Key Concept
Using concept mapping, students will investigate common toxic household products.

Subject Matter outcome: Students will be able to recognize general types and specific examples of toxic household products.

Targeted Age: 5th Grade

Time Needed: 40–45 minutes

Materials Needed:
- Different types of hazardous household products (HHPs)
- Sheets of flip chart paper (1 per 4 students)
- Markers
- Worksheet 1.1 (1 per student)

Advance Preparation: Review Project Overview and Background Basics
Collect an assortment of household products to show children different cleaning and pesticide products. Recommendation: use 3 or 4 clean empty product containers for each group.

Before the lesson, set up 4–6 stations around the room. The students will rotate through these stations in small groups. Place 3 or 4 empty product containers at each station.

Let’s Begin
Group students equally. Suggested groups include:
- Super scrubbers,
- Funky fresheners,
- Classy cleaners,
- Paint buckets, or
- Killer cockroaches.

A number of items I found in my house and in this classroom are at each station. All of these items have something in common. Your group will visit each station. Look at the items. Look for clues on the containers and labels about what the products have in common.

Once you’ve rotated through each station, see if you can identify what the “common denominator” is for all these items.

Allow students to rotate through the stations, looking at the products and labels. (Suggestion: You may want to group the products according to traditional storage location—kitchen, bedroom, bathroom, garage, laundry.)

Did any of the products look familiar to you? What did you observe that might indicate what these items have in common?

Did anyone notice words that were repeated over and over on the items?

What are some of those words? List answers on board. Definitions may be included to the right of the word (see below).

- Caution—warns against danger
- Danger—may cause injury, illness or death
- Flammable—easily catches fire
- Harmful—may injure or damage
- Poison—could harm health or cause death
- Warning—gives notice or caution
Start with “Hazardous Products” in the center of your paper. See how many different examples you can come up with.

Once students are finished with their concept maps... Now, choose a partner and, as a pair, compare your maps. Look at how many items are similar and how many are different. On the back of one of the maps, create one map including all the products together.

Once pairs are finished with their concept maps... Now, let’s have 2 pairs work together. Use the flip chart paper and markers to create one map that represents all the hazardous products you have identified. Once all the teams have created their new concept maps, post them around the room. Ask youth to share their maps with the rest of the class.

Fast Facts: Did you know?
Spring cleaning began during the days of coal fires. Once the winter season had passed, everything had to be washed down in order to get rid of the grime left by the soot.

An average home generates over 20 lbs. of toxic hazardous waste each year. Much of this waste can be linked to household cleaning products.

So, with all of this information, who can guess how these items are all alike?

We are starting a new unit about dangers in our environments. Another word for dangerous is hazardous. All the items I have shown you can be hazardous and are common in most homes. Many household products contain chemicals that can be very harmful (toxic) if used incorrectly or if someone is sensitive to them.

Mapping the World of Hazardous Products

Now, using a sheet of paper and a pencil, I want you to brainstorm about hazardous household products you think are in your home. Create your own concept map for the different types of household products you identify. Illustrate a concept map for students. This activity helps students understand what types of products to look for during their scavenger hunt.

Let’s Reflect

1. As students look at the concept maps, have them point out patterns, such as:
   - Products that appear on all maps
   - Products that appear only once
   - Changes that occurred as more people were added to the group
   - Groupings or classifications of products

2. What do you notice about the types of hazardous products you identified in pairs and then in groups of 4?
   - Did the variety increase? Decrease?
   - If it did change, why did that happen?

3. Were there products that appeared on every group’s list? Why are these products so common in our homes?

4. These lists have items in common and items that only appear once. Why is it important to be able to look for similarities and differences in the information that we collect?
Let’s Apply

1. What causes the number of household products to be different from one family to another? Would the number of people in a household likely affect the number of cleaning products? Why?

2. Think about the types of homes different families live in. Does the type or location of home impact the kinds of hazardous products that are there (apartment, home with a garage, farm)? How so?

3. How many of your teams added something more to your map each time your group got larger? Why is it helpful to use different sources and viewpoints when gathering information?

4. What can we learn from this method of gathering data and recording information? What skills make teams function most efficiently? What challenges do groups face?

Quick Facts
Below are some examples of common Hazardous Household Products (HHPs). When these products become unusable, they are referred to as Hazardous Household Waste (HHW) and must be properly disposed of so that they do not pollute or contaminate the environment.

- **Paint Products:** paint thinner and remover, oil-based paints, stains, varnish, turpentine
- **Cleaning Agents:** bleach, disinfectants, furniture polishes and waxes, drain openers, laundry detergents, degreasers and spot removers, oven cleaners, septic tank cleaners, toilet bowl cleaners, shoe polish
- **Car/Auto-Related Products:** antifreeze, oil, waxes and cleaners, batteries, gasoline, engine additives, windshield washer fluid
- **Hobby and Recreational Supplies:** photo developer chemicals, marine paints, lighter fluid, electronic equipment cleaner, pool chemicals, painting supplies, silk-screen materials
- **Pesticides:** bug killers, mold and fungus killers, weed killers, chemical strips, insect repellants, mothballs, flea killers, pool cleaners, yard insect foggers, rodent baits and poisons

**IN THE NEXT EDITION...**

Give students the Household Scavenger Hunt Worksheet. This worksheet will guide them finding the number of hazardous products in their homes.

Have students share this activity with parents or guardians to ensure proper supervision when looking for and identifying harmful chemicals.

We have talked about possible types of hazards in our homes, but how do we know what is really there? We need to look. When you go home, look around your house and count how many hazardous products you have. While you look, keep in mind the different products we discussed today.

This worksheet will help you keep track of the household products you find and identify. The chart lists different rooms in our house. In the right-hand column, write down names of products that you find.

**Quick Facts**

<table>
<thead>
<tr>
<th>Household Scavenger Hunt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Hazardous Products</strong></td>
</tr>
<tr>
<td>Bedroom</td>
</tr>
<tr>
<td>Bathroom</td>
</tr>
<tr>
<td>Kitchen</td>
</tr>
<tr>
<td>Garage</td>
</tr>
<tr>
<td>Laundry</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

We will use your charts for the next lesson, so be sure to remember to bring them on: (Give students a due date for this assignment based on how you are incorporating this unit into your curriculum.)
### Household Scavenger Hunt

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Hazardous Products</th>
<th>Name of Hazardous Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedrooms (investigate every bedroom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom (investigate every bathroom)</td>
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<td>Kitchen</td>
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<td>Laundry</td>
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<td><strong>Total:</strong></td>
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Household Scavenger Hunt

Dear Parent or Guardian,

Today’s children will be exposed to more chemicals over their lifetimes than any previous generation. Did you know that:

An average household produces over 25 pounds of toxic, hazardous waste every year. Most of this waste is from household cleaning products.

The average household typically uses and stores more than 60 hazardous products, including household cleaners, automotive products, paints, solvents, and pesticides.

The average school janitor uses 23 gallons (about 194 pounds) of chemicals each year.

Helping youth learn about these products can help reduce the potential health risks. Your child is participating in a study unit on different environmental hazards and their impacts on human health. This unit on children’s environmental health includes activities to engage your child in learning about the hazards of household cleaners and pesticides, lead poisoning, radon, mold, air pollution, and asthma triggers.

As part of this introductory activity, each child is completing his/her “Scavenger Hunt” to locate household products that may be dangerous to them or others in the family. Students will use the information for a class discussion of the products.

If you have any questions about this educational program or want more information on any of the hazards mentioned above, please contact your local UF/IFAS Extension office.