



LESSON 3:  
**RESEARCHING A  
COMMON SUBSTANCE**

**OBJECTIVE**

The student will research a common substance and construct a report in the form of a trifold brochure.

**INTRODUCTION**

Every day we come into contact with substances that affect our personal lives. Some of them are elements, while many others are compounds or mixtures. Most of us take them for granted, or know little about them other than their common name. In this project, you will research an important common substance. You will learn about its physical and chemical properties, where it is found, its history, and how it is used. When you have finished this project you will be the class expert on one particular substance, and you will have an opportunity to share your knowledge with your classmates. They will also share what they learn about their substances with you.

**PROCEDURE**

1. Examine the list of substances on the next page. During class, you will have the opportunity to choose one substance to investigate. Your teacher will explain to you how everyone in the class will select their substance in a way that is fair to everyone. Check several substances on the list that interest you in the event that you do not get your first choice. When final agreement has been reached on your substance, write its name here.

**My substance is:** \_\_\_\_\_

2. You will be provided one class period in the media center to research your substance. You should be able to find all of the information that you need for your project during that time. If you need additional research time, you can visit the media center after school, visit the public library, or access information on the internet from home.
3. When you have completed your research, construct an interesting and informative trifold brochure about your substance. Detailed requirements for this brochure appear on the next several pages. When your brochure is completed, you will share what you have learned about your substance with your classmates.

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# RESEARCHING A COMMON SUBSTANCE

CONTINUED...

## POSSIBLE SUBSTANCES TO INVESTIGATE

### ELEMENTS

Hydrogen	Flourine	Zinc
Argon	Neon	Silver
Helium	Sodium	Tin
Carbon	Magnesium	Gold
Nitrogen	Aluminum	Mercury
Oxygen	Silicon	Lead
Fluorine	Phosphorous	Lithium
Neon	Sulfur	Boron
Sodium	Chlorine	Strontium
Magnesium	Potassium	Uranium
Aluminum	Calcium	Arsenic
Silicon	Manganese	Radon
Phosphorus	Iron	Barium
Sulfur	Nickel	Platinum
Chlorine	Copper	Titanium

### COMPOUNDS AND MIXTURES

Baking soda	Morphine	Sugar
Quinine	Carbon dioxide	Poly vinyl chloride
Ethyl alcohol	Camphor	Isopropyl alcohol
Vinegar	Curare	Bronze
Brass	Cholesterol	Glass
Hydrochloric acid	Tylenol	Sulfuric acid
Steel	Amber	Natural gas
Butane	Indigo	Gasoline
Propane	Formaldehyde	Rubber
Sterling silver	Henna	Ceramic tile
Polypropylene	Bleach	Pencil lead
Chalk	Nylon	Diamond
Asbestos	TNT	Aspirin
Ruby	Ambergris	Emerald
Amethyst	Bauxite	DDT
Nitroglycerine	Equal	Glycerine
Styrofoam	Cotton	Cochineal
Ibuprofen	Soap	Teflon
Epsom Salt	Juglone	Polyethylene

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## **RESEARCHING A COMMON SUBSTANCE**

CONTINUED...

### **PRODUCT REQUIREMENTS**

1. Construct an interesting and informative trifold brochure about your substance. Be sure to include a title along with your name and class period.
2. Your brochure should be on paper. It should measure 8½ by 11 inches in size and should fold into three parts (your teacher will show you examples).
3. Include at least one large, color illustration that is related to your topic. You can make your own drawings, take your own pictures, or use pictures from magazines or the internet. Be sure to give credit for pictures that are not yours.
4. Make sure that you include in your brochure all of the applicable required research information that is listed on the previous page. All information in your brochure must be written in your own words and factually correct.
5. Neatness counts! Your lettering must be neat and straight. Do not have crossouts, smudges, stains, wrinkles, or stray marks in your brochure.
6. Spelling and grammar count, too!
7. Do not attach any objects to your brochure such as coins, jewelry, etc.
8. Use your imagination--make an interesting and exciting brochure!
9. Include a bibliography in your brochure citing at least three sources. Be sure that you cite any source of information or illustrations, including internet sources.
10. Turn in your brochure on time.

**The due date for this project is: \_\_\_\_\_**

**END OF ASSIGNMENT**

## **RESEARCHING A COMMON SUBSTANCE**

CONTINUED...

### **RESEARCH REQUIREMENTS**

Try to find the following information about your substance:

1. The name and chemical symbol or formula of your substance, and any other names that your substance might have.
2. A complete description of your substance, including the following (where applicable):
  - color
  - density
  - melting point and boiling point temperatures
  - luster (shiny or dull)
  - hardness (hard or soft; you might use Mohs' scale of 1-10)
  - classification (element, compound, mixture)
  - any other physical characteristics that apply to your element
3. Chemical properties (examples: reactive, non-reactive, poisonous, flammable, corrosive, etc.)
4. Uses of your substance; why is it important?
5. Some history of your substance, which may include any of the following, where applicable:
  - who discovered or invented your substance?
  - when and where was your substance discovered or invented?
  - how was your substance used in the past?
6. Where is your substance found?
7. Is your substance often chemically combined with other substances?  
If so, which ones? What are the names of those combinations of substances?
8. Anything else that you find out about your substance!

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

# RESEARCHING A COMMON SUBSTANCE

## SCORING TOOL

### ASSESSMENT

SELF: TEACHER:

- |       |       |                                                       |
|-------|-------|-------------------------------------------------------|
| _____ | _____ | [2] A PAPER, TRIFOLD BROCHURE WITH COVER              |
| _____ | _____ | [2] CORRECT SIZE (8½ X 11 inches)                     |
| _____ | _____ | [2] INCLUDES NAME, TITLE AND CLASS PERIOD             |
| _____ | _____ | [5] NEAT; NO SMUDGES, CROSSOUTS, WRINKLES; NOT TORN   |
| _____ | _____ | [5] STRAIGHT, EASY-TO-READ LETTERING                  |
| _____ | _____ | [5] CORRECT SPELLING AND GRAMMAR                      |
| _____ | _____ | [5] COLORFUL, ATTRACTIVE, AND EYE-CATCHING            |
| _____ | _____ | [5] CLEAR, LARGE, COLOR ILLUSTRATION RELATED TO TOPIC |
| _____ | _____ | [10] INFORMATIVE; INCLUDES ALL REQUIRED INFORMATION   |
| _____ | _____ | [5] WRITTEN IN OWN WORDS AND EASY TO UNDERSTAND       |
| _____ | _____ | [3] CREATIVE                                          |
| _____ | _____ | [6] INFORMATION IS FACTUALLY CORRECT                  |
| _____ | _____ | [5] BIBLIOGRAPHY INCLUDED, IN CORRECT FORMAT          |
| _____ | _____ | [✓] TURNED IN ON TIME (-7 points each day late)       |

\_\_\_\_\_ TOTAL POINTS (Out of 60 points)

\_\_\_\_\_ GRADE

#### SCORING RUBRIC:

A = 54-60 points

B = 48-53 points

C = 42-47 points

D = 36-41 points

E = less than 36 points

