#15 Atoms and Elements and Compounds! Oh my!

Name:

Date:

Station A- How small is an atom?

Let's start with the atom. Go to htwins.net/scale2/ to begin your exploration.

1. Your first order of business is to… explore! Go on why are you reading this still?!
2. Ok so now you seen the very very big and the very very small. What do you think? What are your observations? Comments?

3. What is the scale of the universe? (Hint: it's on the lower right side of the screen). Fill in the following:
   10^2=100 10^3=_____ 10^6=_____

   The largest side of the universe is 10———

   The smallest side of the universe is 10———

Now let's go to another scale at numbersleuth.org/universe

1. First things first, explore! (Don't forget to press the fullscreen button on the upper right first.) Pick a starting point and watch it go!
2. The numbers has a E, it simply means how many zeros there are. So 10E1 means 10. 10E2 means 100.
3. What is the molecule that plants make? How big (small) is it?

4. What is in the center of the Hydrogen atom? How small is it?

Onto Station B!

Station B- What makes an element?

We are going to build elements! Find the Nova Element app on your iPad.

1. First thing go to settings in the lower right corner and reset the app.
2. Press Explore! You should now see the periodic table. Take a moment, each box is a different element.
3. Now tap on one and press the green Build button. Explore! Press anything, see what happens.
4. You should have an idea of how to build an element now. Build 4 elements from the periodic table. Press submit to check if are correct.

Elements	# of protons	# of neutron	# of electron
Example: Hydrogen	1	1	1

5. What does it take to build an element? How many of each, what pattern do you see?

Onto Station C!

Station C- What combines to make a compound?

Let's build compounds! Find the Elements 4D app.

1. Pick 3 cubes. Careful! Our cubemakers did a lot of hard work making, **be careful not to damage them**!
2. Now explore press "How it works" if you are confused.
3. Let's create some compounds. List what elements you combined to make each compound.Try to build as many as you can.

Element 1	Element 2	Compound
hydrogen	oxygen	H_2O or water!

4. Which two elements didn't create anything?

5. What observations did you have? Comments?

Onto Station A!