Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd: \_\_\_ Ast: \_\_\_\_\_

**ATOM: CLASH OF TITANS**

Video Questions

1. One year before Ludwig Boltzmann died, a young Albert Einstein published a paper about his research with pollen. What did his research conclude?
2. There are more atoms in one glass of water than there are…
3. Which two leading physicists worked together at Manchester University studying atoms between 1911 and 1916?
4. What radioactive material did Rutherford use in his “alpha particle cannon”?
5. Geiger calculated that one in 8,000 alpha particles behaved differently than expected when shot at the piece of gold foil…what was this “strange” behavior?
6. If the nucleus is the size of a soccer ball (futbol), how far away would the nearest electron be?
7. If you could remove all of the empty space from atoms, how big would a person be?
8. What did Bohr describe the atom as to try and explain quantum leaps?
9. What famous scientist “hated” Bohr’s explanation of atoms?
10. Schrodinger used a wave pulsing around the nucleus to describe what part of the atom?
11. Heisenberg was booed out of a lecture hall when he responded to Schrodinger’s lecture about his wave equation. Why did Heisenberg disagree with Schrodinger?
12. Heisenberg’s uncertainty principle says that we can never know an atom’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the same time.
13. Heisenberg and Bohr theorized that atoms behave like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when you *aren’t* looking at them, but they behave like a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when you *are* looking at them.
14. At the Solvay Conference in Brussels in 1927, who led the two “sides” that debated quantum mechanics?
15. Who won the argument at the Solvay Conference with the “Copenhagen Interpretation”?