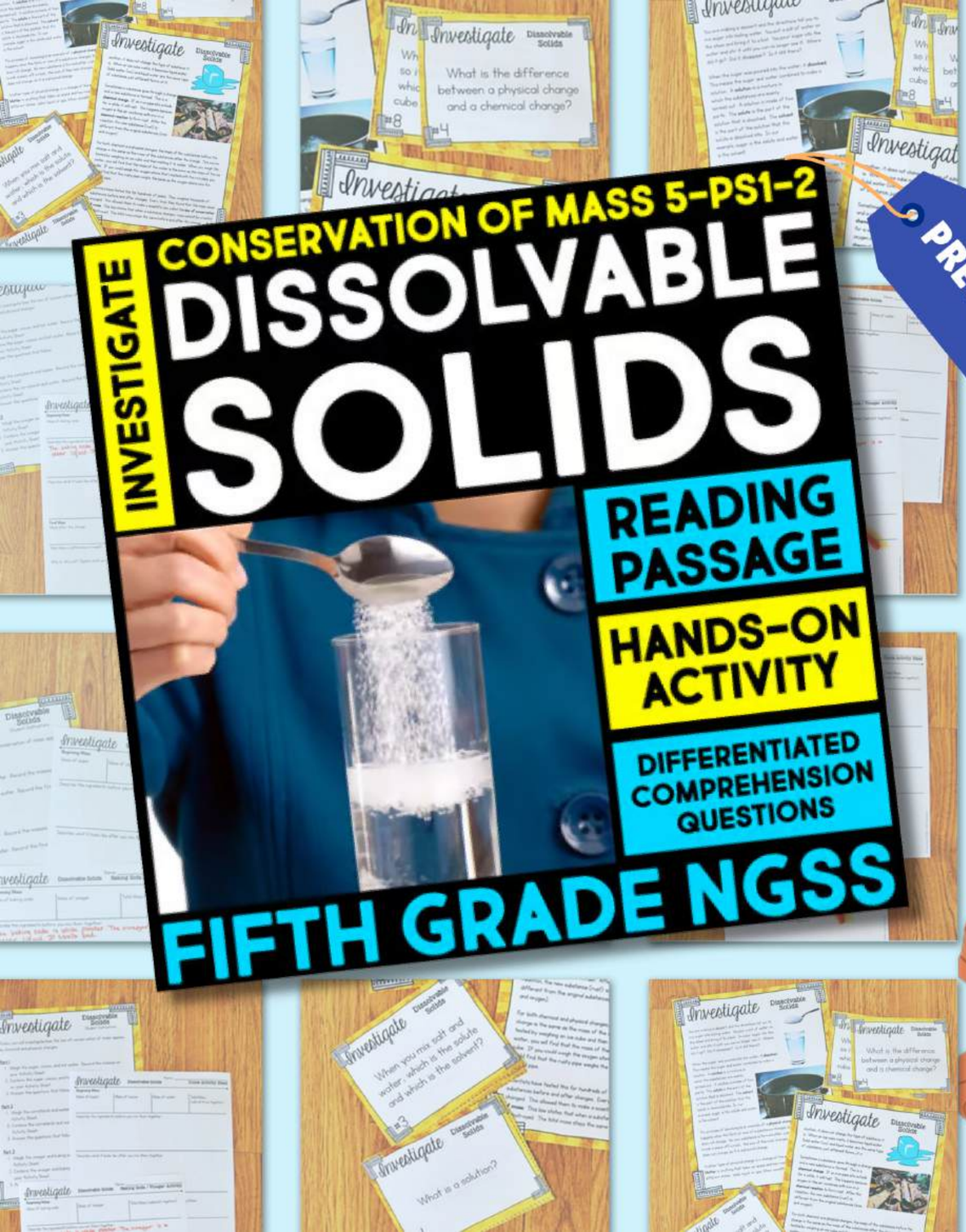


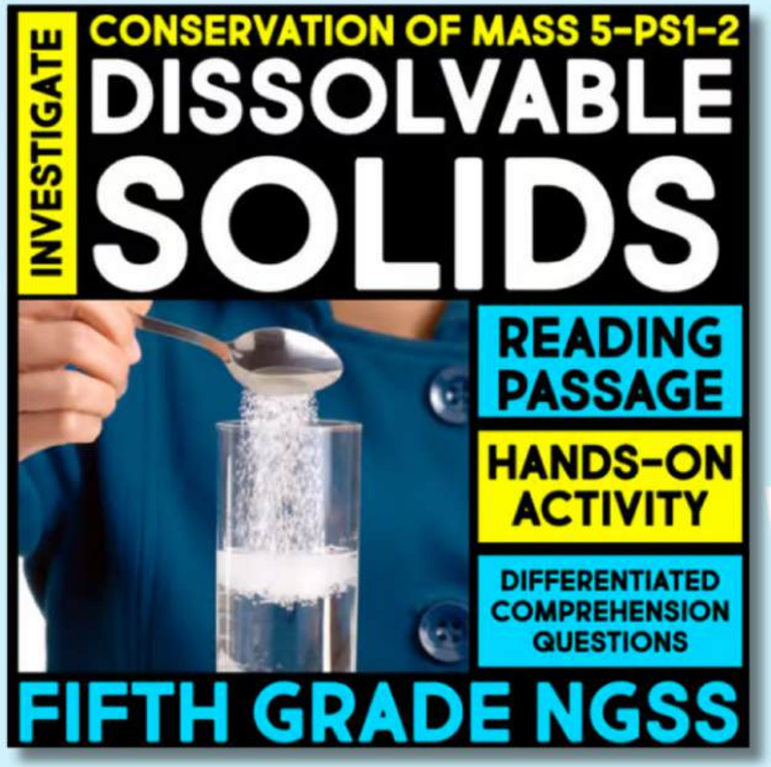
Does Matter Disappear? Let's Find Out.

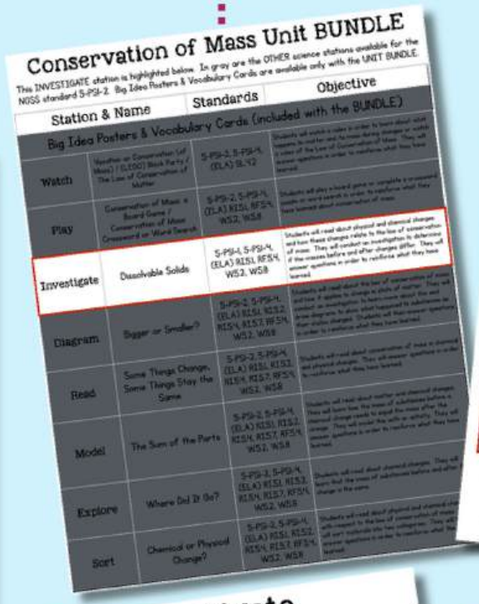
5TH GRADE

INVESTIGATE DISSOLVABLE SOLIDS

KEEP SCROLLING TO SEE WHAT'S INSIDE!

ACTIVITY OVERVIEW





Conservation of Mass Unit BUNDLE

This INVESTIGATE station is highlighted below. In gray are the OTHER science stations available for the NGSS standard 5-PS1-2. 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	Weather or Conservation (of Mass) ? (LEGO) Block Party / The Law of Conservation of Matter	5-PS1-2, 5-PS1-4, (ELA) SL.4.2	Students will watch a video in order to learn about what happens to matter and the mass during changes of matter. They will watch a video of 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-PS1-2, 5-PS1-4, (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-PS1-4, 5-PS1-4, (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. Then, will answer questions in order to reinforce what they have learned.
Diagram	Bigger or Smaller?	5-PS1-2, 5-PS1-4, (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. Then, they will draw a picture of matter. They will draw a picture of matter before a change in state of matter. Then, they will draw a picture after the change. Students will answer questions in order to reinforce what they have learned.
Read	Some Things Change, Some Things Stay the Same	5-PS1-2, 5-PS1-4, (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 changing and physical changes. They will answer questions in order to reinforce what they have learned.
Model	The Sum of the Parts	5-PS1-2, 5-PS1-4, (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. Then, they will model how the mass of substances before a chemical change can be equal the mass after the change. They will model this with an activity. Then will answer questions in order to reinforce what they have learned.
Explore	Where Did It Go?	5-PS1-2, 5-PS1-4, (ELA) RI.5.1, RI.5.3, RI.5.4, RI.5.7, RF.5.4, WS.2, WS.8	Students will read about physical changes. They will explore how the mass of substances before and after a change is the same.
Sort	Chemical or Physical Change?	5-PS1-2, 5-PS1-4, (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. Then, they will sort materials into two categories. They will answer questions in order to reinforce what they have learned.



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.

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.

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

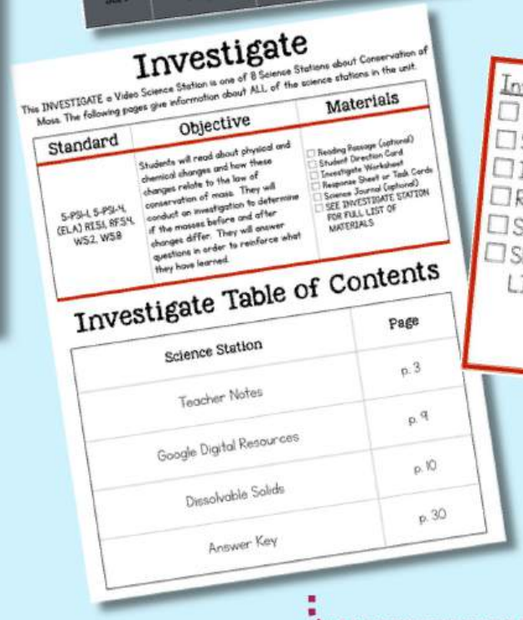
Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

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.

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.

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

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



Investigate

This INVESTIGATE a Video Science Station is one of 8 Science Stations about Conservation of Mass. The following pages give information about ALL of the science stations in the unit.

Standard	Objective	Materials
5-PS1-4, 5-PS1-4, (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.	☐ Reading Passage (optional) ☐ Student Direction Card ☐ Investigate Worksheet ☐ Response Sheet or Task Cards ☐ Science Journal (optional) ☐ SEE INVESTIGATE STATION FOR FULL LIST OF MATERIALS

Investigate Table of Contents

Science Station	Page
Teacher Notes	p. 3
Google Digital Resources	p. 9
Dissolvable Solids	p. 10
Answer Key	p. 30



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

Table of Contents

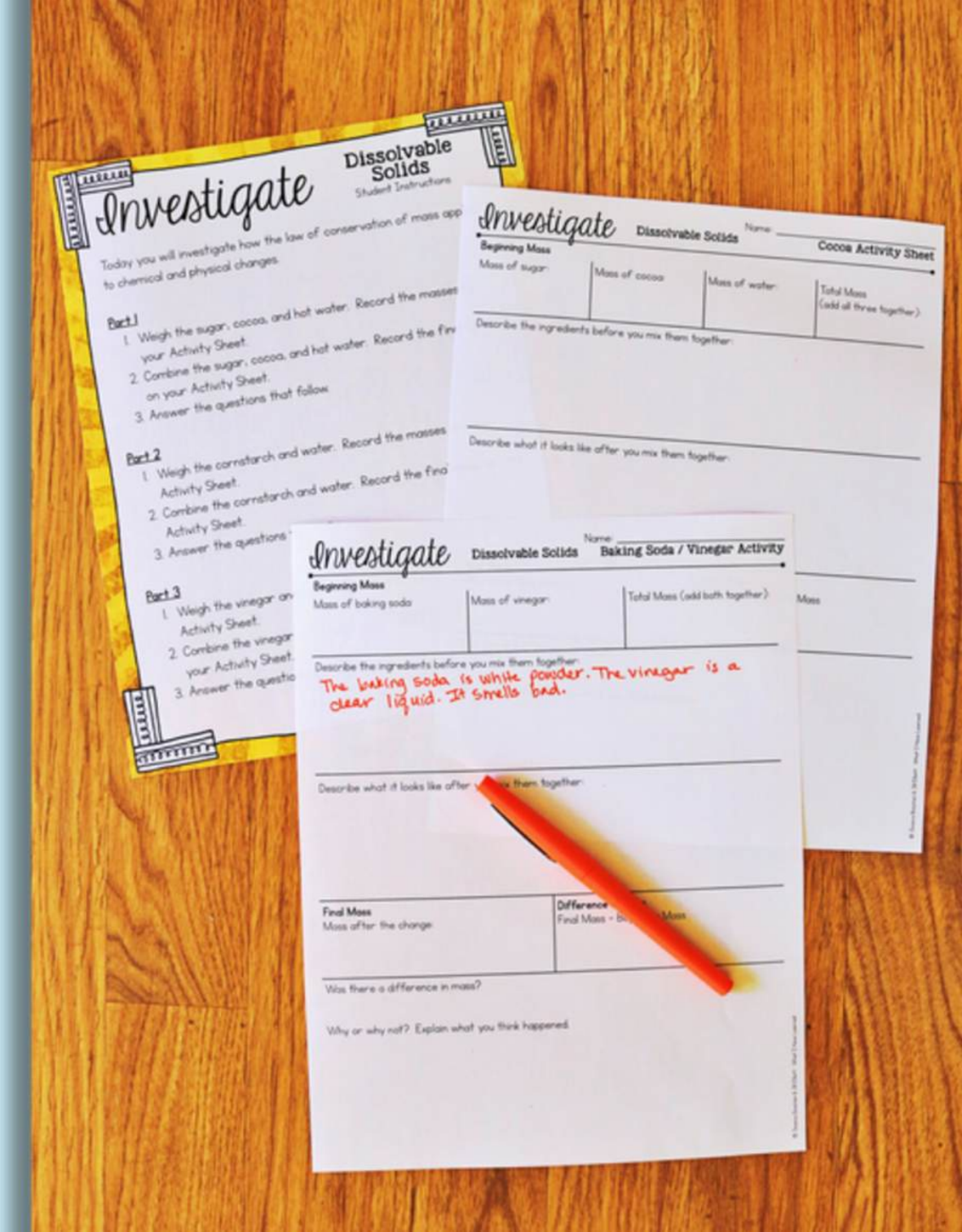
Science Station Overview

Materials Checklist

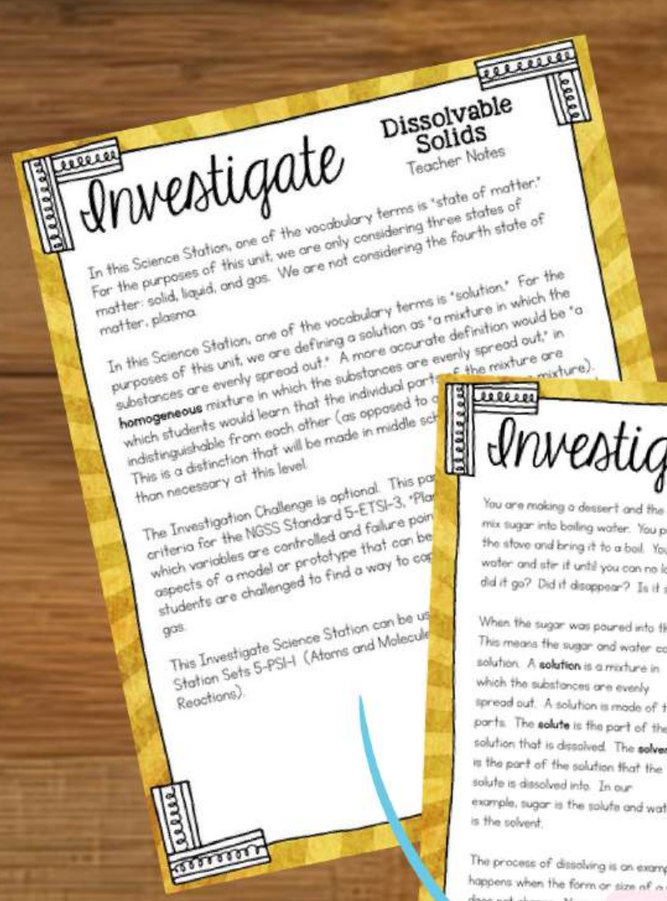
Teacher Notes & Table of Contents

WHAT'S INCLUDED
INVESTIGATE SCIENCE STATION

- Teacher Notes
- **Student Text** in two formats
- Student **Instructions**
- **Activity Sheets** for observation
- Differentiated **Questions**
- Answer Key
- Google Form™
- Google Slides™



INVESTIGATE: READING PASSAGE


Investigate Dissolvable Solids
Teacher Notes

In this Science Station, one of the vocabulary terms is "state of matter." For the purposes of this unit, we are only considering three states of matter: solid, liquid, and gas. We are not considering the fourth state of matter: plasma.

In this Science Station, one of the vocabulary terms is "solution." For the purposes of this unit, we are defining a solution as "a mixture in which the substances are evenly spread out." A more accurate definition would be "a **homogeneous** mixture in which the substances are evenly spread out" in which students would learn that the individual part of the mixture are indistinguishable from each other (as opposed to a **heterogeneous** mixture). This is a distinction that will be made in middle sch than necessary at this level.

The Investigation Challenge is optional. This pa criteria for the NGSS Standard 5-ETS1-3, "Plan which variables are controlled and failure point aspects of a model or prototype that can be students are challenged to find a way to cop gas.

This Investigate Science Station can be us Station Sets 5-PS1-1 (Atoms and Molecule Reactions).


Investigate Dissolvable Solids

another, it does not change the type of substance it is. When an ice cube melts, it becomes liquid water. Solid water (ice) and liquid water are the same type of substance, just different forms of it.

Sometimes a substance goes through a change and a new substance is formed. This is a **chemical change**. If an iron pipe sits outside for a while, it will rust. This happens because oxygen in the air combines with iron in a **chemical reaction** to form rust. After the reaction, the new substance (rust) is

the substances before the after the change. This can be water. When you weigh the same as the mass of the ice ed with the iron pipe, you oxygen atoms plus the

weighed thousands of found that the mass never ed the **law of conservation** mass cannot be created after the change.

p. 2


Investigate Dissolvable Solids

You are making a dessert and the directions tell you to mix sugar into boiling water. You put a pot of water on the stove and bring it to a boil. You pour sugar into the water and stir it until you can no longer see it. Where did it go? Did it disappear? Is it still there?

When the sugar was poured into the water, it **dissolved**. This means the sugar and water combined to make a solution. A **solution** is a mixture in which the substances are evenly spread out. A solution is made of two parts. The **solute** is the part of the solution that is dissolved. The **solvent** is the part of the solution that the solute is dissolved into. In our example, sugar is the solute and water is the solvent.

The process of dissolving is an example of a **physical change**. A physical change happens when the form or size of a substance does not change. No new

break a piece off a rock,

s not change, so it is a

Another

Mat

different states: solid, liq


Investigate Dissolvable Solids

Name: _____ p. 1

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The process of dissolving is an example of a **physical change**. A physical change happens when the form or size of a substance changes, but the substance itself does not change. No new substance is formed after a physical change. If you break a piece off a rock, the size of the rock changes. However, the type of ro so it is a physical change

Another type of physi of the **state of matt Matter** is anything t has mass. Matter different states: something change another, it does substance it is. becomes liquid liquid water a just different


Investigate Dissolvable Solids

Name: _____ p. 2

Sometimes a substance goes through a change and a new substance is formed. This is a **chemical change**. If an iron pipe sits outside for a while, it will rust. This happens because oxygen in the air combines with iron in a **chemical reaction** to form rust. After the reaction, the new substance (rust) is different from the original substances (iron and oxygen).

For both chemical and physical changes, the mass of the substances before the change is the same as the mass of the substances after the change. This can be tested by weighing an ice cube and then melting it to water. When you weigh the water, you will find that the mass of the water is the same as the mass of the ice cube. If you could weigh the oxygen atoms that reacted with the iron pipe, you would find that the rusty pipe weighs the same as the oxygen atoms plus the original pipe.

Scientists have tested this for hundreds of years. They weighed thousands of substances before and after changes. Every time, they found that the mass never changed. This allowed them to make a scientific law called the **law of conservation of mass**. This law states that when a substance changes, mass cannot be created or destroyed. The total mass stays the same before and after the change.

READING PASSAGE IN TWO FORMATS

ENGAGING ACTIVITY & WORKSHEETS

Investigate — Dissolvable Solids — Teacher Notes

Materials
- Student Sheets
- Balance or scale that can measure milligrams
- 2 Tbsp sugar
- 2 Tbsp cocoa
- 250 mL (about 1 cup) hot water
- 1 cup cornstarch
- 250 mL (about 1 cup) water
- 2 Tbsp baking soda
- 1 Tbsp vinegar
- 3 spoons or stir sticks
- 3 beakers or cups

For Investigation Challenge:
- 500 mL Erlenmeyer flask or a half liter bottle with
- mouth.
- Balloon (stretched out--students may need to inf
- deflate a few times first)
- Plastic bag
- Rubber band
- Tape
- Funnel

Investigate — Dissolvable Solids — Student Instructions

Today you will investigate how the law of conservation of mass applies to chemical and physical changes.

Part 1
1. Weigh the sugar, cocoa, and hot water. Record the masses on your Activity Sheet.
2. Combine the sugar, cocoa, and hot water. Record the final mass on your Activity Sheet.
3. Answer the questions that follow.

Part 2
1. Weigh the cornstarch and water. Record the masses on your Activity Sheet.
2. Combine the cornstarch and water. Record the final mass on your Activity Sheet.
3. Answer the questions that follow.

Part 3
1. Weigh the vinegar and baking soda. Record the masses on your Activity Sheet.
2. Combine the vinegar and baking soda. Record the final mass on your Activity Sheet.
3. Ans

Investigate — Dissolvable Solids — Student Instructions

Optional Investigation Challenge
1. Answer the first questions.
- esign a set-up to capture any lost gases. Draw th
- our Activity Sheet and label the materials you
- eigh the vinegar and baking soda. Record the
- tivity Sheet.
- mbine the vinegar and baking soda. Record the
- r Activity Sheet.
- swer the questions that follow.

Investigate — Dissolvable Solids — Cocoa Activity Sheet

Name: _____

Beginning Mass: Mass of sugar:	Mass of cocoa:	Mass of water:	Total Mass (add all three together):

Describe the ingredients before you mix them together:

Describe what it looks like after you mix them together:

Final Mass: Mass:	Difference in Mass: Final Mass – Beginning Mass

Was there a difference in mass?

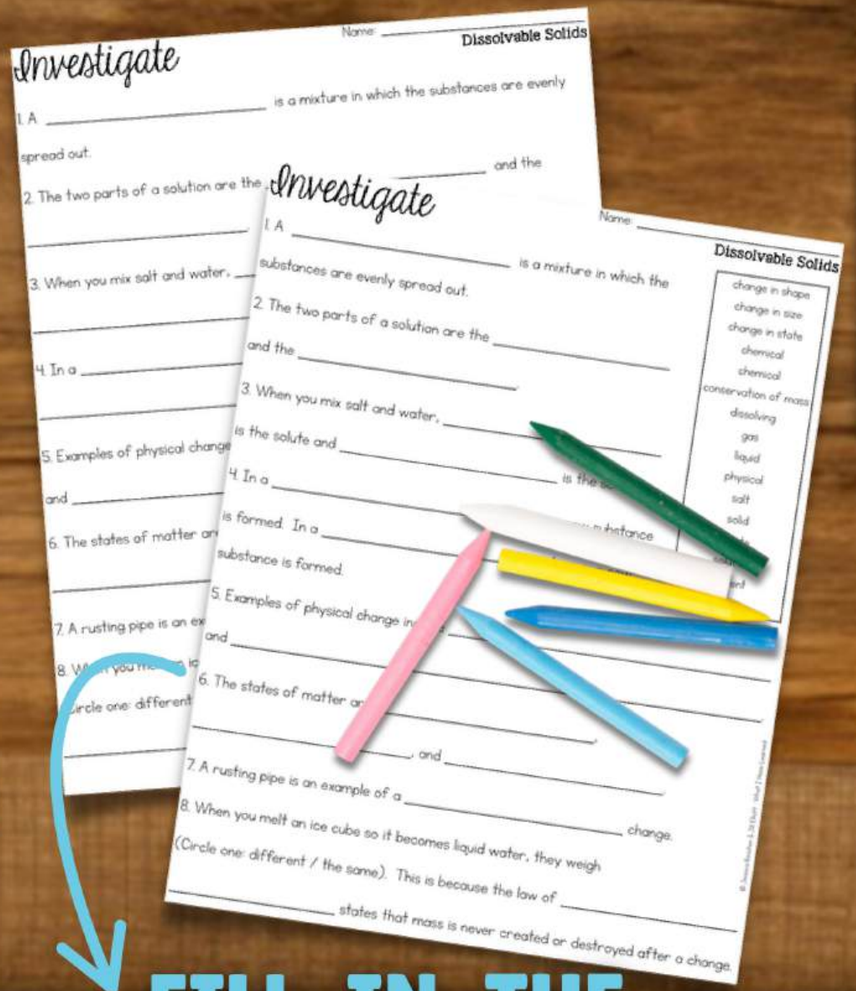
Why or why not? Explain what you think happened.

ENGAGING ACTIVITY & WORKSHEETS

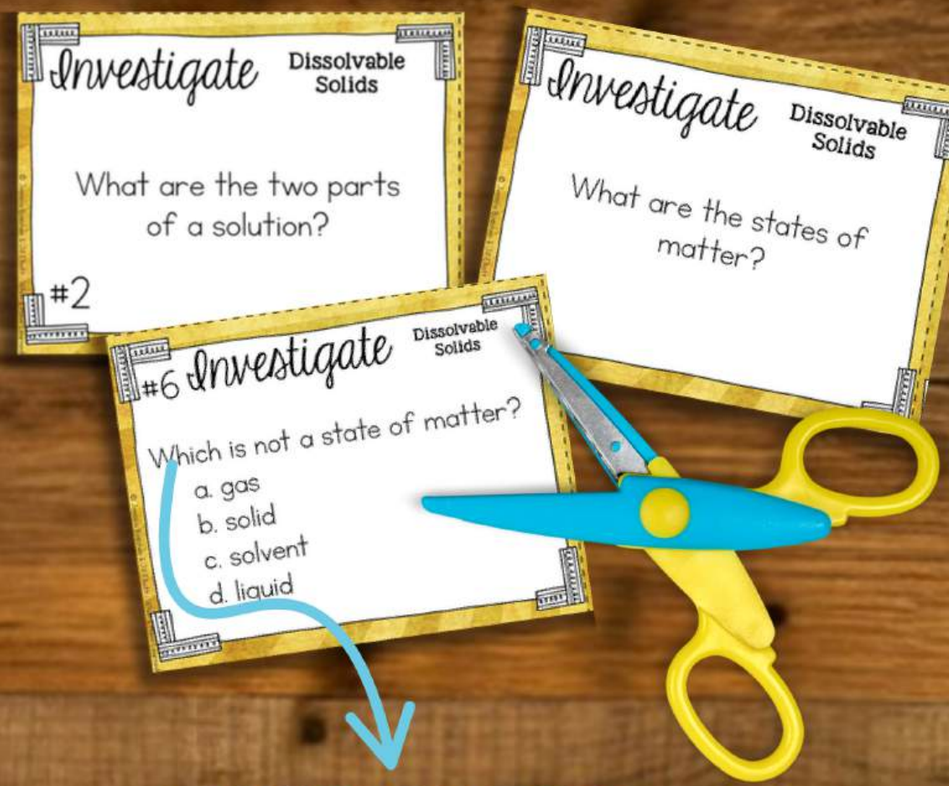
DIFFERENTIATED QUESTIONS



SHORT ANSWER



FILL-IN-THE BLANK



TASK CARDS: SHORT ANSWER & MULTIPLE CHOICE

Investigate

Dissolvable Solids





You are making a dessert and the directions tell you to mix sugar into boiling water. You put a pot of water on the stove and bring it to a boil. You pour sugar into the water and stir it until you can no longer see it. Where did it go? Did it disappear? Is it still there?

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The process of dissolving happens when the forces between the solute particles are broken and the solute does not change. No matter how small you break a piece of sugar, it does not change.

Another type of change is a change in matter. **Matter** is anything that has mass and takes up space. Matter can change from one form to another. This is a change in state. Water can change from a solid (ice) to a liquid (water) to a gas (steam). Each of these is a different state of matter.

Investigate

Dissolvable Solids

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Investigate

Name: _____

Dissolvable Solids

1. What is a solution?
A solution is a mixture in which the substances are evenly spread out.

2. What are the two parts of a solution?
The two parts of a solution are the solute and the solvent.

3. When you mix salt and water, which is the solute and which is the solvent?
When you mix salt and water, salt is the solute and water is the solvent.

4. What is the difference be…cal change and a chemical change?
In a physical change … formed. In a chemical change, a new substance is formed.

5. What are two ex…
Examples of physic… …nge in size, change in shape, change in state, and dissolving.

6. What are the states of ma…
The states of matter are so…

7. Is a pipe that rusts an example of a…nge? Explain your answer:
A rusting pipe is an example of a ch… …is because the rust on the pipe is a new substance. It is different from… …pipe and the oxygen that made it.

8. When you melt an ice cube so it becomes liq… …hs more: the ice cube or the water? Explain your answer:
When you melt an ice cube to water, they… …This is because the law of conservation of mass states that mass is n… …royed after a change. The mass of the substance after the change is t… …before the change.

Investigate

Matter All Around Us

What is the basic building block of matter?

#2

Investigate

Matter All Around Us

Is matter always visible? Explain your answer.

#5

#2 Investigate

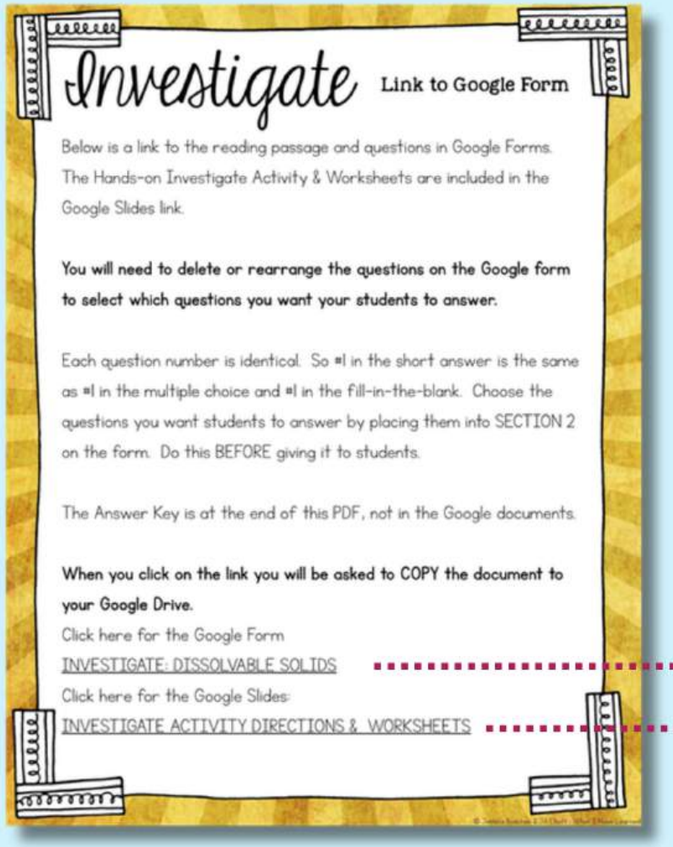
Matter All Around Us

What is the basic building block of matter?

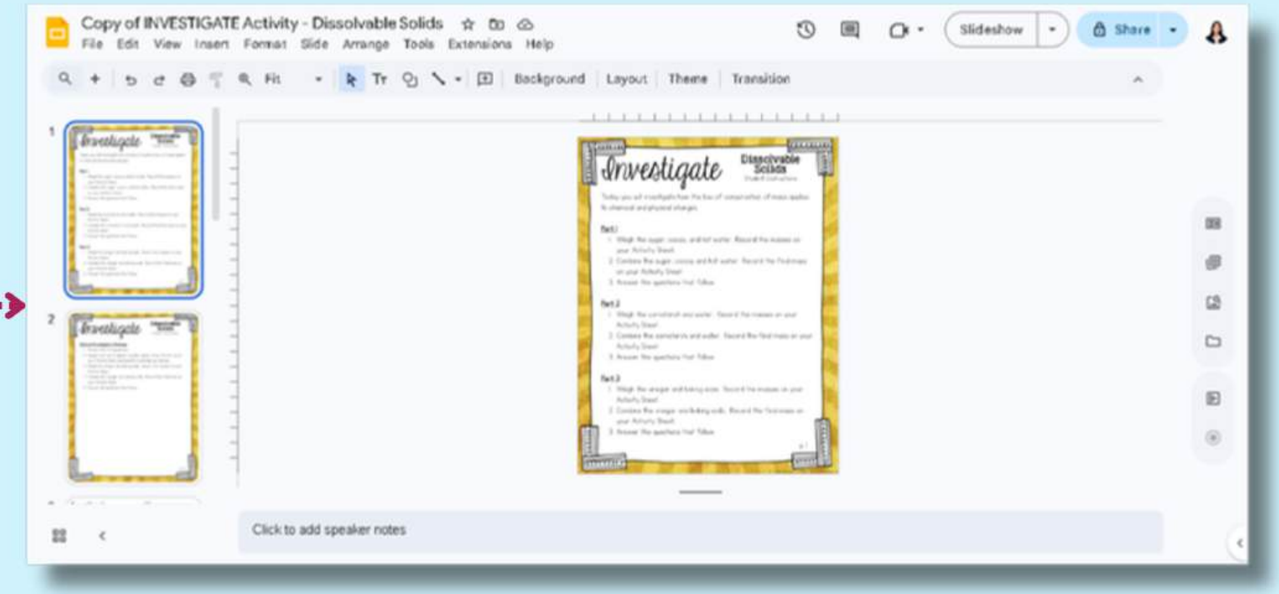
a. Fire
b. Atom
c. Molecule
d. Chemicals



DIGITAL VERSIONS







DIGITAL VERSIONS

- ✔ Google Sheet with Activity & Directions
- ✔ Google Form with Reading & Questions

Answer keys provided

YOU WILL LOVE THIS BECAUSE



Hands-On Discovery

Students actively measure and test instead of just reading about the concept.



Multiple Response Formats

Differentiated questions (short answer, blanks, task cards, multiple-choice) ensure every student can access and demonstrate understanding effectively.



Teacher-Friendly Design

Includes teacher notes, answer keys, and ready-to-use materials—minimizing prep time while maximizing instructional impact in your classroom.

TEACHERS LOVE IT!

This resource was extremely useful to use when teaching conservation of matter in my 5th grade classroom.

Regina S.



This is a well-crafted resource that my students enjoyed and stayed engaged.

Kelly C.



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.



teach MATH | teach SCIENCE | teach READING | teach WRITING

What I have LEARNED