

2nd Grade Matter Resource List

Next Generations Science Standard: 2-PS1 Matter and its Interactions

PS1.A: Structure and Properties of Matter

Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature.

Matter can be described and classified by its observable properties.

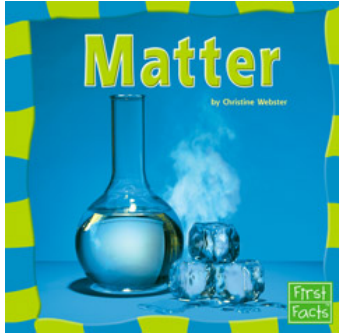
PS1.B: Chemical Reactions

Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.

Books:

Matter by Christine Webster (2006)

Introduces matter and its three forms as solid, a liquid, and a gas. Includes an activity and information on scientist Jacques Charles.

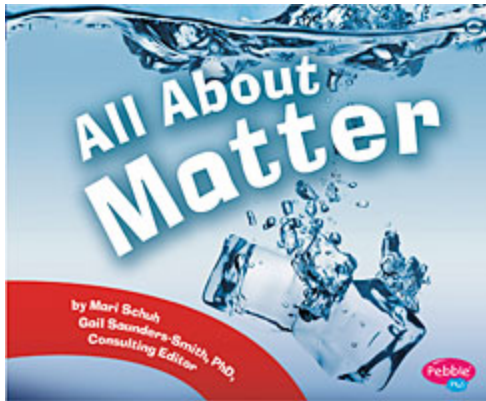


Guided Reading: P

24 Pages

All About Matter by Mari Schuh (2012)

Includes bibliographical references (p. 23) and index. Simple text and full-color photographs provide a brief introduction to matter and its properties.

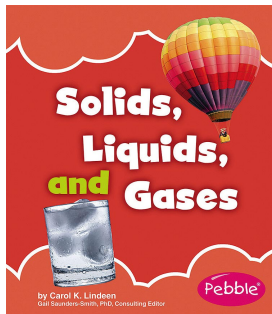


Guided Reading: J

24 Pages

Solids, Liquids and Gases by Carol K. Lindeen (2008)

Text and photographs introduce matter, solids, liquids, and gases.

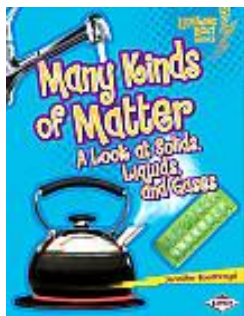


Guided Reading: J

24 Pages

Many Kinds of Matter: A Look at Solids, Liquids and Gases by Jennifer Boothroyd (2010)

Includes bibliographical references (p. 31) and index. What is matter? -- Solids -- Liquids -- Gases -- Changing forms. An introduction to the three types of matter that describes the properties of solids, liquids, and gases and includes a related activity.



Guided Reading: M

32 Pages

What is a Gas by Lynn Peppas (2005)

Includes bibliographical references (p. 23) and index. What is the matter? -- Talking about matter -- Properties of a gas -- Taking up space -- Measuring gas -- Changing states -- From a liquid to a gas -- From a gas to a liquid -- Glass empty or full? -- What can you build with gas? Introduces the properties of gases, and explores the different types of gases and their uses.

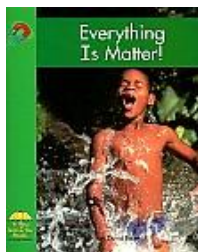


Guided Reading: L

24 Pages

Everything is Matter by David Bauer (2004)

Provides an introduction to solids, liquids, and gases, which are the three states of matter.

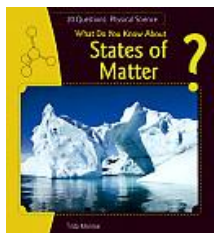


Guided Reading: J

17 Pages

What Do You Know About States of Matter by Tilda Monroe (2011)

Includes index. Provides an introduction to states of matter and includes answers to twenty questions about them. What makes up matter? -- What is a state? -- What are physical properties? -- What are the properties of a solid? -- What happens if you break a solid? -- What are the physical properties of a liquid? -- What happens when you pour a liquid? -- What are the properties of a gas? -- What happens when you fill something with gas? -- How does matter change from one state to another? -- Why does a change in energy change the state? -- Will all matter melt? -- What is it called when a liquid changes into a solid? -- When does liquid turn into a gas? -- Do you need to use a stove to turn liquid into a gas? -- Why is the outside of my juice glass wet? -- Can a solid turn directly into a gas? -- Can a gas turn into a solid? -- What kind of matter makes up the stars? -- Why do states of matter matter?



Guided Reading: P

24 Pages

What is a Gas by Jennifer Boothroyd (2007)

Includes index. An introduction to the states of matter, focusing on gas, explaining what it is and how it behaves, and looking at the oxygen cycle.

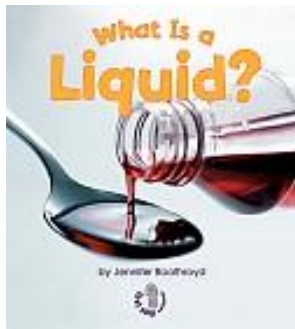


Guided Reading: L

23 Pages

What is a Liquid by Jennifer Boothroyd (2007)

Includes index. Photographs and simple text describe the physical properties of liquids.

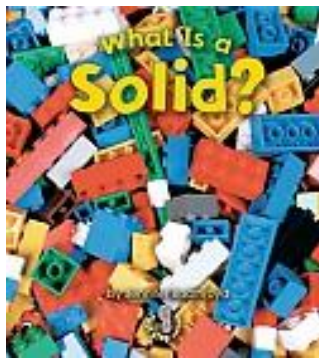


Guided Reading: K

24 Pages

What is a Solid by Jennifer Boothroyd (2007)

Includes index. Photographs and simple text describe the physical properties of solids.

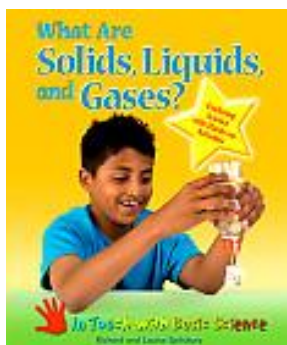


Guided Reading: L

24 Pages

What are Solids, Liquids and Gases by Richard Spilsbury (2008)

Includes bibliographical references (p. 31) and index. Inside matter -- States of matter -- Solids -- Liquids -- Gases -- Changing states. Introduces the states of matter and includes related, hands-on activities.



Guided Reading: N

32 Pages

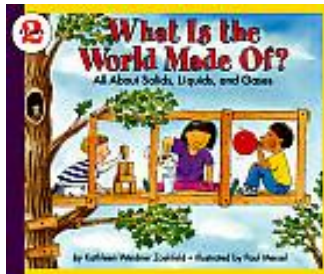
Solids Liquids and Gases by Julie Murray (2007)

Includes index.;The facts about forms -- The science of solids, liquids, and gases -- What makes matter? -- How liquids work -- How solids work -- How gases work -- Real-life science -- Flowing, sliding, and floating through history -- Solids, liquids, and gases in the world today. A brief description of the science of solids, liquids, and gases and how they work.



Guided Reading: N
24 Pages

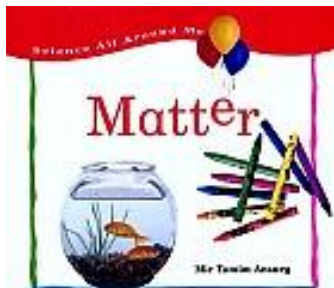
What is the World Made of: All About Solids, Liquids and Gases by Kathleen Zohfeld (1998)
In simple text, presents the three states of matter, solid, liquid, and gas, and describes their attributes.



Guided Reading: N
32 Pages

Matter: Solids, Liquids, and Gases by Mir Tamim Ansary (1996)

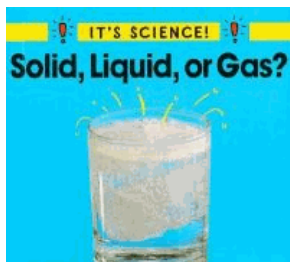
Includes bibliographical references (p. 24) and index. Explains the basic properties of matter through looking at everyday experiences and direct observation.



Guided Reading: M
24 Pages

Solid, Liquid or Gas by Sally Hewitt (1998)

Presents information about the properties of solids, liquids, and gases, using observation and activities.

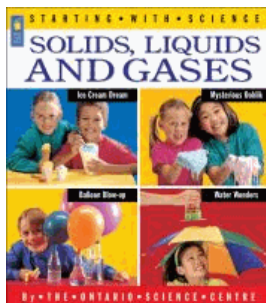


Guided Reading: O

30 Pages

Solids, Liquids and Gases by Louise Osborne (1998)

Solids, Liquids and Gases has 13 experiments carefully chosen by the Ontario Science Centre. With minimal supervision, children can explore the three states of matter, what makes each state unique and how matter changes from a solid to a liquid to a gas through evaporation, condensation, melting and freezing.

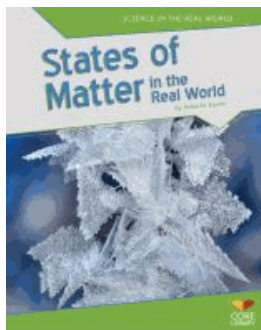


Guided Reading: O

31 Pages

States of Matter in the Real World by Roberta Baxter (2013)

Explores the science concept of states of matter, how different states exist in everyday situations, and how this concept is used in technology.



Guided Reading: P

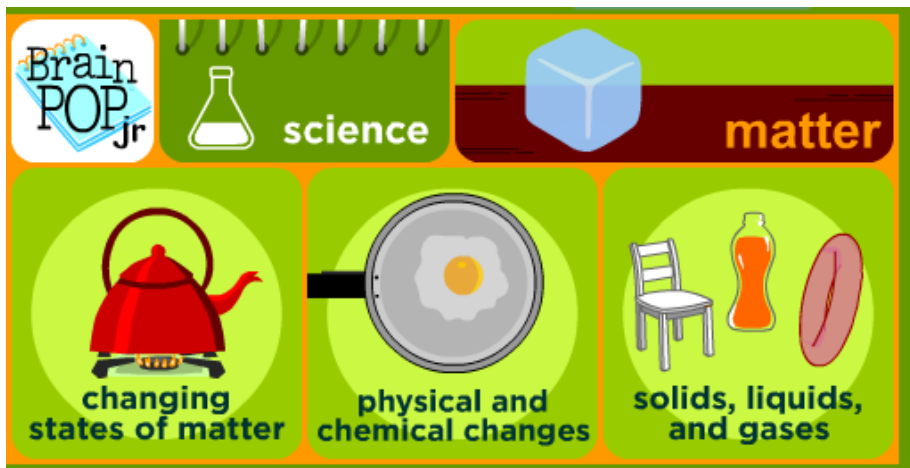
48 Pages

Digital Resources


Databases: (To access these databases remotely, ask your librarian for your school's username and password.)

Brainpop Jr.: *Brainpop, Jr. is a database that provides a 3-6 minute video on informational topics followed by a comprehension quiz. The database includes activities and lesson plans as well. It is geared towards grades K-3.*

The Science folder in Brainpop, Jr. contains these three videos that deal with matter and the changing states of matter.



Two different online quizzes are offered after each video to check for understanding. They are entitled “Easy” and “Hard” with 5 questions each.



1. 

What happens when you boil water?



- (a) The water evaporates and changes to a gas.
- (b) The water freezes and changes to a solid.
- (c) The water condenses and changes to a liquid.
- (d) The water does not change state.

Pebble Go! *Pebble Go is a database that includes non-fiction books, videos and activities. The target audience for Pebble Go is Kindergarten through 3rd grade, however Pebble Go can be a great way to pique interest in a topic for 4th and 5th graders. Each book is 5 pages long and includes a read-aloud button that highlights each word as it reads aloud. There are often one or two very short videos on the topic embedded within each book.*


There are two Pebble Go book that align with Next Generation Science Standards for 2nd Grade on Matter. Click on “Earth and Space,” “Earth Features,” “All About Water,” and select “The Water Cycle” or “Water.”

[Back](#)   **The Water Cycle**

[What Is It?](#) [Evaporation](#) [Condensation](#) [Precipitation](#) [Endless Cycle](#)




 

On Earth, water is always changing form. It changes from **liquid** to **gas** to **solid**, and back again. Water changing from one form to another creates the water cycle.




[Print This](#)

[What Is It?](#) [Where Is It?](#) [Groundwater](#) [Solid and Gas](#) [Using Water](#)

Water is the colorless **liquid** covering about three-fourths of planet Earth. Water fills lakes, rivers, and oceans. It falls from clouds as rain, snow, or sleet. Water is a part of all living things.



[Print This](#)

World Book Web:

The World Book Web is a suite of online research tools that includes encyclopedia articles, primary source collections, educator tools, student activities, pictures, audio, and video, complemented by current periodicals and related Web sites. Most all of these World Book Web research tools include options where text can be read aloud to the user. All Ithaca elementary school libraries currently subscribe to **World Book Kids**, **World Book Student**, **World Book Discover**, **World Book Timelines** and **World Book Classroom: Early World of Learning**. For specific training in how to use these amazing tools consult Worldbook's training website or ask your school's librarian. <http://www.worldbookonline.com/training/>

World Book Kids has an article called "Matter" which aligns with Next Generation Science Standards for 2nd Grade. You can use this link to access the article on day and night: <http://www.worldbookonline.com/kids/article?id=ar831153> OR you can simply type "matter" in World Book Kids and choose the first article.

Matter

Matter is the substance, or material, from which all things are made. Everything in the world is made of matter. Matter is anything that has weight and takes up space.

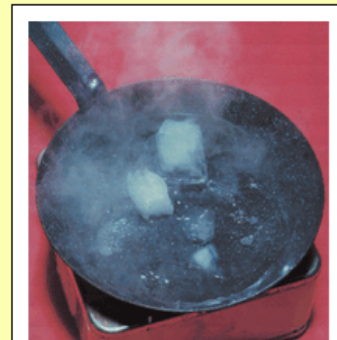
Many kinds of matter are easy to recognize. For example, people recognize gold by its color and sugar by its taste. Matter also has other properties. For example, copper carries electricity, and salt dissolves in water—it seems to disappear.

Matter can be a solid, a liquid, or a gas. A solid, such as a rock, has form. It has its own shape. A liquid, such as water, has no shape of its own, but it can flow. A liquid can take the shape of any container into which it is poured. A gas, such as air, has no shape, either, but it can expand. When a gas is put into a closed container, it spreads out and fills the container.

Most kinds of matter are *compounds* <<KAHM powndz>>. That means they are made up of several kinds of matter. Compounds can be separated into simpler kinds of matter.

The simpler kinds of matter are called *elements* <<EHL uh muhnts>>. Elements cannot be split up. They contain only one kind of substance.

All matter is made up of atoms. In an element, all the atoms are the same kind. But the atoms of each element are different from the atoms of any other element. When the atoms of two or more



Picture

Matter can be a solid, a liquid, or a gas.

In *World Book Kids*, there are two activities in the Teach It! and Think it! sections that deal with matter. The first is a lesson plan called "Mealtime Matter" and the second is a student version of the same activity. Both focus on foods we consume as a way to understand matter and its properties.

"Teach It!" <http://www.worldbookonline.com/kids/activities?id=TI000026&type=tcit>

"Think It!" <http://www.worldbookonline.com/kids/activities?id=TH000028&type=thinkit>



Mealtime Matter

INTRODUCTION

Like everything else in the world, the foods and drinks we enjoy are made of matter. Like all matter, they can be in the form of solids, liquids, or gases. Many foods change from one form of matter to another when we change their temperature.

NATIONAL CONTENT STANDARD: NS. K-4.2 PHYSICAL SCIENCE--PROPERTIES OF OBJECTS AND MATERIALS.

OBJECTIVES:

- To understand that foods can exist in different states--solid, liquid, and gas.
- To understand that these states can be altered.

MATERIALS:

- printouts of "Mealtime Matter" Think It activity
- pencil or pen

PROCEDURES:

1. Discuss the three states of matter: liquid, solid, and gas. Ask students for examples of each.
2. Distribute copies of the activity to your students. Ask them to write their answers right next to each question. Collect the worksheets.

DISCUSSION:



Mealtime Matter

Like everything else in the world, the foods and drinks we enjoy are made of matter. Like all matter, they can be in the form of solids, liquids, or gases. Many foods change from one form of matter to another when we change their temperature. See if you can match the foods and drinks listed in the box with the numbered clues.

Foods

- a. buttered toast
- b. cola
- c. soft-boiled egg
- d. spaghetti
- e. soup
- f. ice cream
- g. fried fish
- h. frozen orange juice
- i. salad



Breakfast

1. I start out as a cold solid. After you stir me with a clear liquid, you can drink me.
2. I start out as a soft, flat solid. When you heat me, I turn crisp. I taste good when I'm spread with a yellow solid that melts.

Other World Book Kids articles related to the subject of matter include:

For more information, see these articles:

[Atom](#)

[Element, Chemical](#)

[Gas](#)

[Liquid](#)

[Molecule](#)

[Solid](#)

Gas

Gas is one of the three basic forms of matter. The other two forms are solid and liquid. A bottle half full of water is an example of all three forms of matter. The bottle is a solid. The water is a liquid. The air above the water in the bottle is a gas.

Air itself is a mixture of gases, mainly nitrogen and oxygen. The gases in air have no color or odor. But some gases have a color or an odor, or both. For example, when eggs rot, they give off a gas that smells bad.

A gas, such as oxygen, is made up of tiny bits of matter called *molecules* <<MOL uh kyoolz>>. The molecules are always moving around and crashing into one another. If the gas is in a container, the moving molecules push against the container's sides. This push is called the pressure of the gas. If gas in a container is heated, the molecules move



Another lesson plan on the subject is called “Change! Change! Change!: Understanding Matter in Three forms”

<http://www.worldbookonline.com/kids/activities?id=TI000006&type=tcit>



Change! Change!! Change!!!

Be a scientist!

Understanding matter in three forms

INTRODUCTION

This activity offers an introduction to the states of matter and how they can be changed. By observing and recording their experiments, students begin to understand that phenomena can be observed, measured, and controlled in various ways.

NATIONAL CONTENT STANDARD: NS.K-4.2 PHYSICAL SCIENCE--PROPERTIES OF OBJECTS AND MATERIALS.

OBJECTIVES:

- To understand that materials can exist in different states—solid, liquid, and gas.
- To understand that these states can be altered.

MATERIALS:

- three clear glasses—the same size

Websites:

Science Games for Kids: Solids, Liquids, Gases

<http://www.sciencekids.co.nz/gamesactivities/gases.html>

Learn about solids, liquids and gases as you experiment with the conditions that change them from one form to another in this fun, interactive science activity.

Changing State

http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state_fs.shtml

Change ice to water to vapor in this interactive BBC Kids activity.

Changing State Vocabulary

<http://www.crickweb.co.uk/ks2science.html#changingstate>

Drag key vocabulary words to their appropriate place in a changing state of water diagram.

The Water Cycle

<http://www.crickweb.co.uk/ks2science.html#changingstate>

You can watch the animated diagram illustrate the water cycle. There is also an interactive element of dragging labels to their appropriate place.

Changes in Matter Games

<http://www.learninggamesforkids.com/changes-in-matter-games.html>

Interactive word games using changes in matter vocabulary.

Changing Matter

http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks3/science/changing_matter/index.htm

Animated model allows students to increase heat until a solid turns into a liquid, and finally a gas.

iPad apps:

Matter - by Kids Discover

Cost: \$3.99

Includes interactive 3-D models, quizzes and puzzles about different kinds of matter, properties and states of matter, and physical and chemical changes. Includes experiments as well.

States of Matter - by Braahmam Net Solutions

Cost: \$0.99

Explains the three states of matter and tells you about the property of the state. You can read, listen and assess your learning on states of matter. Simulations tell you about the motion of atoms within the particular state.

The Water Cycle - by Classroom Complete Press, Ltd.

Cost: Free

Interactive images showing the four stages of a water cycle.

Water Cycle, HD - by Sprout Labs, LLC

Cost: \$1.99

Tests knowledge of the water cycle. Easy, Intermediate and Advanced level questions. Very visual game.