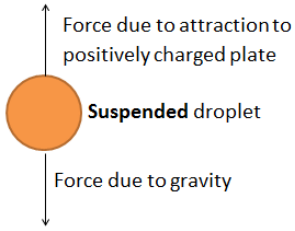
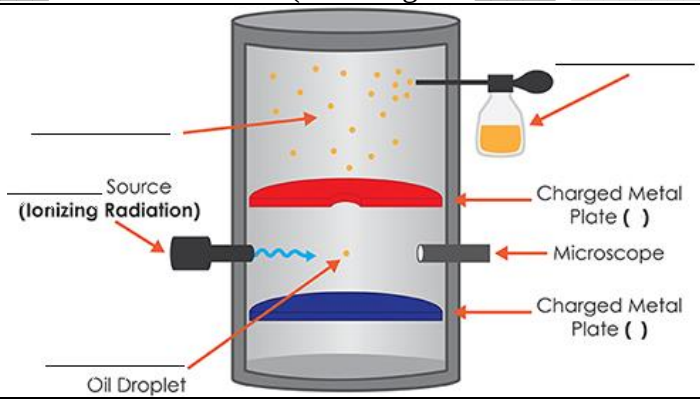
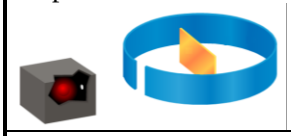
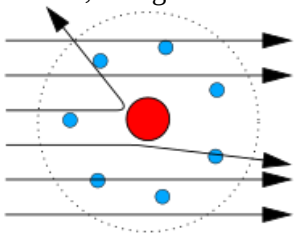
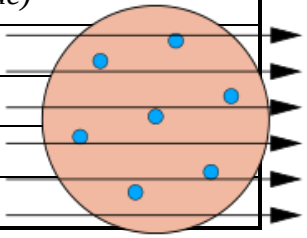
Topic: Millikan and Rutherford	**Name:** **Date:**
Questions/Main Ideas:	**Notes:**
What was the Oil Drop Experiment?  	With an _____, sprayed oil droplets into box with two charged plates Used _____ to give droplets one or more _____ As droplets fell between plates, he measured how different _____ on plates change the _____ of fall ← When the droplet is not moving, the forces are _____ This allowed Millikan to determine the _____ charge on each droplet. Millikan realized the charge of each droplet was a **whole-number** _____ of the same value (the charge of _____ _____)
How was the **Oil Drop Experiment** set up? *Label the **oil droplets**, **electron source**, **atomizer,** and **charged oil droplet** to the right. Also label which charged plate was positive (+) and which charged plate was negative*	
What did Millikan conclude?	Credited with **experimentally determining the charge of an** _____ as 1.60 x 10^{-19} Coulombs Mathematically, he used _____'s charge-to-mass ratio to **determine the** _____ as 9.108 x 10^{-28} grams *(that is TINY!)*
Explain the Gold Foil Experiment 	Surrounded thin piece of _____ foil with phosphorescent screen Rutherford "shot" _____ charged _____ (α) particles at the foil He looked at where the screen would "_____" in order to see where the _____ particles were going after they traveled through the foil.
What did Rutherford **expect** to see?	If Thomson's _____ _____ model of the atom were true, he expected the _____ charged particles to go _____ through the atom.
What did Rutherford **actually** observe, though? 	In fact, most particles did shoot straight through. However, a very _____ number of particles were _____ or even shot straight back. Since alpha particles are _____, and like charges repel, this means **they "hit" something with a _____ charge**. Since most particles went straight through, the **positive charge must be very _____ and _____** *Rutherford said "It was almost as incredible as if you fired a 15-inch bullet at a piece of tissue paper and it came back and hit you."*
List Rutherford's conclusions.	1. 2. 3.
Summary and Question(s) I have: *(explain the model to the right and why it is not true)*	THOMSON MODEL