

Name \_\_\_\_\_

Date \_\_\_\_\_

## Lesson 3—What Are Chemical Changes in Matter?

### 1. Inquiry Skill Practice—Draw Conclusions

Look at the table. What conclusion can you draw about how substances affect pennies?

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Substance	Reaction
acetic acid [vinegar]	Penny becomes brighter. Liquid turns green.
water	Penny remained the same.
citric acid [lemon juice]	Penny becomes brighter.

### 2. Use Vocabulary

Match the clue on the left to the term on the right.

\_\_\_ Water is made of two elements.

\_\_\_ Water is colorless and odorless.

\_\_\_ Another term for chemical change.

A. physical properties

B. chemical reaction

C. compound

3.



### Reading Skill Practice—Compare and Contrast

Read the selection. Compare and contrast elements and compounds.

An element is made up of only one kind of atom. For instance, hydrogen is an element. All of the atoms that make up hydrogen are the same. A compound is made up of more than one kind of atom. Baking soda is a compound.

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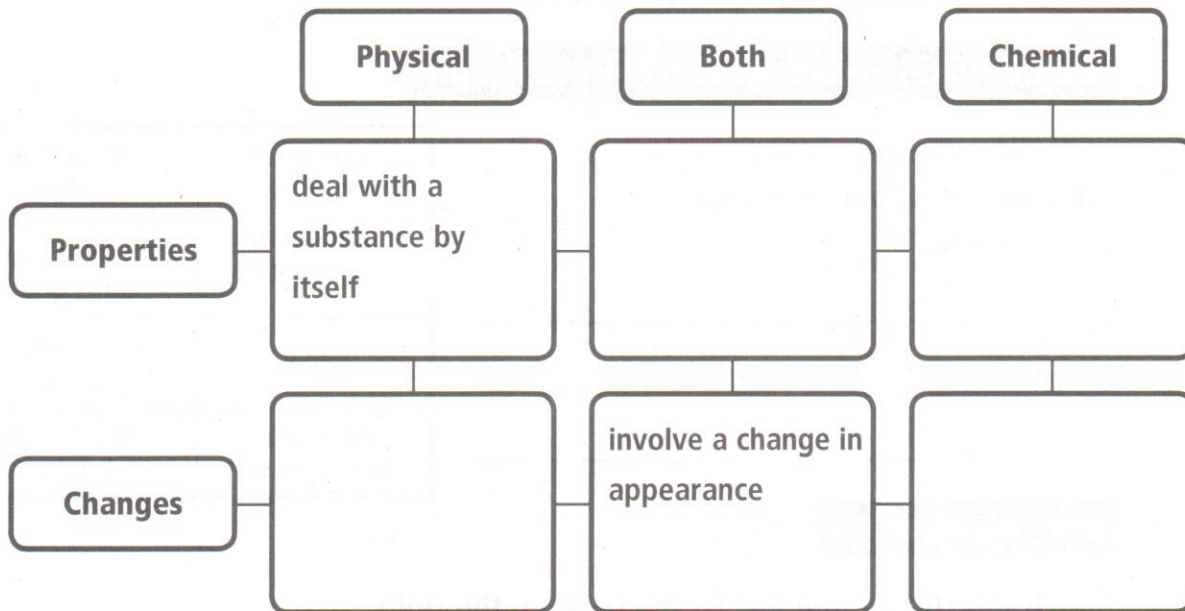
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4.  **Compare and Contrast**

Complete the graphic organizer.



5. **Critical Thinking and Problem Solving**

Leaves change their color in autumn. Is this process a physical change or a chemical change? Explain your reasoning.

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## Changes in Matter

### A. Explore Word Meanings

Read the definitions of the underlined words. Then write the answer to each question.

1. Physical properties are traits that involve a substance by itself. What are the physical properties of a can of tomato soup?

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2. An atom is the smallest possible particle of a substance. Is an atom smaller or larger than a basketball? Which words helped you decide?

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3. A chemical change is a change that results in one or more new substances. What chemical change is likely to occur when a metal chair is left outside in the air and rain?

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### B. Multiple-Meaning Words

Read each sentence and the definitions of the underlined word. Circle the letter that shows which way the word has been used.

4. Water is a compound made up of hydrogen and oxygen.  
A. two or more different elements that have chemically combined  
B. a word made up of two smaller words
5. All of the clothes and shoes in my closet are examples of matter.  
A. something that is important  
B. anything that has mass and takes up space