How does matter affect your life?

Use with textbook pages 94-103.

Create a Quiz

After you read this page, create a five-question quiz based on what you have learned. Trade your quiz with a partner, and answer the questions.

The word “chemical” refers to anything that is matter. In the home, many chemical products have symbols on them to tell you about their safety. These are Hazardous Household Products Symbols (HHPS).

The Borders
- Dangerous Container: The border that looks like a traffic yield sign means that the container is dangerous.
- Dangerous Product: The border that looks like a traffic stop sign means that the contents of the container are dangerous.

The Hazards
- Explosive: This symbol means that the container can explode. If it is punctured or heated, pieces can cause serious injuries, especially to the eyes.
- Flammable: This symbol means that the product will catch on fire easily if it is near sparks, flames, or even heat.
- Corrosive: This symbol means that the product inside the container will burn the throat or stomach if swallowed and will burn skin or eyes on contact.
- Poisonous: This symbol means that the product will cause illness or death if you eat or drink it. For some products, just smelling or finding them is enough to cause serious harm.

In school and in the workplace, chemical products have a different set of safety symbols on them. These symbols are part of the Workplace Hazardous Materials Information System (WHMIS).

Reading Check

1. What do HHPS and WHMIS stand for?

2. How do the HHPS and WHMIS systems differ?

You must work and act safely in your school laboratory. You must know the safety information in your textbook on pages xiv to xvii and pages 100 to 101. Your teacher may give you additional safety information.
### Identifying Hazardous Household Products Symbols (HHPS)

*Use with textbook page 97.*

1. What is the hazard associated with the following HHPS borders?
   
a) ![Triangle Symbol]
   
   ____________________________

   b) ![Octagon Symbol]
   
   ____________________________

2. Complete the following table.

<table>
<thead>
<tr>
<th>HHPS Symbol</th>
<th>Degree and Type of Hazard</th>
<th>Safety Precautions Needed</th>
<th>Type of Product This Symbol Is Found On</th>
</tr>
</thead>
</table>
| ![Triangle Symbol] | • caution (least severe)  
  • explosive  
  • can cause serious injuries if heated or punctured | | |
| ![Octagon Symbol] | • store away from heat and flames  
  • use in a well-ventilated area | | |
| ![Octagon Symbol] | | • toilet bowl cleaner  
  • oven cleaner | |
| ![Octagon Symbol] | • do not make contact with skin  
  • do not get in eyes  
  • do not eat or drink  
  • do not breathe in fumes  
  • wear gloves  
  • wear protective goggles and clothes  
  • wash hands after using | | |
Understanding WHMIS and HHPS

Use with textbook pages 97 and 99.

1. You are about to use the following three household products. Identify the HHPS symbols found on each container and the hazards illustrated by these symbols. Describe the precautions you would take when using these products.

<table>
<thead>
<tr>
<th>Household Item</th>
<th>Name of the HHPS Symbols</th>
<th>Hazard</th>
<th>Safety Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane Gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stain Remover</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fondue Fuel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Nitrous oxide gas (aka laughing gas), used in dental offices for sedation, is stored in containers under pressure and is highly flammable.

a) What two WHMIS symbols would be on a safety label for nitrous oxide gas?

b) What are the hazards associated with these WHMIS symbols?

c) Describe two safety precautions you should take when using this gas.

d) Suggest a place where this gas can be safely stored.
Safety Do's and Don'ts

*Use with textbook pages 100-101.*

Each of the following situations could happen in a science lab. Describe the unsafe practices and explain the safe and correct way to carry out the procedure.

1. You and your partner came to class late and missed the instructions on how to do the lab. You convince your partner that it is okay to start the lab without the teacher.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________

2. You are cold and decide to keep your long dangly scarf around your neck as you use the Bunsen burner.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________

3. You did not have time to eat lunch so you decide that you can eat your sandwich and drink your soda while you dissect the eyeball.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________

4. You just washed your hands but there are no paper towels available. You decide that it is okay to unplug your microscope by pulling on the cord.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________

5. While you are heating the solution in the test tube, you point it away from you but toward your partner.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________

6. You are asked to describe the odour of the solution in the beaker. You hold the beaker up close to your face and smell the fumes.
   Unsafe practice: ________________________________
   Safe lab practice: ________________________________