

Skills and Strategies

- Planning and Conducting
- Evaluating
- Applying and Innovating
- Communicating

Safety

- Never eat or drink anything in the laboratory.

What You Need

- a selection of elements and information cards—these elements will include a variety of solid, liquid, and gaseous elements from different families of the periodic table

Meet the Elements

Most of the matter we interact with every day is in the form of compounds and mixtures. In this investigation, you will observe a number of elements in uncombined form.

Question

How can we distinguish among elements by observing some of their physical and chemical properties?

Procedure

1. Your teacher will give a list of the elements you will be observing. Use this list to prepare a table like the one opposite. (Alternatively, your teacher may provide a table for you to fill out.) Be sure to leave plenty of room for observations.
2. Observe the elements as directed by your teacher. Record properties provided on the information cards. Your teacher may demonstrate additional properties.

Process and Analyze

1. Where within any period do you find the following:
 - a) the most dense metals
 - b) the most reactive metals
2. Where within any group do you find the following:
 - a) the most dense elements
 - b) the most reactive elements
3. Many of the elements you examined were metals.
 - a) List four properties that most metal elements have in common.
 - b) List the elements that are exceptions to the properties you listed above, and explain why.
 - c) List the elements that are magnetic.
4. List the elements that conducted electric current. Were they all metals?

Symbol	Element Name	State	Colour	Additional Properties (lustre, malleability, density, conductivity, magnetism)	Group
H					
Li					
Na					

Communicate and Question

- Summarize your findings about metals and non-metals.
- What questions do you have about the elements or a specific element as a result of this investigation? Come up with at least three questions. Choose one and do Internet research to find the answer.