**JMS Lesson Plan**

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| **Teacher:** | Anne Harwell | **Subject:** | Physical Science (9th Grade) |
| **Date:** | **Beginning:** 10/9/2017**Ending:**  10/13/2017 | **Grades:** | 8th |
| **Learning****Targets:** | I can describe atomic structure and how the structure determines an element’s identity.I can recognize where atoms of some common elements are found and how they are named.I can classify elements as metals, nonmetals, and metalloids.I can identify groups of elements. | **Connects with:** | **Math – graphing calculators (accelerated content)** |
| **Standard(s):** | **SPS1.a.** Develop and use models to compare and contrast the structure of atoms, ions, and isotopes.  |
| **DOK Level** | **Activities / Assignments / Questions** | **Assessment** |
| **­­****Acceleration** | Radioactivity – Model how quickly atoms of radioactive elements can change (pg. 159) Activity: The Half-Life of Pennies | ☒ Formative | ☐Selected Response - ☐Constructed Response - ☒Verbal☐Rubric☒Other – diagram/model☐Other –  |
| **2** | Explore: The size of Atoms (pg. 137 activity How small can you cut paper?)In terms of percentages, which has more oxygen, Earth’s crust or a human body?ISN notes – diagram of the atomic structureWhat happens when an atom forms an ion?Where on Earth can you find noble gases?How can an element change into an atom of a different element? | ☒ Formative☐ Summative | ☐Selected Response - ☐Constructed Response – ☒Verbal☐Rubric☒Other – research☐Other –  |
| **3** | Analyze: When determining the mass of an atom, the electrons are not considered. Why can scientist disregard the electrons? Cite your evidence.Why do you think the noble gases were among the last of the naturally occurring elements to be discovered? Cite your evidence.Activity – Button activity (sort, classify and form a table to show how they are arranged) | ☒ Formative☒ Summative | ☒Selected Response☒Constructed Response ☒Verbal☐Rubric☐Other – ☐Other –  |
| **4** | Investigation- Modeling Atomic MassesThis investigation will give you some sense of how scientists determined the mass of all atoms: You will compare the masses of different film can “atoms.” You will predict the number of washers in each film can “atom.” Infer – hydrogen has only a single proton in its nucleus, apply your results to determine the next four elements. Extend: find the masses of the next two elements (how many washers are needed for each model?) | ☒ Formative☐ Summative | ☐Selected Response☐Constructed Response -☐Verbal☐Rubric☐Other – ☐Other – |
| **Resources:** | Textbook – Physical Science McDougal Littell<https://www.youtube.com/watch?v=EMDrb2LqL7E> (Video -Introduction to atomic structure)<https://www.youtube.com/watch?v=N-FfVLOBccI> (Video – How big is an atom?) |

**Monday** – **ISN Notes:** Introduction to Atomic Structure

 **Activity:** Atomic Diagram

 Isotope Worksheet

 **Anchor Activity -** Key Concepts & Critical Thinking p.151 (1-5)

**Tuesday-** Elements make up the periodic table (Button Activity – Explore similarities and differences of objects). ISN notes on reading the periodic table

 **Video** – Introduction to atomic structure

**Wednesday** – The periodic table is a map of the elements (misconception-appearance of single atoms do not have the same properties of the same atom in bulk)’

 **ISN notes** – periodic table worksheet

**Thursday** – **Activity**: Radioactivity– the Half-Life of Pennies

 **Video** - How big is an atom?

**Friday** – **CLOZE Reading** (Atomic Structure and The Periodic Table of Elements) and Study Guide