L.O.U.

Happy Atoms Lab

Name : _____,
Hour _____

Question: How can we determine which elements might react with one another?

Knowledge Probe. Watch the video "How Molecules Are Formed" to learn about electrons and how they bond. What makes an atom "happy"?

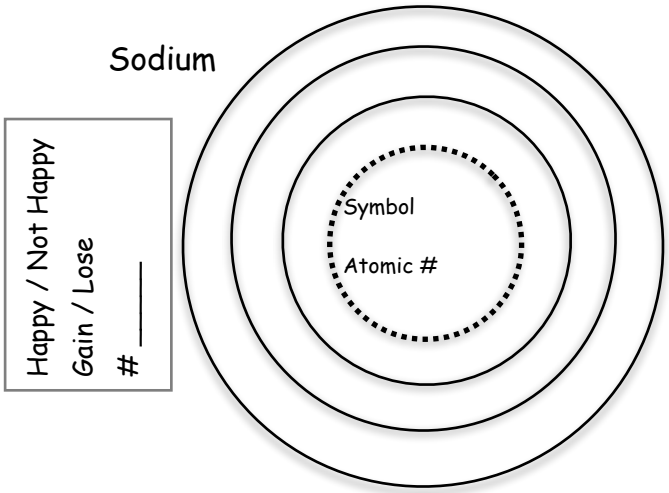
_____

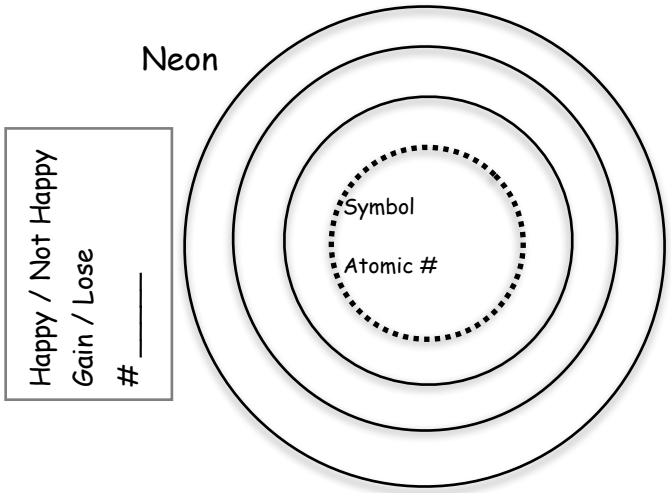
_____

Investigation Plan

1. Find the atomic number for the element; this will give you the number of electrons for the atom.
2. Arrange the electrons (dried beans) on the model beginning closest to the nucleus and working outward. Make sure you only use enough electrons to match the atomic number.
3. On your paper, write the chemical symbol for the element in the nucleus (center) of the atom.
4. Write down the atomic number above the chemical symbol.
5. Transfer your information from the model to your paper by drawing in the electrons on the correct energy levels.
6. Record if the atom is happy or not happy, if it would gain or lose electrons and the number it would gain (-#) or lose (+#).

Observations: Record the following observations in the space provided.





Oxygen

Happy / Not Happy
Gain / Lose
____

Boron

Happy / Not Happy
Gain / Lose
____

Beryllium

Happy / Not Happy
Gain / Lose
____

Fluorine

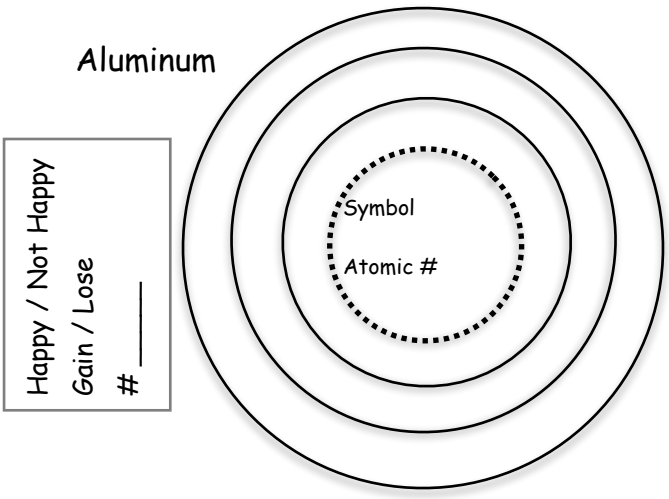
Happy / Not Happy
Gain / Lose
____

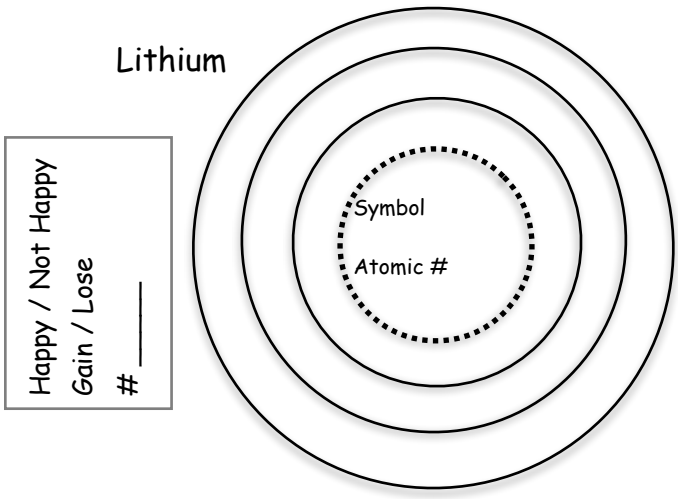
Magnesium

Happy / Not Happy
Gain / Lose
____

Helium

Happy / Not Happy
Gain / Lose
____





Data Analysis: Fill in the chart below that organizes the information you have about electron arrangements. Use this chart to help you answer the question of which elements will react with each other.

Element Symbol	Number of Electrons	1st Energy Level	2nd Energy Level	3rd Energy Level	Gain ? Lose ? Neither ?	How Many?
He						
Li						
Be						
B						
O						
F						
Ne						
Na						
Mg						
Al						

Explanation: Draw a model showing two atoms from this lab that would react with each other to make both of them happy. Highlight the transferred electrons and use an arrow to show the movement of electrons from one atom to another.

Grading Rubric:

_____ Atom 1 Correct # Protons
_____ Atom 1 Correct # Neutrons
_____ Atom 1 Correct # Electrons
_____ Atom 1 Correct Placement of Electrons
_____ Atom 2 Correct # Protons
_____ Atom 2 Correct # Neutrons
_____ Atom 2 Correct # Electrons
_____ Atom 2 Correct Placement of Electrons
_____ Correct electrons highlighted
_____ Correct arrow

_____ Number Correct/10