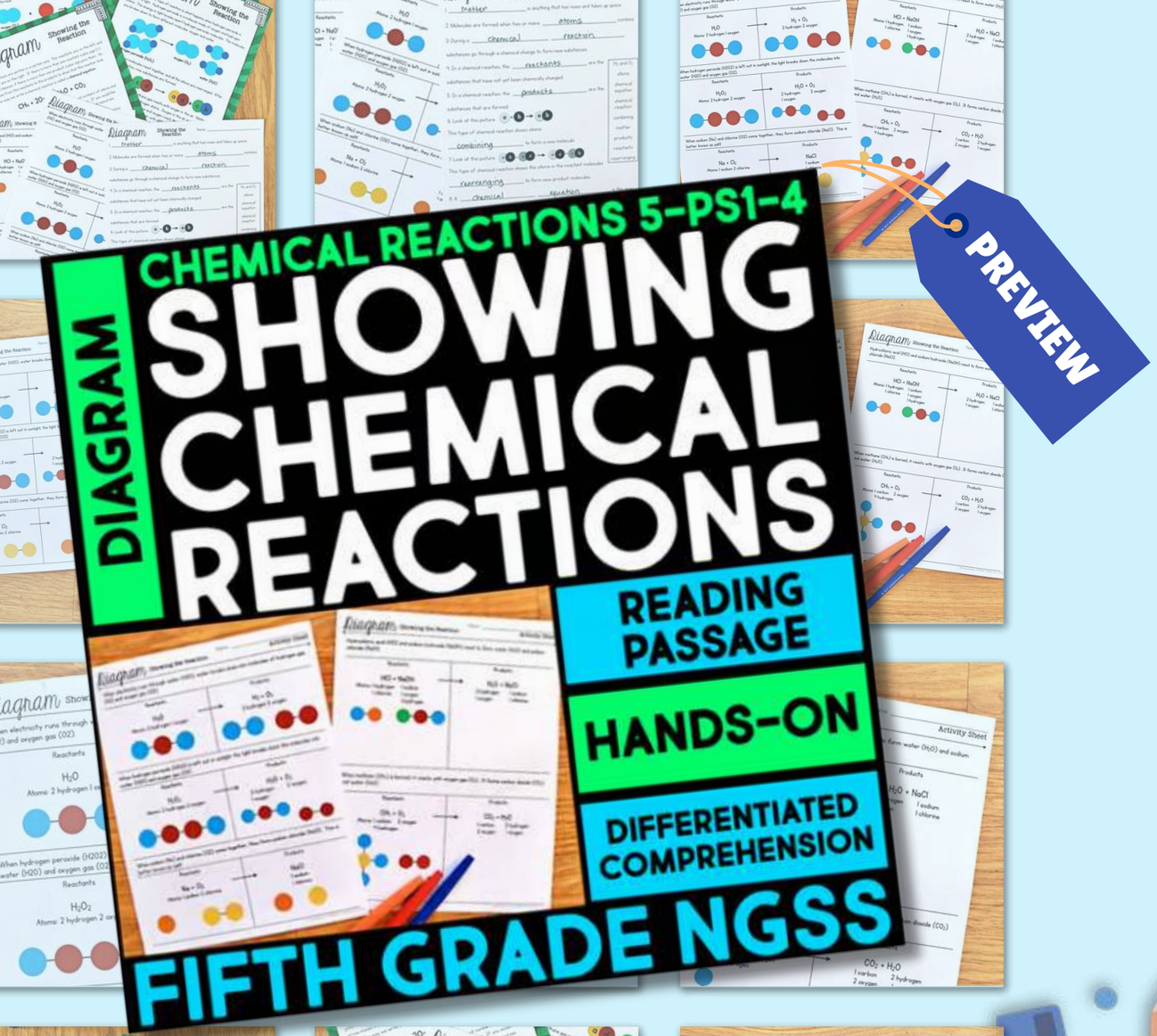


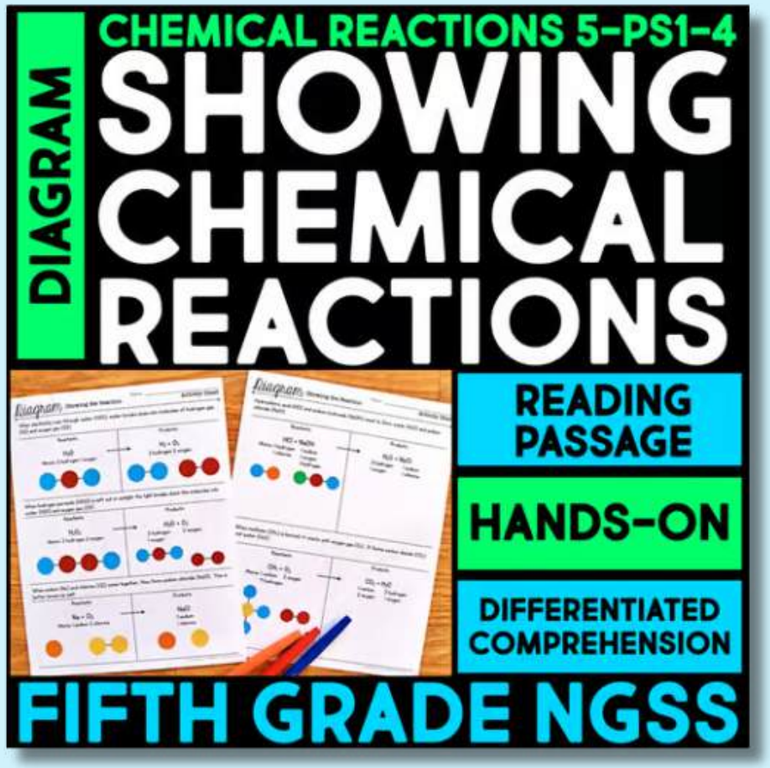
Help Students See What Happens During a Reaction!

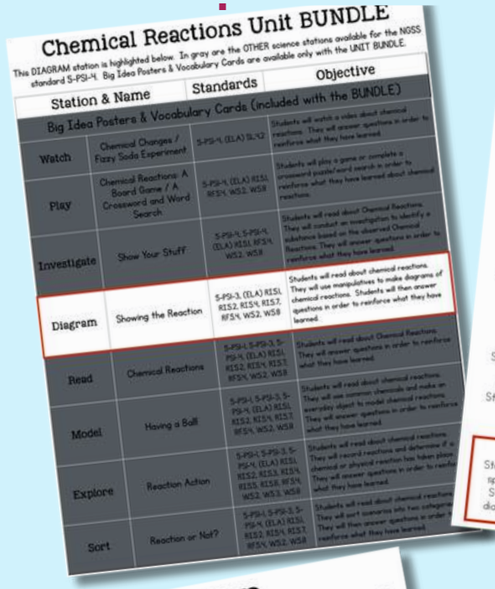
5TH GRADE

DIAGRAM SHOWING CHEMICAL REACTION

KEEP SCROLLING TO SEE WHAT'S INSIDE!

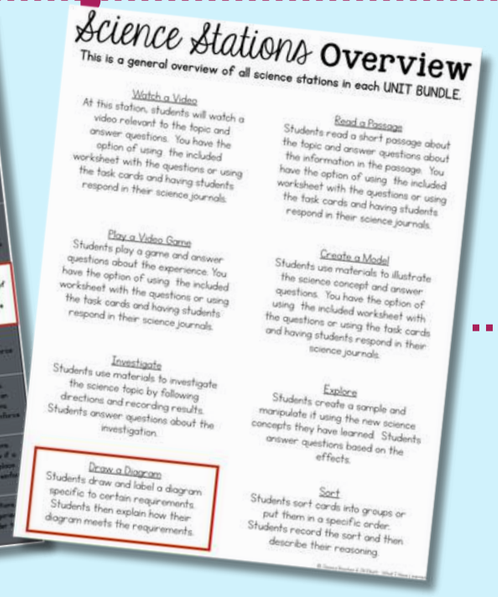
ACTIVITY OVERVIEW




Chemical Reactions Unit BUNDLE

This DIAGRAM station is highlighted below. In gray are the OTHER science stations available for the NGSS standard 5-PS1-4. 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	Chemical Changes / Fizzy Soda Experiment	5-PS1-4, (ELA) SL.5.2	Students will watch a video about chemical reactions. They will answer questions in order to reinforce what they have learned.
Play	Chemical Reactions: A Board Game / A Crossword and Word Search	5-PS1-4, (ELA) RI.5.1, RF.5.4, WS.2, WS.8	Students will play a game or complete a crossword puzzle/word search in order to reinforce what they have learned about chemical reactions.
Investigate	Show Your Stuff	5-PS1-4, 5-PS1-4, (ELA) RI.5.1, RF.5.4, WS.2, WS.8	Students will read about Chemical Reactions. They will conduct an investigation to identify a substance based on this observed Chemical Reactions. They will answer questions in order to reinforce what they have learned.
Diagram	Showing the Reaction	5-PS1-3, (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 reactions. They will use manipulatives to make diagrams of chemical reactions. Students will then answer questions in order to reinforce what they have learned.
Read	Chemical Reactions	5-PS1-3, 5-PS1-3, 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 Chemical Reactions. They will answer questions in order to reinforce what they have learned.
Model	Having a Ball	5-PS1-3, 5-PS1-3, 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 chemical reactions. They will use common chemicals and make an everyday object to model chemical reactions. They will answer questions in order to reinforce what they have learned.
Explore	Reaction Action	5-PS1-4, 5-PS1-3, 5-PS1-4, (ELA) RI.5.1, RI.5.2, RI.5.3, RI.5.4, RI.5.5, RI.5.8, RF.5.4, WS.2, WS.3, WS.8	Students will read about chemical reactions. They will record reactions and determine if a chemical or physical reaction has taken place. They will answer questions in order to reinforce what they have learned.
Sort	Reaction or Not?	5-PS1-3, 5-PS1-3, 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 chemical reactions. They will sort scenarios into two categories. They will then 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 the 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 the 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.

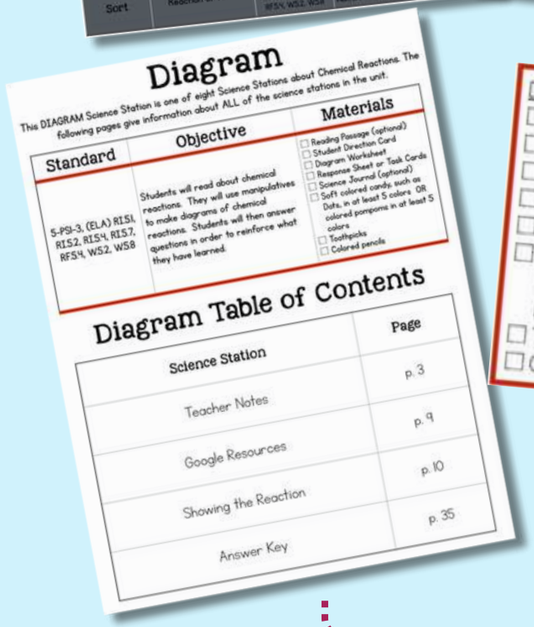
Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

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 the 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 the 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.

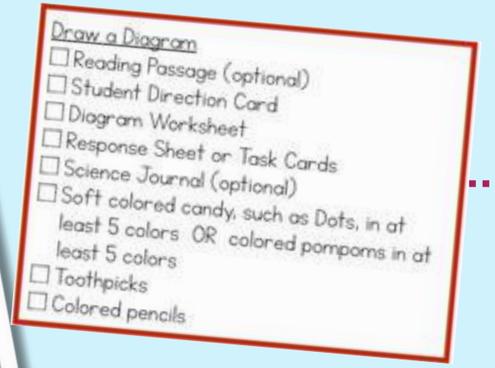

Diagram

This DIAGRAM Science Station is one of eight Science Stations about Chemical Reactions. The following pages give information about ALL of the science stations in the unit.

Standard	Objective	Materials
5-PSI-3, (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 reactions. They will use manipulatives to make diagrams of chemical reactions. Students will then answer questions in order to reinforce what they have learned.	☐ Reading Passage (optional) ☐ Student Direction Card ☐ Diagram Worksheet ☐ Response Sheet or Task Cards ☐ Science Journal (optional) ☐ Soft colored candy, such as Dots, in at least 5 colors OR colored pompoms in at least 5 colors ☐ Toothpicks ☐ Colored pencils

Diagram Table of Contents

Science Station	Page
Teacher Notes	p. 3
Google Resources	p. 9
Showing the Reaction	p. 10
Answer Key	p. 35


Draw a Diagram

- ☐ Reading Passage (optional)
- ☐ Student Direction Card
- ☐ Diagram Worksheet
- ☐ Response Sheet or Task Cards
- ☐ Science Journal (optional)
- ☐ Soft colored candy, such as Dots, in at least 5 colors OR colored pompoms in at least 5 colors
- ☐ Toothpicks
- ☐ Colored pencils

Table of Contents

Science Station Overview

Materials Checklist

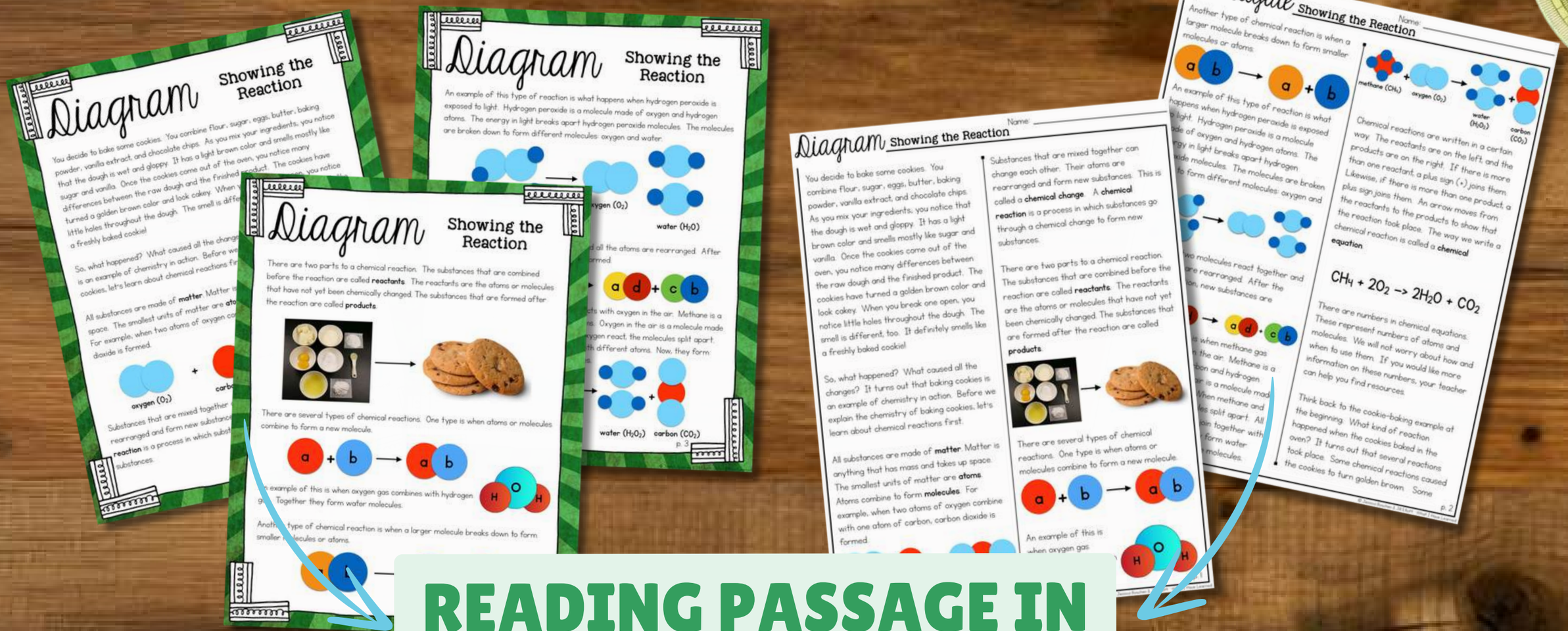
Table of Contents / Teacher's Notes

WHAT'S INCLUDED
DIAGRAM SCIENCE STATION

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



DIAGRAM: READING PASSAGE



READING PASSAGE IN TWO FORMATS

Name _____ Activity Sheet

Diagram Showing the Reaction

When electricity runs through water (H_2O), water breaks down into molecules of hydrogen gas (H_2) and oxygen gas (O_2)

Reactants	Products
H_2O Atoms: 2 hydrogen 1 oxygen	$H_2 + O_2$ 2 hydrogen 2 oxygen



When hydrogen peroxide (H_2O_2) is left out in sunlight, the light breaks down the molecules into water (H_2O) and oxygen gas (O_2)

Reactants	Products
H_2O_2 Atoms: 2 hydrogen 2 oxygen	$H_2O + O_2$ 2 hydrogen 1 oxygen 2 oxygen



When sodium (Na) and chlorine (Cl_2) come together, they form sodium chloride ($NaCl$). This is better known as salt!

Reactants	Products
$Na + Cl_2$ Atoms: 1 sodium 2 chlorine	$NaCl$ 1 sodium 1 chlorine





Name _____ Activity Sheet

Diagram Showing the Reaction

Hydrochloric acid (HCl) and sodium hydroxide ($NaOH$) react to form water (H_2O) and [illegible] chloride ($NaCl$).

Reactants	Products
$HCl + NaOH$ Atoms: 1 hydrogen 1 chlorine 1 sodium 1 oxygen 1 hydrogen	$H_2O + NaCl$ 2 hydrogen 1 oxygen 1 sodium 1 chlorine



When methane (CH_4) is burned, it reacts with oxygen gas (O_2). It forms carbon dioxide (CO_2) and water (H_2O).

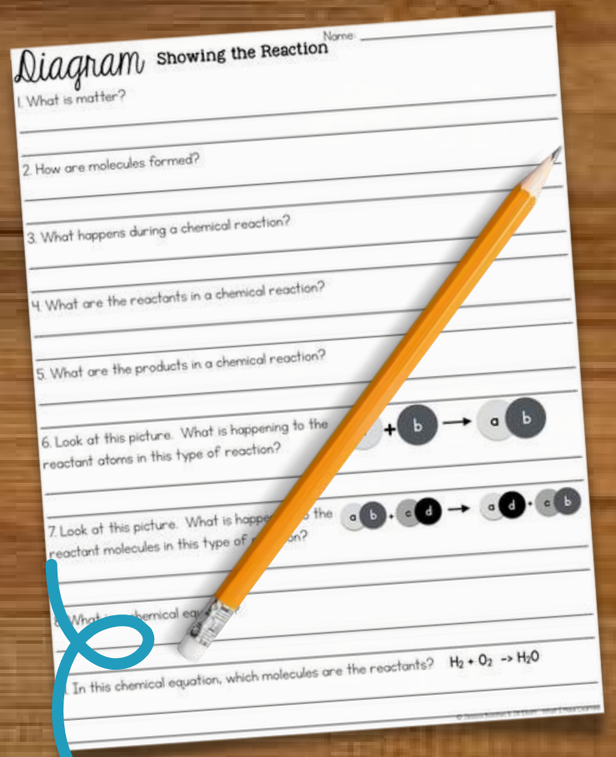
Reactants	Products
$CH_4 + O_2$ Atoms: 1 carbon 2 oxygen 4 hydrogen	$CO_2 + H_2O$ 1 carbon 2 hydrogen





ENGAGING ACTIVITY & WORKSHEETS

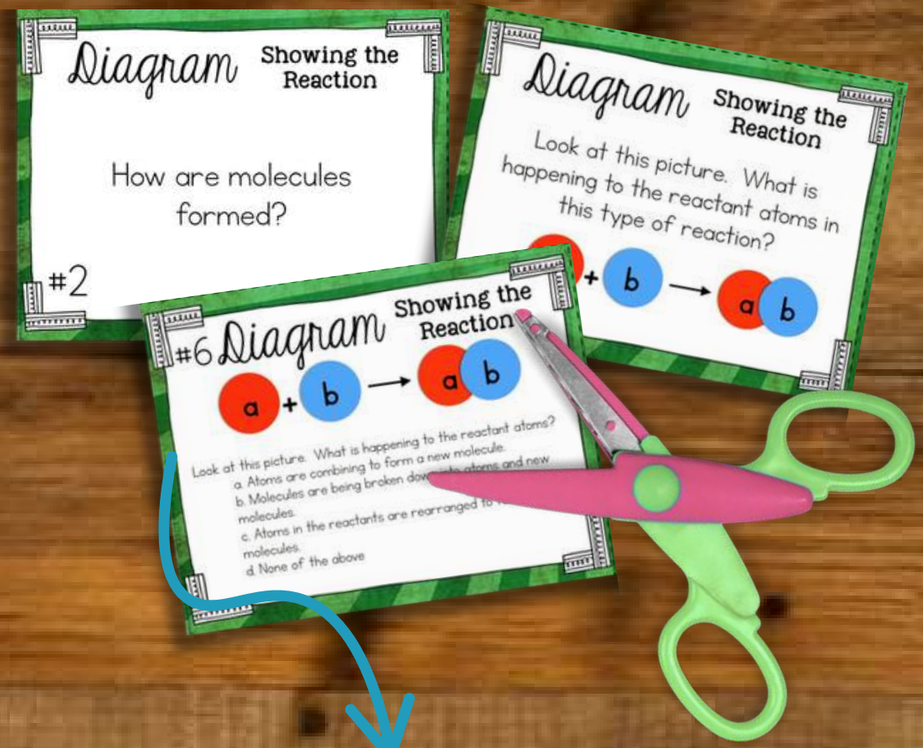
DIFFERENTIATED QUESTIONS



SHORT ANSWER



FILL-IN-THE BLANK



TASK CARDS: SHORT ANSWER & MULTIPLE CHOICE

Diagram Showing the Reaction

You decide to bake some cookies. You combine flour, sugar, eggs, butter, baking powder, vanilla extract, and chocolate chips. As you mix your ingredients, you notice that the dough is wet and gloppy. It has a light brown color and smells mostly like sugar and vanilla. Once the cookies come out of the oven, you notice many differences between the raw dough and the finished product. The cookies have turned a golden brown color and look cakey. When you open, you notice little holes throughout the dough. The smell is different, too. It smells like a freshly baked cookie!

So, what happened? What caused all the changes? Because this is an example of chemistry in action. Before we learn about chemical reactions, let's learn about matter.

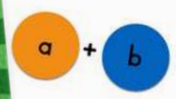
All substances are made of **matter**. Matter is anything that has mass and takes up space. The smallest units of matter are atoms. For example, when two atoms of oxygen combine with carbon, carbon dioxide is formed.

Diagram Showing the Reaction

There are two parts to a chemical reaction. The substances that are combined before the reaction are called **reactants**. The reactants are the atoms or molecules that have not yet been chemically changed. The substances that are formed after the reaction are called **products**.



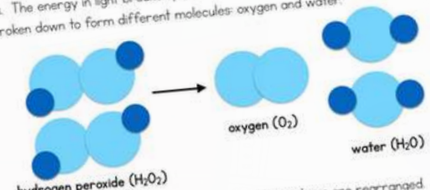




p. 2

Diagram Showing the Reaction

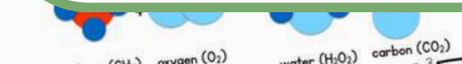
An example of this type of reaction is what happens when hydrogen peroxide is exposed to light. Hydrogen peroxide is a molecule made of oxygen and hydrogen atoms. The energy in light breaks apart hydrogen peroxide molecules. The molecules are broken down to form different molecules: oxygen and water.



hydrogen peroxide (H_2O_2) oxygen (O_2) water (H_2O)

Sometimes two molecules react together and all the atoms are rearranged. After the chemical reaction, new substances are formed.





methane (CH_4) oxygen (O_2) water (H_2O_2) carbon (CO_2)

p. 3

Diagram Showing the Reaction

How are molecules formed?

#2

Diagram Showing the Reaction

Name: _____

1. What is matter?
Matter is anything that has mass and takes up space.

2. How are molecules formed?
Molecules are formed when two or more atoms combine.

3. What happens during a chemical reaction?
During a chemical reaction, substances go through a chemical change to form new substances.

4. What are the reactants in a chemical reaction?
In a chemical reaction, the substances that have not yet been chemically changed.

5. What are the products in a chemical reaction?
In a chemical reaction, the substances that are formed during a chemical change.

6. Look at this picture. What is happening to the reactant atoms in this type of reaction?



This type of chemical reaction shows two atoms combining to form a new molecule.

7. Look at this picture. What is happening to the reactant molecules in this type of reaction?



This type of chemical reaction shows two reactant molecules rearranging to form new product molecules.

8. What is a chemical equation?
A chemical equation is the way we write

9. In this chemical equation, which molecules are the reactants? $H_2 + O_2 \rightarrow H_2O$
In this chemical equation, H_2 and O_2 are the

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#7 Diagram Showing the Reaction

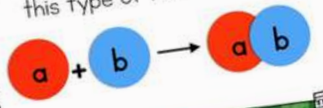


Look at this picture. What is happening to the reactant molecules?

a. Molecules are combining to form a new molecule.
b. Molecules are being broken down into atoms and new molecules.
c. Atoms in the reactants are rearranged to form new molecules.
d. None of the above

Diagram Showing the Reaction

Look at this picture. What is happening to the reactant atoms in this type of reaction?

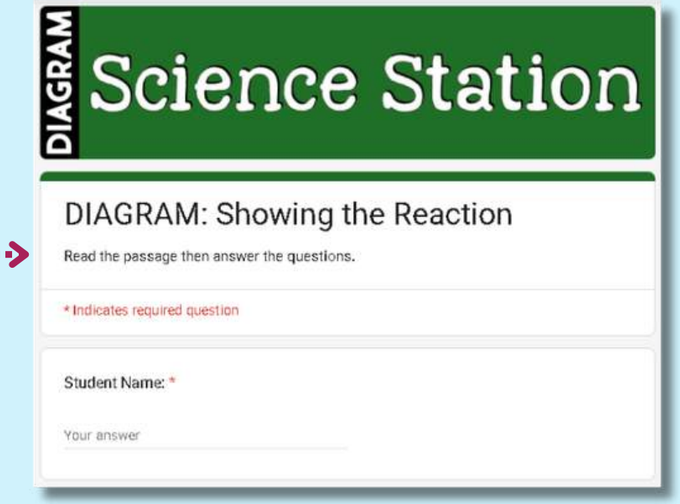


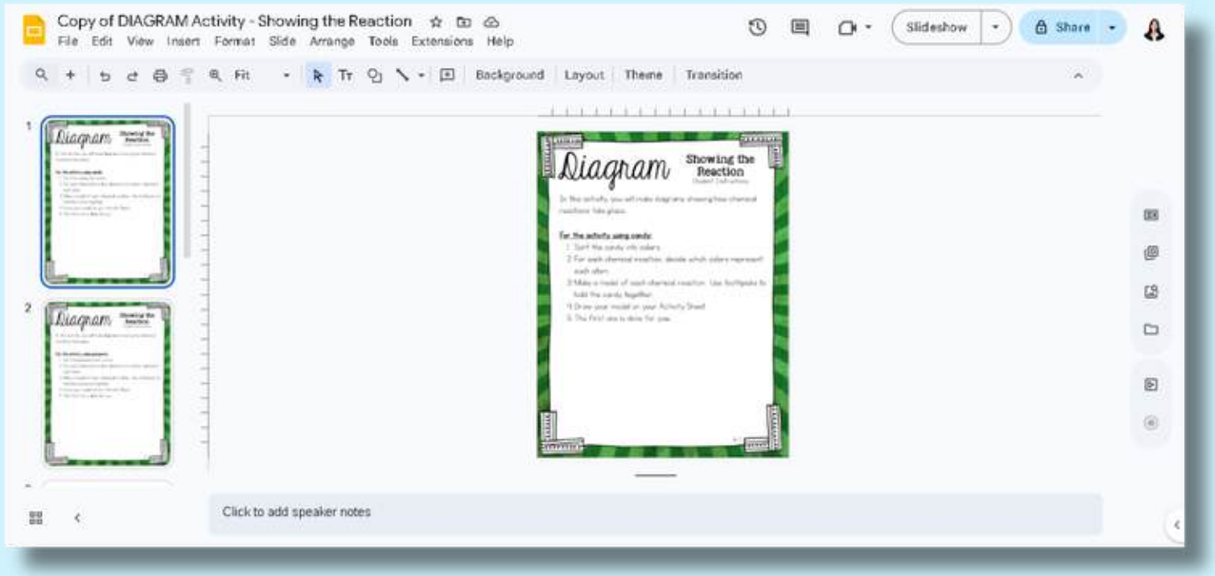
#6

ADD TO CART

DIGITAL VERSIONS







DIGITAL VERSIONS

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

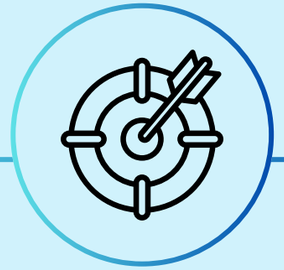
Answer keys provided

YOU WILL LOVE THIS BECAUSE



Visual Learning at Its Best

Students draw and model changes, making abstract concepts concrete.



Time-Saving for Teachers

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Balanced Learning Approach

Combines reading, creating, and reflecting so students learn science content while developing problem-solving and critical thinking skills.

TEACHERS LOVE IT!

★★★★★

Love it!

Lighting the Embers



★★★★★

This was great to use as practice sub plans during our chemical reaction unit. Thank you!

Megan B.



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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