Lesson Plan: Matter and Its Properties

Grade Level: 3
Subject: Physical Science
Duration: 45–60 min
NGSS 2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Learning Objectives

By the end of this lesson, students will be able to:

- **Define** matter as anything that has mass and takes up space.
- **Identify** the three states of matter: solid, liquid, and gas.
- **Describe** properties of matter such as mass, volume, density, and buoyancy.

science-grade-3-matter-and-its-properties.pdf)

- Vocabulary Worksheet 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-matter-and-its-properties-1.pdf)
- Activity Lesson: Properties of Matter (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-3-matter-and-its-properties-properties-of-matter-4.pdf)
- Worksheet: Matter and Its Properties (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-3.pdf)

- Assessment Quiz (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-0.pdf)

Lesson Procedure

Step 1: Introduction (5 minutes)

- Ask students: 'Look around the room—what do you think everything you see is made of?'
- Explain that everything that takes up space and has mass is called matter.

Step 2: Direct Instruction (15 minutes)

- Distribute the Study Guide and read the section 'Matter and Its Properties' together. (https://newpathworksheets.com/api/guide/study-guide-science-grade-3-matter-and-its-properties.pdf)
- Discuss the three states of matter (solid, liquid, gas) using the examples in the guide (rock

its-properties-3.pdf)

- Students will fill in blanks to define matter and draw an example of a solid.

Step 5: Assessment (10 minutes)

- Administer the multiple-choice quiz to assess understanding of states of matter and properties. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-0.pdf)
- Review answers as a class if time permits.

Differentiation Strategies

For advanced learners:

- Encourage students to research the Periodic Table of Elements mentioned in the study guide and pick one element to describe.

For learners needing support:

- Provide real-world examples (water, ice, steam) to demonstrate the three states of matter visually.

Extension Activities

- Fact Finding: Have students identify clouds or simple machines using the 'Fact Finding' worksheet.

- Worksheet PDF 2 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-2.pdf)
- Worksheet PDF 3 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-3.pdf)
- Fact Finding Worksheet (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-matter-and-its-properties-fact-finding-4.pdf)
- Vocabulary PDF 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-matter-and-its-properties-1.pdf)
- Vocabulary PDF 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-matter-and-its-properties-2.pdf)

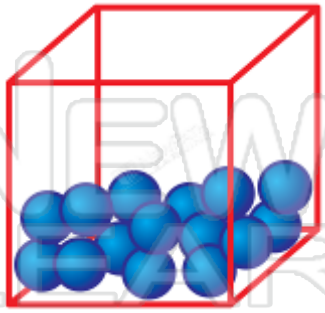
MATTER AND ITS PROPERTIES

Everything around us is made out **matter**.
Matter is anything that takes up space and has mass.
All **matter** is made up of many different kinds of particles that are combined together in different ways.

Lesson Checkpoint: What is matter?

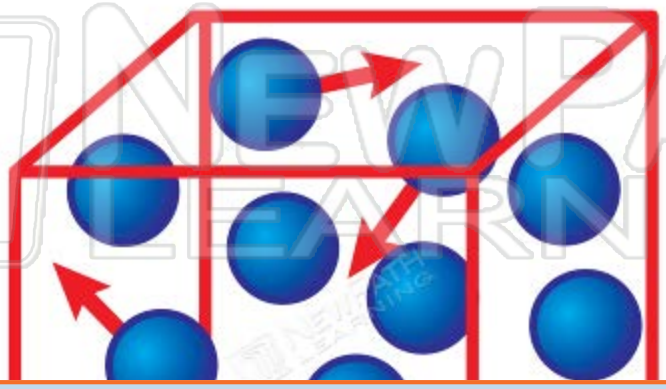
An **atom** is the basic building block of matter that make up all objects. It is the tiniest particle of any element. An **element** is matter that is made up of one type of particle. Scientists have identified over 100 elements in nature, which are labeled on the Periodic Table of Elements. Some elements are copper, calcium, and uranium.

are close together, but not as close as in a solid.



Liquids do NOT keep the same shape. Liquids take the shape of whatever container holds it. An example of a liquid is water.

A third state of matter is **gas**. A gas is matter in which its particles are very far apart.



Properties of Matter

A **property** of **matter** is a feature, trait, or characteristic. Matter can have many different properties. **Properties** are used to describe an object.

Some properties of matter can be measured using tools such as a balance to measure an object's **mass** and a graduated cylinder to measure the **volume** of liquids. Scientists most often use **metric** measurements when measuring matter.

Density is a property of **matter** that tells how much matter fits into a certain space. **Buoyancy** is also a property of matter. **Buoyancy** is whether an object sinks or floats in water.

A **property** of an item may also be its hardness, like a brick. Size is also a property of **matter**. The size of something has to do with how big, small, wide, or thin something is. The size of an object can be measured using the **metric units** millimeters (mm), centimeters (cm), and meters (m). For long distances the metric unit of kilometers (km) can be used.

Lesson Checkpoint: What is one property of matter?

Volume is the amount of space **matter** takes up.

Solids, liquids, and **gases** all have volume.

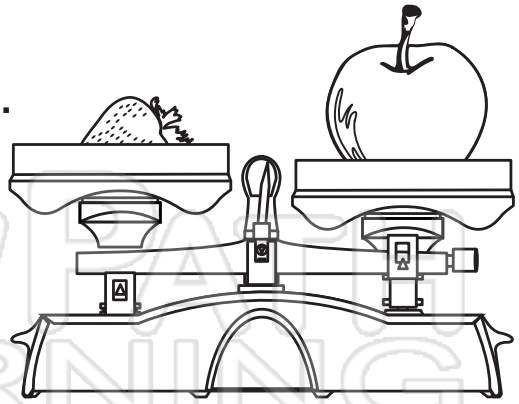
Properties of Matter

Sci C

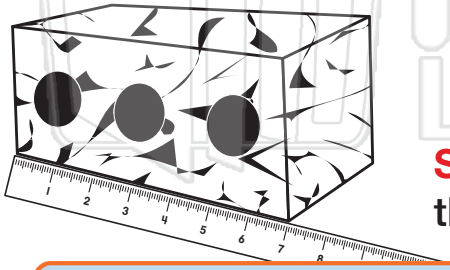
Name _____ Class _____ Date _____

A **property** of matter is a **feature**, **trait** or **characteristic**. Properties are used to describe an object.

Volume is the **amount of space** matter takes up. Solids, liquids, and gases all have volume.



Mass is **how much** there is of something.



Size has to do with how big, small, wide or thin something is.

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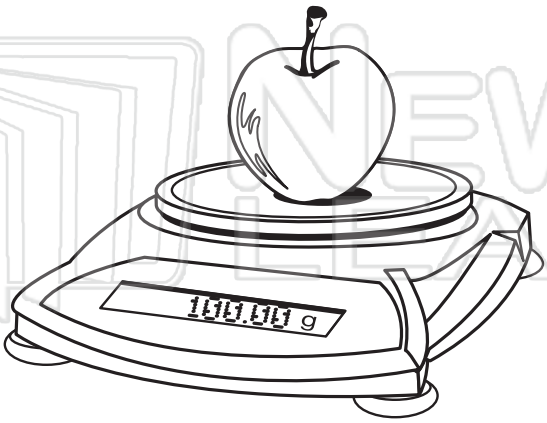
Some **ce** to measure an object's **mass**, or a **measuring cup** to measure the **volume** of liquids.



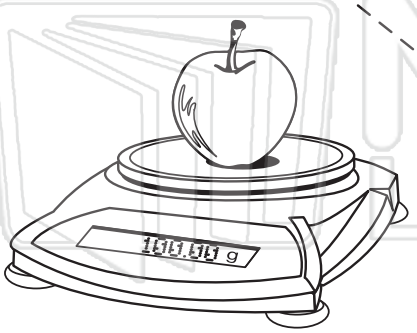
Properties of Matter

Sci C

Name _____ Class _____ Date _____

Match the objects with the various properties of matter. Draw a line.

mass



volume

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PREVIEW

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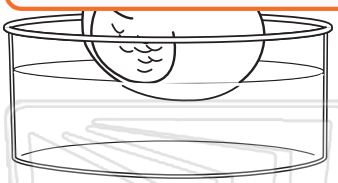
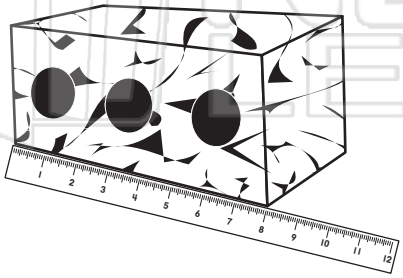


density



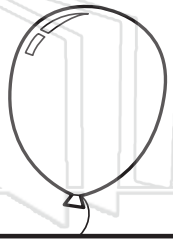
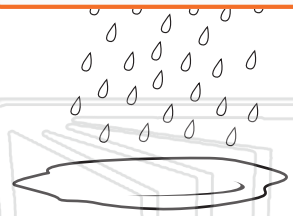
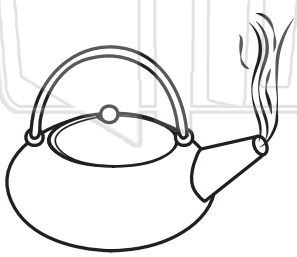
buoyancy

Properties of Matter

Sci C

Name _____ Class _____ Date _____

Matter exists in **3 states**: solid, liquid, gas. **Solid** matter always has and keeps the same shape. **Liquids** take the shape of whatever container they are poured into. A **gas** has no shape and fills its container.

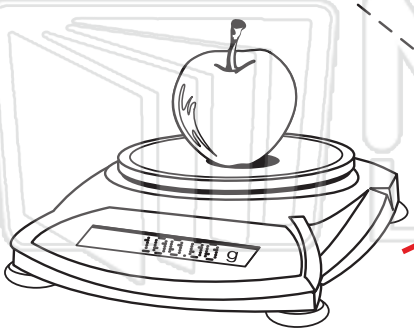
Mark the state of matter.	solid	liquid	gas
			
			
			
			

Properties of Matter

Sci C

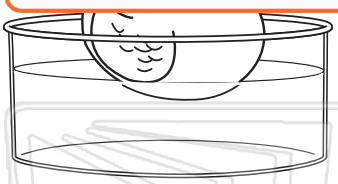
Answer Key

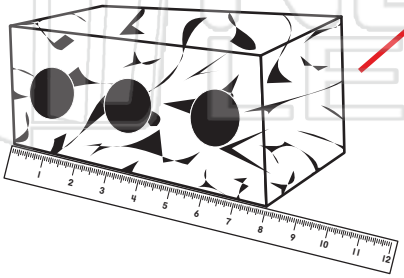
Match the objects with the properties of matter. Draw a line.



mass

volume





density

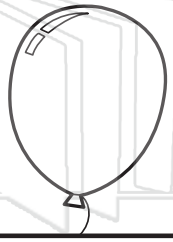
buoyancy

Properties of Matter

Sci C

Answer Key

Matter exists in **3 states**: solid, liquid, gas. **Solid** matter always has and keeps the same shape. **Liquids** take the shape of whatever container they are poured into. A **gas** has no shape and fills its container.

Mark the state of matter.	solid	liquid	gas
			X
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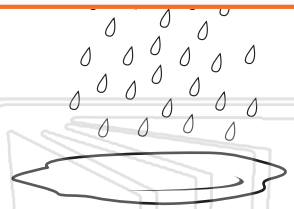
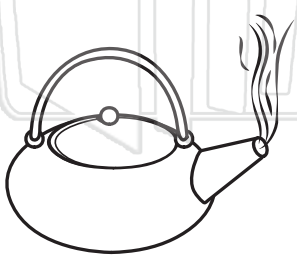
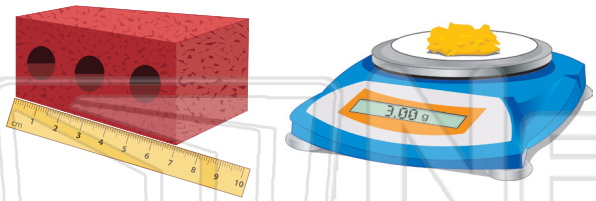
		X	
			X

Matter and Its Properties

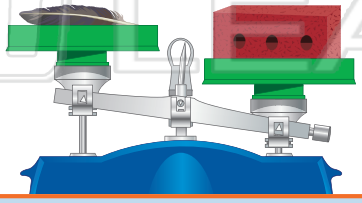
Sci C

Name _____ Class _____ Date _____

1 _____ is anything that **takes up space** and **has mass**. It is everything around us.



2 _____ is **how much** there is of something.



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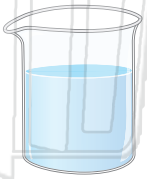
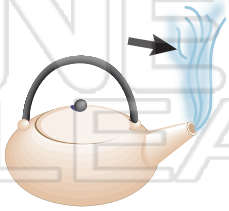
5 There are **three states** of matter. Name them.





_____ _____ _____

6 **Solid matter** keeps the same shape, unless forcibly changed. Draw an example of a **solid**.

7 A _____ takes the shape of whatever container it is **poured** into.

PREVIEW

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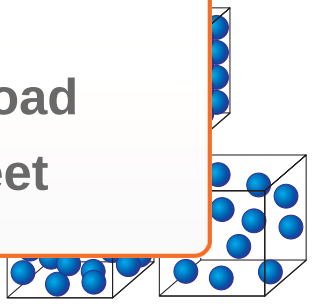


10 Some properties of matter can be measured using **tools**, such as a **balance** to measure an object's **mass**.

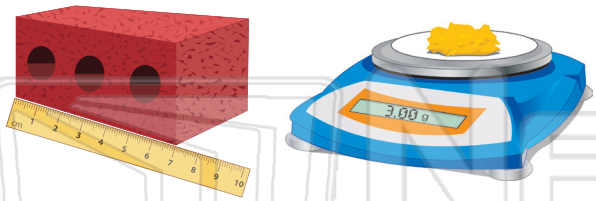
Describe another **tool** that can be used to measure matter.

Matter and Its Properties - Answer Key

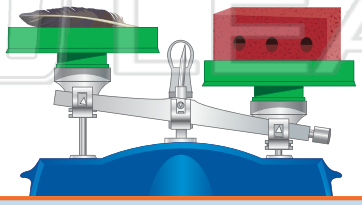
Sci C

Name _____ Class _____ Date _____

1 **Matter** is anything that **takes up space** and **has mass**. It is everything around us.



2 **Mass** is **how much** there is of something.



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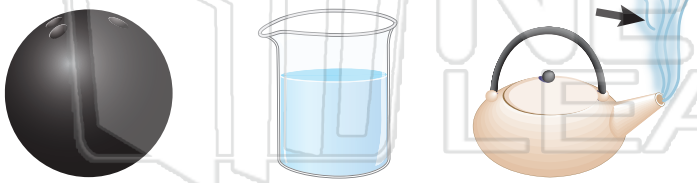
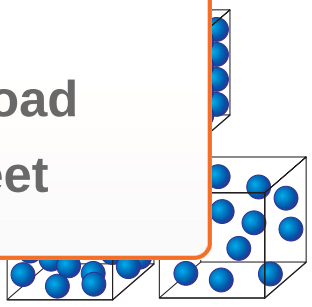


solid _____ liquid _____ gas _____

6 **Solid matter** keeps the same shape, unless forcibly changed. Draw an example of a **solid**.

open-ended

7 A **liquid** takes the shape of whatever container it is **poured** into.



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Describe another **tool** that can be used to measure matter.

open-ended

Matter and its properties

Sci C

Name_____ Class_____ Date_____

1 **Everything** around us is made of _____.

A air
B soil
C water
D matter

2 What is **matter**?

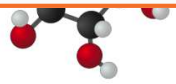
A anything that is heavy
B anything that takes up space and has mass
C anything that is shiny
D anything that fits in a small container

3 **Mass** is _____.

A how shiny an object is
B what color an object is
D height

4 What is a **property** of matter?

A a feature, trait, or characteristic
B a definition
C who owns the object
B nutrients
C particles
D metals



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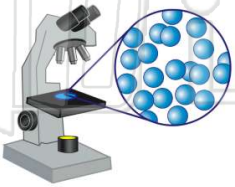
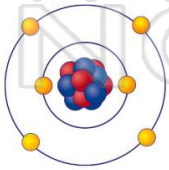
9 An **element** is matter that is made up of _____ **type(s)** of particle.



A only one
B three
C two
D four

10 A(n) _____ is the basic **building block of matter** that makes up all objects. It is the tiniest particle of any element.



A molecule
B mineral
C atom
D substance

Matter and its properties

Sci C

Name_____ Class_____ Date_____

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D anything that fits in a small container

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A how shiny an object is
B what color an object is

C

4 What is a **property** of matter?

A a feature, trait, or characteristic
B a definition
C who owns the object

A

5

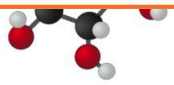
A

7

C

D height

B nutrients
C particles
D metals



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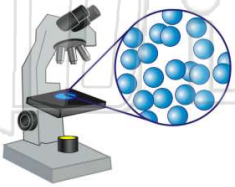
C two
D four



A

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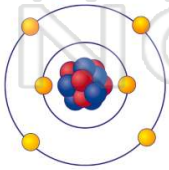


C

Matter and its properties

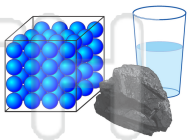
Sci C

Name_____ Class_____ Date_____

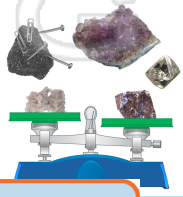
Match each of the following terms to its definition:

Graduated cylinder	Buoyancy	Density	Atom
Property	Matter	Element	Mass

1. - anything that has mass and occupies space - a solid, liquid or gas



2. - tells how an object looks and feels; a feature, trait, or characteristic



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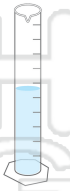
7. - a tool used by scientists to measure the volume of liquids



8. - the amount of matter in an object; a property of matter that tells how much there is of something

Matter and its properties

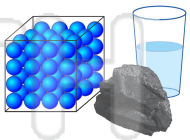
Sci C

Name_____ Class_____ Date_____

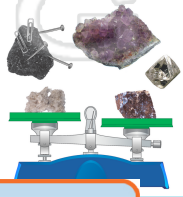
Match each of the following terms to its definition:

Graduated cylinder	Buoyancy	Density	Atom
Property	Matter	Element	Mass

1. matter - anything that has mass and occupies space - a solid, liquid or gas



2. property - tells how an object looks and feels; a feature, trait, or characteristic



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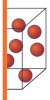
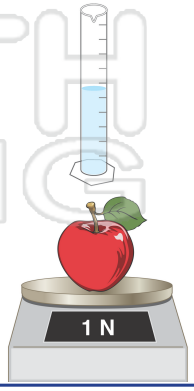
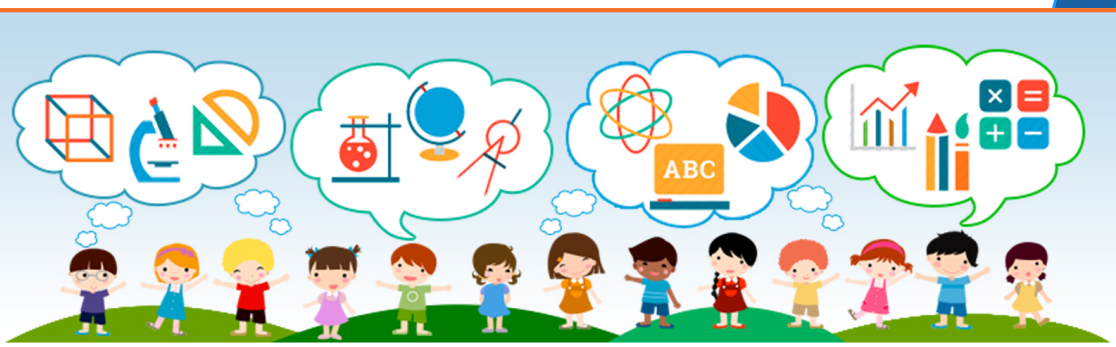


6. ele
down;
chemical change

7. graduated cylinder - a tool used by scientists to measure the volume of liquids



8. mass - the amount of matter in an object; a property of matter that tells how much there is of something



PREVIEW

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