

THE RIGHT CHEMISTRY

Teacher Lesson Plan

LEVELS

Grades 4-5

SUBJECTS

Language arts
Math
Science
Social studies
Visual arts

CONCEPTS

People use ingenuity and innovation to make the best use of available resources.

People use tools and technologies to adapt to their environment.

To meet the needs of an expanding human population, societies practice resource management and employ technology.

SKILLS

Analyzing
Categorizing
Classifying
Comparing
Contrasting
Data gathering
Discussing
Identifying relationships and patterns
Interpreting
Observing
Organizing information
Representing
Researching

If you would like to receive additional copies of *Educational in Nature* program material, please email: envcom@gapac.com

In addition to providing beauty and recreation, forests supply raw materials to help meet society's needs for housing, paper, containers and thousands of other products used by consumers every day. As one of the country's leading forest products providers, Georgia-Pacific LLC has a long-term interest in and commitment to the health of our nation's forests.

EDUCATIONAL IN NATURE®

www.gp.com/EducationalinNature

OVERVIEW

The chalkboard, your desk, your hand – they are all examples of matter. Chemistry is the study of matter, how matter reacts and combines to create new chemicals, the changes that take place in matter and what makes up matter. By studying chemistry and the chemical reactions of different types of matter, we can create chemicals and products that improve our lives.

DISCUSSION, STUDY TOPICS AND SUGGESTED ACTIVITIES

The study of chemistry can be used in the context of many different areas of learning. Here are some suggestions:

SCIENCE

- **Papermaking.** Test the strength of different kinds of paper – bath or facial tissue, a paper towel, a paper sack, a piece of writing paper – when they are wet and dry. Which type of paper breaks or tears first when it gets wet? Why? What types of paper need to be strong? What types need to be soft? (*class experiment, research project*)
- **Chemical Reactions.** What chemical reactions do you make every day? (*class experiment, research project*)
- **Interview with a chemical.** Ask students to conduct an “interview” with a chemical or write a story from a chemical’s perspective. In the interview or story, the chemical should reveal its characteristics, how it is created and how it is used. (*research project, class activity, essay topic*)

SOCIAL STUDIES

- **Chemicals from trees.** What products have you used today that are made from tree chemicals? What tree chemicals are in products or objects that are in the classroom, at home? (*class activity, essay topic, class presentation*)
- **Alternative products.** What would life be like without products made from tree chemicals? What products could you substitute for them? What could you invent that would take the place of some of these tree chemicals? (*research project, essay topic, class presentation, art project, short story, video project*)
- **Chemicals in the community.** Divide the class into groups and assign each group a local or regional chemical plant to research and report on. What chemicals do they make? In what products are these chemicals used? What environmental and safety factors do they take into consideration when producing chemicals? What economic or other impact does the plant have on the community? Invite a representative from a chemical plant to your classroom to talk about the facility. (*research project, class discussion, class presentation, field trip, guest speaker*)

MATH

- **Math Activity Suggestions.**
 1. If it takes 2 ounces of vinegar and salt to clean 500 pennies, how many pennies can be cleaned with 5 ounces of salt and vinegar?
 2. If 2 paper towels are needed to clean 4 windows, how many paper towels are needed to clean 12 windows? 240 windows?

THE RIGHT CHEMISTRY

Activity Sheet

A WAY WITH WORDS

How many words can you make out of **The Right Chemistry**?

For example: height or stir

WHAT AM I?

1. I come from wood fiber. I am often combined with other chemicals and used in products like ice cream and shampoo. What am I?

2. I am one of the basic substances or chemicals that make up matter. I am often called a chemical building block, and I have a permanent place on the periodic table. What am I?

3. Most of the time you think of me in terms of “small,” “medium” or “large,” but when it comes to papermaking, I play an important role in helping you communicate “clearly.” What am I?

Answers to What Am I?: 1. cellulose 2. element 3. size



©2011 Georgia-Pacific LLC. All rights reserved.

EDUCATIONAL IN NATURE®

www.gp.com/EducationalinNature

THE RIGHT CHEMISTRY
Teacher Lesson Plan