

Homemade Cleaner Family Challenge

Are homemade cleaners a better choice than commercial cleaning products?



Materials

homemade glass cleaner in labeled spray bottle • quart-sized (32-ounce) spray bottles of 2 commercial glass cleaners • mirrors • clean rags or paper towels

Put Glass Cleaners to the Test

① Test the homemade window cleaner against two commercial window cleaners by using each product to clean a different area of a dirty mirror. Observe characteristics such as ability to clean well, residue or streaking, and odor.

② *Which one cleans better or faster than the other?*

③ Compare the cost of commercial cleaners to a homemade cleaner. The cost of the spray bottle, the vinegar, and the label are provided. Record the costs shown on the price tags for cleaners A and B. Add a cost for your time. Total all costs to find the cost of the homemade cleaner.

Cost Comparison Between Commercial and Homemade Cleaners			
Items	Cost per Item	Amount Needed	Cost
Spray Bottle	\$1.98	1	\$1.98
Label	\$5.29/150	1	\$0.04
Vinegar	\$1.89/16 oz	2 oz	\$0.25
Your Time			
Total cost of homemade cleaner			
Cleaner A	Total cost of cleaner A		
Cleaner B	Total cost of cleaner B		

④ Rate the products for each quality on a scale of 1 (worst) to 5 (best).

Which Cleaner Is Better?			
Quality	Homemade Cleaner	Cleaner A	Cleaner B
Ability to clean			
Streaking			
Odor			
Price			

⑤ *Which cleaner is better? Why do you think so?*

Explanation

Almost every home in the United States contains hazardous chemicals of various kinds. A hazardous chemical is a chemical that poses some form of danger to humans, domestic animals, or the environment.

When thinking about hazardous chemicals around the house, your first thought might be those cleaning products under the sink. Perhaps you've wondered whether homemade cleaners are safer and as effective as the commercial products you typically use.

Many homemade cleaning products are safe, effective, and less expensive than their commercial counterparts. But not always. When thinking about using a homemade product, you might want to consider the following issues.

- Homemade products may contain ingredients that have not been tested for safety or environmental impact like their commercial counterparts.
- Homemade products may be stored in containers that are not child- and pet-resistant.
- Storing homemade products in containers previously used for commercial products may pose unexpected hazards. The ingredients of the homemade product may dissolve or react with residue from the commercial product or with the container material.
- Homemade products may be less effective than commercial products, causing the consumer to spend more time and use more of the product. In addition, the ingredients in a homemade product may deteriorate over time.
- Homemade products may not be labeled with all of the important product information, such as ingredients and safety and disposal procedures. Also, homemade products have no company information and phone number listed on the label to help consumers provide fast treatment in case of an accident.

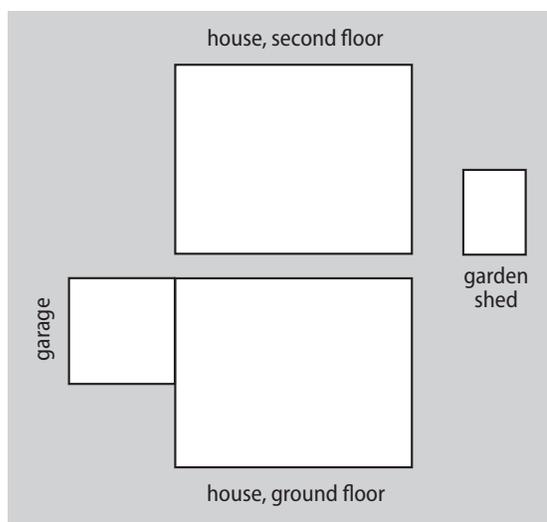
Commercial product labels provide information about whether a material is hazardous and, if so, what kind of hazard it poses. Hazardous substances are classified into six main categories that include flammable/combustible, explosive/reactive, corrosive, toxic, or irritant.

To alert consumers to these hazards, signal words, indicating the levels of hazard, are required by law to appear on labels of hazardous products. Approved signal words, from least to most hazardous are **CAUTION**, **WARNING**, and **DANGER**. Where needed, the signal word **POISON** is used along with **DANGER**.

Try at Home

Nearly every home contains at least a few hazardous household chemicals, and reading their container labels for safety information is important. Cleaning products aren't the only products around the house with important chemical labels. Chemicals are often used in arts and crafts projects and other hobbies or home activities such as animal care, gardening, and lawn care.

Go on a scavenger hunt around your house and see what you can find. You'll need a large piece of paper; blue, green, and red colored pencils or markers; and a notebook and a pen or pencil. Draw a bird's-eye view of your home on the paper. This will be your property map. If the buildings have multiple levels, draw each level separately. Here's an example.



Carrying your property map, notebook, and writing supplies, go through all areas of your property and hunt for chemical products.

- For each label you find that uses the word **CAUTION** or **WARNING**, draw a blue star on your property map in the location where you find the product.
- For each label you find that uses the word **DANGER**, draw a green star on your property map in the location where you find the product.
- For each label you find that uses the word **POISON**, draw a red star on your property map in the location where you find the product.
- As you're on your scavenger hunt, keep a list in your notebook of the products you find in each of the three categories (**CAUTION** or **WARNING**, **DANGER**, and **POISON**). Make a note of where you find these products and their special storage and disposal requirements.