

Mrs. Rosso 8th Grade Science

Atoms, Atomic Theory, & Periodic Table of Elements Unit Plan

August 28-September 19

Vocabulary:

columns electrons families groups model neutrons	nucleus period periodic table properties protons	rows scientific theory subatomic particle technology trend
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Standards:

SC.8.P.8.7 (Level 1) - Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of sub-atomic particles (electrons surrounding a nucleus containing protons and neutrons).

- SC.7.N.3.2 (Level 2) - Identify the benefits and limitations of the use of scientific models.
- SC.8.N.3.2 (Level 3) - Explain why theories may be modified but are rarely discarded.
- SC.8.E.5.10 (Level 3) - Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information

Advanced: SC.912.P.8.4 - Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom.

SC.8.P.8.6 (Level 1) - Recognize that elements are grouped in the periodic table according to similarities of their properties.

- SC.6.N.2.2 (Level 2) – Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.

Advanced: SC.912.P.8.5 - Relate properties of atoms and their position in the periodic table to the arrangement of their electrons.

Learning Targets:

- I am learning theories may be modified based on new evidence but are rarely discarded (in the context of atomic theory).

- I am learning to recognize that atoms are the smallest unit of an element and are composed of subatomic particles:
 - o Electrons (negative)
 - o Neutrons (neutral)
 - o Protons (positive)
- I am learning to determine the type of subatomic particle using its location, mass, and charge.
- I am learning to create a model or diagram of an atom that contains a nucleus, an electron cloud, and subatomic particles.
- I am learning to discuss the benefits and limitations of various historical atomic models
- I am learning to explain electrons, protons and neutrons are parts of the atom and the nuclei of atoms are composed of protons and neutrons, which experience forces of attraction and repulsion consistent with their charges and masses.
- I am learning to recognize that elements are grouped in the periodic table according to similar properties
 - o Groups/Families- vertical columns of elements that share similar properties
 - o Periods- horizontal rows of elements with increasing atomic number
 - o Most elements on the periodic table are metals
 - o Metalloids are elements that have properties of metals and nonmetals
- I am learning to use the periodic table to identify and classify elements.
- I am learning to predict properties of an element using a periodic table when given information about other elements in the same column.
- I am learning to use the periodic table and electron configuration to determine an element's number of valence electrons and its chemical and physical properties
 - I am learning to explain how chemical properties depend almost entirely on the configuration of the outer electron shell

Daily Activities:

Day 1 (August 28) Intro to Unit, Is it a Theory ? probe

Study Jams: [Atoms: StudyJams! Science | Scholastic.com](https://www.studyjams.com/science/atoms)

atoms & subatomic particles Kesler modified noted w/PPT

Day 2 (August 29) atoms & subatomic particles

Bill Nye Atoms & Molecules

Subatomic Particles Foldable

Ted ED video clip: Just how small is the atom [1333\) Just How Small is an Atom? - YouTube](https://www.youtube.com/watch?v=1333)



Day 3 (August 30 ER) atoms & subatomic particles

Atomic numbers & Atomic Mass, practice calculating for subatomic particles

Brainpop: Atoms

Cpalms tutorial #183487 The Atom part 1: Big things come in small packages

Day 4 (Aug. 31 & Sept. 1) atoms & subatomic particles

Chemical Bonds Keeley Probe

Crash Course Chemistry [part 1: the Nucleus](#)

The Atom Cornell [Doodle Notes](#) w/[PPT](#)

[Candy Atom Lab](#) or [Element Builder](#) Gizmo Lab

Day 5 (September 5) Atomic theory

Ted [ED video clip](#): The 2,400 year old search for the atom
<https://www.youtube.com/watch?v=xazQRcSCRaY>

Brainpop: Atomic Model

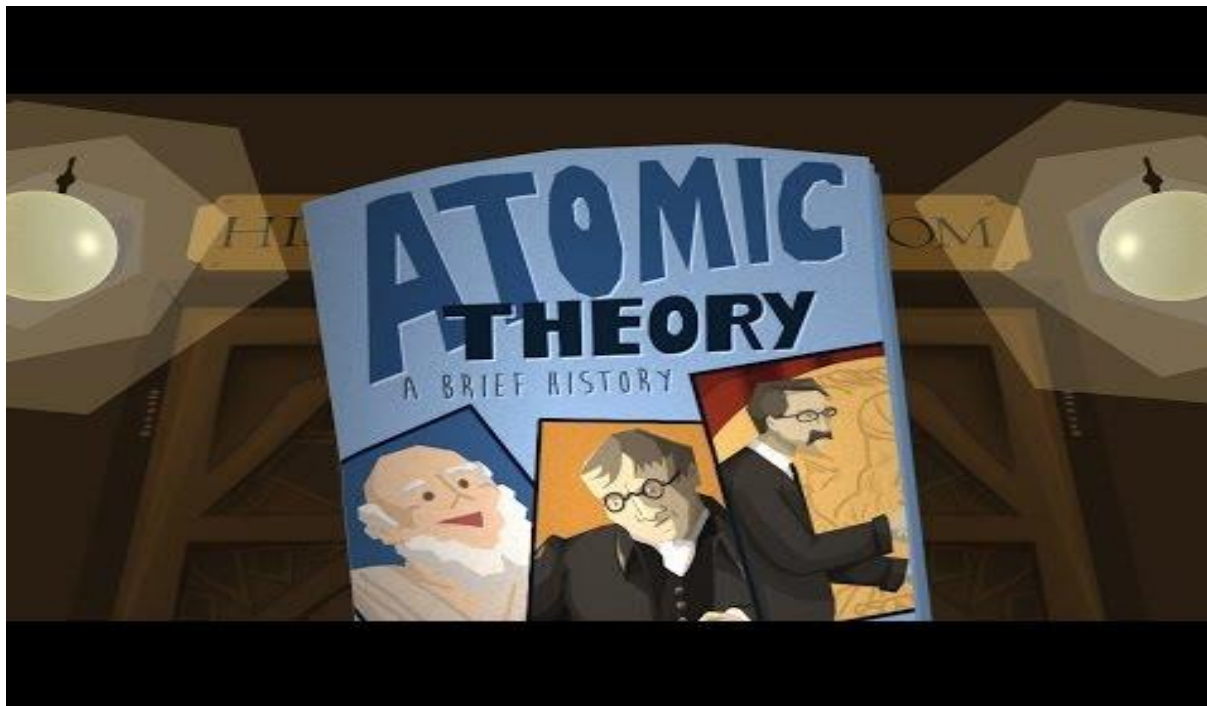
Cpalms tutorial #183706 The History of the Atom

Day 6 (September 6 ER) atomic theory

Crash Course Chemistry: [The History of Atomic Chemistry](#)

Cpalms: History of Atomic Theory

Benefits & Limitations of Models-Atomic Theory



Day 7 (September 7 & 8) periodic table of elements

[Periodic People](#) Activity

Studyjams: [Periodic Table: StudyJams! Science | Scholastic.com](#)

Day 8 (September 11) periodic table of elements

Send home [Study Guide](#) today

Brainpop: [Periodic Table of Elements - BrainPOP](#)

Planet [Orkadoo](#) activity

Cplams: Exploring the Periodic Table [Part 1: Periods](#) #173484

Day 9 (September 12) periodic table of elements

Interactive Periodic Table: [Periodic Table of the Elements \(pbslearningmedia.org\)](#)

Day 10 (September 13 ER) periodic table of elements

Periodic Table [Sciencesaurus Research](#)

Periodic Table PPT w/notes

Cpalms: Exploring the Periodic Table [Part 2: Groups](#) #173485

Day 11 (September 14 & 15) periodic table of elements

Gizmo Element Builder simulation lab

[Periodic Element sort](#) Bohr Model Matching Cards

Day 12 (September 18) Review & DIA Administration

DIA 13 (September 19) Test Analysis & Remediation