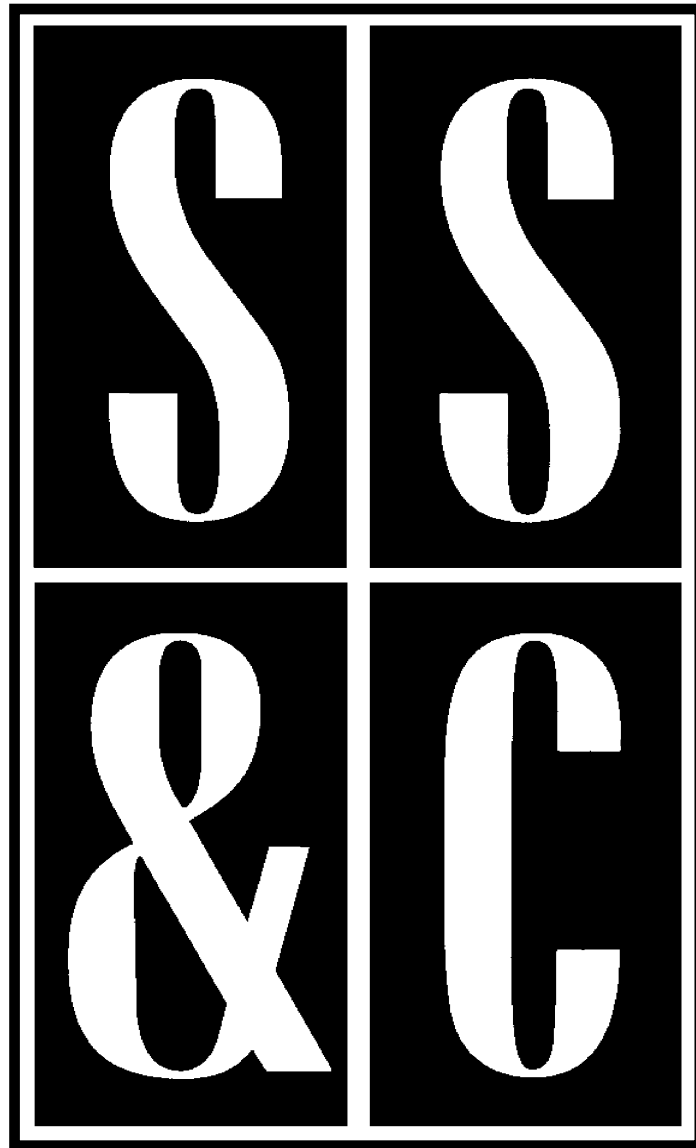


# Scope, Sequence & Coordination

*A National Curriculum Development and Evaluation Project for High School Science Education*



**A Project of the National Science Teachers Association**



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# Scope, Sequence & Coordination

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## Student Materials

Learning Sequence Item:

# 964

## Models of Chemical Families

*March 1996*

*Adapted by: Sandra McCann, Ghassem Mozaffari and Dorothy Gabel*

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### **Contents**

#### **Lab Activities**

1. Believing Without Seeing
2. Solving the Mystery

#### **Readings**

## Science as Inquiry

**Believing Without Seeing****Overview:**

Seeing is believing, but sometimes we cannot see the object. How do we know what it looks like?

**Procedure:**

You will be provided with a sealed box. All of the boxes in the class are the same except for the contents. Gather as much information about the contents of the box—without opening it. Record your observations and the inferences you make from each observation. This will help you arrive at a model of the contents. Draw a model of the contents.

**Questions:**

1. Which of your senses did you use to determine a model of the object inside the box? How were they used?
2. Are there any special instruments that you could use to make observations of the contents of the box without opening it?
3. How does the method you used give you an indication of how scientists might go about determining the structure of atoms that are too small to be seen?

## Science as Inquiry

**Solving the Mystery****Overview:**

How well did you do in Activity 1?

**Procedure:**

Carefully open the box provided for you in Activity 1 and observe the enclosed object. Record your observations. Now, compare these observations with your recorded observations and your drawn model from Activity 1.

**Questions:**

1. How does your drawn model compare with your observations of the actual object in the box?
2. How does this relate to the work of a scientist who must determine the atomic structure of atoms of the elements in families on the Periodic Table?