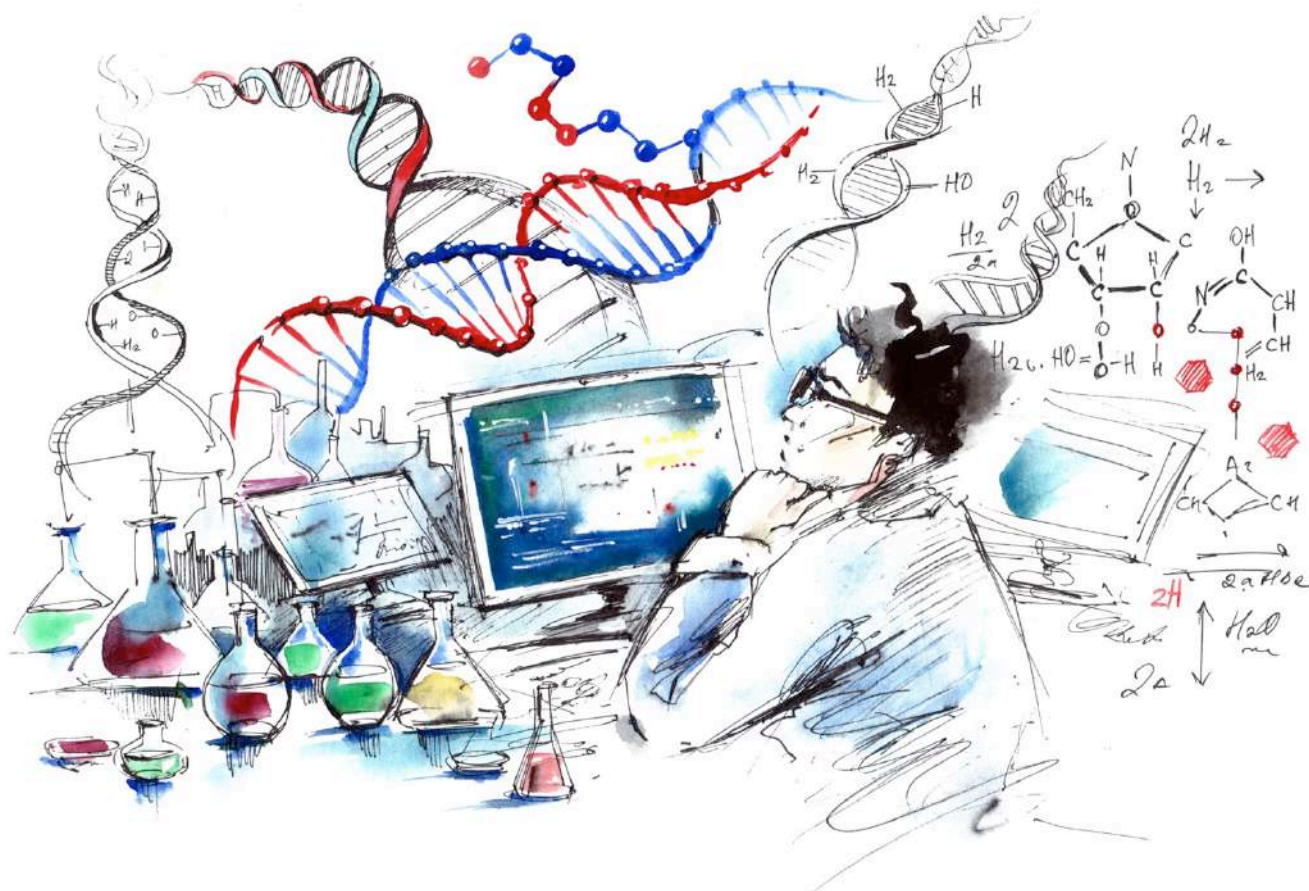
Tasks: Make observations about the lab safety features of this lab.



Lab Station #7

Directions: The goal of science is to investigate and explain the natural world. Science begins with observation. Observation allows us to gather information in an orderly fashion. Observation involves using the senses. At this station you will observe an interesting phenomenon known as “the dancing raisins.” Spend a few moments observing the dancing raisins, then answer the questions on your Chemistry Chat handout.

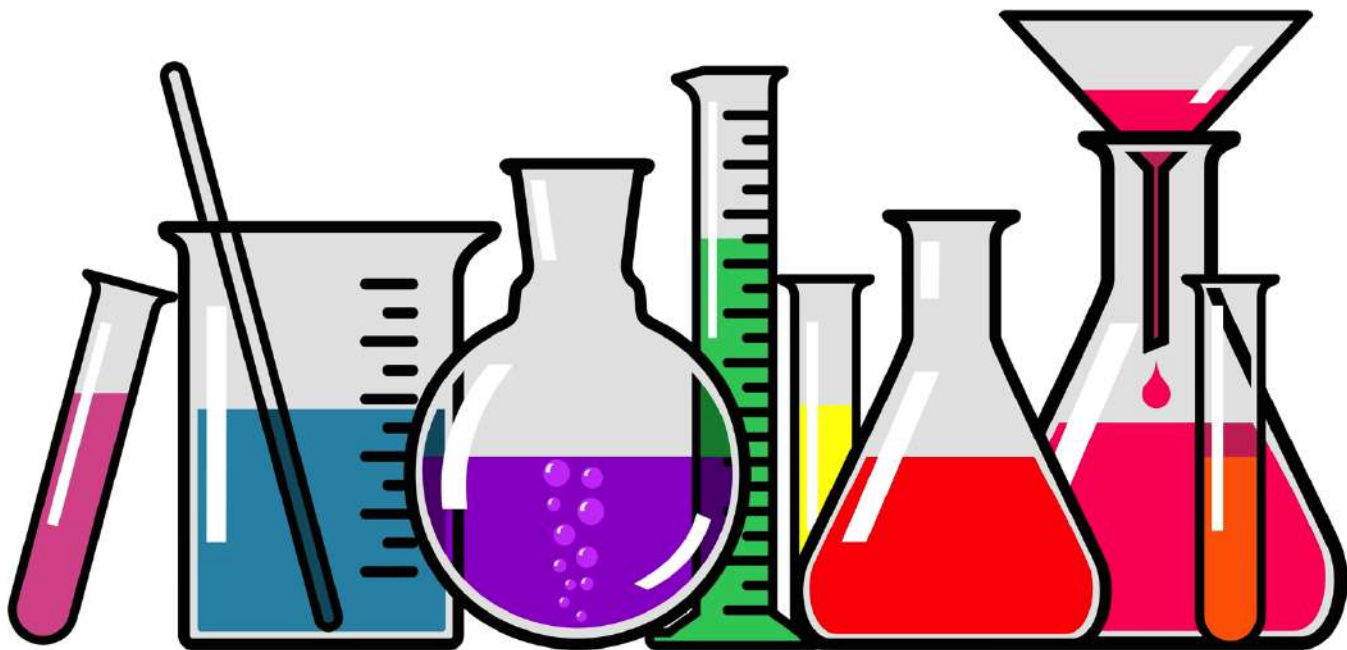
Task: Use your observation skills to form an explanation of the dancing raisins.



Lab Station #8

Directions: Throughout the year we will be carrying out many lab activities that will require metric measurements. The International System of Units (SI System) is the universal language of science. As a student of science, you must understand and be able to use this system of measurement. This station is a metric system scavenger hunt. You will notice a variety of objects at this station. Your job is to find the object that best fits each question/description found on your student handout.

Task: Find the object that best fits the metric measurement descriptions on the student handouts.



Lab Station #9

Directions: The study of physical science or chemistry requires an understanding of many scientific and technical terms. Many times the prefixes and suffixes used in a scientific term will give us clues as to the meaning of the word. Below you will see a list of common prefixes and suffixes used in physical science or chemistry. Use the chart below to determine the meaning of the words found on your student handouts.

Task: Determine the meaning of the terms on your handout using the prefixes and suffixes found in the chart below.



Prefix	Meaning	Suffix	Meaning
Calor -	Heat	- ation	The process of
Chem -	Chemical	- atmo	Air
Chromo -	Color	- celer	Swift, to hasten
Con -	Come together	- gen	To produce
Deca -	Ten	- graph	Recording
Fiss -	Split	- ician	Specialist
Fus -	Melt together	- ist	Person
Hetero -	Different	- ject	To throw
Homo -	Same	- mer	Part
Inter -	Between	- meter	Measuring instrument
Poly -	Many	- morph	Form
Pro -	Forward	- ology	Science of
Sci -	Knowledge	- on	Thing
Trans -	Across	- phon	Sound
Tri -	Three	- scope	Looking instrument
Uni -	Single	- spher	Ball
Vibr -	To shake	- us	Thing



Lab Station #10

Directions: Each element has its own chemical symbol. This provides a shorthand method for dealing with longer names. Chemical symbols consist of one capital letter or a capital letter plus one or two small letters. For many elements, the chemical symbol is simply the first letter of their name. For other elements, the symbol is the first letter of the name plus another letter from its name. Some symbols are derived from Latin, and as a result have a symbol that does not seem to fit the element. For example, “*Argentum*” is Latin for “silver.” That is why the symbol for silver is Ag. How many symbols can you remember for the elements?

Task: To determine the name and/or chemical symbols of a variety of elements.

