Name:_____**Date:**_____**Period:**_____

Atomic Addition!

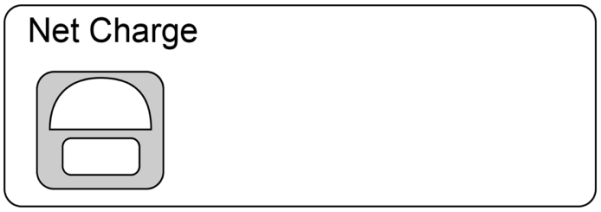
Learning Goals:

- Identify additive inverses (zero pairs).
- Model addition of integers using protons and electrons, and extend this to a number line.
- Create a rule for adding integers.

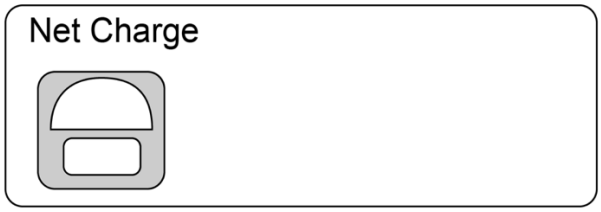
1. **Explore** the Build an Atom simulation for a few minutes, building whatever atoms you choose. Write down 1-3 observations you have about building an atom.

2. Build two different atoms with a **positive net charge**, then record some information about your atoms in the tables and diagrams below.

Protons	
Electrons	
Neutrons	
Net Charge	



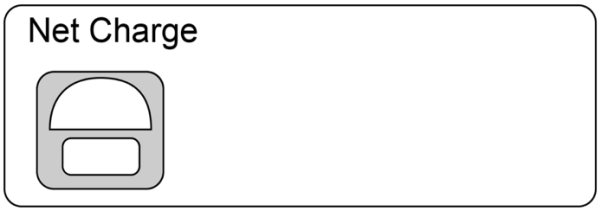
Protons	
Electrons	
Neutrons	
Net Charge	



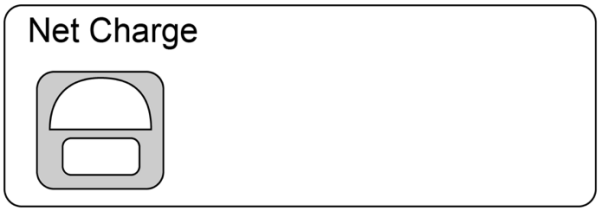
Compare your results with your partner.

4. Build two different atoms with a **negative net charge**, then record some information about your atoms in the tables and diagrams below.

Protons	
Electrons	
Neutrons	
Net Charge	



Protons	
Electrons	
Neutrons	
Net Charge	



Compare your results with your partner.

6. 💬 Discuss with a partner and record your thoughts:

a) In order to have a **positive** net charge, what must be true about the number of protons and electrons?

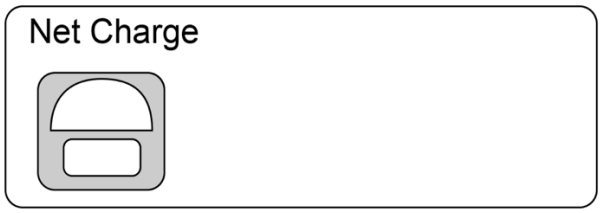
b) In order to have a **negative** net charge, what must be true about the number of protons and electrons?

c) What could the value of a **neutron** be, if represented by an integer?

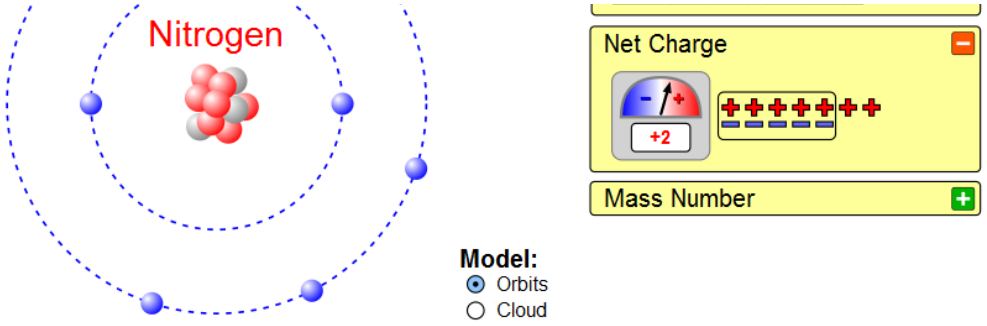
d) Why are some of the + and – signs circled in the net charge?

11. Create an atom with a **net charge of zero.** 💬 What do you notice about the number of protons and electrons?

Protons	
Electrons	
Neutrons	
Net Charge	



12. The net charge of the Nitrogen atom below can be written as the addition sentence **7 + (-5) = 2**



Re-write the net charge of the atoms you created above as addition sentences.