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

**ATOMIC THEORY TIMELINE**: In each box, provide information on what the idea/discovery was and how it was made. Where possible, draw pictures or diagrams to explain the event.

**Thomson (1897): DISCOVERY OF ELECTRONS**

Cathode Ray Tube –

**Electrons:**

Charge –

Location –

Mass **–**

**Democritus (@400 BC):**

“cut the cheese” -

“ATOMOS” -

**1850**

**1900**

**1800**

**@400 B.C.**

**Dalton (1808): EARLY ATOMIC THEORY**

Key Ideas:



Visualize atoms as:

**Nagaoka (1904): PROPOSAL OF NUCLEUS**

Visualize the atom as:

Evidence –

**Rutherford (1911): EVIDENCE OF NUCLEUS**

Alpha Particle Cannon –

Important Conclusions:



**Modern “Electron Cloud” Model (1920’s-Present):**

Nucleus:

Electron Cloud:

**Bohr (1913): ENERGY LEVELS & VALENCE ELECTRONS**

Energy Levels:

Visualize the atom as:

Valence Electrons:

**1950**

**2000**

**1900**

**ELEMENTS**

**Atomic Number:**

**Atomic Mass:**

**Isotopes:**

**Ions:**

**Chadwick (1932): DISCOVERY OF NEUTRONS**

“Extra Mass” –

Neutrons:

Charge –

Location –

Mass –

**Rutherford (1917): DISCOVERY OF PROTONS**

Alpha Particles –

**Protons:**

Charge –

Location –

Mass –