

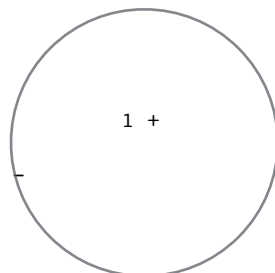
Before you draw atoms 1-20, let's make sure you have the correct data for each one.

- Rule #1) The atomic number is the number of protons (+). Atomic # = +
- Rule #2) The number of electrons (-) in an atom is equal to the number of protons (+). (Duh!) + = -
- Rule #3) Under "# of Electrons (-)", record the number of electrons in each shell. The first shell can hold up to 2 electrons. The second shell can hold up to 8. The third holds 8 and the fourth 18.
- Rule #783-C) The at. mass or weight = the number of protons + number of neutrons. Mass = Protons + Neutrons

Name	Symbol	At. #	# Protons (+)	# Electrons (-)	# Neutrons (0)
1. _____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____	_____
19. _____	_____	_____	_____	_____	_____
20. _____	_____	_____	_____	_____	_____

If you are sure you got things correct, you can draw atoms 1-20 on the back of this paper.

H (Hydrogen)



Example....

ATOM DRAWING QUESTIONS

NAME _____

Use your atom drawings and the periodic table to answer the following questions. Answer using symbols. The outside electron shell is also called the valence shell.

- Which 3 atoms from your drawings have full outside (valence) shells? _____
- In which column do these elements appear on the periodic table? _____
- Predict three more elements on your periodic table with full valence shells. _____

These elements are happy, fulfilled! All atoms 'want' to have full shells!

- Which 4 drawings have only 1 electron in the outside (valence) shell? _____
- In which column do these four elements appear on the periodic table? _____
- Predict 3 more elements with only one electron in the outside shell. _____
- Besides H, name 2 drawings which need one more electron to have a full valence shell _____.
- In which column do these elements appear on the periodic table? _____
- Predict 3 more elements that need 1 more electron to have a complete valence shells. _____

The elements in 7, 8, and 9 are unfulfilled, unhappy, incomplete. They want to have full electron shells, like flowers need rain, like you need an "A" in chemistry, like Oops, sorry. Well, they DO want another electron. They are lonely, sad,...oh, sorry.

- How many electrons each to F and Cl need to be happy? _____

An ion is an atom that has gained or lost electrons. It isn't neutral like an atom as it has unequal numbers of electrons and protons. Atoms become ions so they can be "happy."

- What is a really easy way that Na could be "happy?" _____
- If Na loses one electron, its new charge will be positive/negative.
- What must happen to Cl in order to have a full valence shell?
- If Cl gains an electron, its charge will be positive/negative.
- Hey, predict what will happen to Na and Cl if they do what you said above. _____

If Na & Cl form ions, they attract and join together in an "ionic bond." What electrons have joined together...

- If Na and Cl join, a substance named _____ is formed.
- Oxygen needs _____ more electron(s) to be happy.
- How many hydrogens will it take to make oxygen happy? _____
- Name the substance that is made if you join one oxygen to two hydrogens? _____
- What is the formula of this substance you named in question 19? _____x