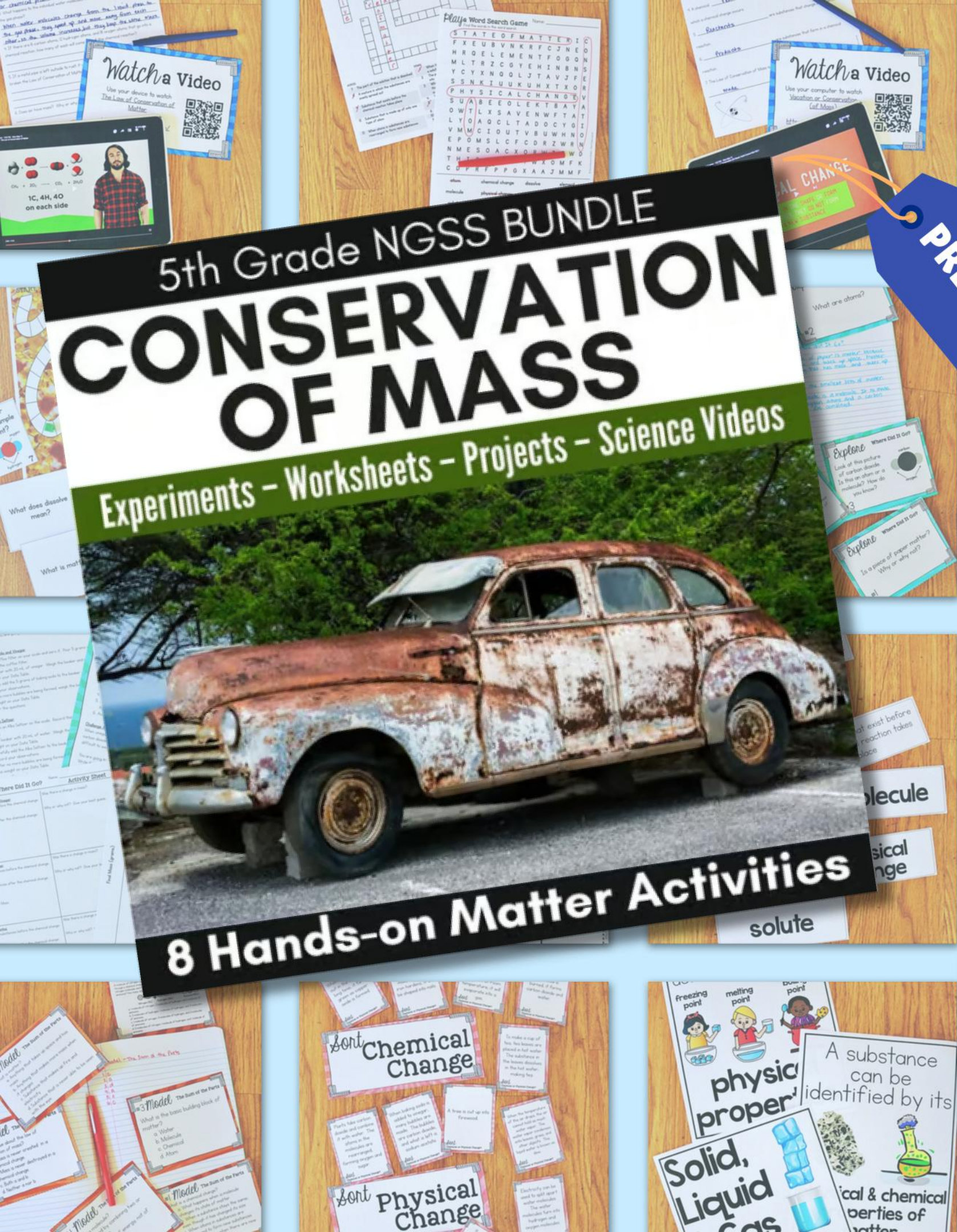


5TH
GRADE

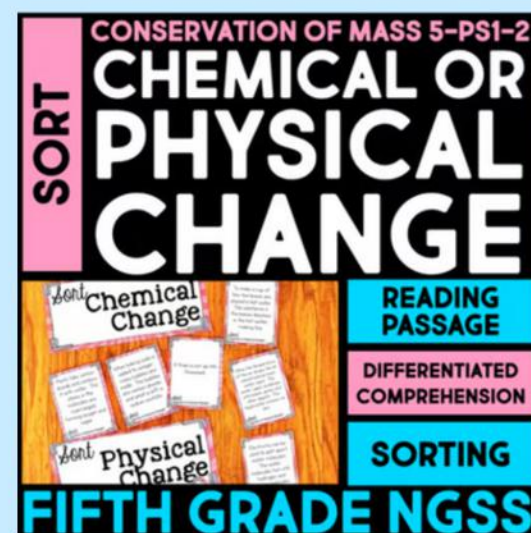
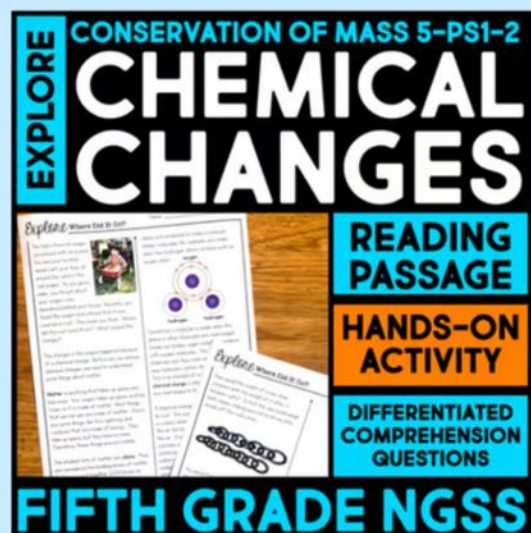
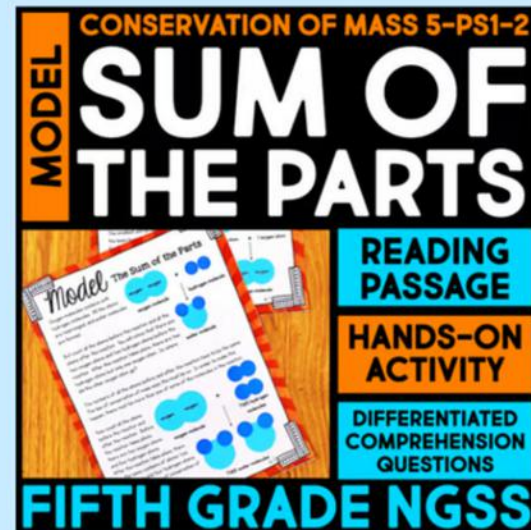
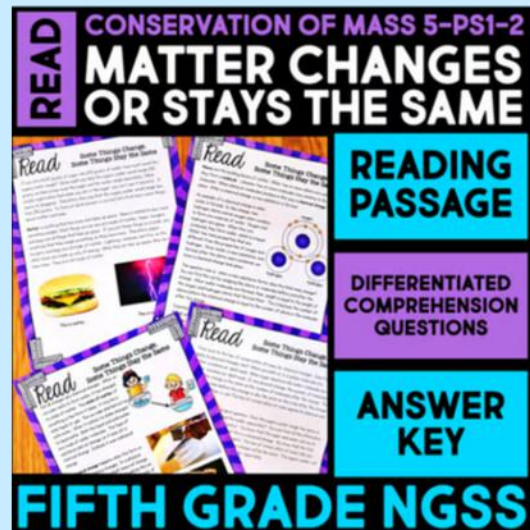
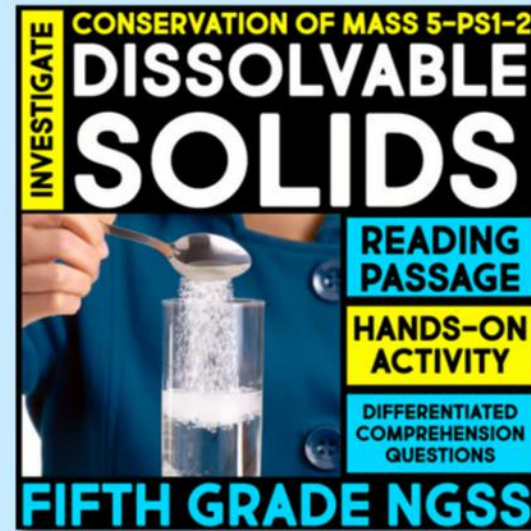
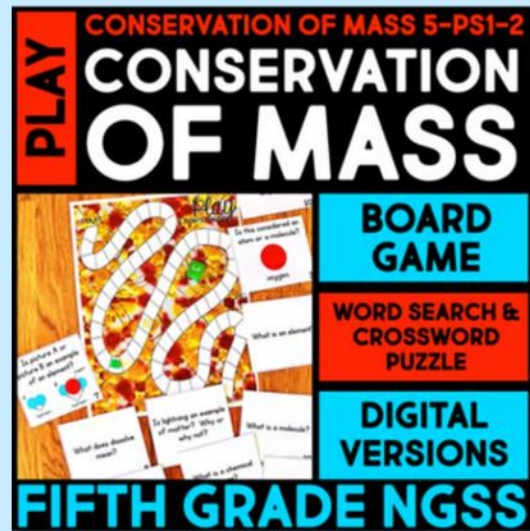
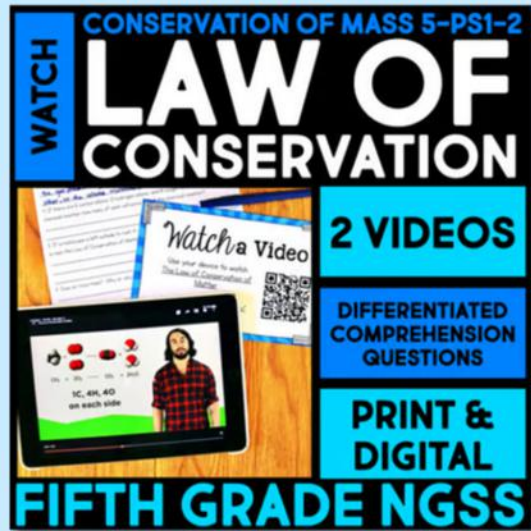
Hands-On Science That
Builds Real Understanding

CONSERVATION OF MASS BUNDLE

KEEP SCROLLING TO SEE
WHAT'S INSIDE!



WHAT'S INCLUDED IN THE BUNDLE?



- ✓ 8 Science Stations aligned with the NGSS for 5th grade
- ✓ 6 Reading passages
- ✓ Hands-on activities
- ✓ Differentiated comprehension questions
- ✓ Digital Videos & Video Games
- ✓ Digital Google Slides & Forms

6 READING PASSAGE



6 Reading Passages that provide
all scientific background
knowledge for each station

Available in two
formats + Digital

Includes pictures and
visuals

PAGE OVERVIEW

WATCH

CONSERVATION OF MASS 5-PS1-2

LAW OF CONSERVATION



2 VIDEOS

DIFFERENTIATED COMPREHENSION QUESTIONS

PRINT & DIGITAL

FIFTH GRADE NGSS

Conservation of Mass Unit BUNDLE

Big Idea Posters & Vocabulary Cards are available only with the UNIT BUNDLE.

Station & Name	Standards	Objective	
Big Idea Posters & Vocabulary Cards (included with the BUNDLE)			
Watch	Variation or Conservation (of Mass) / (LEGO) Block Party / The Law of Conservation of Matter	5-PSI-2, 5-PSI-4, (ELA) SL.4.2	Students will watch a video in order to learn about what happens to matter and its mass during changes or the Law of Conservation of Mass. They will answer questions in order to reinforce what they have learned.
Play	Conservation of Mass: a Board Game / Conservation of Mass: Crossword or Word Search	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RF.5.4, WS.2, WS.8	Students will play a board game or complete a crossword puzzle or word search in order to reinforce what they have learned about conservation of mass.
Investigate	Dissolvable Solids	5-PSI-4, 5-PSI-4, (ELA) RI.5.1, RF.5.4, WS.2, WS.8	Students will read about physical and chemical changes and how these changes relate to the law of conservation of mass. They will conduct an investigation to determine if the masses before and after changes differ. They will answer questions in order to reinforce what they have learned.
Diagram	Bigger or Smaller?	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about the law of conservation of mass and how it applies to change in state of matter. They will conduct an investigation to learn more about this and draw diagrams to show what happened to substances as their states changed. Students will then answer questions in order to reinforce what they have learned.
Read	Some Things Change, Some Things Stay the Same	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about conservation of mass in chemical and physical changes. They will answer questions in order to reinforce what they have learned.
Model	The Sum of the Parts	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about matter and chemical changes. They will learn how the mass of substances before a chemical change needs to equal the mass after the change. They will model this with an activity. They will answer questions in order to reinforce what they have learned.
Explore	Where Did It Go?	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about chemical changes. They will learn that the mass of substances before and after the change is the same.
Sort	Chemical or Physical Change?	5-PSI-2, 5-PSI-4, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about physical and chemical changes with respect to the law of conservation of mass. They will sort materials into two categories. They will then answer questions in order to reinforce what they have learned.

Conservation of Mass

Science Stations

NGSS Standards Overview

5-PSI-2

Next Generation Science Standards are written to be "Three Dimensional." The following section explains how this set of science stations addresses the three dimensions of Performance Expectation, Disciplinary Core Idea, and Science and Engineering Practices/Crosscutting Concepts.

In Fifth Grade, students are expected to demonstrate understanding in the following area:

5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. [Clarification Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances.] [Assessment Boundary: Assessment does not include distinguishing mass and weight.]

This correlates with the DCIs 5-PS1A and 5-PS1B, which state:

PS1A: Structure and Properties of Matter
The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish.

PS1B: Chemical Reactions
No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.)

All stations in this set meet the DCIs, helping students gain an understanding of the conservation of matter when chemical and physical changes happen in a system.

Science and Engineering Practices
Using Mathematics and Computational Thinking
Mathematical and computational thinking in 3-5 builds on K-2 experiences and progresses to extending quantitative measurements to a variety of physical properties and using computation and mathematics to analyze data and compare alternative design solutions.

- Measure and graph quantities such as weight to address scientific and engineering questions and problems. (5-PS1-2)

Crosscutting Concepts
Scale, Proportion, and Quantity

- Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.

Science Stations Overview

This is a general overview of all science stations in each UNIT BUNDLE.

Watch a Video

At this station, students will watch a video relevant to the topic and answer questions. You have the option of using the included worksheet with questions or using the task cards and having students respond in their science journals.

Read a Passage

Students read a short passage about the topic and answer questions about the information in the passage. You have the option of using the included worksheet with questions or using the task cards and having students respond in their science journals.

Play a Video Game

Students play a game and answer questions about the experience. You have the option of using the included worksheet with questions or using the task cards and having students respond in their science journals.

Create a Model

Students use materials to illustrate the science concept and answer questions. You have the option of using the included worksheet with questions or using the task cards and having students respond in their science journals.

Investigate

Students use materials to investigate the science topic by following directions and recording results. Students answer questions about the investigation.

Explore

Students create a sample and manipulate it using the new science concepts they have learned. Students answer questions based on the effects.

Draw a Diagram

Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

Sort

Students sort cards into groups or put them in a specific order. Students record the sort and then describe their reasoning.

Materials Checklist

Conservation of Mass Unit BUNDLE

The following checklist is for the FULL UNIT BUNDLE.

Watch a Video

☐ Computer / Device
☐ Student Direction Card
☐ Response Sheet or Task Cards
☐ Science Journal (optional)

Play a Game

☐ Student Direction Card
☐ Board Game (die & game pieces)
☐ Word Search or Crossword Puzzle
☐ Response Sheet or Task Cards
☐ Science Journal (optional)

Investigate

☐ Reading Passage (optional)
☐ Student Direction Card
☐ Investigate Worksheet
☐ Response Sheet or Task Cards
☐ Science Journal (optional)
☐ SEE INVESTIGATE STATION FOR FULL LIST OF MATERIALS

Draw a Diagram

☐ Reading Passage (optional)
☐ Student Direction Card
☐ Diagram Worksheet
☐ Response Sheet or Task Cards
☐ Science Journal (optional)
☐ SEE DIAGRAM STATION FOR FULL LIST OF MATERIALS

Read a Passage

☐ Reading Passage
☐ Response Sheet or Task Cards
☐ Science Journal (optional)

Create a Model

☐ Reading Passage (optional)
☐ Student Direction Card
☐ Model Worksheet
☐ Response Sheet or Task Cards
☐ Science Journal (optional)
☐ Balance or scale
☐ Ball of clay (about the size of a tennis ball)
☐ LEGO creation (build something—small house, person, car, etc., and it needs to be heavy enough to show a mass on your balance or scale)
☐ Quart-sized freezer bag filled with ice cubes
☐ Rolling pin
☐ Towels and tray to contain any water and/or scattered pieces

Explore

☐ Reading Passage (optional)
☐ Student Direction Card
☐ Explore Worksheet
☐ Response Sheet or Task Cards
☐ Balance or scale that measures grams
☐ Coffee filters
☐ Spoons
☐ Baking soda
☐ Vinegar
☐ Alka-seltzer
☐ Mentos candy
☐ Diet Coke (not Pepsi or off-brand)
☐ 100 mL beakers
☐ SEE EXPLORE STATION FOR LIST OF MATERIALS FOR CHALLENGE ACTIVITY

Sort

☐ Reading Passage (optional)
☐ Student Direction Card
☐ Larger Sort Cards or Worksheet
☐ Scissors
☐ Glue
☐ Response Sheet or Task Cards
☐ Science Journal (optional)

Table of Contents

Science Station Overview

Materials Checklist

Science Stations

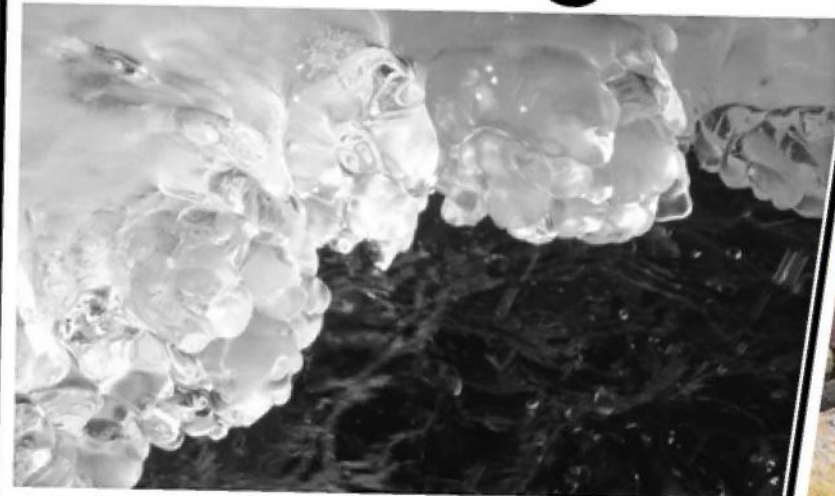
BIG IDEA POSTERS

Substances



can go through physical changes or chemical changes

In a physical change,



the form or size of substance changes, no new substance formed.

In a chemical change,



a new substance is formed.

There are three states of matter:



solid, liquid, and gas.

BIG IDEA POSTERS THAT EXPLAIN THE KEY CONCEPTS.

**chemical
change**

**chemical property
of matter**

freezing point

when atoms in substances
are rearranged to form
new substances

A property of matter that can
be observed and measured only
by causing a chemical change.

**VOCABULARY CARDS
WITHOUT PICTURE**



one of the
forms that
matter can
take, including
solid, liquid,
and gas

**state of
matter**



melting point

tem
at
solid becomes
a li



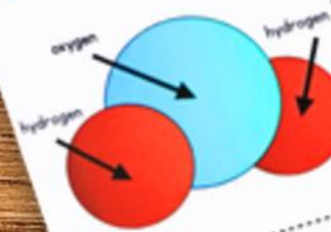
**property of
matter**

a trait
can
obs
m



freezing point

the
temperature
at which a
liquid becomes
a s



molecule

two c
atoms c
witho
atoms
joined to



**physical property
of matter**

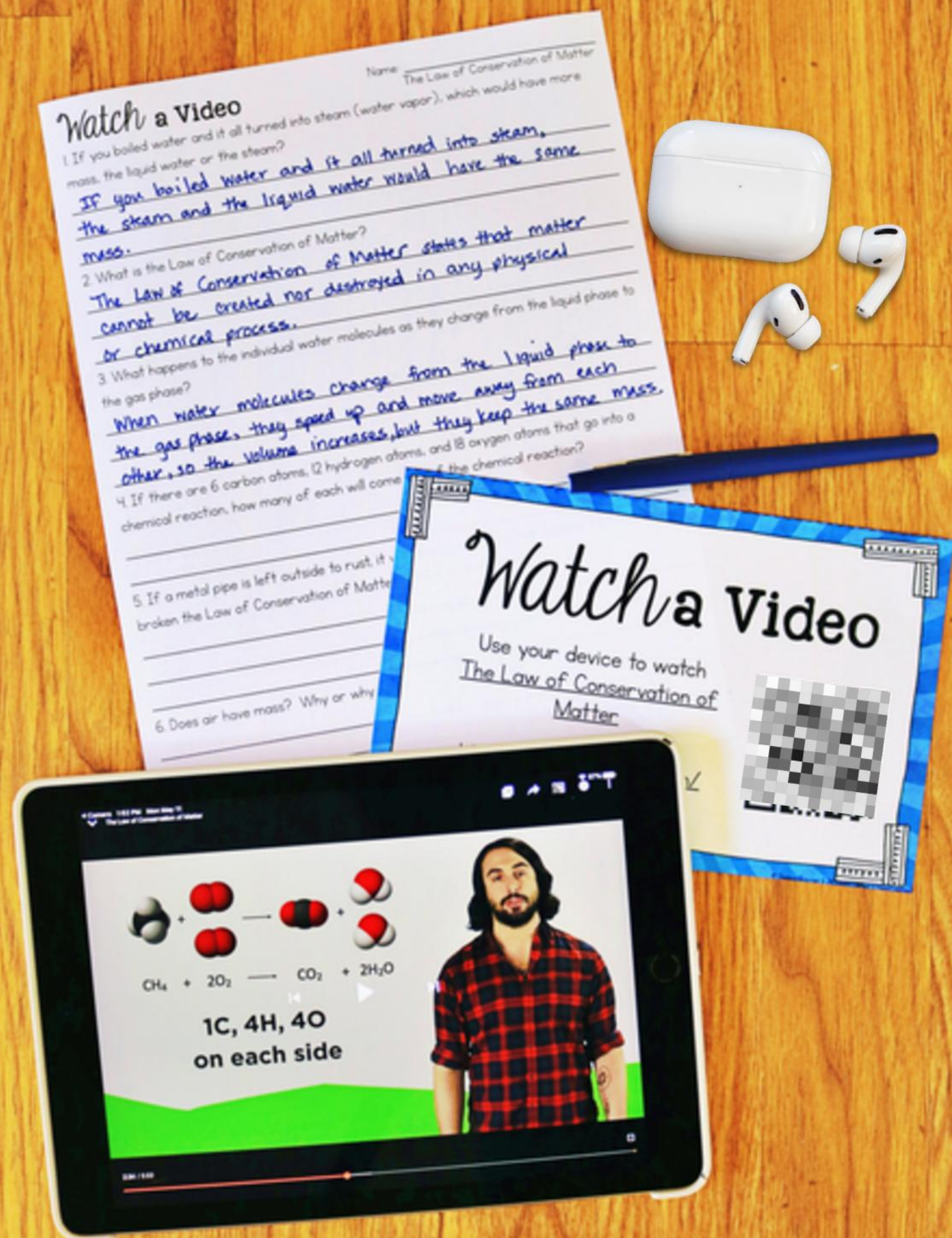
a property of
matter that can
be observed and
measured
without changing
the substance

**VOCABULARY CARDS
WITH PICTURE**

WATCH STATION

VIDEO ACTIVITIES ABOUT CONSERVATION OF MASS AND MATTER CHANGES

Great resource.
“Helped my students
better understand
our content.”
- Jill Fischer



PLAY STATION

BOARD GAME, CROSSWORD, AND WORD SEARCH REVIEW ACTIVITIES

“Great product!
Definitely
recommend using it
for your classroom!”
- Caitlyn B.



INVESTIGATE STATION

HANDS-ON LAB INVESTIGATIONS WITH DISSOLVABLE SOLIDS

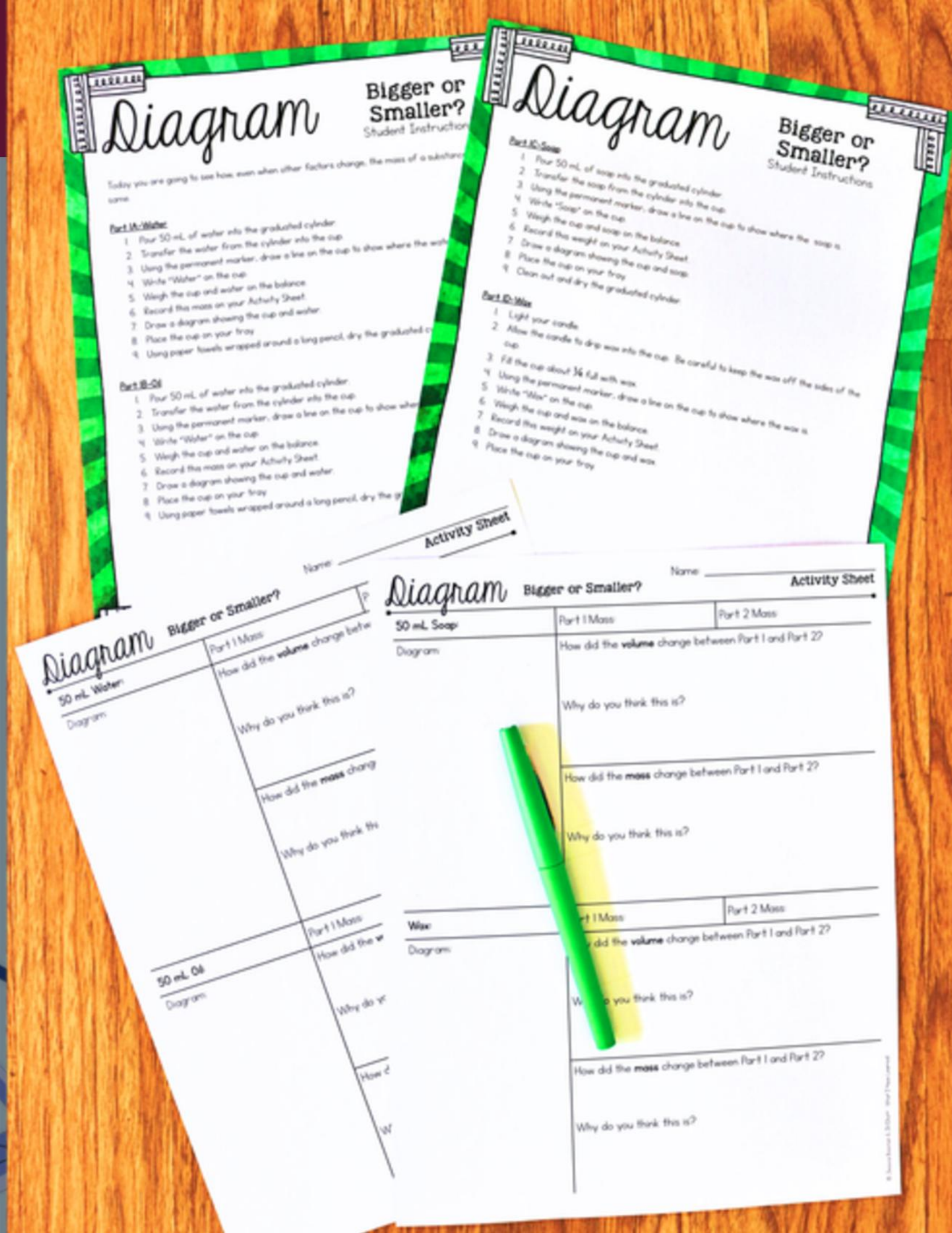
“My students were
very engaged
using this
resource!”
- Amanda F.



DIAGRAM STATION

VISUAL MODELING OF MASS CHANGES DURING STATE CHANGES.

“ My students loved using this activity! ”
- CherieR B.



READ STATION

READING PASSAGES WITH COMPREHENSION QUESTIONS

This was great test
prep and review
for my 5th
graders.
- Jennifer R.



MODEL STATION

**BUILD AND MODEL HOW MASS
BEFORE AND AFTER A CHANGE
REMAINS EQUAL**

“ Great LOCOM
resource...thanks!
- stacy reed ”

Model The Sum of the Parts

In this activity, you will model the law of conservation of mass. You will show that the number of atoms before and after the change stays the same.

Directions:

1. Read the Activity Sheet and follow the instructions.
2. Answer the questions at the bottom of the Activity Sheet.

Name: _____

Model The Sum of the Parts		Activity Sheet
Clay Ball		
Weigh the clay ball and record its mass.		Subtract the first mass from the second mass. Mass of big ball
Separate the clay into 5 smaller balls. Weigh these balls (placed next to each other on the scale or balance) and record their mass.		Mass of 5 balls Difference in mass
Legos		
Weigh the LEGO creation and record its mass.		Subtract the first mass from the second mass. Mass of LEGO creation
Separate all the pieces of the LEGO creation. Weigh these pieces (placed next to each other on the scale or balance) and record their mass.		Mass of LEGO pieces Difference in mass
Ice		
Weigh the bag of ice cubes and record its mass.		Subtract the first mass from the second mass. Mass of bag of ice cubes
Using the rolling pin, crush the ice cubes. Be careful not to break the bag. Weigh the bag of crushed cubes and record its mass.		Mass of bag of crushed ice Difference in mass
Questions: For each of the three activities, what was the difference in mass? Why do you think you got these results?		

EXPLORE STATION

GUIDED LAB ACTIVITIES EXAMINING WHERE MASS GOES DURING REACTIONS

This was a great tool
“ to help me cover
the topic while
remote!
- Elizabeth B. ”

Explore Where Did It Go?

In this activity, you are going to explore what happens when substances combine.

Part 1: Baking Soda and Vinegar

1. Place a coffee filter on your scale and zero it. Pour 5 grams of baking soda into the coffee filter.
2. Fill a beaker with 20 mL of vinegar. Weigh the beaker and record the weight on your Data Table.
3. Carefully add the 5 grams of baking soda to the beaker.
4. Record your observations.
5. After no more bubbles are being formed, weigh the beaker and record this weight on your Data Table.
6. Answer the questions.

Part 2: Alka Seltzer

1. Weigh an Alka Seltzer on the scale. Record this weight on your Data Table.
2. Fill a beaker with 20 mL of water. Weigh the beaker and record the weight on your Data Table.
3. Carefully add the Alka Seltzer to the beaker.
4. Record your observations.
5. After no more bubbles are being formed, weigh the beaker and record this weight on your Data Table.
6. Answer the questions.

Part 3: Mentos

1. Weigh a Mentos candy on the scale. Record this weight on your data table.
2. Fill a beaker with 20 mL of Diet Coke. Weigh the beaker and record the weight on your Data Table.
3. Carefully add the candy to the beaker with Diet Coke.
4. Record your observations.
5. After no more bubbles are being formed, weigh the beaker. Record this weight on your Data Table.
6. Answer the questions.

Challenge Activity

When vinegar and baking soda combine, one of the molecules they form is carbon dioxide. Carbon dioxide is a gas. It escapes into the air, making it difficult to weigh.

You are going to write a...

Activity Sheet

Explore Where Did It Go?

Create a bar graph of the Difference in Mass for the three parts.

Part	Was there a change in mass?	Why or why not? Give your best guess.
Part 1: Baking Soda and Vinegar		
Part 2: Alka Seltzer		
Part 3: Mentos		

Find Mass (grams)

Substance	Mass (grams)
Baking Soda & Vinegar	
Alka-Seltzer	
Mentos	

SORT STATION

PHYSICAL AND CHEMICAL CHANGE SORTING ACTIVITIES TIED TO CONSERVATION OF MASS

“ Lots of great
information in this
resource that helped
reinforce the topic. ”
- Fiona K.

Sort Molecule Only

- Mercury is a metal that is a liquid at room temperature.
Hg
Sort: Element, Molecule, or Both?
- Hydrogen peroxide is often used to clean wounds.
H2O2
Sort: Element, Molecule, or Both?
- Bromine is a brown liquid at room temperature.
Br2
Sort: Element, Molecule, or Both?
- Plants absorb carbon dioxide and turn it into food.
O2
Sort: Element, Molecule, or Both?
- When phosphorus is exposed to oxygen, it glows.
P4
Sort: Element, Molecule, or Both?
- Methane is the main ingredient in natural gas, the gas that is used for cooking and heating in homes.
CH4
Sort: Element, Molecule, or Both?
- Acetic acid is also known as vinegar.
CH3COOH
Sort: Element, Molecule, or Both?
- Land animals need oxygen from the atmosphere to breathe.
O2
Sort: Element, Molecule, or Both?
- Citric acid is found in lemons and oranges.
C6H8O7
Sort: Element, Molecule, or Both?
- Copper is a metal that is used in pots and pans because it conducts heat well.
Cu
Sort: Element, Molecule, or Both?

Sort Element Only

- Diamonds and other crystals used to be filed with hydrogen gas to help them float.
H2
Sort: Element, Molecule, or Both?
- Argon is a gas that is used to help make light bulbs stable.
Ar
Sort: Element, Molecule, or Both?
- The 5¢ coin, called the "nickel", is not pure nickel metal. It is 75% copper and 25% nickel.
Ni
Sort: Element, Molecule, or Both?
- Many wedding rings are made of gold.
Ag
Sort: Element, Molecule, or Both?
- 78% of the Earth's atmosphere is nitrogen gas.
N2
Sort: Element, Molecule, or Both?

Sort Both

CONSERVATION OF MASS ACTIVITIES

SUGGESTED USES

Learning Stations

Use all eight stations or just a few as learning stations that students complete at their own pace.

Science Centers

Set up a rotation where students visit each center to complete the activities.

Whole Class

Use the activities in a whole class format.

Small Group

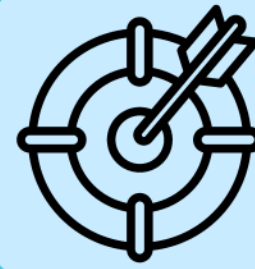
Use the activities with a small group who need extra help.

YOU WILL LOVE THIS BECAUSE



Complete Unit in One Download

Provides everything needed to teach conservation of mass without searching for separate labs, readings, and review materials.



Direct NGSS Alignment

Directly supports 5-PS1-2 while reinforcing scientific reasoning and evidence-based explanations.



Hands-On + Digital

Students repeatedly measure, model, analyze, and explain how mass is conserved during physical and chemical changes.

TEACHERS LOVE IT!



Engaging 5th grade science resource on a tricky subject. My kids enjoyed this lesson and seemed to have a better understanding of the concept. Thanks!

Jennifer T.



These resources are awesome! I love the convenience of having so many different types of activities already put together in one place!

Lindley G.



My passion is making learning accessible to all students.
I love scaffolding learning, breaking down the concepts and building them up so that students can see the connections.
I love figuring out the small components that build up to the big ideas and helping students see it all.



What I have **LEARNED**