

TEACHING POWERPOINT

8 ENGAGING, CONTENT-RICH LESSONS:

Describing Matter
Properties of Matter
Understanding Solids
Understanding Liquids
Understanding Gases
Changing Matter
Temperature & Matter
Matter Within Objects



EACH LESSON INCLUDES:

- Detailed, scripted lesson plan
- PowerPoint lesson
- Science journal activity
- Related investigation
- Exit tickets in 2 formats
- Vocabulary posters
- Objectives display cards
- Turn & talk partner questions
- Read aloud & video links
- Science center activity

The collage features several educational materials:

- Lesson 2 Quick Check:** "What are some properties you can observe?" with a list: hard, weight, observe. "Color, shape, and size are properties you can observe."
- States & Properties of Matter Teacher Guide:** Includes "Videos" and "Structure & Properties of Matter".
- Lesson 2 Investigate: Testing Flexibility:** "Engineers test their materials to see if they have the properties needed for a specific..."
- Investigation 2: Testing Flexibility:** "QUESTION: How can we test for flexibility?" "OBJECTIVE: Students will plan and carry out an investigation to test objects for flexibility. Students will record scientific observations to classify materials by observable properties." "MATERIALS: Ping-pong balls, groups a variety of objects and non-flexible objects." "DRAW THE OBJECT"
- Texture is another property. Texture is how something feels. An object may feel hard or soft. It may feel...**
- Test the hardness of an object:** "Hardness is a property that..."
- Test if an object is magnetic:** Shows a magnet and paper clips.
- Test if an object is flexible:** Shows a boy bending a blue object.
- Test if an object is buoyant:** "You can test if an object is buoyant by observing if it will sink or float." "Partner about... are buoyant." "s help float?"
- Properties can be tested:** Shows a microscope.
- Properties can be observed:** "Each type of matter has different properties. You can observe properties with your senses." "You can use your..."
- Lesson 2 Journal: Write About It:** "BIG IDEA: An object's properties." "GUIDING QUESTION: How can properties be observed?"
- Lesson 1 Investigate: Describing Matter:** "QUESTION: How can you describe matter?" "Look closely at the properties of your crackers. Describe..."
- Lesson 2 Objectives:** "I can describe matter by testing its properties." "I can identify properties used in everyday life."
- Lesson 2: Properties of Matter:** A poster showing hot air balloons.

SAMPLE LESSON



Aligned to
**Next Generation
Science
Standards, TEKS,**
and
**Common Core
State Standards
for 2nd Grade**

STANDARDS BASED

TEACHER GUIDE

Scripted lesson plans
Lesson objectives
Performance tasks
Teacher's notes
Management tips
Lab procedures
Extension activities
Assessments

15 Day Pacing Guide

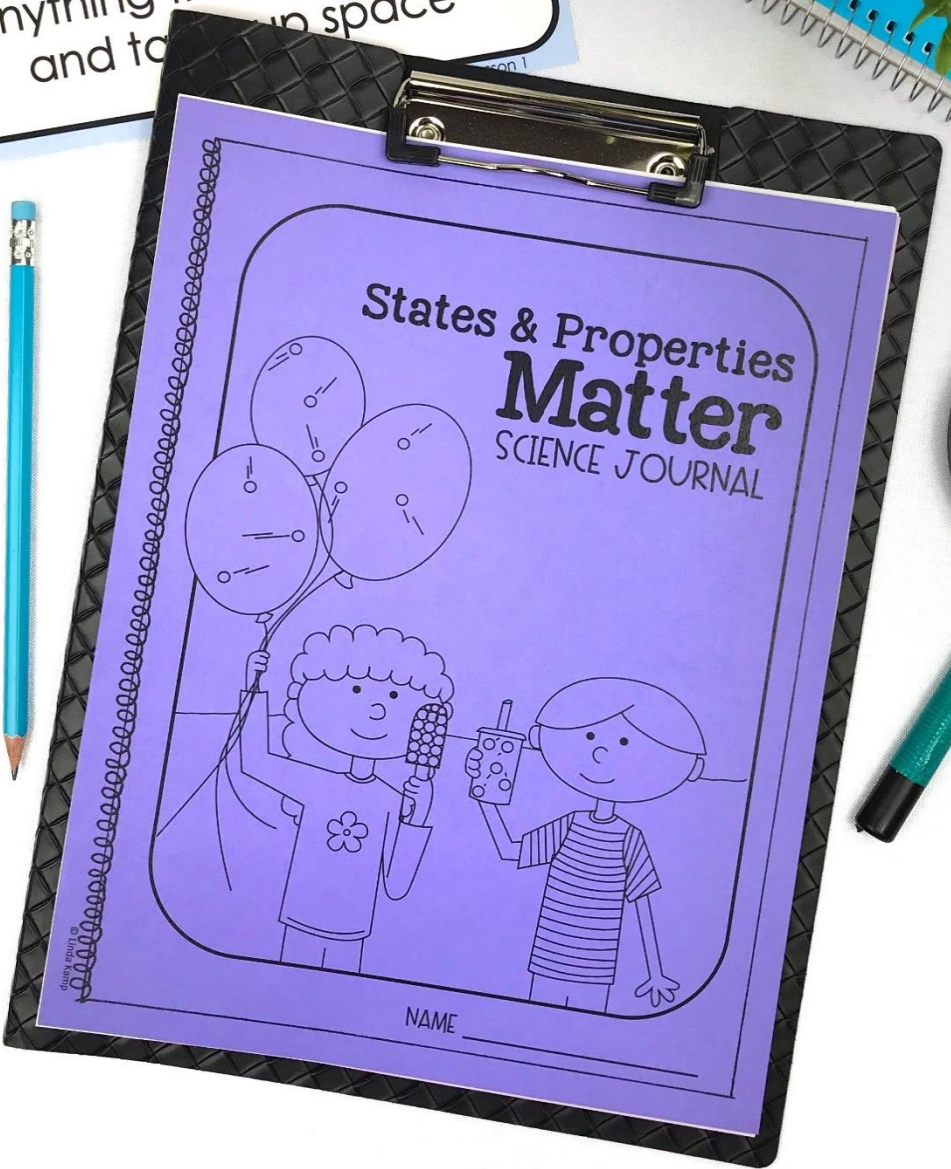
DETAILED LESSON PLANS

The collage features numerous lesson plan pages from a science teacher guide. Visible pages include:

- Lesson 1: Describing Matter** (Structure & Properties of Matter)
- Lesson 2: Testing Flexibility** (Structure & Properties of Matter)
- Lesson 3: Design a Toy Using a Solid, Liquid & Gas** (Structure & Properties of Matter)
- Lesson 4: Understanding & Using Liquids** (Structure & Properties of Matter)
- Lesson 5: Carbonation Exploration** (Structure & Properties of Matter)
- Lesson 6: Changing Matter** (Structure & Properties of Matter)
- Lesson 7: Ice Cream in a Bag** (Structure & Properties of Matter)
- Lesson 8: What Shapes Are Best for Building?** (Structure & Properties of Matter)
- Lesson 9: Matter Within Objects** (Structure & Properties of Matter)
- Lesson 10: Understanding & Using Gases** (Structure & Properties of Matter)
- Lesson 11: Properties of Matter** (Structure & Properties of Matter)
- Lesson 12: Designing a Toy** (Structure & Properties of Matter)
- Lesson 13: Cracker Lab** (States & Properties of Matter)
- Lesson 14: Read Alouds** (States & Properties of Matter)
- Lesson 15: Videos** (States & Properties of Matter)
- Lesson 16: Videos** (States & Properties of Matter)
- Lesson 17: Unit Pacing** (States & Properties of Matter)
- Lesson 18: Standards Alignment** (States & Properties of Matter)
- Lesson 19: Unit Overview** (States & Properties of Matter)

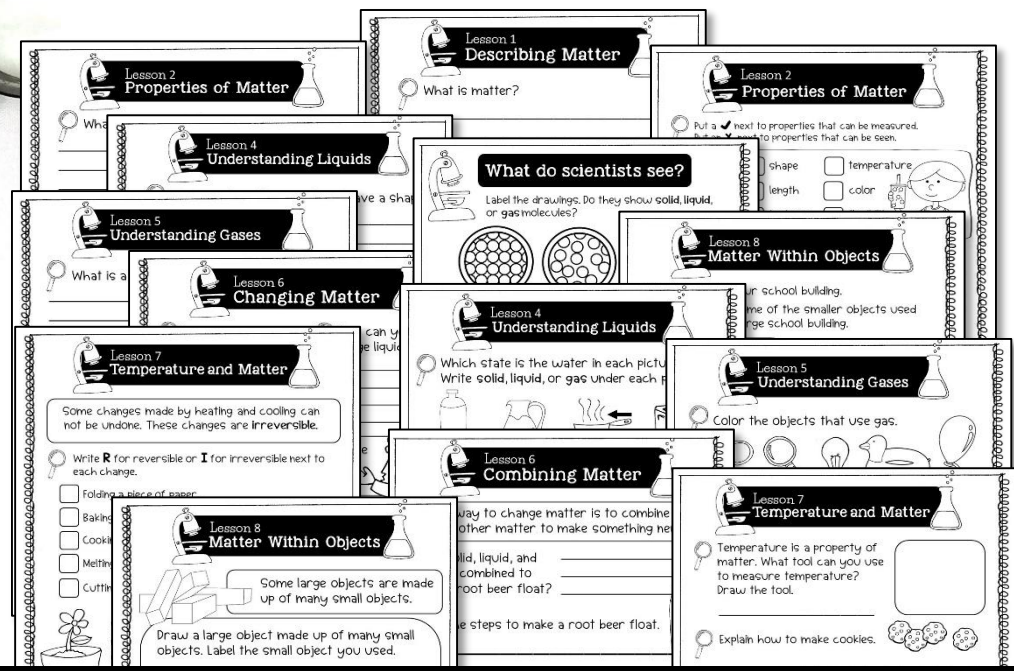
Each page typically contains sections for Learning Targets, Materials, Guiding Questions, and detailed activity instructions. The 'Cracker Lab' page includes a 'Cracker Lab' chart with columns for Cracker, Texture, Color, Shape, and Size, and rows for various cracker types like Wheat, Honey, and Fruit.

properties of an
matter
anything that has weight
and takes up space



RESPONSE JOURNAL ACTIVITIES INCLUDE:

- Short written response
- Writing to explain
- Sequencing
- Categorizing
- Applying vocabulary



LESSON RESPONSE JOURNAL

8 HIGH-ENGAGEMENT LESSONS

During each lesson students discuss, write, and question.

LESSON 1 INVESTIGATE Describing Matter

QUESTION: How can you describe matter?



LESSON 1 JOURNAL Write About It

What do scientists use?

LESSON 1 TALK ABOUT IT Describing matter

Look at objects all around



LESSON 6 INVESTIGATE Changing Matter

Think about the properties of clay. Investigate



LESSON 6 TALK ABOUT IT Changing matter

Talk with your partner about some ways matter can change



LESSON 5 JOURNAL Write About It

What is a substance?

LESSON 5 TALK ABOUT IT Understanding gases

Talk with your partner about ways you and your family use aas.



LESSON 6 JOURNAL Write About It

Complete Lesson 6

Combining Matter

One way to change matter is to combine it with other matter to make something new.

LESSON 7 TALK ABOUT IT Irreversible changes

Talk with your partner about



LESSON 2 JOURNAL Write About It

LESSON 5 INVESTIGATE CANDY & COKE Carbonation Exploration

QUESTION: How can carbonation



LESSON 7 INVESTIGATE Ice Cream IN A BAG

Think about the



LESSON 2 TALK ABOUT IT Properties of matter

LESSON 7 JOURNAL Write About It

Complete Lesson 7


Temperature and Matter

Temperature is a property of matter that tells you how hot or cold something is.

LESSON 2 INVESTIGATE Testing Flexibility

Engineers test their materials to see if they have the properties needed for a specific job.

QUESTION: How can you test if an object is flexible?



LESSON 8 INVESTIGATE What shapes are best for building?

QUESTION: How can an object made of small pieces be taken apart and made into something new?



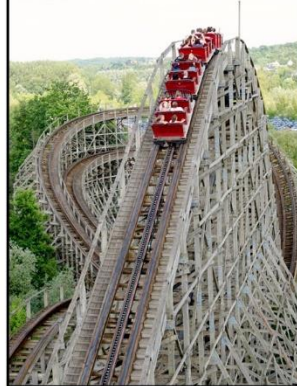
LESSON 8 JOURNAL Write About It

Complete Lesson 8 in your science journal about large objects made from smaller objects.

LESSON 8 TALK ABOUT IT Matter within objects

Talk with your partner about what the roller coaster is made of.

What properties make the materials good for building a roller coaster?



8 HANDS-ON, HIGH INTEREST LABS



After each lesson students explore:

- Uses for solids, liquids & gases
- Comparing properties
- Testing materials
- Reversible/irreversible changes
- Cause and effect
- Designing solutions
- Building models
- Planning investigations

STEP-BY-STEP GUIDES

With teacher tips, procedures, & pictures



Investigation 8 **TEACHER GUIDE**
Lesson 8 **What Shapes Are Best for Building?**

QUESTIONS: How do you use shapes when building? How can an object be made into something new?

OBJECTIVE: Students will show how an object made of smaller pieces can be disassembled and made into a new object. Students will collect data about different blocks and identify those that are useful.

MATERIALS:

Investigation 2 **TEACHER GUIDE**
Lesson 2 **Testing Flexibility**

QUESTION: How can we test objects for flexibility?

OBJECTIVE: Students will plan and carry out an investigation to test objects for flexibility. Students will record science observations to classify materials by observable properties.

MATERIALS:
 Prep per small group a variety of flexible and non flexible objects.
 Examples:
 -1 piece of pool noodle -rubber band
 -pencil -plastic spoon
 -spaghetti noodle -metal spoon
 -student lab sheet

SEARCH CHECKS ARE FLEXIBLE?

OBJECT	BEND?	FLEXIBLE?
pool noodle	yes	yes
pencil	no	no
spaghetti	yes	yes
rubber band	yes	yes
plastic spoon	no	no
metal spoon	no	no

Investigation 4 **TEACHER GUIDE**
Lesson 4 **Design & Build A Dam**

QUESTION: How can I build a structure to change the flow of water?

OBJECTIVE: Students will plan, design and build a dam for the purpose of changing the flow of water.

MATERIALS:
 -student lab sheet

Investigation 1 **TEACHER GUIDE**
Lesson 1 **Describing Matter Cracker Lab**

QUESTION: What properties can you observe that describe the crackers?

OBJECTIVE: Students will compare properties of objects.

MATERIALS:
 Prep per student:
 -5 types of crackers in different shapes and sizes
 -paper towel, napkin, or paper plate
 -student lab sheet

INVESTIGATION:
 Explain to students: "Scientists describe matter by their features or properties. In this investigation you will look closely at different types of crackers to observe their features. Remember that features can be size, shape, color and texture. Some crackers may have similar features, some may be different."
 Give the following directions. Draw each of your crackers in the chart. Think about adjectives you can write to describe the features of your crackers and write them in the space provided.

Cracker Lab

Cracker	Texture	Color	Size	Shape
round	crunchy	tan	large	round
square	crunchy	orange	medium	square
triangular	crunchy	yellow	small	triangular
rectangular	crunchy	light yellow	medium	rectangular
irregular	crunchy	brown	medium	irregular
small	crunchy	orange	small	small

Investigation 3 **TEACHER GUIDE**
Lesson 3 **Design a Toy Using a Solid, Liquid & Gas**

QUESTION: How can you use a solid, liquid and a gas to make a toy?

OBJECTIVE: Students will design a solution to a problem. Students will design a toy using specific materials.

MATERIALS:
 Provide a variety of materials for building:
 masking tape clay
 craft sticks bubble wrap
 straws pipe cleaners
 pipe cleaners liquid glue
 cardboard scissors
 building blocks

TEACHER NOTE: If time allows, have students build their designs with the above materials. Otherwise have students draw & design a toy using materials pictured in the Power Point slide.

Investigation 5 **TEACHER GUIDE**
Lesson 5 **Carbonation Exploration**

QUESTION: How can carbonation blow up a balloon?

OBJECTIVE: Students will form a gas by combining a solid and liquid to inflate a balloon.

MATERIALS:
 -student lab sheet
 -20 oz. bottle of soda
 -1 pkg. Pop Rocks candy
 -small kitchen funnel
 -8" balloon
 -student lab sheet

PROCEDURE:
 Explain to students: "Today we are going to investigate how gas forms when we combine..."

Investigation 6 **TEACHER GUIDE**
Lesson 6 **Changing Matter Play Doh Lab**

QUESTION: How can you change matter?

OBJECTIVE: I can explore ways matter can be changed. I can make a plan and carry out an investigation.

MATERIALS:
 -2 balls of Play Doh
 -plastic paper
 -student lab sheet

Investigation 7 **TEACHER GUIDE**
Lesson 7 **Ice Cream in a Bag**

QUESTION: How is matter changed by heating and cooling?

OBJECTIVE: Students will investigate how a liquid mixture changes when it is cooled and heated.

MATERIALS PER STUDENT:
 1 c. half-and-half
 2 Tbs. sugar
 1/2 tsp. vanilla extract
 3 c. ice
 1/3 c. rock salt or kosher salt
 sandwich size Ziplock bag
 student lab sheet
 1 Gallon size Ziplock bag per 2 students
 plastic spoons

PROCEDURE:
 NOTE: I recommend making a large batch of this recipe in a pitcher ahead of time. Multiply the recipe by the number of students in your class.
 1. Pour 1 cup of the mixture into each student's bag. Push out the excess air and seal.

5 SCIENCE CENTERS



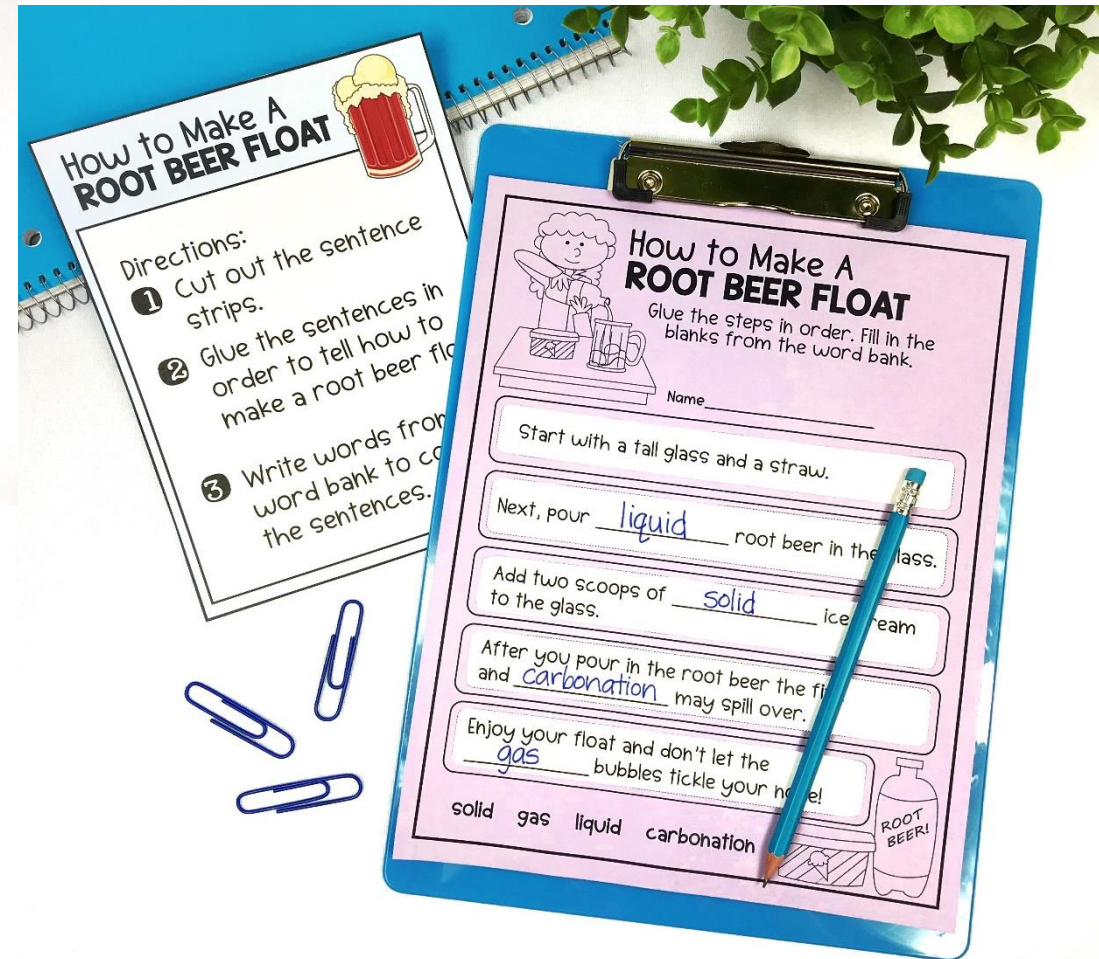
Literacy based EXTENSION ACTIVITIES



Integrate science in your reading centers



Reinforce SCIENCE CONTENT

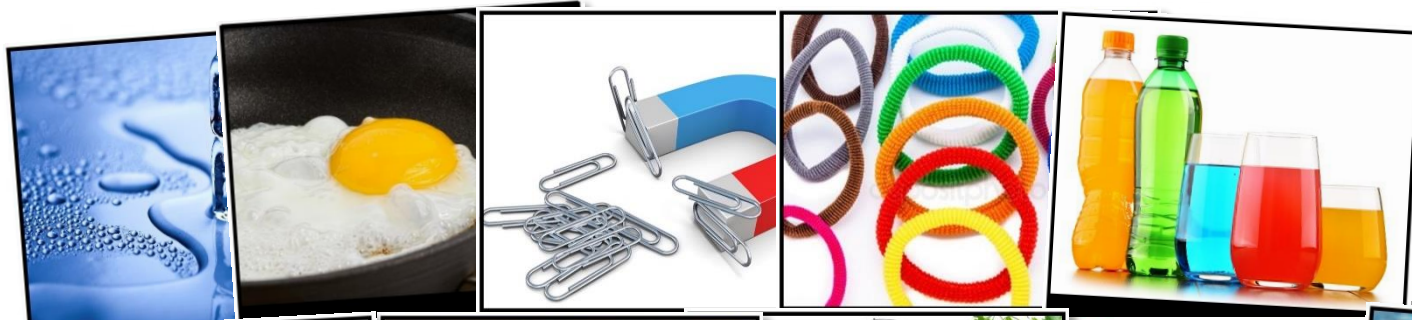


Practice LITERACY SKILLS

Centers included in color and black & white

LESSON SUPPORT

Full page Vocabulary posters



solid

Matter that has its own shape and size. Ice is the solid form of water.

liquid

Matter that does not have its own shape. Liquids take the shape of their container.

gas

Matter that does not have its own shape or size. Gas filled the bicycle tire.

purpose

The use of an object. The purpose of a pencil is to write.

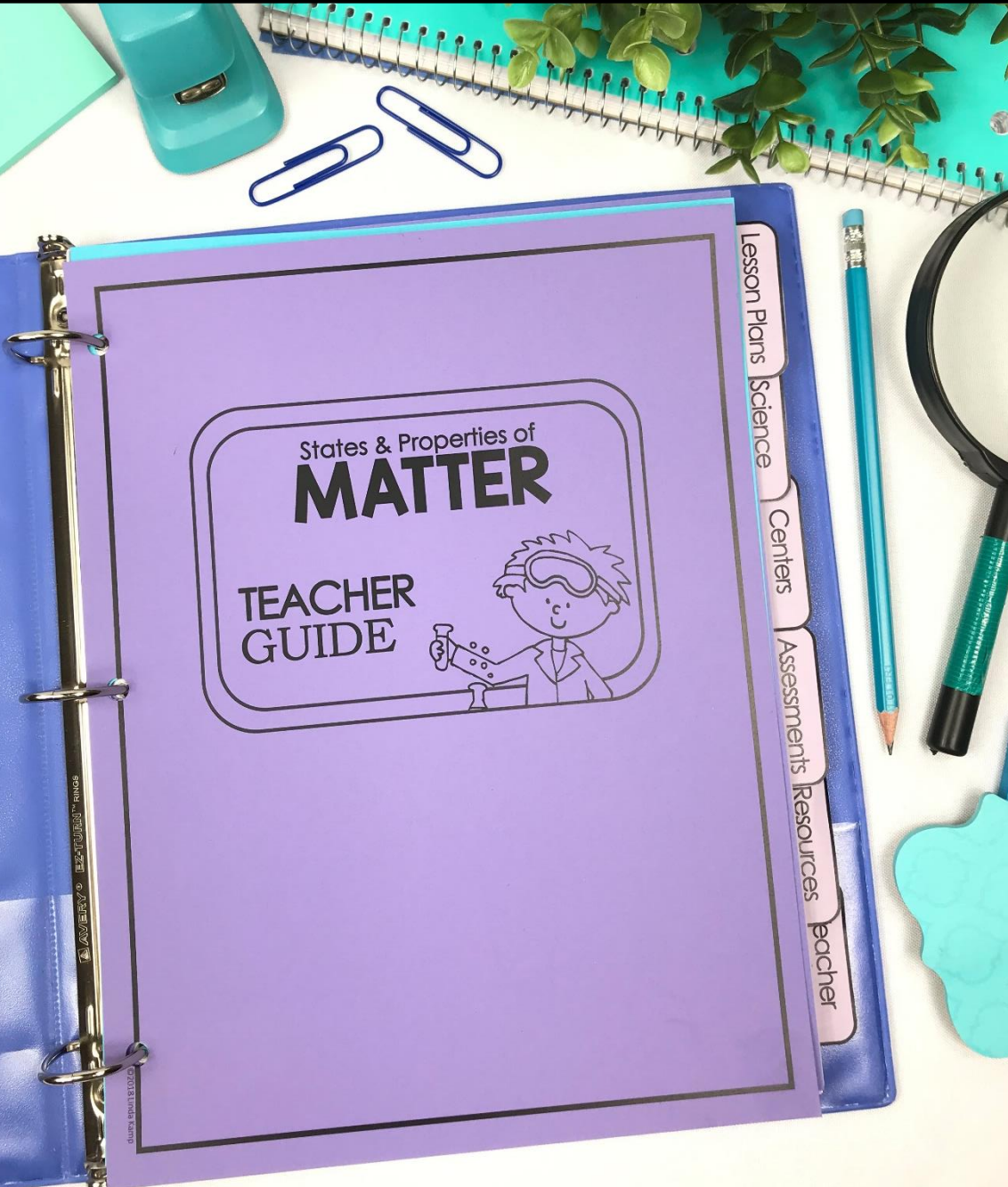
combine

Put two or more things together to make something new.

property

A trait or feature of an object you can observe. Color, shape and size are some properties.

UNIT PLANNING BINDER

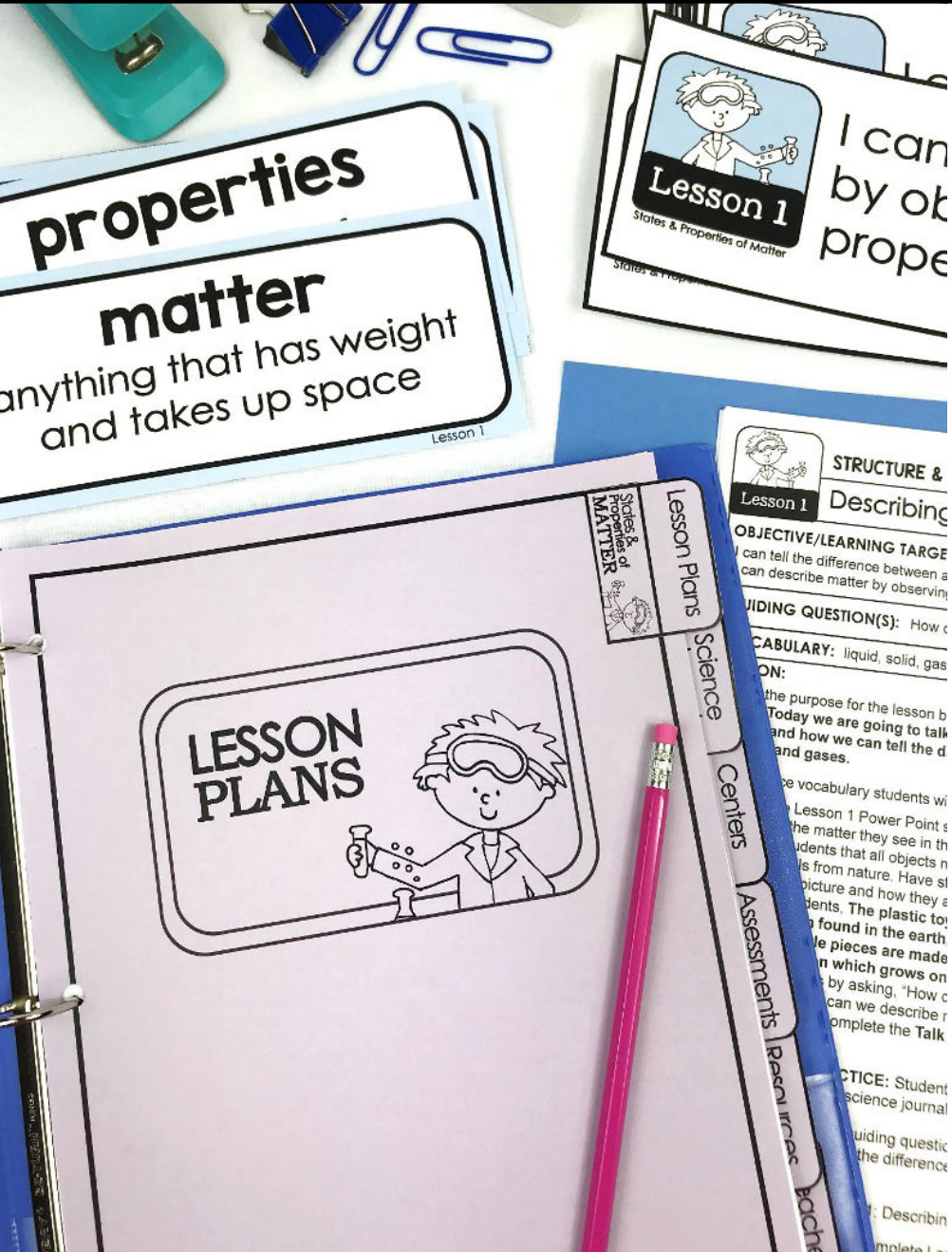


Organize your unit
in a handy
planning binder

Binder includes:

- binder cover
- binder spines
- section dividers
- divider tabs

UNIT PLANNING BINDER



PLAN - TEACH - ASSESS
an engaging, organized
and effective unit



Store posters and centers in page protectors

Science for Second Grade

Lesson 5: Understanding Gases

Lesson 1
States & Properties of Matter

matter
anything that has weight and takes up space

Lesson 2: Properties of Matter

Lesson 1
States & Properties of Matter

GUIDING QUESTION
How can properties of matter be used to describe matter?

I can describe matter by observing its properties.

Properties of Matter Cracker Lab

Name: _____

Draw your Cracker	Describe the Texture	Describe the Color	Describe the Size	Describe the Shape
	raised	tan	medium size 1/2 inches	triangle shaped
	wavy	orange	small 1 inch	fish shaped
	smooth greasy	golden brown	small	elephant shaped
	smooth dry	light yellow	large 2 1/2 inches	rectangle shaped
	uneven lumpy			round

States & Properties of Matter
SCIENCE JOURNAL

Mom put helium gas in balloons for my party.

Anything that has weight and takes up space is _____.

A. a property
B. a solid
C. a gas
D. matter

gas
Matter that does not have its own shape or volume. Gas filled the bicycle.

NAME: _____

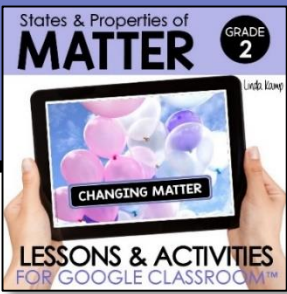
States & Properties of
MATTER

GRADE
2



Students gain an understanding of:

- States of matter & its properties
- Reversible & irreversible changes
- Building models
- Testing materials
- Planning & conducting investigations
- Analyzing data
- Science & engineering practices
- Constructing explanations
- Using evidence to support claims
- Designing solutions to problems



GOOGLE SLIDE LESSONS

LISTEN & LEARN



Step-by-step directions
for assigning to students



8 LISTEN & LEARN LESSONS


Narrated slides enable
independent learning
and easy differentiation!

- Describing Matter
- Properties of Matter
- Understanding Solids
- Understanding Liquids
- Understanding Gases
- Changing Matter
- Temperature & Matter
- Matter Within Objects


LESSON RESPONSE ACTIVITIES


Interactive
lesson
response
activities on
Google Slides™



 Lesson 2
Properties of Matter 

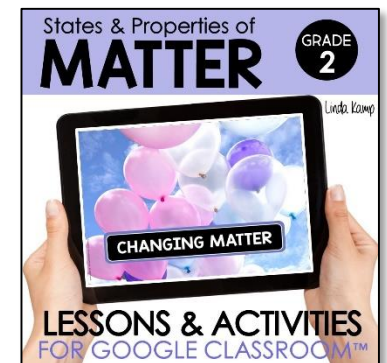
 Drag a ✓ next to properties that can be measured.
Drag an X next to properties that can be seen.

<input checked="" type="checkbox"/> weight	<input checked="" type="checkbox"/> shape	<input checked="" type="checkbox"/> temperature
<input type="checkbox"/> smell	<input checked="" type="checkbox"/> length	<input checked="" type="checkbox"/> color
<input checked="" type="checkbox"/> size	<input checked="" type="checkbox"/> texture	<input checked="" type="checkbox"/> flexibility



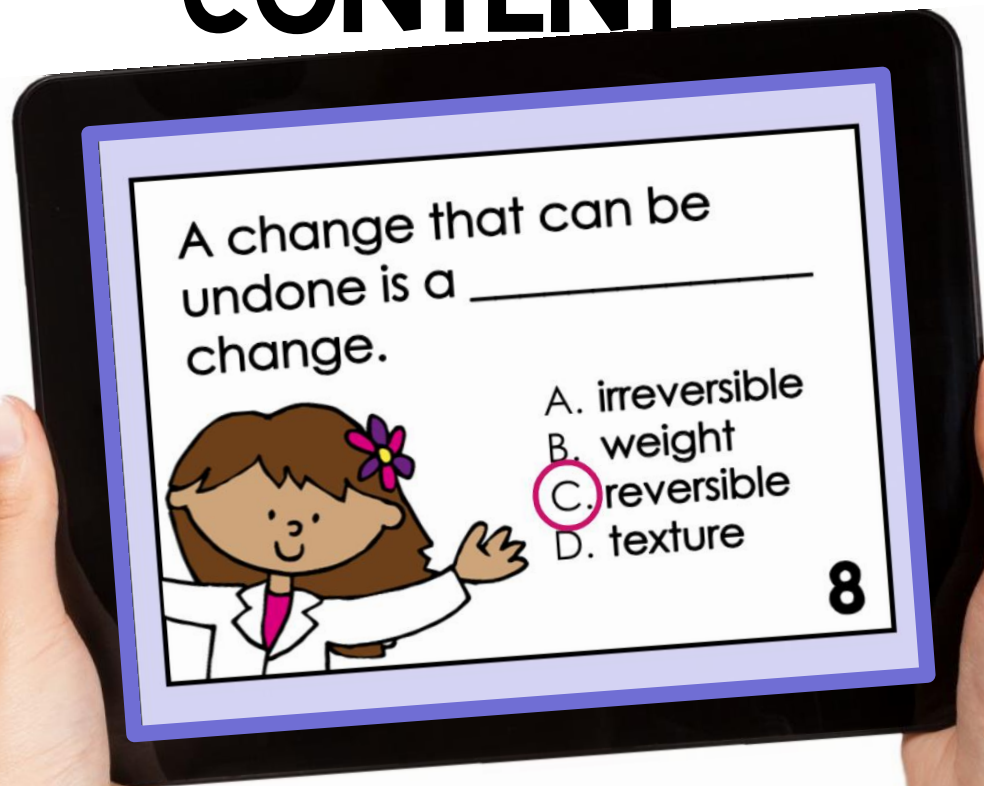
 How can you test if an object is buoyant?
Type here

  How can you test how hard an object is?
Type here

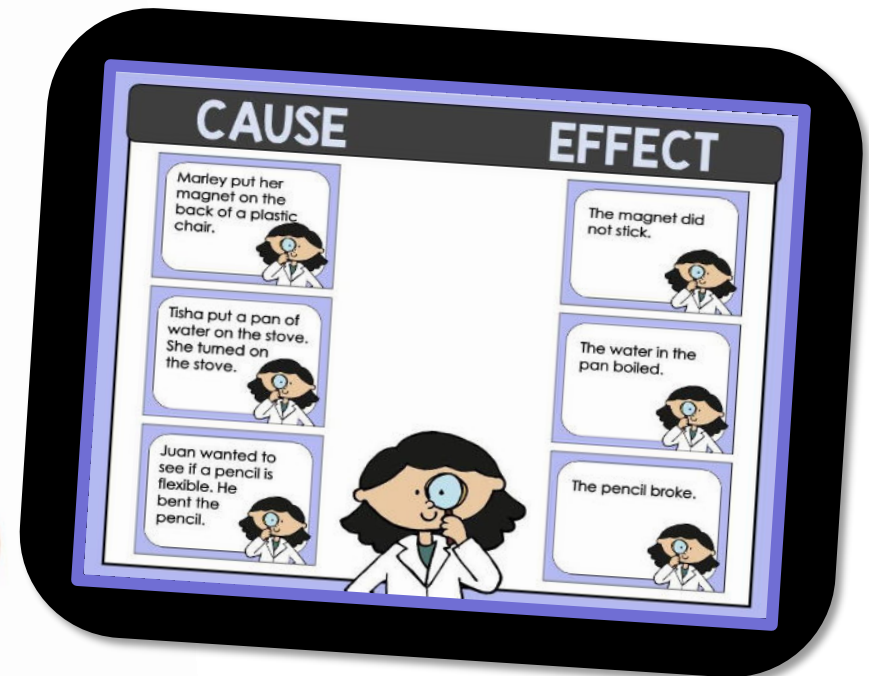


GOOGLE SLIDE CENTER GAMES

Reinforce
SCIENCE
CONTENT



Practice
LITERACY
SKILLS

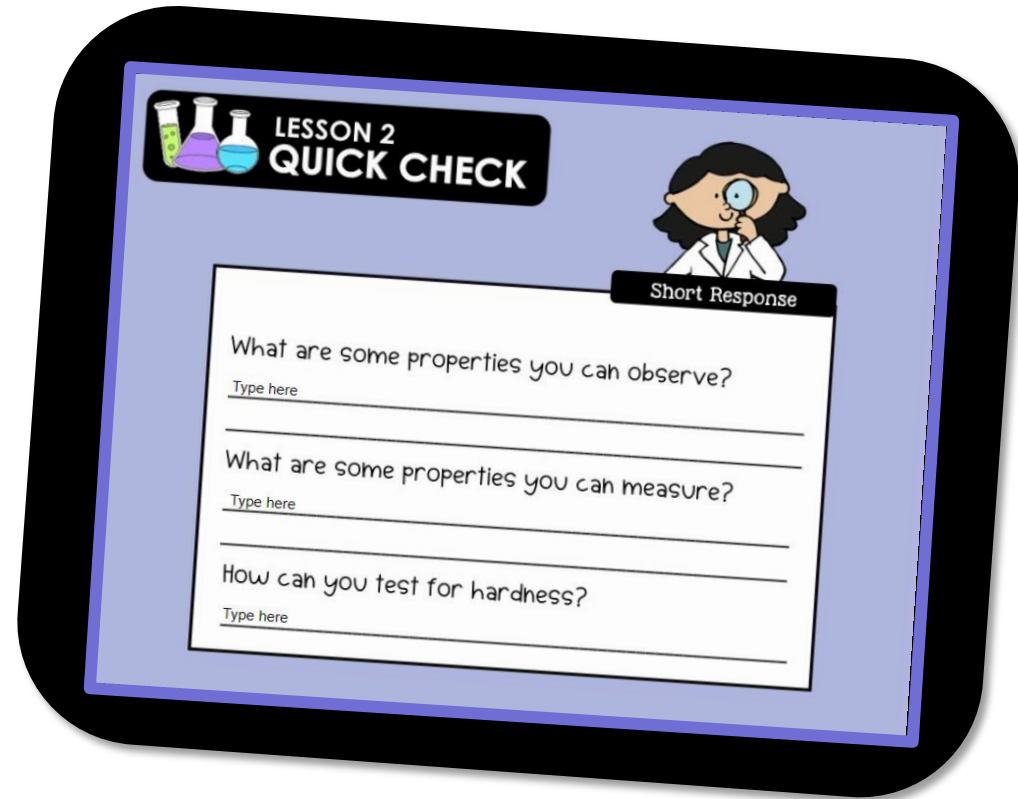
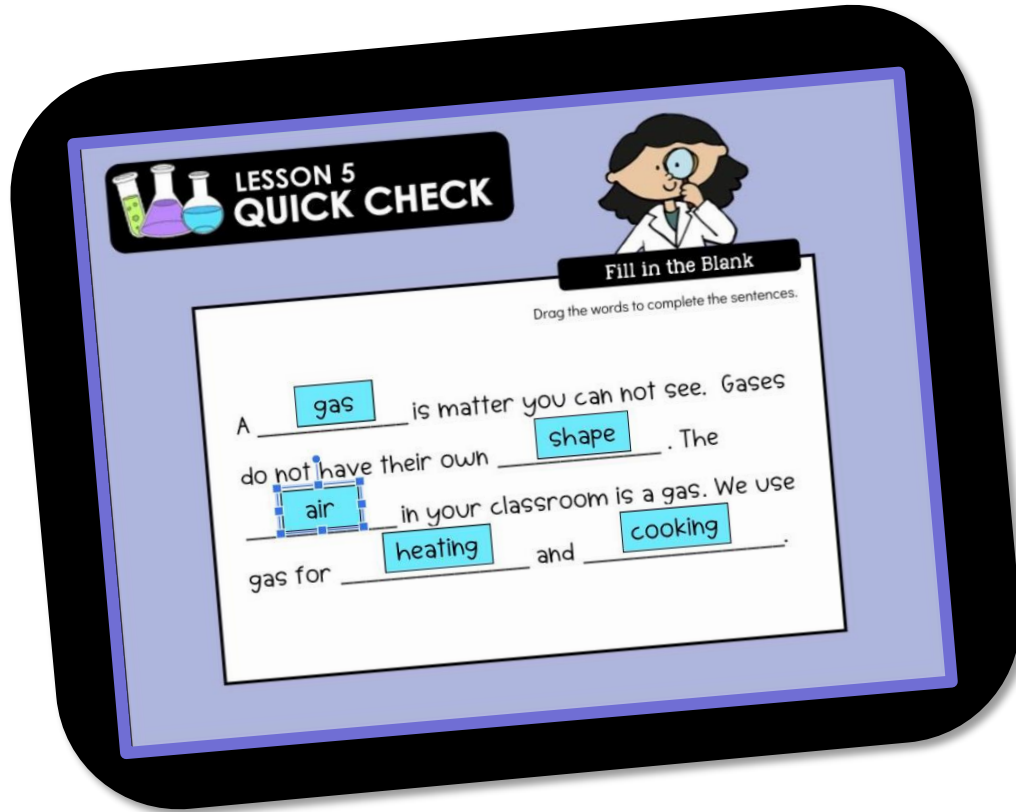


5 Interactive games
with moveable pieces



ASSESSMENTS MADE EASY

TYPE YOUR ANSWER
short response quizzes



DRAG & DROP
Fill in the blank quizzes

Differentiated quizzes & unit test included



GIVE YOURSELF FLEXIBILITY

Easily move between
CLASSROOM and **REMOTE LEARNING**

