

# Poisoning Primer

## Keeping Kids Safe



Teaching Outlines and Activities to Help Protect Children from Poisonings

**Poison Control  
Center**



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## Keeping Kids Safe

The nurses, pharmacists and doctors who staff the 24-hour Poison Control Center (PCC) hotline at The Children's Hospital of Philadelphia handle many calls from parents with small children who have ingested or been exposed to potentially dangerous substances in the home. Poisonings can cause injury and even death. Some basic lessons can help teach kids to avoid poisonings.

This manual, written by the Poison Control Center team, includes lesson ideas and activity sheets for preschool and elementary school students. Our goal is to make it second nature for kids to think twice before eating or drinking substances around the home, garage and yard, and to always ask their parents or another adult first. The Poison Control Center team cares about the safety of every child. We hope you find this manual useful in helping to keep your students safe.

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## What is the Poison Control Center?

The Poison Control Center was established in 1986 as an independent nonprofit organization. In 1993, the center became a division of The Children's Hospital of Philadelphia. The PCC serves the public and healthcare providers in the Pennsylvania counties of Berks, Bucks, Carbon, Chester, Columbia, Dauphin, Delaware, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Monroe, Montgomery, Northampton, Northumberland, Philadelphia, Pike, Schuylkill, Susquehanna, Wayne, Wyoming and York, and the three counties of the state of Delaware. The Center operates under the strict national standards of the American Association of Poison Control Centers and has been certified as a regional poison control center since 1987.

### The Poison Control Center embraces six missions within its region:

- The provision of a 24-hour daily poison information public health hotline, free of charge.
- The provision of epidemic surveillance for health threats to the public.
- The provision of expert toxicology information to public health, governmental and news information agencies.
- The provision of poisoning prevention education to the public.
- The provision of poisoning prevention, evaluation and treatment education to healthcare professionals.
- The provision of medical toxicology consultation to healthcare providers treating poisoned patients.

## What Happens When You Call the Poison Control Center?

When you call the hotline, a registered nurse, pharmacist or physician who has specialized training in toxicology answers the phone. The specialist assesses the seriousness of the poisoning exposure based on the substance, time of exposure, the patient's symptoms and the potential for early intervention. This information is needed for the specialist to provide the appropriate treatment recommendations.

We ask for your name and phone number so we can follow up by calling back to check on the patient. Follow-up is performed for each poisoning exposure that has resulted in symptoms or when there is the likelihood that the patient will become symptomatic. The staff uses a state-of-the-art information retrieval system called Poisindex that lists more than 600,000 household products, chemicals and medications, as well as other references.

The Poison Control Center responds to more than 200 calls a day. The majority originate in the home and are made by the parent or relative of a small child. The workplace is the second most common site of a poisoning exposure.

## Poisoning Primer

**What is a poison?** A poison is any substance — solid, liquid or gas — that may injure or impair health, or even cause death when taken into the body or put onto the skin. Poisons come in all kinds of colors and shapes. Some are odorless and tasteless. Sometimes things that smell or taste good may be poisonous. Almost any substance can become a poison when used inappropriately or in excessive amounts, particularly in small children.

**Poisons are everywhere.** In most homes, poisons can be found in almost every room. (See Table of Potential Poisons in the Home, below.) Most children and many adults think of poisons as very deadly substances that are mysterious, quick-acting and impossible to trace. They rarely consider cigarettes, perfume, shampoo, plants, vitamins with iron and many other common household products as poisons.

**Labels can be misleading.** People tend to think anything sold over the counter must be safe. Others assume if a product is not labeled “poison” it must be harmless. Most product labels, but not all, contain adequate information concerning use, storage and potential hazards. However, many people do not read the label carefully or at all. Caution, warning, danger, flammable, corrosive, hazardous, fatal, caustic, harmful and poison are examples of signal words that alert the user to potential hazards.

**Plants can be poisons.** Plants are a common cause of potential poisoning in children under 5. Houseplants, yard shrubs, wild berries, trees and mushrooms are all attractive to children. Children should be taught not to put twigs, grass, berries or mushrooms in their mouths.

**There are many ways to be poisoned.** Children can be poisoned through: ingestion — eating or drinking something toxic; absorption — splashing or spilling something on the skin or in the eye; inhalation — breathing dangerous or irritating fumes; and injection — being bitten or stung by insects, snakes, spiders and even some types of fish.

Potential Poisons in the Home	
Whole House	smoke (house fire), carbon monoxide (house fire or faulty furnace/chimney, hot water heater, gas oven, etc.)
Bathroom	air freshener, antiseptics, aspirin, baby powder, deodorant, hair dye/perm, medicine, mouthwash rubbing alcohol, shampoo, tile cleaner, toilet bowl cleaner
Bedroom	aftershave, cologne, cosmetics, medicine, nail polish, perfume
Kitchen	alcoholic beverages, ammonia, bleach, cleaners, detergent, drain cleaner, floor wax, glue, medicine, vitamins
Living Room	cigarettes, flowers/plants, furniture polish, mothballs
Garage/Basement	antifreeze, charcoal lighter fluid, fertilizer, gasoline, kerosene, motor oil, paint thinner, pesticides, turpentine, windshield washer fluid
Outside	berries/plants, garden supplies, mushrooms

## Children: At Risk for Poisonings

Young children rarely understand that they could poison themselves. Small children, especially ages 1 to 5, are curious about the things around them, and have a great tendency to explore the world by putting everything in their mouth! To make matters worse, some poisonous substances look just like common foods or beverages, and may come in pretty packages that make children more attracted to them. For example, they may mistake the shiny crystals of a drain cleaner for candy, or pellets to kill insects or rodents as the funny-looking vitamins they take each day.

### How do poisonings happen?

- Many poisonings happen as a result of children imitating their parents or caregivers. Children are great imitators; they want to gargle with mouthwash or put gasoline in the lawn mower, but they don't understand that gasoline and even large amounts of mouthwash can hurt them.
- Improper storage of products is a frequent cause of poisoning in children (and even occasionally in adults). Many poisons are improperly stored where children can easily reach them, such as underneath the sink or on a table. It is dangerous to store products such as gasoline, furniture polish or cleansers in food containers.
- Improper use or combining products is another cause of poisoning. Mixing household products may create toxic fumes. The combination of bleach and ammonia creates a poisonous gas (chloramine gas) that can cause respiratory problems. The use of varnishes or paint strippers in poorly ventilated areas can cause headaches, nausea, vomiting and other serious conditions.
- Taking medicine without reading the label, increasing dosage or taking a friend's medication can have very serious consequences. When taking medication, it is important to read the label in a well-lighted area. Many have been poisoned when they have ingested or administered medication in the dark and later discovered it was not the proper medication.
- Anything in a spray can should be considered a potential poison. It is important to check the position of the opening before spraying aerosols in order to avoid eye or skin injury. Many aerosols can cause damage to the delicate tissues of the eye.

### When do poisonings occur?

Poisonings can happen to anyone at any time. Most poisonings occur when household products are in use. It is not uncommon for a parent to leave a poisonous product unattended while cleaning, after the doorbell or telephone rings. Remember, it only takes a minute for a child to get into a poisonous substance. Poisonings also occur in times of stress, such as during a household move, if there is an illness or death in the family, or during the holidays. Poisonings also occur before meals when youngsters are hungry and parents or caregivers are preoccupied.

## Keeping Kids Safe: Educational Interventions

An attempt can be made to teach young children to avoid poisons, especially those that sometimes look like things we eat or drink. Unfortunately, there is little firm evidence that preschool children can reliably learn to avoid dangerous substances, and so the primary responsibility for prevention and early recognition of childhood poisonings falls to parents and, perhaps, older siblings. Still, we offer here some approaches that have been used by poison centers throughout the country to educate preschool children about this hazard. We have also provided similar exercises for older children who may have preschool-age siblings. Lastly, and perhaps most importantly, we provide materials to send home with each young child for their parents in an effort to take poison prevention education into every student's home.

### Teaching children about poisons

When teaching about poisons, emphasis should be placed on the concept that people cannot always tell a poison by the way it looks, smells or tastes because:

- Some things may look like candy, but they are medicine and can be poisonous. Explain how easy it is to mistake medications for candy because they may look much alike. ("Just because something looks good does not mean it is good to eat.") Emphasize that while medicines administered by a parent or other trusted adult are obviously appropriate, taking them under any other circumstance is very dangerous.
- Even things that smell and taste good may have poison in them. Just because something smells or tastes good does not mean that it is good to eat or drink. Products such as scented lamp oils that look like soft drinks can poison when ingested and can even be harmful when spilled on the skin.
- There may be something other than a soft drink in the soda bottle or plastic milk carton. Children associate cups, soft drink bottles and drinking glasses with food and drink. Several serious poisonings have been reported when lighter fluid, intended for outdoor barbecue fires, has been poured into such containers and mistakenly swallowed by small children.

## For the Classroom: Lesson Ideas

The following are outlines of poison safety lessons for children, to make them aware of poisonous substances and that they should always ask their parents or caregivers before putting anything in their mouths.

### For preschool children: Appropriate for ages 3 to 5 | Approximate time: 30-35 minutes

Because most children under 5 cannot read, they do not understand warning labels on household products. They do not recognize written words such as "poison," "danger" and "harmful." This lesson will help them be more aware of substances that can be dangerous.

#### A. Introduction to poisons | 10 minutes

1. **Solids** | Show pictures of poisons that would be harmful if eaten (examples: medicine, vitamins, wild mushrooms/berries, plants, flowers, cigarettes, mothballs).
2. **Liquids** | Show pictures of poisons that would be harmful if swallowed (examples: mouthwash, windshield washer fluid, rubbing alcohol, alcoholic beverages, kerosene/gasoline, glue).
3. **Sprays** | Show pictures of poisons that would be harmful if sprayed in the face or on the skin (examples: perfume/cologne, furniture polish, air freshener, hair spray, bug spray).

#### B. Game | 10 minutes

1. Have a bag or box filled with various poisonous products that would be dangerous to eat, drink or spray in the face or on the skin.
2. In the same bag or box put various items that are good to eat or drink (examples: fruit, cereal, juice).
3. As you show each item to the children, have them raise their hands and say "STAY AWAY" if it's poisonous. For items that are good for them, have them fold their hands in their laps.

#### C. Poem | 5 minutes

To conclude the lesson, a poem is an excellent way to summarize the key elements. Recite each line separately to the children and have them repeat each line back to you.

It may look pretty  
It may smell good  
But before I taste it  
I'll ask if I should!

#### D. Stop, Ask First video | 6 minutes

Video is available at [www.poissoncontrol.chop.edu](http://www.poissoncontrol.chop.edu) or in limited supply through the Poison Control Center at 215-590-2003.

**Kindergarten and first grade** | Approximate time: 45 – 50 minutes

**A. and B.** Use “Introduction to poisons” and “Game” from the preschool outline (page 7).

**C. Story** | 10 minutes

1. Read the story “Medicine is Not Candy” to the children.
2. Briefly ask the children questions about the story. Examples: What would you do if you saw your baby sister eating the pills? Should Alivia have eaten the medicine she found in the cabinet without asking first? Did Tommy do the right thing by telling Grandma and Grandpa right away what Alivia had done? Make sure to ask: How could this situation have been prevented?

**D. Coloring activity** | 10 minutes

1. Pass out the activity “Put an X on the poisons” (see Appendix) to each child.
2. Have the children draw an X on each of the poisonous items and color in the items that are good for them.
3. After everyone has completed the activity, go over each answer with them. Emphasize that medicine should only be taken when a parent or caregiver gives it to them.

**E. Poem** | 5 – 10 minutes

1. To conclude the lesson, a poem is an excellent way to summarize the key elements. Recite each line separately to the children and have them repeat each line back to you.
 

It may look pretty  
It may smell good  
But before I taste it  
I'll ask if I should!
2. After you have gone over the poem a couple of times with the children, ask for volunteers to say it all by themselves.

**F.** For additional activities to do at home, see the “Poison Patrol Activity and Game Book.”

**Second grade through fifth grade** | Approximate time: 40 – 45 minutes

**A. Introduction to poisons** | 10 minutes

1. **Solids** | Ask the students what poisons would be harmful if eaten, and write them or have the children write them in front of the class (examples: medicine, vitamins, wild mushrooms/berries, plants, flowers, cigarettes, mothballs).
2. **Liquids** | Ask what poisons would be harmful if swallowed, and then write them or have the children write them in front of the class (examples: mouthwash, windshield washer fluid, rubbing alcohol, alcoholic beverages, kerosene/gasoline, glue).
3. **Sprays** | Ask what poisons would be harmful if sprayed in the face or on the skin and then write them or have the children write them in front of the class (examples: perfume/cologne, furniture polish, air freshener, hair spray, bug spray, window spray).

4. **Invisible** | Ask what poisons you can't see, hear, touch or smell, and write them or have the children write them in front of the class (examples: carbon monoxide from a heater in the home, fumes from a cleaning product or a gas leak from a stove).

**B. Story** | 10 minutes

1. Read the story “Medicine is Not Candy” to the children.
2. Briefly ask the children questions about the story. Examples: What would you do if you saw your baby sister eating the pills? Should Alivia have eaten the medicine she found in the cabinet without asking first? Did Tommy do the right thing by telling Grandma and Grandpa right away what Alivia had done? Make sure to ask: How could this situation have been prevented?

**C. Game** | 10 – 15 minutes

To help students develop sound judgment, have them demonstrate what they would do if confronted with an unsafe situation. Present a “just suppose” story and then call on individual children to tell what they would do and why.

1. Suppose you were playing in your home and you found a box of pills or a bottle of medicine on the table, open with the safety cap off. What would you do?
2. Suppose a friend offered you some pills to take. What would you do?
3. Suppose you found your baby brother or sister playing with a can of cleaning powder. What would you do?
4. Suppose your friend offered you something to eat or drink, but you were not sure what it was. What would you do?
5. Suppose you saw another child eat or drink something you thought might harm him or make him sick. What would you do?
6. Suppose you found your baby brother or sister chewing on something, but he or she would not open his or her mouth to let you see what it was. What would you do?
7. Suppose you were thirsty and found a soda bottle in the garage where your father usually keeps his tools. What would you do?
8. Suppose you and your baby brother saw your father or mother painting, and they put some paint in a cup and left it there. What would you do?

In all of these situations, children should immediately tell their parents/caregivers.

**D. Activity** | 10 minutes

1. Crossword Puzzle (see Appendix)

After everyone has completed the crossword, go over each answer with them carefully.

# For Parents: Calling the Poison Control Center

## What to Do in a Poisoning Emergency?

1. First of all, **remain calm!**
2. Do not give anything by mouth until you have spoken to the Poison Control Center.
3. **CALL THE POISON CONTROL CENTER (1-800-222-1222).** The specialist will instruct you on how to handle the exposure. When you call, have the following information available:
  - Your name and phone number
  - Age of the poisoning victim
  - Name of the product involved in the poisoning
  - Amount involved
  - Time the poisoning occurred
  - Any symptoms the poisoning victim is experiencing
4. Follow the instructions given to you by the Poison Control Center.
5. **DO NOT** rely on antidotes or home remedies listed on first-aid charts or product labels. They may be out-of-date and may cause more damage than the poison you are trying to treat.

# For Parents: Keeping Children Safe from Poisoning

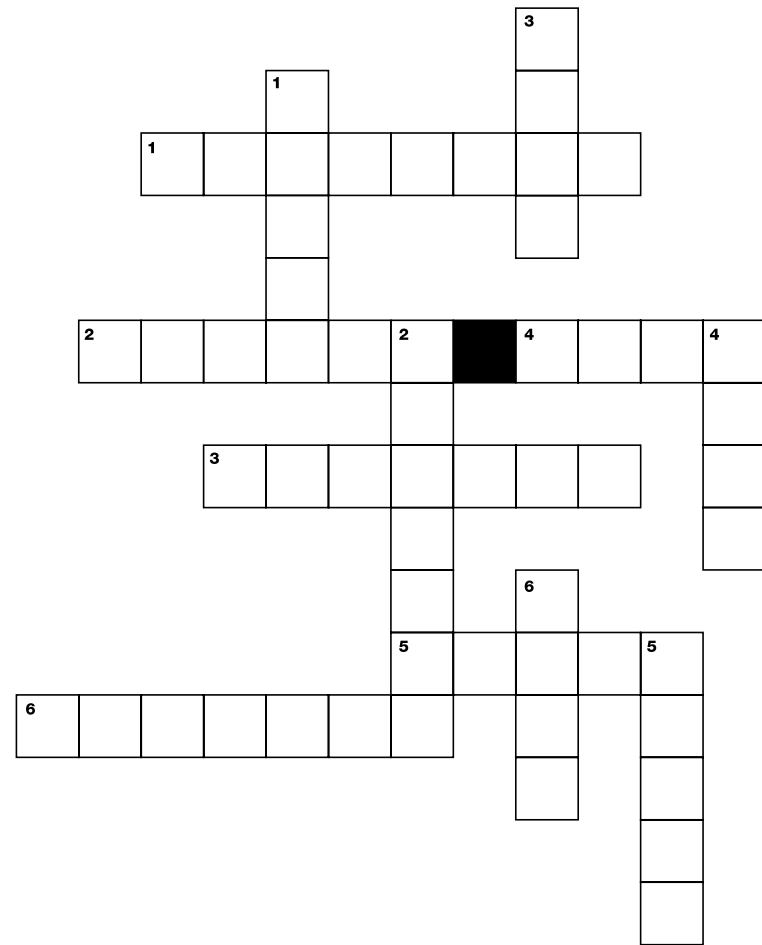
## Tips for Poison Prevention

Awareness is the key to preventing poisonings. The first step in preventing poisonings is the recognition that **ANY ITEM HAS THE POTENTIAL TO POISON WHEN USED INAPPROPRIATELY.**

Poisonings are preventable, but only when people are aware of the problem and learn poison prevention measures. By following these basic rules, and poison-proofing your home, poisonings can be prevented:

1. Clean out medicine cabinets and discard all outdated medications properly. Contact your poison control center for up-to-date guidance on how to safely dispose of medications.
2. Always read the product label before using the product.
3. Keep household products in their original container. Keep labels intact and readable. Never keep household products in cans, cups or soda/juice bottles.
4. Store products out of the reach of children and pets.
5. When called to the phone or door while using hazardous products, make sure that the child or product is taken with you.
6. Read and follow all label instructions for the proper use of each product.  
**NOTE:** First-aid treatment information on product labels is often inaccurate and outdated and may be dangerous. Always call the Poison Control Center at 1-800-222-1222 for up-to-date information.
7. Purchase medications and household products in child-resistant containers when possible.
8. Never take medicines in the dark. Always read the label before taking medication. Never take medicine that has not been prescribed for you.
9. Never refer to medicine as candy.
10. Label all indoor and outdoor plants with their botanical and common names. This will help determine what to do if a plant is eaten.
11. Teach children to seek permission from a parent or caregiver before eating or drinking anything.

Name \_\_\_\_\_



**ACROSS**

1. M \_ D \_ \_ I N E is not candy.
2. Little children like to put everything in their \_ O U \_ \_ \_ .
3. Bleach, drain cleaners and furniture polish are all P O \_ \_ \_ \_ \_ .
4. If someone should be poisoned, you should C \_ \_ \_ the Poison Control Center right away.
5. Poisons should be kept out of the R \_ \_ \_ H of children.
6. Plants and B \_ R R \_ \_ \_ can be poisonous.

**DOWN**

1. Always ask an A D \_ \_ \_ before tasting.
2. We have to help protect our younger brothers and S \_ \_ T \_ R S .
3. Poisons should not be kept under the S \_ \_ \_ .
4. \_ \_ \_ K up all medicines.
5. Poisons can be found in every room of your \_ \_ \_ S E .
6. If you remember these poison prevention rules/ideas, you can S \_ V \_ someone's life.

Name \_\_\_\_\_



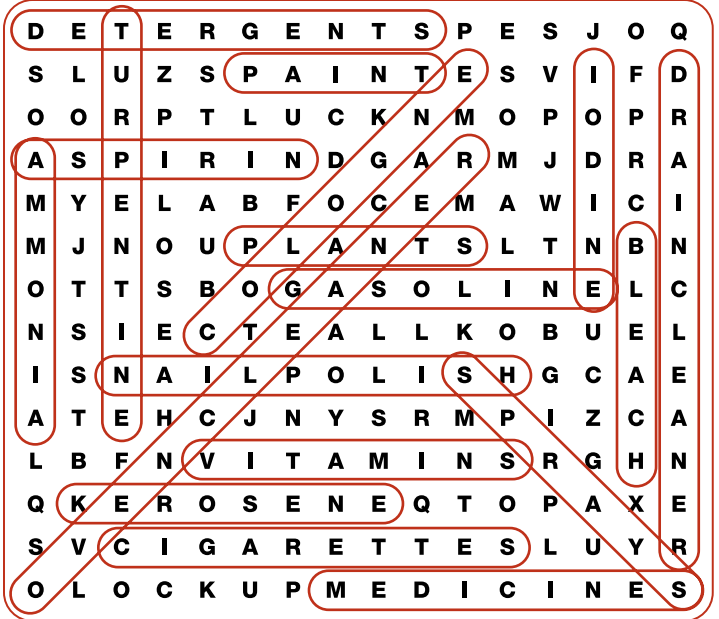
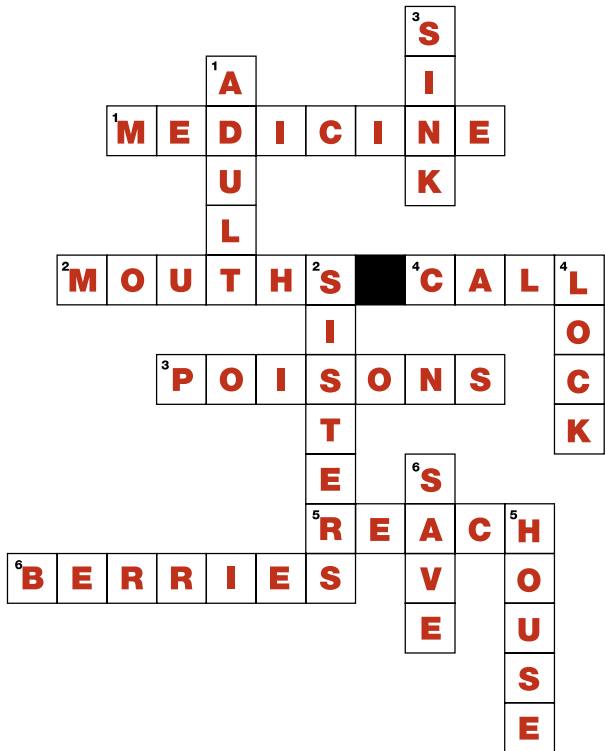
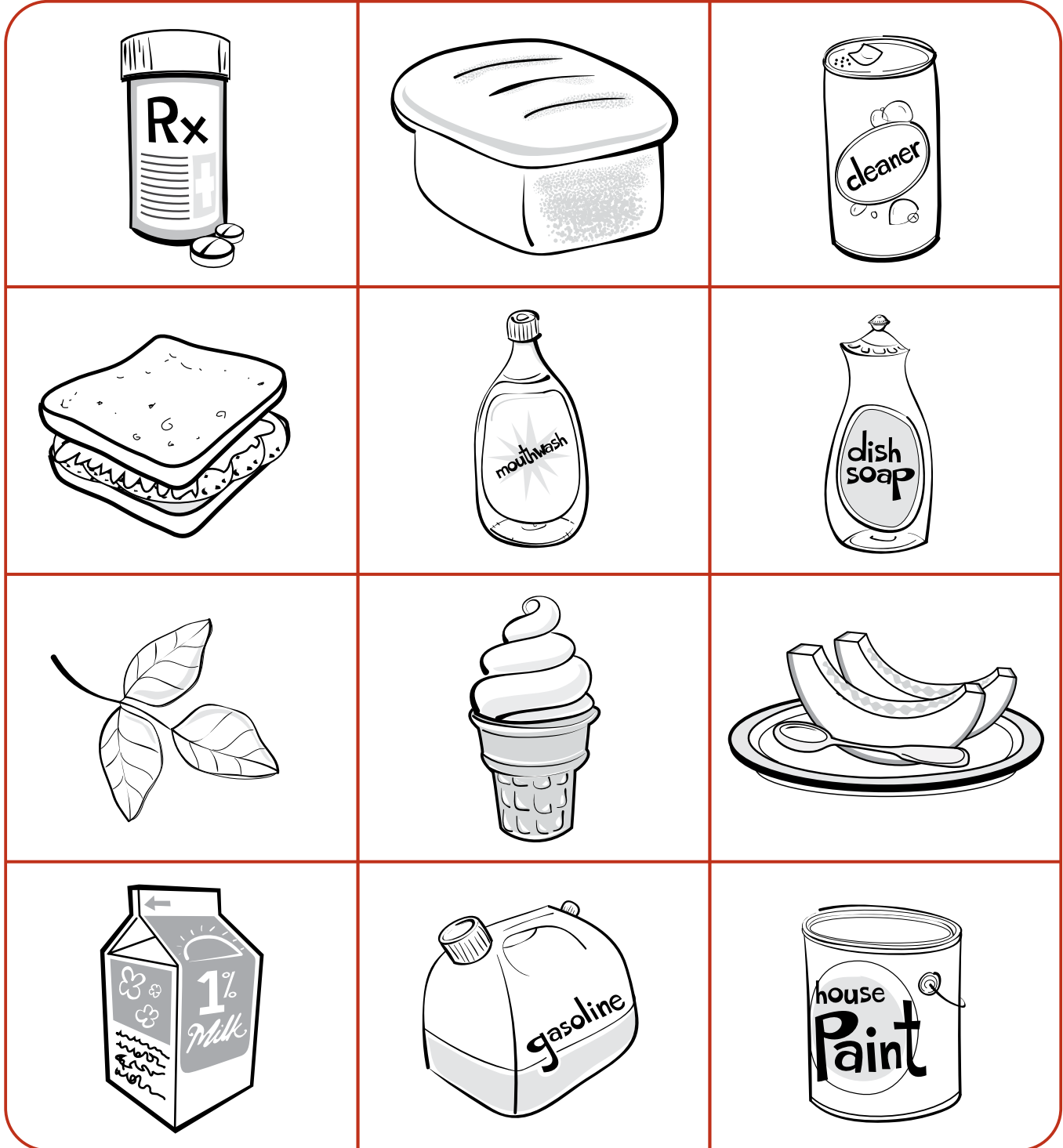
**FIND AND CIRCLE THESE HIDDEN POISONS:**

- |                   |                       |                     |
|-------------------|-----------------------|---------------------|
| <b>AMMONIA</b>    | <b>DRAIN CLEANERS</b> | <b>OVEN CLEANER</b> |
| <b>ASPIRIN</b>    | <b>GASOLINE</b>       | <b>PAINT</b>        |
| <b>BLEACH</b>     | <b>IODINE</b>         | <b>PLANTS</b>       |
| <b>CIGARETTES</b> | <b>KEROSENE</b>       | <b>SPRAYS</b>       |
| <b>COLOGNE</b>    | <b>MEDICINES</b>      | <b>TURPENTINE</b>   |
| <b>DETERGENTS</b> | <b>NAIL POLISH</b>    | <b>VITAMINS</b>     |

Name \_\_\_\_\_

**ANSWER KEY**

Color the things that are safe to eat. Put an X on the poisons.



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Hope lives here.

Founded in 1855, The Children's Hospital of Philadelphia is the birthplace of pediatric medicine in America. Throughout its history, a passionate spirit of innovation has driven this renowned institution to pursue scientific discovery, establish the highest standards of patient care and train future leaders in pediatrics.

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