ATOMS

Name: _____

Refer to a Periodic Table and the Key below to fill out this table for each element. Start with helium as your first atom to make.

1. Fill out the table below with the correct values.
2. Assemble the nucleus using the proper number of large colored and white marshmallows. Stick them together with toothpicks.
3. Select the proper number of small colored marshmallows (all one color) as your electrons. Attach them one at a time to the nucleus with toothpicks.

ATOM	ATOMIC SYMBOL	ATOMIC NUMBER	NUMBER OF PROTONS	ATOMIC MASS (ROUNDED)	NUMBER OF NEUTRONS (Mass – Atomic Number)	NUMBER OF ELECTRONS
Hydrogen	*H*	*1*	*1*	*1.00*	*0*	*1*
Helium						
Lithium						
Beryllium						

Atomic Number **1**

Atomic Symbol **H**

Name **Hydrogen**

Atomic Mass **1.00794**

KEY

Number of Protons = Atomic Number
(Use the large colored marshmallows for protons)
Number of Neutrons = Atomic Mass – Atomic Number
(Use the large white marshmallows for neutrons)
Number of Electrons = Number of Protons
(Use the small colored marshmallows for electrons)

Name: _____

ATOMS: Ions & Isotopes

Refer to a Periodic Table and the Key below to fill out this table for each element.

1. Assemble the nucleus using the proper number of large colored and white marshmallows. Stick them together with toothpicks.
2. Select the proper number of small colored marshmallows (all one color) as your electrons. Attach them one at a time to the nucleus with toothpicks.
3. Turn the lithium atom into an ion, and note the information.
4. Turn either the lithium atom or the beryllium atom into an isotope. Record what you did.

ATOM	ATOMIC SYMBOL	ATOMIC NUMBER	# PROTONS	ATOMIC MASS	# NEUTRONS	# ELECTRONS
Lithium						
Beryllium						
Lithium Ion						
Isotope: _____						

Atomic Number	**3**
Atomic Symbol	**Li**
Name	**Lithium**
Atomic Mass	**7**

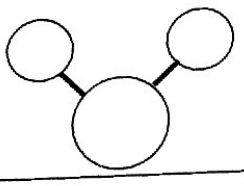
KEY

Number of Protons = Atomic Number
Number of Neutrons = Atomic Mass – Atomic Number
Number of Electrons = Number of Protons
Ions: Add or subtract an electron from the element
Isotope: Add or subtract a neutron from the element

Name: _____

Molecules

1. Color in the Molecule Color Key molecules with colored pencils as indicated.
2. Determine the number of elements in each molecule, and write it down.
3. Draw and color the molecule with the correct number of elements.
4. (skip) Make each molecule model using appropriately colored gumdrops and toothpicks.

Molecule	Elements	Draw It!
Water H_2O	H = _____ O = _____ N = _____ C = _____	
Carbon Dioxide CO_2	H = _____ O = _____ N = _____ C = _____	
Ammonia NH_3	H = _____ O = _____ N = _____ C = _____	
Methane CH_4	H = _____ O = _____ N = _____ C = _____	

Molecule Color Key

Hydrogen (yellow) ○

Oxygen (red) ○

Nitrogen (green) ○

Carbon (black) ○

Name _____

Periodic Table Activity sheet

Use the periodic table you made to answer each question

1. How are the atomic numbers and the atomic masses of the elements related to how the elements are arranged on the Periodic Table?

2. How does the number of electrons relate to the arrangement? What is the difference in the number of electrons in a 3rd period element and the 2nd period element above it?

3. Do some elements next to each other have the same number of neutrons? How is that possible?

4. How are the colors arranged, and what conclusions can be drawn from this arrangement?

Referring to the table below, write the name and number of the group above each color group on the periodic table you made.

Green	Blue	Orange	Red	Tan	Pink	Purple	Yellow
Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII	Group VIII
Alkali Metals	Alkaline Earth Metals	Boron Family	Carbon Family	Nitrogen Family	Oxygen Family	Halides	Noble Gases

5. Compare the location of the **Metals** groups in relation to the **Noble Gases** group. What is the significance of their locations on the Periodic Table?

6. Which groups have names that help you to remember where certain elements are located?

(Fill in Each Card using Periodic Table)

Periodic Table Cards

Sample Card

1 H *Hydrogen* *1.00* P = 1 N = 0 E= 1	___ H _____ _____ P = ___ N = ___ E=___	___ He _____ _____ P = ___ N = ___ E=___	___ Li _____ _____ P = ___ N = ___ E=___	___ Be _____ _____ P = ___ N = ___ E=___
___ B _____ _____ P = ___ N = ___ E=___	___ C _____ _____ P = ___ N = ___ E=___	___ N _____ _____ P = ___ N = ___ E=___	___ O _____ _____ P = ___ N = ___ E=___	___ F _____ _____ P = ___ N = ___ E=___

Periodic Table Cards