

Online Resources S8P1 Matter

S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.

a. Develop and use a model to compare and contrast pure substances (elements and compounds) and mixtures.

Pure Substances and Mixtures

<https://youtu.be/88MBCyiaPSM>

<https://youtu.be/LC1eS5Cwke0>

<https://youtu.be/1CkPhAWrcSQ>

<https://youtu.be/tGfLhPslEjQ>

Mixtures and Solutions

<https://youtu.be/pnpmPDa3tbM>

https://www.wiley.com/legacy/Australia/PageProofs/SQ7_AC_VIC/c05SeparatingMixtures_WEB.pdf

Candy Compound

<https://sciencespot.net/Media/candycompounds.pdf>

ARGUMENT-DRIVEN INQUIRY (ADI)

Lab 3. Physical Properties of Matter: What are the identities of the unknown substances?

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b. Develop and use models to describe the movement of particles in solids, liquids, gases, and plasma states when thermal energy is added or removed.

States of Matter

<https://youtu.be/w1Sly56RLqI>

<https://youtu.be/xYU7RSoOZ0U>

<http://studyjams.scholastic.com/studyjams/jams/science/matter/solids-liquids-gases.htm>

Molecular Movement

<http://www.middleschoolchemistry.com/lessonplans/chapter1/lesson1>

Phase change simulation (virtual lab with the graph)

<https://interactives.ck12.org/simulations/chemistry/phases-of-matter/app/index.html>

Change of State

<http://www.middleschoolchemistry.com/lessonplans/chapter2>

Plasma (excellent on plasma)

<https://youtu.be/94tReSbyPYc>

LITERACY

READWORKS

Adventure on a Hot Air Balloon

ONLINE READING

http://www.chem4kids.com/files/matter_changes.html (Part 1)

http://www.chem4kids.com/files/matter_changes2.html (Part 2)

ARGUMENT-DRIVEN INQUIRY (ADI)

Lab 1: Thermal Energy and Matter: What Happens at the Molecular Level When Thermal Energy Is Added to a Substance?

Lab 15. Thermal Energy and Specific Heat: Which material has the greatest specific heat?

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c. Plan and carry out investigations to compare and contrast chemical (i.e., reactivity, combustibility) and physical (i.e., density, melting point, boiling point) properties of matter.

Physical and Chemical Properties

https://youtu.be/ARCoKoy_BRE?list=PLIfmdZOdR4pxeg0QmtXwWL-pDQ1k1-r9B (viscosity)

Online Textbook: cK-12

<https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/section/2.2/>

<https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/>

Properties Song

<https://www.youtube.com/watch?v=uJOGy0dgmUU&feature=youtu.be&list=PLS9MA4eDAqOdpbh327U7i9hGL7yNTZa1F>

Physical and Chemical properties and changes (approx. 5 min.)

<https://www.youtube.com/watch?v=C4pQQQNwy30&feature=youtu.be>

Density

<http://www.middleschoolchemistry.com/lessonplans/chapter3>

Quizziz - Physical and Chemical Properties Review

<https://quizizz.com/admin/quiz/57e91dbda69b770857db381c/physical-and-chemical-properties-review>

Jeopardy game - Physical and Chem properties Review

<https://jeopardylabs.com/play/physical-and-chemical-properties-and-changes>

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d. Construct an argument based on observational evidence to support the claim that when a change in a substance occurs, it can be classified as either chemical or physical.

Physical and Chemical Changes

<https://www.youtube.com/watch?v=x49BtB5dOwg&feature=youtu.be>

<https://www.youtube.com/watch?v=X328AWaJXvl&feature=youtu.be>

Chemical Change Crash Course

https://www.youtube.com/watch?v=37pir0ej_SE&feature=youtu.be&list=PLUBFfN1xMv-reQ7ka86qw42IGE4asptaC

Physical vs. Chemical Changes

<https://www.youtube.com/watch?v=4ZGULLWEy1c&feature=youtu.be>

Physical and Chemical Changes READWORKS (articles)

In Readworks, the articles you can choose from are:

- “The Penny Experiment”
- “The Elements of Jewelry”

Chemical Change

<http://www.middleschoolchemistry.com/lessonplans/chapter6>

ARGUMENT-DRIVEN INQUIRY (ADI)

Lab 2. Chemical and Physical Change: What set of rules should we use to distinguish between chemical and physical changes in matter?

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e. Develop models (e.g., atomic-level models, including drawings, and computer representations) by analyzing patterns within the periodic table that illustrate the structure, composition, and characteristics of atoms (protons, neutrons, and electrons) and simple molecules.

Atomic Structure

<https://youtu.be/addK0b2lsw8> (Dogs Teaching Chemistry)... So cute!

Atoms and Molecules

<https://youtu.be/vISOESXQI7o>

<https://www.acs.org/content/acs/en/education/whatischemistry/adventures-in-chemistry/games/outer-space-molecule-chase.html> Interactive Game

Molecular Model

http://www.glencoe.com/sites/common_assets/science/virtual_labs/E02/E02.html

<https://phet.colorado.edu/en/simulation/legacy/build-a-molecule>

Molecular Bonding (Enrichment)

https://youtu.be/_M9khs87xQ8 (Dogs Teaching Chemistry)

<https://www.youtube.com/watch?v=OTgpN62ou24&feature=youtu.be>

Periodic Table of Elements

<http://www.middleschoolchemistry.com/lessonplans/chapter4>

ARGUMENT-DRIVEN INQUIRY (ADI)

https://docs.google.com/document/d/1tSHZ9_aSIKI-S1Ocx90o5bTnS7UZiv36Jff9DkICJaY/edit

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f. Construct an explanation based on evidence to describe conservation of matter in a chemical reaction including the resulting differences between products and reactants.

Conservation of Matter / Mass S8P1.f

Argument-Driven Inquiry (ADI)

<https://docs.google.com/document/d/1soWg9wInf0fYv82Sw5W60M32lOfi8782qjr9RhC9XUM/copy>

Lab 4. Conservation of Mass: How does the total mass of the substances formed as a result of a chemical change compare to the mass of the original substances?

Lab 5. Design a Koozie: Which koozie design will cool a soda the best? S8P2.d
Physical Sciences Core Idea 2 Motion and Stability: Forces and Interactions

Conservation of Matter Lessons/Activities

<http://www.middleschoolchemistry.com/lessonplans/chapter5>

Conservation of Matter (video)

<https://youtu.be/2S6e11NBwiw>

Conservation of Matter (Legos)

<https://www.youtube.com/watch?v=esZAzT2dEFk&feature=youtu.be>

Conservation of Matter (Crash Course)

<https://www.youtube.com/watch?v=3lHHOiTdmK4&feature=youtu.be>

<https://www.youtube.com/watch?v=2S6e11NBwiw&feature=youtu.be>

Alka Seltzer Demonstration

<https://www.youtube.com/watch?v=ruGa1qg6ltE&feature=youtu.be>