

# Chemical Formulas

## Summary

The components of chemical formulas and equations that are used to illustrate chemical reactions.

## Main Core Tie

Food and Science

[Strand 5](#)

## Background for Teachers

Very early scientists, called alchemists, used symbols to represent elements. For example, they used a drawing of a half moon to represent the element silex and a ring as the symbol for the element gold. Today, the symbols for elements are derived from the elements' name. The names come from many sources. Most are named by the person credited with discovering the element. For example, two elements were discovered by Ellen H. Richards, a scientist who founded the home economics profession. As the discoverer, she would have had the right to name those elements.

Names sometimes honor a place or a person. Curium, for example, is a radiative element named to honor Marie Curie, the scientist who discovered radium. Hafnium is named for the place it was discovered, Copenhagen. The Latin name for Copenhagen was Hafnia. Sodium was named for one of its common compounds, soda. Soda was commonly used as a headache remedy and the Arabic word for headache was soda, hence soda and sodium.

The most common source of an element name is some property of the element. Protactinium, for example, is a radioactive element that decays to actinium. Protos, in Greek, means first. Protactinium means first before actinium. Likewise, in Swedish tung means heavy and sten means stone, so tungsten means heavy stone.

## Intended Learning Outcomes

Understanding and interpreting the symbols used in writing and communicating information about chemical elements, compounds, and equations will transfer to an understanding of the use and preparation of food.

## Instructional Procedures

See attachments below:

The students will take a PREASSESSMENT quiz to determine their current knowledge about abbreviations for chemical elements.

The students will participate in an exercise listing some COMMON HOUSEHOLD COMPOUNDS AND THEIR FORMULAS, and they will identify the elements in formulas provided and give the number of atoms in each element in the formula.

The students will practice converting structural formulas to shorthand chemical formulas using a worksheet entitled TYPES OF FOOD CHEMICALS KNOWN AS NUTRIENTS.

The students will analyze a chemical formula and determine its meaning. (See UNDERSTANDING CHEMICAL FORMULAS.) The students will participate in a SUMMATIVE EVALUATION: CHEMICAL FORMULAS.

## Authors

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