

Name _____

Period _____



Science 8

Date _____

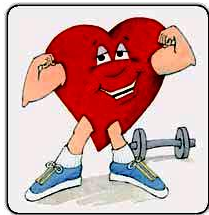
Atomic Dating Game

Directions: Atoms are lonely hearts that are constantly in search of partners to bring stability to their lives. Your job is to play matchmaker and make each atom stable by determining how many valence electrons each element needs and finding a partner that will complete the valence energy level.

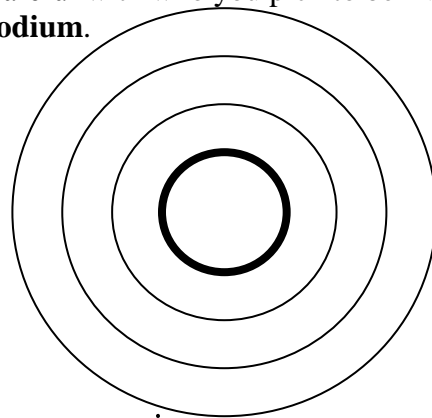
Hypothesis: If an element has _____
then it will be _____ because _____

Part 1: Let's meet our first bachelor, Mr. Sodium. Mr. Sodium is very lustrous but has an explosive personality when he gets near water or oxygen. He is quite a lonely metal that, like all metals, is looking to lose a few electrons! Since he is highly reactive... be careful with who you pick to be his date!

In the circle below, create an atomic drawing of Mr. Sodium.



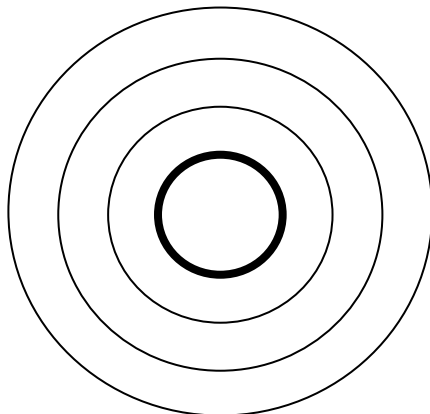
11
Na
Sodium
23



Let's meet our eligible bachelorettes:

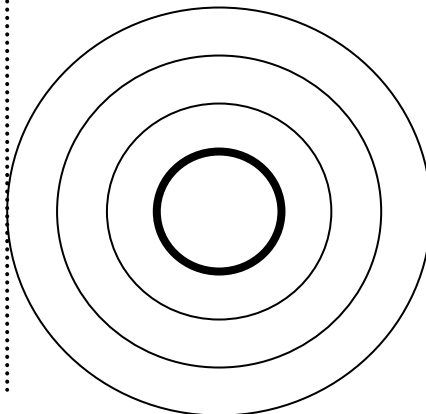
Ms. Lithium is a highly reactive metal looking to lose electrons.

3
Li
Lithium
7



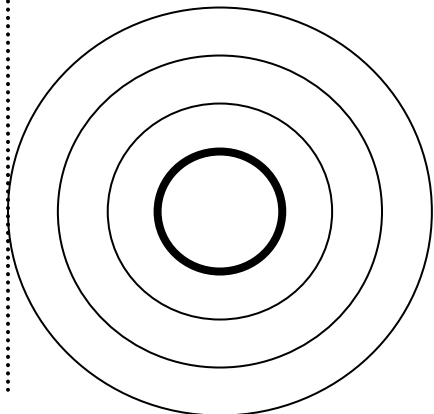
Ms. Calcium is a reactive metal looking to lose electrons

20
Ca
Calcium
40



Ms. Fluorine is a nonmetal looking to gain electrons.

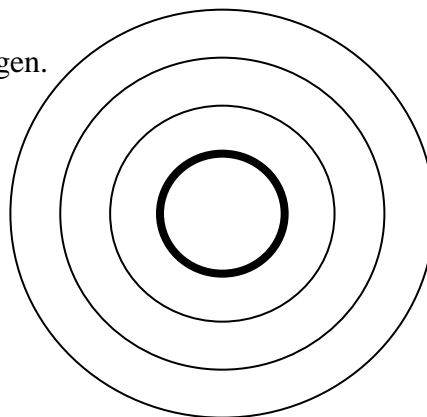
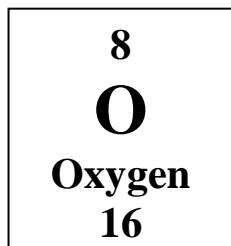
9
F
Fluorine
19



Mr. Sodium should date _____, because _____

Let's meet our next available bachelorette, Ms. Oxygen. Ms. Oxygen is a lonely non-metal who, like all non-metals, is looking to gain a few electrons! While she is needed by many living things, she is having a hard time finding love.

In the circle below, create an atomic drawing of Ms. Oxygen.

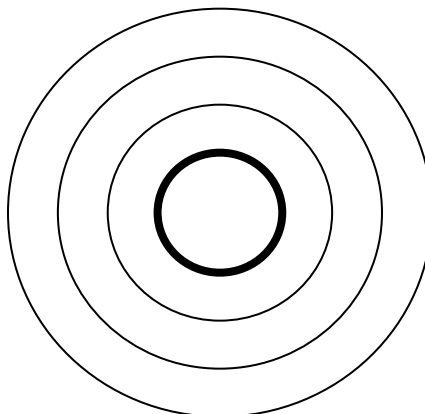
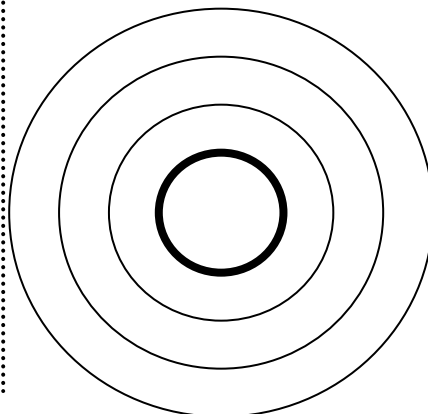
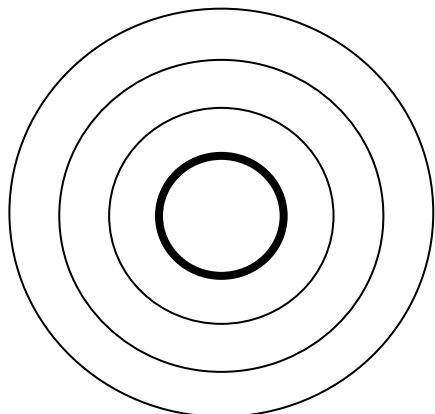
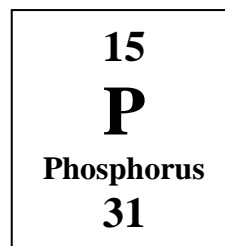
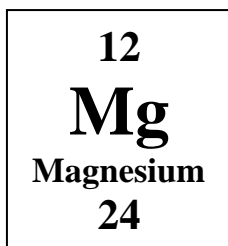
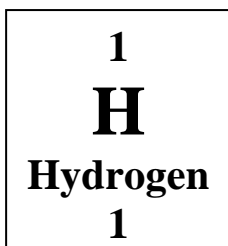


Let's meet our eligible bachelors:

Mr. Hydrogen is a highly reactive nonmetal looking to gain an electron:

Mr. Magnesium is a reactive metal looking to lose electrons

Mr. Phosphorus a nonmetal looking to gain electrons.

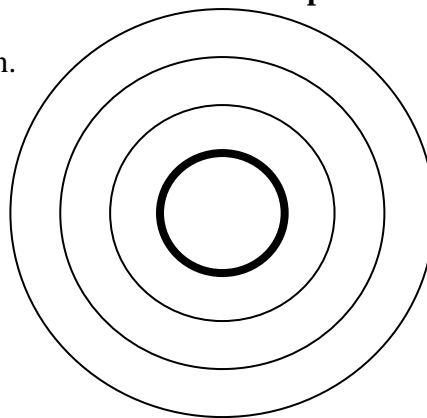
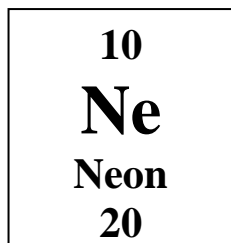


Ms. Oxygen should date _____, because _____

Part 2: Meet the final bachelorettes and bachelors. Your job is to use the table to find an atom that will complete the valence energy levels.

Let's meet our next bachelorette, Ms. Neon. She is an independent young element who does not react well to other elements. See if you can find her a soul mate! See how many valence electrons she has and find an atom that could complete her and find a match from the periodic table.

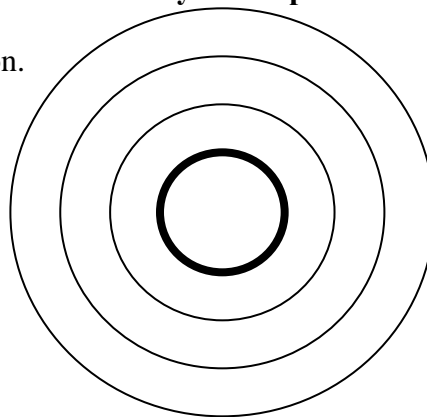
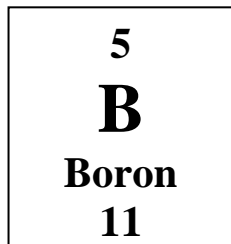
In the circle below, create an atomic drawing of Ms. Neon.



Ms. Neon should date _____, because _____

Let's meet our final bachelor, Mr. Boron. Although his name may imply it... Mr. Boron is hardly a bore! He has worked hard to find an atom to date... but could use your help!

In the circle below, create an atomic drawing of Mr. Boron.



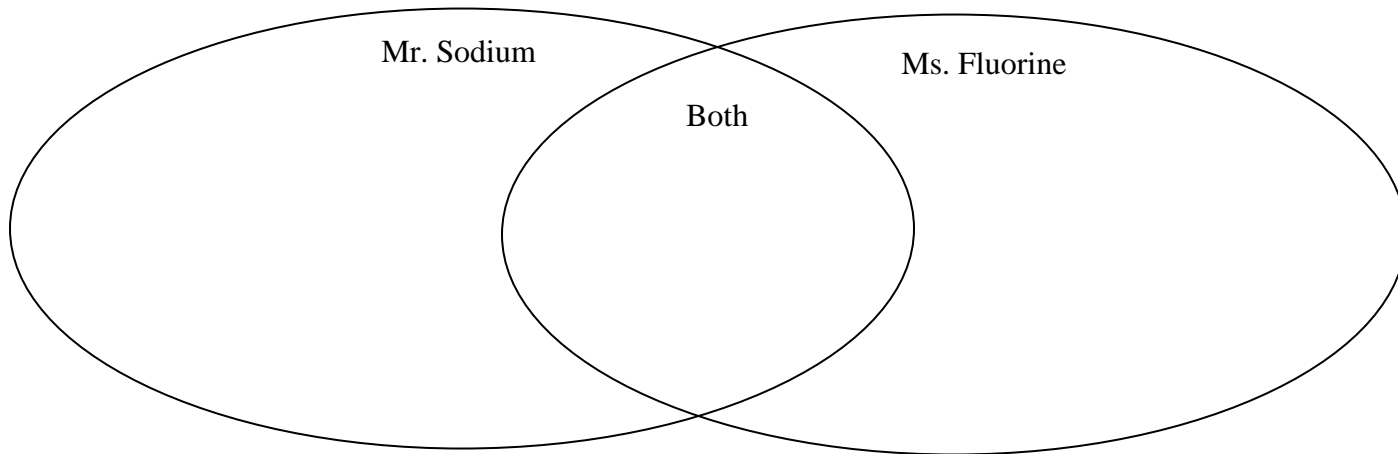
Mr. Boron should date _____, because _____

Reflection Questions:

- 1) In the space below, answer the EQ based on your knowledge of valence electrons and reactivity.

EQ: How do the atoms that make up matter affect its characteristics and behavior?

- 2) Compare and contrast Mr. Sodium and Ms. Fluorine. What is similar? What is different?



- 3) Compare and contrast Ms. Oxygen and her date, Mr. Hydrogen. What is similar? What is different?

