

History of the periodic table - Youtube lesson and follow up:

Ellen Parchen, Earth Science introductory skills

Overview: Freshman enter with a crazy mix of knowledge or lack of regarding the periodic table/ and basic chemistry. This topic is part of introductory knowledge before we move into Astronomy so they will begin to grasp all that really happened as the Universe and Solar system was forming. It is also a major connection when we talk about atmosphere on planets, and planet composition. As the year continues we continue to refer back to the elements, the periodic table, basic bonding principles and much more.

The main principle of this lesson series is simply to show the students that the periodic table is an amazing tool, with a huge amount of information. To have a glimpse into the history and how the table came to be, makes it all that much more amazing to me, when one considers how the old scientists went about discovering chemistry and somehow knew what it has taken us many years later to confirm.

Materials: Periodic table for each student to include in their science section of their binder. The questions and links for the videos.

Directions for the students:

1. Please list 3 things that you currently understand about the periodic table:

2. We are going to start this topic with the history of the periodic table. Please view this utube clip in order to answer the following questions: [Solving the puzzle of the Periodic Table](#)

- Within this video - a number of scientists are mentioned and credited with certain understandings from their research. **Choose two** - Name them, and identify their contribution and how they tried to solve the puzzle.

- What are some things that we know about the elements as a result of general science understanding? Give two examples mentioned in this video.

- Define what an element is, and where do they come from?

Now watch [Periodic Table of Elements - A volatile history](#)

Mendeleev has been credited with solving the puzzle for the organization of the Periodic Table. What properties allowed him to organize the table in such a way that its use has lasted over 100 years?

Mendeleev was also able to predict the locations of elements that had not be discovered yet. How many elements are there now? How many did he have to work with when he organized the table?

Look at your periodic table and identify 5 unique traits that can be identified for each element. (hint: use the key in the bottom left corner of your chart).

Now choose 5 elements and include those same 5 unique characteristics in a chart.

Element					

Grading: Students will be assessed each question is worth 3 pts, except the last two which are worth 5 and 10 respectively. Early assignments are graded based on completion, and quality attempts at answers to build science skills and vocabulary.

Montana Standards:

Content Standard 1—Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations.

Content Standard 2—Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.

Content Standard 4—Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth’s systems and other objects in space.

Content Standard 6—Students understand historical developments in science and technology.

National Next Gen Standards:

HS-ESS1 Earth’s Place in the Universe

HS-ESS2 Earth’s Systems



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