

## Title of Lesson:

# What Does Matter Look Like?

### Conceptual Statement:

Our five senses help us observe and describe the physical properties of matter.

### Conceptual Learning Sequence:

This lesson is part of a conceptual unit on observing, measuring and predicting properties of matter. Before beginning this lesson, students should know that everything is made of matter. The lesson introduces them to using their senses to observe and describe the properties of matter.

### Student Outcomes:

- Students learn how to use their five senses to observe and describe matter.
- Students observe, compare and describe objects.
- Students gain an understanding of vocabulary associated with the five senses from *My Five Senses* and generate words for a "Concept Wheel."

### Lesson Overview:

In this lesson, the teacher reads *My Five Senses* to students as they contribute words to a "Concept Wheel." Students collect objects from the classroom or school grounds. Students observe the objects and use words from the "Concept Wheel" to record the properties that describe the objects.

### English Language Learning:

English Language Development standards are referenced in the lesson where appropriate. The hand icon appears throughout the lesson when learning strategies and lesson components are identified as pathways for academic success and reflect critical developmental differences for students who are English learners.

### Literature in the Science Learning Cycle:

The book, *My Five Senses*, is read in the ENGAGE stage to clarify vocabulary words related to senses. During reading and lesson activities, students are engaged in learning how their five senses help them experience and describe the world around them.

### Learning Strategy:

Students use the "Concept Wheel" as an instructional strategy to build on their prior knowledge. Brainstorming, discussion and visual displays help students connect the printed word, pictures and conceptual knowledge. (See Appendix pages 184-185.)

### Literature Selection:

**Title:** *My Five Senses*

**Author:** Alikei

**Illustrations:** Alikei

**Publisher:** Harper Collins, 1989

**Annotation:** The text and illustrations invite children to share in the wonder of their five senses and in the different ways they use their senses.

**Genre:** Nonfiction



## Essential Question:

What can  
we observe  
about matter?



## California Science Content Standards:\*

### Science: Grade K, Physical Science

1. Properties of materials can be observed, measured, and predicted. As a basis for understanding this concept:
  - a. Students know objects can be described in terms of the materials they are made of (e.g., clay cloth, paper) and their physical properties (e.g., color, size, shape, weight, texture, flexibility, attraction to magnets, floating, sinking).

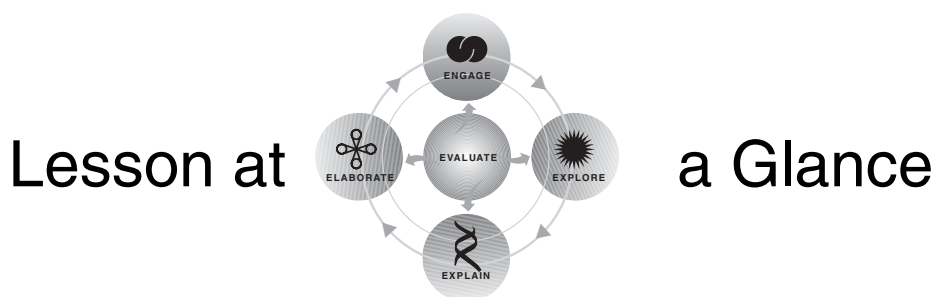


### 4. Investigation and Experimentation

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

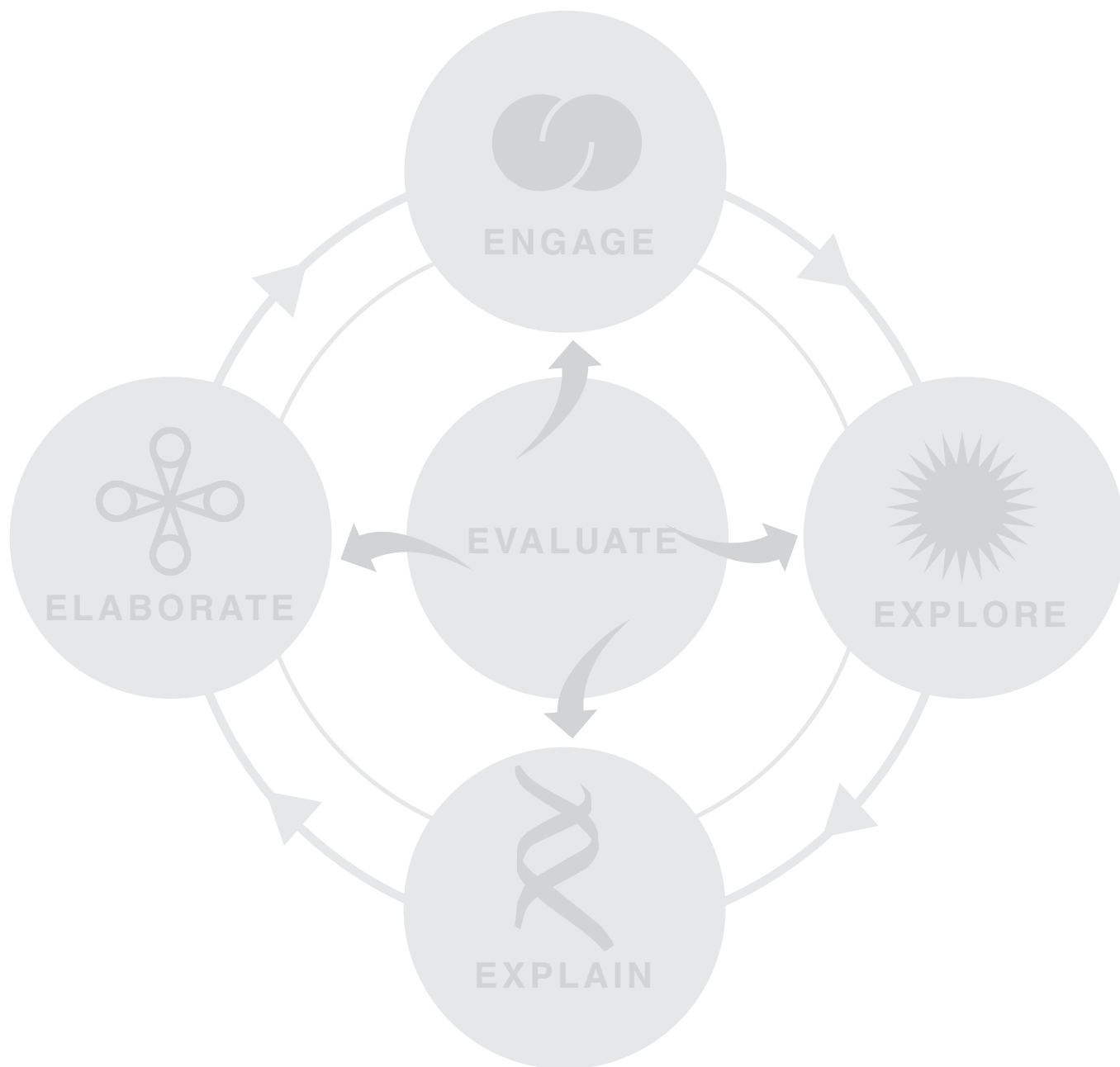
- a. Observe common objects using the five senses.
- b. Describe the properties of common objects.
- c. Communicate observations orally and through drawings.

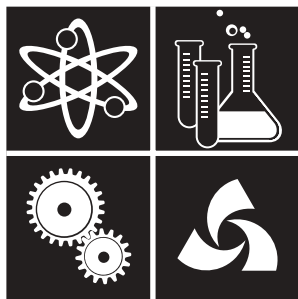
\*Selected standards addressed within this lesson.



Lesson at a Glance

Science Learning Cycle	Objective Science Thinking Process	Suggested Time
<p>ENGAGE</p>	Students engage in observing and communicating properties of an object. Students listen to <i>My Five Senses</i> and think how senses help describe the properties of matter. Observing, Communicating, Comparing	35 minutes
<p>EXPLORE</p>	Students explore properties of matter using their five senses. Observing, Communicating, Comparing	30 minutes
<p>EXPLAIN</p>	Students explain how to describe properties of matter. Observing, Comparing, Communicating	40 minutes
<p>EVALUATE</p>	While evaluation occurs throughout the lesson, the teacher evaluates student understanding as demonstrated in the students' matter booklet. Observing, Comparing, Communicating	45 minutes
<p>ELABORATE</p>	Students apply their skills in describing properties of matter through activities at school and at home. Observing, Communicating, Comparing	2-10 minute sessions





# What Does Matter Look Like?

## Teacher Background:

Matter is defined as anything that has mass and takes up space. Everything in our world is made of matter. People, cars, trees, lakes, clouds, and air all have mass and take up space, so they are made of matter.

We can observe the properties of matter with our five senses. Everything we can see, hear, taste, touch, and smell is made of matter. The properties we observe may include: size, shape, mass, volume, color, texture, sound, smell, and taste.

The information we receive through our five senses makes it possible for us to interpret our environment.

## Related California Content Standards

### **Math: Grade K**

#### Measurement and Geometry

- 1.0 Students understand the concept that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties.
- 1.1 Compare the length, weight, and capacity of objects by making direct comparisons with reference objects.
- 2.0 Students identify common objects in their environment and describe their geometric features.

### **Language Arts: Grade K**

#### Reading

- 1.0 Word Analysis, Fluency, and Systematic Vocabulary Development  
Students know about letters, words, and sounds. They apply this knowledge in reading simple sentences.

#### Vocabulary and Concept Development

- 1.17 Identify and sort common words from within basic categories (e.g. colors, shapes, foods).
- 1.18 Describe common objects and events in both general and specific language

#### 2.0 Reading Comprehension

Students identify the basic facts and ideas in what they have read, heard, or viewed.

#### Comprehension & Analysis of Grade-level-Appropriate Text

- 2.3 Connect to life experiences the information and events in texts

#### 3.0 Literacy Response and Analysis

Students listen and respond to stories based on well-known characters, themes, plots and settings.

#### Narrative Analysis of Grade-Level-Appropriate Text

- 3.1 Distinguish fantasy from realistic text

#### Writing

##### 1.0 Writing Strategies

Students write words and brief sentences that are legible.

#### Organization and Focus

- 1.1 Use letters and phonetically-spelled words to write about experiences, stories, people, objects, or events
- 1.3 Write by moving left-to-right and top-to-bottom

#### Written and Oral English Language Conventions

##### 1.0 Written and Oral English Language Conventions

Students write and speak with a command of standard English conventions

#### Sentence Structure

- 1.1 Recognize and use complete and coherent sentences when speaking

#### Spelling

- 1.2 Spell independently using pre-to-early-phonetic knowledge, sounds of the alphabet, and knowledge of letter names

#### Listening and Speaking

##### 1.0 Listening and Speaking Strategies

Students listen and respond to oral communication. They speak in clear and coherent sentences.

#### Comprehension

- 1.2 Share information and ideas, speaking audibly in coherent, complete sentences

### **English Language Development: Grades K**

#### Listening and Speaking:

Early Intermediate-Ask and answer questions using phrases or simple sentences

#### Reading Word Analysis:

Intermediate-Understand that printed materials provide information.

#### Reading Fluency and Systemic Vocabulary Development

Intermediate-Apply knowledge of content-related vocabulary to discussions and reading.

Advanced-Read simple one-syllable and high-frequency words

#### Reading Comprehension:

Beginning-Draw pictures from student's own experiences related to a story or topic.

#### Writing:

Beginning-Write a phrase or simple sentence about an experience generated from a group story.

**Grouping:** Whole class and partners

When working in partners, pair EL with native speakers.

**Materials:****Per Class**

Pocket chart

Sentence strips

Ball or other object

Class Senses Chart

Class “Concept Wheel”

*My Five Senses*, Ailiki (big book preferred)

**Per Student**

1 Object from the classroom or school grounds

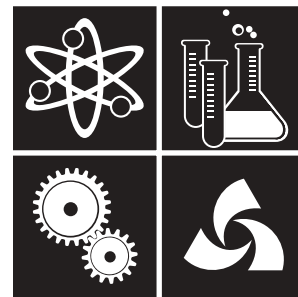
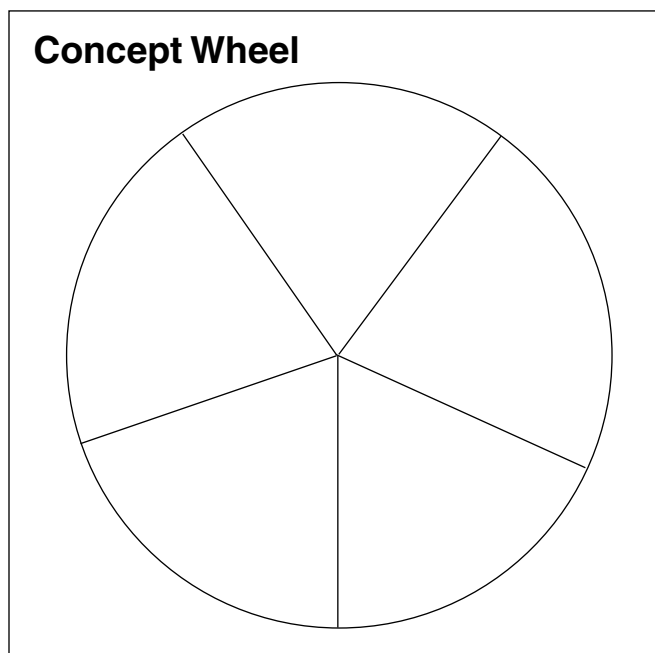
1 Sentence strip

6 Pages of “My Matter” booklet (Student page 1.0)

**Advanced Preparation:**

1. Set-up a table or shelf for students to place their matter (objects).
2. Cut sentence strips (one per student) 2”x10” long.
3. Recruit parent volunteers or peer tutors to help in the EXPLAIN stage with students who cannot yet write.
4. Duplicate 3 pages of “My Matter” booklet (Student page 1.0) for each student. Cut these pages and staple into a 6-page booklet.
5. Write the sentence frame, “My Matter \_\_\_\_\_” (from the My Matter booklet) on 6 sentence strips and display in a pocket chart. Complete each sentence on a separate sentence strip using these (or similar) words if the object described is a ball.
  - My matter is red.
  - My matter smells like rubber.
  - My matter has white spots.
  - My matter can bounce.
  - My matter is a ball. (The last sentence strip tells what the matter is.)

Prepare a Class “Concept Wheel” on chart or butcher paper to write and draw ideas about the five senses after reading the literature selection, *My Five Senses*. See example below.

**VOCABULARY**

**feel** – to touch or be aware through the senses

**hear** – to receive sound through the ears

**matter** – what all things are made of

**observe** – to use the five senses to gather information about the world around you

**properties** – special characteristics

**see** – the sense of eyesight

**senses** – how a living thing gathers information about its environment

**smell** – to notice the odor of something

**taste** – to be aware of the flavor of something in the mouth

**touch** – the sense in the skin, especially in the fingers

6. Prepare a “Class Senses Chart” on chart or butcher paper. Write headings for each sense and a sentence frame in the box. When students explain properties of their matter, have them describe their matter in a complete sentence (e.g., “My matter tastes sweet.”). Include pictures for visual cues. See example below.

### Senses Chart

See	Hear	Feel	Taste	Smell
My matter is . . . (color, shape, size)	My matter sounds . . .	My matter feels . . .	My matter tastes . . .	My matter smells . . .

### Teacher Resources:

Southwest Educational Development Laboratory, <http://www.sedl.org/work/literacy.html>

### Teacher Tips:

- If using an object other than a ball, create your own sentence strips to describe the object, making sure that the last one states what the object is.
- Expect students to have different observations. All students may not perceive the properties in the same way; however, it is important to make sure that all observations are qualitative or quantitative statements and are not inferences. Naming objects is an inference, not an example of an observation.
- Duplicate extra pages for the “My Matter” booklet in case students want to describe more than 6 pages worth of properties!

### Related Student Resources:

Broekel, R., *Tus Cinco Sentidos*, Children’s Press, 1988.

Hewitt, Sally, *The Five Senses*, Children’s Press, 1999.

Miller, Margaret, *My Five Senses*, Econo-Clad, 1999.

Rius, Maria, *The Five Senses*, Hearing, Econo-Clad, 1999.

Slater, Teddy, *Busy Bunnies Five Senses*, Scholastic, 2000.

### Lesson Credits:

This lesson is adapted from *Matter, A Storyline Unit*, developed by the K-12 Alliance (CSIN-SPAN-SS&C), 2000

# The Science Learning Cycle:

## What Does Matter Look Like?



### ENGAGE:

1. Look around the room and tell students you are thinking of some matter that is in the classroom (e.g., ball). Give clues to describe the matter (e.g., The matter I am thinking of is round, red, and squishy). Ask students how they know what is being described. How do they know it isn't something else? Remind students that all matter has properties by which it can be identified or described. After students guess the matter you were thinking of, provide examples of additional ways of describing the matter, "One of the properties of this object or matter is that it has bumps on it," or "This matter is soft," etc.
2. Display the "Concept Wheel" where students can clearly see it. Read *My Five Senses* by Aliko. After reading, ask students to name the five senses. Add one of the sense words (see, hear, feel, touch and taste) in each section of the "Concept Wheel." Ask students to think of other words that come to mind for each sense word (e.g., see-eyes, look, sight; hear-ears, listen, sounds, noise; etc.) and add these words and pictures to the appropriate section of the "Concept Wheel." Ask students to add words/pictures from the book *My Five Senses*, state where that word belongs on the wheel, and explain why they placed it there (e.g., drum is placed in the "Hear" section because it makes noise). This activity is an opportunity for EL to understand that printed materials provide information.
3. Ask students, "How do our five senses help us describe the properties of matter?"
4. Ask students to look at the same object you began with (e.g., ball). Model for students a way to describe the object more fully using complete sentences (e.g., "My matter looks red with white spots all over it. It looks round and can bounce as high as me. My matter feels soft and squishy. My matter smells like rubber. My matter makes a sound when I bounce it"). Explain that the sense of taste was not included in this description and remind students about precautions for tasting objects.



### EXPLORE:

5. Have students look around the room or allow them to go outside to collect one piece of matter they will use for the next activity.
6. Have students put their matter on their desk or table. Ask students to observe their matter with their senses. Ask students to think of ways to describe their matter using as many of their senses as possible.
7. Ask students to share their observations with their partner. Then provide time for students to share their description of their matter with other students in the class. When describing their matter, encourage students to use the sentence frame (e.g., "My matter looks/is \_\_\_\_\_", "My matter feels \_\_\_\_\_", etc.). This provides an opportunity for EL to answer questions using phrases or simple sentences.



### EXPLAIN:

8. Display the "Class Senses" chart. Have students raise their hands when they have discovered a "property" of their matter using one or more of their five senses. Ask students to explain the property and tell which sense they used to find it. Write the property of the object in the appropriate column on the "Class Senses" chart for the sense used (e.g., "red" in the sight column, "rough" in the touch column). Encourage students to respond in complete sentences without actually naming the object.
9. After each observation is shared, ask other students to stand if they have objects that have the same property. Complete the "Class Senses" chart with words or phrases that describe the properties of the matter students are holding.
10. Distribute a sentence strip to each student and ask students (or volunteers) to write on the strip at least five properties (e.g., -red, rubber, round, white spots, bounces) that describe their matter. Students may use words from the "Class Senses" chart or the "Concept Wheel." Collect the sentence strips and the pieces of matter to use with the "What's My Matter?" game (step 11). You will return the strips and objects (step 15) to students to use while making their own booklet, "My Matter."

*The Science Learning Cycle:* What Does Matter Look Like?



### EVALUATE:

11. Introduce the "What's My Matter?" game. Display the objects (pieces of matter) and gather students where they can easily see the pieces of matter. Choose a sentence strip completed by one of the students and read it aloud. When the students think they can identify the matter described, ask them to raise their hand and name the object. Play this game several times.
12. Tell the students they will be making a "My Matter" booklet. Model how to complete the pages of the booklet: display a sentence frame from the "My Matter" booklet in the pocket chart; read the sentence frame, "My matter \_\_\_\_\_.", aloud slowly and then read together several times with the students. Next, using the object from step 1 (the ball), model how to complete each sentence by adding the remaining part of the sentence. Read each sentence with the students. In this part of the lesson, it is appropriate for EL at beginning reading comprehension level to draw pictures for prewritten sentences strips.
13. Ask students which senses were used to describe the object. Add a picture of the sense used to each sentence strip. (For example, "My matter is red." Draw a picture of an eye at the end of the sentence. "My matter smells like rubber." Add a picture of a nose at the end of the sentence.) Ask students if there are other senses that could have been used.
14. Show students the blank pages of the student "My Matter" booklet (Student page 1.0) and explain that they will now make their own booklet using their piece of matter. Each page will have one property and a picture.
15. Return the appropriate sentence strip to each student to use to complete their "My Matter" booklet. Using parent volunteers or older student helpers, ask students to complete the observations/descriptions of their matter. The last page of the booklet should tell what the matter is. Ask students to draw a picture to go with each page.
16. Provide time for students to read their booklets to each other.



### ELABORATE:

17. Play "What's My Matter?" game with other items in the classroom.
18. Provide "touch and feely" boxes (boxes in which students can feel, but cannot see, the objects) to partners and ask them to describe the objects. After each item is described, ask students to open the boxes and compare their descriptions with the actual object.
19. Send a "Surprise Box" home with a different student each night. Ask the student to place an object in the box and have their parents help write five properties about this object. Ask students to return the box to the classroom. The next day, have students listen to the properties and guess what might be in the box.



### Teacher Reflection:

1. How does the student work provide evidence of student understanding that matter has properties that can be described using the five senses?
2. What instructional strategies used in this lesson promote student understanding? How do you know?
3. How does the literature selection support student understanding of the science concepts?
4. How would you modify instruction to ensure understanding of student outcomes by all students?



My matter \_\_\_\_\_ .

cut here

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My matter \_\_\_\_\_ .