

IN THE AIR

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Detox Your **Domicile**

ADULT EDUCATION MODULE



MISSOURI
BOTANICAL
GARDEN



IN THE AIR

Detox Your Domicile

FACILITATOR'S INTRODUCTION

(Be sure that brochures have been distributed at the beginning of the program.)

Thank you for coming to our presentation. When most people think of air pollution, they think of outdoor air. You may be surprised to learn indoor air is often more polluted than the air outside. Common everyday household activities increase the pollutants in our homes and are a significant pollution source overall. We will explore some alternatives that can reduce our exposure to many of these pollutants.

To stage our program, we have chosen a familiar format—the home improvement show. Our purpose is not to make light of a serious subject, but to lighten the learning atmosphere and give it relevance to our daily lives. The brochure summarizes the points you'll learn today and provides you with tips to use in your own home. We even have a place to inventory your household cleaners with a scoring system to help you determine products for which you may wish to find substitutes. Thank you for your interest. Now, let's get on with the presentation.

Ladies and Gentleman, please welcome the host of Detox Your Domicile, the home improvement show that shows you how to put the green in clean.

THE HOME IMPROVEMENT SHOW

HOST:

Welcome to this week's installment of DETOX YOUR DOMICILE, a special feature of Pollution Prevention Network or PPN. Now let's meet our experts—those Gallant Guardians of Green who have helped dozens of families make their homes healthier and safer places to live. Heeeeeere's Les and Non Toxic. *(Applause as Les and Nonnie enter.)*

LES and NONNIE:


Thank you, Thank you. *(They sit in chairs placed next to the easel.)*

HOST:

We have invited viewers to write to us about their air pollution problems. Each week we choose one of those letters and go for an on-the-spot visit from our PPN team. Our experts, Les and Nonnie, tour the winners' home, advising them on ways to solve or lessen the air pollution problems they are experiencing. In addition, we select members of our studio audience to participate in games and demonstrations related to air pollution. So, let's get started. *(Turns to Nonnie)* Nonnie, tell us the story behind today's program.

NONNIE:

Today you will see us visiting the home of Omar and Olga Occupant. This young couple was having serious pollution-related air problems directly affecting Olga's health. Here is what Mr. Occupant wrote. *(Reads the letter.)*



Dear Les and Non Toxic,
We need your help! My wife Olga and I have recently purchased an average home. Olga was just diagnosed with asthma. We have noticed that on days when we do chores around the house her breathing is worse. Our doctor gave us a list of changes we could make to help prevent an asthma attack. I even quit smoking.

LES:

Omar quit smoking. That is an important step. We know that certain chemicals can aggravate asthma and many of them are found in cigarette smoke. Continue with the letter Nonnie.

NONNIE: *(continues)*

Our Doctor said that some of the ordinary products we use in our home might be aggravating Olga's breathing, and she mentioned your wonderful program, "Detox Your Domicile." Please come visit, and show us what we can do to have cleaner air and reduce our exposure to toxics in and around our home.

Sincerely,
Omar and Olga Occupant

HOST:

You certainly have your work cut out for you. According to the American Lung Association, 26 million Americans have been diagnosed with asthma and 8.6 million of those are under the age of eighteen.

LES:

Those are disturbing statistics, but the good news is those with respiratory ailments—as well as the rest of us—can have healthier lifestyles by reducing air pollution. Many people don't know that the air outside our homes is often cleaner than the air inside our homes.

NONNIE:

You're right, Les. In fact most air pollution is invisible, but though you can't see it, it's still there.

LES:

Before we take a look at what Nonnie and I found at the Occupants' home, let's pause for a word from our sponsor.

BEST BAKING SODA COMMERCIAL



BEST BAKING SODA COMMERCIAL

(Suggestion: Ask two people to read the commercial before the program begins. Give them copies so they can look over it before reading it on the program.)

FIRST SPEAKER:

Did you know that baking soda cleans everything? This small box is a powerhouse when it comes to cleaning. *(Holds up a box of baking soda.)*

SECOND SPEAKER: *(Speak quickly, like a sales patter.)*

Why it'll scrub your pots, tubs, teeth, and patio furniture.

FIRST SPEAKER:

And that's not all. Use it in your shoes, your sinks, your fridge, and your drains.

SECOND SPEAKER:

Baking Soda Cleans Everything. *(Hold up a box of baking soda.)*

FIRST SPEAKER:

Use it to wash your clothing and bedding as a bleach booster.

SECOND SPEAKER:

Use it on your children. It can soothe bee stings, chicken pox, and sunburns. As we said....

BOTH SPEAKERS TOGETHER:

Baking Soda Cleans Everything. *(Hold up a box of baking soda.)*

FIRST SPEAKER:

What do you pay for a product that does all that?

SECOND SPEAKER:

I bet you pay a lot more than you need to! For a bottle of all purpose cleaner, you can pay over three dollars.

FIRST SPEAKER:

But for a box of baking soda you only need pocket change.

SECOND SPEAKER:

This product has more than 500 documented uses. But wait, there's more. It's friendly to the environment and non-toxic, too. In fact, you can use it to brush your teeth and freshen your breath.

FIRST SPEAKER:

Use it to freshen your carpets, cat box, and trash bins. It's a great deodorizer. Using it is not the pits; in fact, it will freshen your pits.

SECOND SPEAKER:

Just in case you're not convinced, it will freshen your pillowcase, briefcase, suitcase, and the books in your bookcase. It will even help you pluck a chicken.

FIRST SPEAKER:

So, for all your household chores remember—say it with me—

BOTH SPEAKERS TOGETHER:

Baking Soda Cleans Everything. *(Hold up a box of baking soda. Vanna holds up audience cue sign.)*

THE KITCHEN

LES:

Thank you, sponsors. You're doing a great job. And remember- *(Vanna holds up baking soda cue sign and the audience repeats "Baking Soda Cleans Everything!")* Now back to the Occupants' home. We'll start with the kitchen. *(The kitchen sketch is displayed on the easel. Audience members will also find a sketch of the house plan in the brochures handed out earlier.)* As in most American homes, the cabinet under the sink in Omar and Olga's kitchen is a major storage area for cleaning supplies. Even a quick glance revealed a hodgepodge of products designed to clean everything from dirty sneakers to fine china.

HOST:

But what could those innocent-looking cleaning products that we all know and love have to do with indoor air pollution?

LES:

They may look innocent, but real dangers lurk in many of those bright cans and bottles. Many household cleaners contain toxic chemicals released into the air when used.

HOST:

So, what did you advise the Occupants to do about their cleaning products?

NONNIE:

We sat down and read the labels on the cleaners they were using. First of all, we cautioned them never to mix two cleaners of different kinds together, especially if one contains ammonia and the other contains chlorine. This can produce a gas, and breathing its fumes could be fatal. Then, we discussed how to begin phasing out risky household products in favor of safer ones.

HOST:

We talk about doing that at home, but we never know where to start. And you can't throw dangerous stuff like that in the trash, can you?

LES:

Certainly not, but you can start deciding which ones to replace by considering four things: how toxic is the product, what is its use, how often you use it, and if there are suitable alternatives available.

HOST:

Give me an example.

NONNIE:

Suppose you buy a glass cleaner that is mildly toxic and you buy a more toxic oven cleaner. Conventional wisdom would say, “Get rid of the most toxic one—the oven cleaner.” But wait a minute. You use the glass cleaner several times a week for many different chores all over the house. On the other hand, you use the oven cleaner in one location for a specific job once every three or four months.

HOST:

Are you saying it might be wiser to find an alternative for the glass cleaner?

LES:

We’re saying you need to consider how, when, and where you use the product as well as its level of toxicity. Look for safer substitutes for all of your toxic cleaners.

NONNIE: We compared top name brands in the store. One carried a caution label, but the other did not because it posed less of a risk. And if you like saving money, you can make your own safer household cleaners as your great-grandparents did.

HOST: Come on, Nonnie. Do any of those homemade cleaners really work?

AUDIENCE PARTICIPATION

LES:

Since you’re so skeptical—let’s find out! First, I have a baking pan with baked-on stains that are almost impossible to remove. *(Shows it to the audience.)* Let’s be honest, how many of you have pans like this at home? Raise your hands. *(Show of hands. Les selects an audience member to come up and participate. Vanna sets out audience participation props set-up #1.)* Before your eyes, we are going to remove these stains with a paste of vinegar and cream of tartar. *(Les has the audience member treat the stains and scrub the pan.)*

HOST:

Is this one of those things we shouldn’t try at home?

LES:

On the contrary. You can try this at home. Vinegar and cream of tartar are non-toxic household products. The recipe is simple. Make a paste of cream of tartar and vinegar and scrub away. In self-cleaning ovens, you can use this on oven windows to remove the grease. Are we ready to see the results?

HOST:

(Displays the pan.) That’s really great! Thank you, for participating. *(Prize is awarded to participant.)* Now, back to Omar and Olga’s home. Okay, Nonnie. Where do we go next?

LIVING ROOM

NONNIE:

We toured the Occupants' living room next. (*Vanna: The easel sign is changed to the living room. This is a good time to switch audience participation props to set-up #2.*) We were delighted to see that the Occupants were using fluorescent light bulbs in their lamps and ceiling fixtures.

HOST:

I know fluorescent bulbs save energy and last longer, Nonnie, but what do they have to do with air pollution?

NONNIE:

Most of our nation's electricity is produced in coal-fired plants. Burning coal produces pollution. It follows that anything we can do to save electricity reduces air pollution.

HOST:

That makes sense. Were there any problems in the living room?

LES:

The living room walls were discolored from smoking. Omar and Olga plan to repaint the living room walls and strip the painted woodwork down to the natural wood underneath.

NONNIE:

The first step, especially if you live in a home built before 1978, is to test the painted surfaces for lead. Test kits are inexpensive and available at home centers and hardware stores. If you find lead, seek expert advice on how to deal with it. We tested the woodwork and found no lead.

HOST:

Aren't some paint strippers dangerous to use?

NONNIE:

Yes. You must read and follow the instructions on the container when working with paint strippers.

HOST:

I always read the labels on products I bring into my home, but I'm still confused. Some labels say caution, some say danger. What's the difference?

NONNIE:

Let's see if any of our audience members can answer that question, but first, let me set the stage. Your task is to become familiar with four signal words that tell how toxic the product is. I need five volunteers from the audience. (*Vanna changes easel to the sign with the signal words printed in random order. Nonnie hands one placard each to four volunteers asking them up to face the audience, instructing them to hold the placard in front of them. Be sure they don't accidentally line up in the correct order!*) Here are the signal words. Not in order, they are WARNING, NON-TOXIC, DANGER OR POISON, and CAUTION.

MAKING YOUR WAY THROUGH THE HAZARDOUS LABEL MAZE

SIGNAL WORDS ON LABELS

(Not In Order)

WARNING | NON-TOXIC | DANGER OR POISON | CAUTION

(Nonnie directs the fifth volunteer.)

What you must do is to arrange the four signal words from least to most toxic in 15 seconds. Least toxic is on your right, and most toxic is on your left. Are you ready? GO! *(The fifth volunteer moves the other people with the signs around until they are in the order believed to be correct.)*

HOST: *(Times with stopwatch or second hand of wristwatch. Calls time in 15 seconds.)*

How did our intrepid volunteer do, Nonnie?

NONNIE: Hmmm—let me see. *(Nonnie examines the results. If the sequence is not correct, Vanna rearranges them into the proper order.)*

HOST: Let me get this straight. The correct sequence of product labels from least to most toxic is NON-TOXIC, CAUTION, WARNING, DANGER OR POISON. But what do those words really mean? For instance, if I accidentally swallowed some of one of them, would it kill me? And if so, how much of it would be lethal?

NONNIE: That's a good question and the answer will scare you. *(Nonnie or Vanna distributes an eyedropper to the person holding the Danger or Poison sign, a teaspoon for warning, a medicine cup for caution, and a smiley face cutout for non-toxic.)* Nevertheless, consumers must realize how lethal some of their products can be. Here is how the U.S. Environmental Protection Agency

Signal Words Defined By The U.S. Environmental Protection Agency

**DANGER OR
POISON:**

A taste to a teaspoon taken by mouth
could kill an averaged-sized adult.



WARNING:

A teaspoon to an ounce by mouth
could kill an averaged-sized adult.



CAUTION:

An ounce to over a pint taken by
mouth could kill an average-sized adult.



NON-TOXIC:

No label needed.



answers your question. *(Vanna changes the poster. Nonnie reads through the definitions on the poster as the volunteers hold up their sign and props that demonstrate the amounts.)*

HOST:

Wow! I see what you mean about scary.

NONNIE:

Before we move on, this chart gives us one more important thing to remember.

HOST:

I'm almost afraid to ask, but what is it?

LES:

Swallowing a hazardous product is undoubtedly the most life-threatening danger, but serious problems may also arise from breathing the fumes or splashing the product in the eyes or on the skin. Quantifying those dangers is difficult.

HOST:

As always, Les, it comes down to reading the labels and following the directions. Thanks, to the audience members for helping us learn this important lesson. *(Participants may be awarded prizes at this time, return their props and take their seats.)* Let's get back to those paint strippers that got us started looking at labels. What's in some of them that make them so dangerous?

NONNIE:

Some commonly used chemicals in paint strippers and finishes may cause cancer in humans. Exposure to high levels of these chemicals over short periods can irritate the nose and lungs. They can cause dizziness, headaches, and lack of coordination.

HOST:

That sounds bad for all people, even those with a respiratory problem. So, what did you tell the Occupants?

LES:

We took a trip to a home decorating store to select a safer wall paint. While we were there, we discussed paint strippers and varnishes with the department manager. She recommended one of the safer paint strippers now on the market.

HOST:

What did the Occupants decide to do?

LES:

In the end, they decided to paint the woodwork.

NONNIE:

That sounds like a wise course to take. And speaking of courses to take, we'll let Les steer us into the next room.

BEDROOM

LES:

The bedroom was next (*Vanna changes the poster on the easel to the bedroom.*) It's bare right now because the Occupants have decided to buy new bedroom furniture.

NONNIE:

Their budget won't stretch to include new drapes and bed covers, so Olga planned to have the present ones cleaned and use them until they can afford new ones.

HOST:

That sounds like a good plan, but I've heard dry cleaning can be harmful.

LES:

You're right. Many dry cleaners use chemical solvents to clean everything, not only drapes but clothing as well. Improper cleaning can leave a residue of chemicals that can cause throat, eye, and nose irritation and even affect your mood, memory, and coordination. In addition, dry cleaning processes may contaminate the soil and water as well as the air.

HOST:

So what are the alternatives?

LES:

First, we looked for an alternative cleaning business that uses a carbon dioxide process or a wet cleaning process. Unfortunately, those businesses are few and far between, and we couldn't find one nearby.

HOST:

Couldn't you just wash those things?

LES:

Great idea, and that's what we did. Of course, we read the content labels to make sure the fabrics were washable. Everything turned out fine.

HOST:

What would you have advised Olga if the fabrics had not been washable?

LES:

We would have told her to go ahead and dry clean the items but to take them out of the plastic bags as soon as possible afterward and expose them to the outside air a few hours before using them or hanging them. We advised Olga to look for washable fabrics when she buys new drapes and bedding.

HOST:

Unwanted chemicals seem to be unavoidable. If I can't avoid them, can I do anything to get rid of them?

LES:

Letting fresh air into the house will help.

NONNIE:

Yes, and here's another idea, which the Occupants were already doing. They didn't know they

were doing it, however, until we pointed it out. Did you notice the houseplants in every room we visited?

HOST:

Yes, but what can they do to help?

LES:

Many houseplants have the capability of removing certain kinds of toxics from the air. The scientific word for this process is phytoremediation.

HOST:

Phyto what?

LES:

Phytoremediation. Phyto refers to plants, and remediation means to fix or improve. Houseplants such as, philodendrons, peace lilies, english ivy, and spider plants can reduce small amounts of some indoor air pollutants. To avoid mold problems, which can sometimes be an asthma trigger, be sure to maintain houseplants by watering them properly.

HOST:

Who knew? This is great because I love houseplants. Is this one of the pollution-gulping plants? *(Picks up the plant from the table.)*

LES:

Yes. This is a _____ plant, and we're going to give it as a Prize. *(The plant is awarded, see the Facilitator's Guide for a list of suggestions on awarding prizes.)*

BATHROOM

HOST:

Meanwhile, Where to next at the Occupant's home?

NONNIE:

We took a peek into the bathroom next. *(Vanna changes poster to the bathroom.)* Like kitchen cabinets, bathroom cabinets are common places to store cleaners. We had discussed those, so we concentrated on a couple of other products found in most bathrooms: drain cleaners, air fresheners, and disinfectants.

HOST:

Don't tell me you banned those essentials from the Occupant's bathroom?

NONNIE:

Of course not. We never ban anything. We give people the facts about the products they are using and let them make their own decisions.

HOST:

Fair enough. So what if I have a clogged drain? What do you recommend?

NONNIE:

An old fashioned plunger.

HOST:

That may take care of the immediate problem, but what about maintaining my drains.

NONNIE:

There are many home remedies, but if you are looking for a commercial product check out the enzyme-based ones.

HOST:

Let's move on to our next item. What's the story on air fresheners?

NONNIE:

The important thing to know about air fresheners is how they work. Chemical-based air fresheners, whether liquids, aerosols, or solids, mask odors rather than neutralize them.

HOST:

Do you have any good news?

NONNIE:

Sure. You can buy several natural alternatives.

HOST:

Such as?

NONNIE:

Use homemade potpourri scented with natural oils. Even a small bowl of vinegar can be effective.

HOST:

You mentioned that the Occupants' bathroom cabinet contained disinfectants. What dangers do they pose?

NONNIE:

Disinfectants are toxic and kill fungi, molds, mildew, and bacteria.

HOST:

Like antibacterial hand soaps and germicides?

NONNIE:


More like bleach and products to get rid of molds. Disinfectants are to be used on hard surfaces. They are classified as pesticides and regulated by the Environmental Protection Agency. Antibacterial soaps and other products for human use are classified as drugs and regulated by the Food and Drug Administration.

HOST:

Pesticides? I suppose we have no alternatives for killing germs.

NONNIE:

Not if you want to get rid of them. Cleaning the surface is probably the most important step. Less toxic products called sanitizers reduce the dangers from certain microorganisms but may not kill them. Isopropyl alcohol, wiped onto a clean surface and allowed to dry, is effective and inexpensive.



Both sanitizers and disinfectants are useless on a surface that is not clean. As we discussed with air fresheners, there are places and times in our homes when disinfectants are needed. Consider where and why you need to use a disinfectant. For the baths and kitchens, they may be essential, but for other areas of your home, milder cleaning agents or sanitizers may be sufficient. The bottom line as always is

HOST, LES, AND NONNIE TOGETHER:

Read the labels carefully, use only as directed, and keep them out of the reach of children.

HOST:

Now, Les, tell us about the next room.

UTILITY ROOM

LES:

We toured the utility room next. (*Vanna changes poster to the utility room.*) The Occupants' utility room contains the heating/cooling system, water heater, washer, and dryer, and ironing equipment.

HOST:

What caught your attention in the utility room?

LES:

We were in for a pleasant surprise. The Occupants are really on the cutting edge when it comes to energy savings. The washer and dryer have an Energy Star label.

HOST: What does that mean?

LES:

An Energy Star label means the appliance meets a high standard of energy efficiency and will save you money on your energy bills.

HOST:

Be sure to look for this symbol when purchasing your next appliance. Were there any problems in the utility room?

LES:

Well, the Occupants use a lot of laundry products that contain potentially harmful substances.

HOST:

Such as?

LES:

Chlorine bleach, which is a pesticide, and laundry detergents that can irritate eyes and skin. In addition to health hazards, laundry products that are misused or disposed of improperly can contaminate water and soil.

HOST:

Can we find less toxic laundry products on the market?

LES:

There certainly are. Many have been around for a long time such as borax, baking soda, (*Vanna holds up Baking Soda sign*), and non-detergent soaps. Other environmentally friendly laundry products are produced commercially.

NONNIE:

I think it's time for a breath of fresh air. Let's follow Les into the yard.

OUTDOORS

NONNIE:

(*Vanna changes the poster to outdoors. Nonnie passes out "Compost Song" lyric sheets if this has not been done.*) The Occupants' certainly enjoy outdoor living. Olga has a small garden in one corner of the yard where she grows herbs and vegetables. I was thrilled to see a compost bin near the garden where she recycles some kitchen scraps, dead leaves, and lawn clippings.

HOST:

More people seem to be composting these days. Where can you find information about composting?

NONNIE:

The Internet is a great place to begin, but state or local farm bureaus, conservation agencies, and botanical gardens will offer assistance. In fact, we can help you learn more about composting right now with a song.

LES:

That sounds like fun. OK. Everybody up for the Compost Song.

NONNIE:

The tune is Hokey Pokey.

Compost Song

(Sung to the tune of "Hokey Pokey")

Verse

**"Put in your celery tops and your apples skins, all fruit and vegetables come on in.
So, give me a little water and turn me once in awhile, rot's what it's all about.**

Chorus

**It's about Decomposition, It's about Decomposition, It's about Decomposition, and
Rot's what it's all about.**

Verse

**Put your coffee grounds in, but keep your stinky meat out. I love your leaves and
clippings so much I want to shout.**

So, give me a little water and turn me once in awhile, rot's what it's all about.

Chorus

**It's about Decomposition, It's about Decomposition, It's about Decomposition, rot's
what it's all about."**

LES:

That was great. The best part about composting is all of the free natural fertilizer to use on your lawns and gardens. How did everything look?

HOST:

The Occupants' backyard was inviting with its neatly trimmed lawn, covered patio, charcoal barbecue grill, picnic table, and comfy lawn chairs, a scene right out of a home magazine.

NONNIE:

Or maybe a horror flick. Five or six families are mowing and trimming their lawns with gasoline-powered tools.

LES:

Three or four others are treating their lawns and gardens with fertilizers, herbicides, and pesticides.

NONNIE:

Other families are cooking over charcoal fires started with lighter fluid.

HOST:

You have hit a nerve here, Nonnie. The lawn and garden can go to seed if they must, but I'll give up my hamburger turner when they pry it from my greasy, soot-covered hands!

NONNIE:

Cutting down on air pollution doesn't mean giving up everything you love and enjoy. It means using safer, cleaner alternatives when available. We have substitutes for every one of the activities we mentioned.

HOST:

Let's start with the charcoal grill.

NONNIE:

You can get a gas grill.

HOST:

I don't want a gas grill. I love my charcoal grill. And how am I going to light the briquettes without lighter fluid?

NONNIE:

I'm glad you asked that. (*Vanna appears with a charcoal chimney.*) Does anyone know what this is? A charcoal chimney is a simple way to light a charcoal fire without using volatile lighter fluids. They cost about \$10 at large grocery, hardware, garden, and discount stores. Crumpled paper is placed in the bottom of the chimney with charcoal briquettes piled on top. The paper is lighted through slits at the bottom of the chimney. Holes in the chimney create a draft to ignite the charcoal.

HOST:

Okay—that's one out of three. But what about those power mowers—and if you tell me to get a reel mower, I'm going to tell you to GET REAL!

NONNIE:

Oh, that was awful! Okay, then how about an electric mower?

HOST:

I'd probably run over the cord and electrocute myself the first time I used it.

NONNIE:

Then get a cordless electric mower.

HOST: *(Groans)*

Aren't they more expensive?

NONNIE:

A little bit—but they don't use gas or oil, and they don't make noise or spew smoke and fumes into the air. Small gasoline engines make much dirtier smoke than cars.

HOST: I'll think about it. What's your answer for the folks using herbicides and pesticides on their lawns and gardens?

NONNIE:

You can discourage weeds and garden pests with homemade or commercial products that don't harm the environment or poison something you didn't mean to harm. Keep in mind that whatever you use outdoors is likely to wind up in the air, water, and soil not only in your own yard, but in other yards as well.

LES:

If it just stayed in our yards that would be bad enough, but the chemicals we use end up in our ground water and our sources of drinking water, too.

HOST:

You know, I have friends who live in the country. They refuse to use anything on their property that might harm wildlife. They plant native species around their home because native plants have adapted to the local environment.

NONNIE:

What does their lawn and garden look like?

HOST:

Actually, it's nice—quite pleasant. I guess it's a matter of priorities. And speaking of priorities, it's time to award another Attendance Prize. What is it this time, Nonnie?

NONNIE:

(Displays and awards prize—perhaps a charcoal starter.)

GARAGE

HOST:

The only place we haven't examined is the garage. *(Vanna changes poster to the garage.)*
The sponsor for this segment is the Green Car Garage. Let's listen to their commercial. *(Two previously selected volunteers present commercial.)*



COMMERCIAL FOR THE GREEN CAR GARAGE

(Suggestion: Ask two people to read the commercial before the program begins. Give them copies so they can look over it before reading it on the program.)

FIRST SPEAKER:

Howdy Folks. Welcome to the Green Car Garage. We know cars and we love 'em. But we know that cars are tough on the air we breathe, the water we drink, and the soil we walk on.

SECOND SPEAKER:

That's why we started the Green Car Garage: to help you keep your car in tip-top shape without destroying the environment.

FIRST SPEAKER:

How do we do that, you may ask? Try our Car Wash. When you wash your car in your own driveway, the runoff with all the soap and sediment runs into the storm drains and makes its way into streams and rivers.

SECOND SPEAKER:

And that's not good, folks. No, sir-eeee. Here at the Car Wash we use environmentally friendly products to get your car clean, we recycle our water, and our wastewater is sent to a treatment plant.

FIRST SPEAKER:

Do you change your oil at home? Well, I guess it's cheaper that way, but what do you do with your used oil? Did you know that a single pint of oil dumped into a waterway stretches into a one-acre oil slick?

SECOND SPEAKER:

And that's not good, folks. No, sir-eeee. We can dispose of your oil properly for you here at the Green Car Garage with a lot less hassle. And we do it right.

FIRST SPEAKER:

We do our part to make the air cleaner, too, by keeping your engine tuned up and your tires inflated to give your car greater efficiency and better gas mileage.

SECOND SPEAKER:

All of those little things we do add up to big things in the long run: cleaner air, cleaner water, and cleaner soil. So, bring your car to the Green Car Garage.

BOTH SPEAKERS TOGETHER:

When you give us a chance, you give the environment a chance.

NONNIE:

(Volunteers are thanked for their participation and may be awarded prizes at this time. They take their seats.) Welcome back. The Occupants told us they were lucky to find a home in their neighborhood with an attached garage or any garage at all for that matter. Lots of people have to park their cars on the street or in their driveways. But that doesn't mean the garage isn't important if you are lucky enough to have one.

HOST:

Why is that?

NONNIE:

Because it's the "home" of the automobile, the major source of air pollution in the United States—along with other vehicles that burn gasoline and diesel fuel. Les and I will walk you through the garage.

HOST:

I only see one rather small car. Isn't that unusual these days?

LES:

For lots of families it is, but Omar and Olga wanted to avoid two car payments. He takes the bus to work and Olga car pools with three neighbors. That means she only has to drive to work once or twice a week.

HOST:

So the Occupants were "home free" in the garage, huh?

NONNIE:

Not quite. They admit that they don't maintain their car as well as they should. A well-maintained car can cut down the pollution it produces. Even a small thing like keeping the tires inflated properly increases the number of miles you can drive on a gallon of gas.

LES:

And that saves you money, too.

HOST:

How about the garage itself?

NONNIE:

A garage can easily become a "chamber of horrors." I was dumbfounded when Olga told me that she and Omar often warm up the car engine on winter days in the attached garage.

HOST:

Now that's dangerous. Carbon monoxide is deadly. Besides, newer cars don't even need to warm up.

LES:

You're right. We made sure that all hazardous products in the garage were properly stored and locked in a cabinet. And that fuel, such as gasoline, was stored in the proper container. Gasoline is flammable and it and its fumes contain benzene, a toxic known to cause cancer.

HOST:

Les and Nonnie, the old clock on the wall says it's almost time to go. Give us your closing thoughts on the "Big Picture".

LES:

Most of us seldom consider the cumulative effect of the choices we make. What does it matter if I use a pesticide on my lawn, hazardous cleaner inside my house, wash my car in the driveway, or drive to work alone? If I were the only person on earth, it probably wouldn't matter. But when millions or billions of people do the same, small problems quickly become enormous obstacles.



NONNIE:

So, the Big Picture is this: In the long run, the effort of making environmentally friendly choices is well worth it, for our health and safety and for the sake of our fragile planet.

HOST:

Thank you, Les, and Nonnie. Thanks to our viewers and studio audience and a special thanks to the Occupants for letting us come into their home. Until next week—

ALL TOGETHER:

Be safe, healthy, and environmentally responsible. And remember...

(Vanna holds up baking soda sign) Audience members say,
“BAKING SODA CLEANS EVERYTHING!”

FACILITATOR’S CLOSING

It has been a pleasure to share this time with you. Thank you for your cooperation in our audience participation segments. Please take note of the inventory of the Household Chemicals Chart and the sources for additional information listed in the brochure provided at the beginning of the presentation.

We sincerely hope that the Big Picture ideas have given you food for thought, and that you will give safer household products a try.

Script for “Best Baking Soda Commercial”



BEST BAKING SODA COMMERCIAL

(Suggestion: Ask two people to read the commercial before the program begins. Give them copies so they can look over it before reading it on the program.)

FIRST SPEAKER:

Did you know that baking soda cleans everything? This small box is a powerhouse when it comes to cleaning. (Holds up a box of baking soda.)

SECOND SPEAKER:

(Speak quickly, like a sales patter.)

Why it'll scrub your pots, tubs, teeth, and patio furniture.

FIRST SPEAKER:

And that's not all. Use it in your shoes, your sinks, your fridge, and your drains.

SECOND SPEAKER:

Baking Soda Cleans Everything. *(Hold up a box of baking soda.)*

FIRST SPEAKER:

Use it to wash your clothing and bedding as a bleach booster.

SECOND SPEAKER:

Use it on your children. It can soothe bee stings, chicken pox, and sunburns. As we said....

BOTH SPEAKERS TOGETHER:

Baking Soda Cleans Everything. *(Hold up a box of baking soda.)*

FIRST SPEAKER:

What do you pay for a product that does all that?


SECOND SPEAKER:

I bet you pay a lot more than you need to! For a bottle of all purpose cleaner, you can pay over three dollars.

FIRST SPEAKER:

But for a box of baking soda you only need pocket change.

(CONTINUED ON NEXT PAGE)



SECOND SPEAKER:

This product has more than 500 documented uses.

But wait, there's more. It's friendly to the environment and non-toxic, too. In fact, you can use it to brush your teeth and freshen your breath.

FIRST SPEAKER:

Use it to freshen your carpets, cat box, and trash bins. It's a great deodorizer.

Using it is not the pits; in fact, it will freshen your pits.

SECOND SPEAKER:

Just in case you're not convinced, it will freshen your pillowcase, briefcase, suitcase, and the books in your bookcase. It will even help you pluck a chicken.

FIRST SPEAKER:

So, for all your household chores remember—say it with me—

BOTH SPEAKERS TOGETHER:

Baking Soda Cleans Everything. (Hold up a box of baking soda. Vanna holds up audience cue sign.)

Compost Song

(Sung to the tune of “Hokey Pokey”)

Verse

“Put in your celery tops and your apples skins, all fruit and vegetables come on in.

So, give me a little water and turn me once in awhile, rot’s what it’s all about.

Chorus

It’s about Decomposition, Its about Decomposition, It’s about Decomposition, and Rot’s what it’s all about.

Verse

Put your coffee grounds in, but keep your stinky meat out. I love your leaves and clippings so much I want to shout.

So, give me a little water and turn me once in awhile, rot’s what it’s all about.

Chorus

It’s about Decomposition, It’s about Decomposition, It’s about Decomposition, rot’s what it’s all about.”

Script for “The Green Car Garage Commercial”



COMMERCIAL FOR THE GREEN CAR GARAGE

(Suggestion: Ask two people to read the commercial before the program begins. Give them copies so they can look over it before reading it on the program.)

FIRST SPEAKER:

Howdy Folks. Welcome to the Green Car Garage. We know cars and we love ‘em. But we know that cars are tough on the air we breathe, the water we drink, and the soil we walk on.

SECOND SPEAKER:

That’s why we started the Green Car Garage: to help you keep your car in tip-top shape without destroying the environment.

FIRST SPEAKER:

How do we do that, you may ask? Try our Car Wash. When you wash your car in your own driveway, the runoff with all the soap and sediment runs into the storm drains and makes its way into streams and rivers.

SECOND SPEAKER:

And that’s not good, folks. No, sir-eeee. Here at the Car Wash we use environmentally friendly products to get your car clean, we recycle our water, and our wastewater is sent to a treatment plant.

FIRST SPEAKER:

Do you change your oil at home? Well, I guess it’s cheaper that way, but what do you do with your used oil? Did you know that a single pint of oil dumped into a waterway stretches into a one-acre oil slick?

SECOND SPEAKER:

And that’s not good, folks. No, sir-eeee. We can dispose of your oil properly for you here at the Green Car Garage with a lot less hassle. And we do it right.

FIRST SPEAKER:

We do our part to make the air cleaner, too, by keeping your engine tuned up and your tires inflated to give your car greater efficiency and better gas mileage.

SECOND SPEAKER:

All of those little things we do add up to big things in the long run: cleaner air, cleaner water, and cleaner soil. So, bring your car to the Green Car Garage.

BOTH SPEAKERS TOGETHER:

When you give us a chance, you give the environment a chance.

DETOX YOUR DOMICILE



BAKING SODA CLEANS EVERYTHING!

Poster/Audience Cue Card

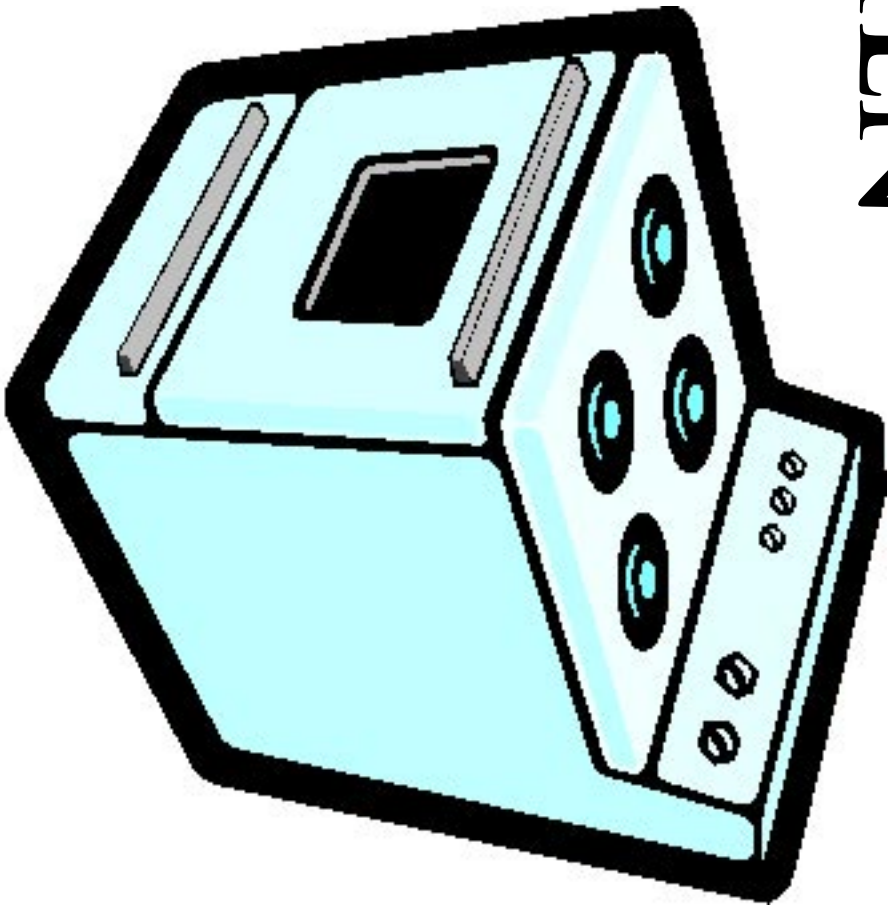


APPLAUSE

Poster/Audience Cue Card



KITCHEN



Poster or Overhead

LIVING ROOM



Poster or Overhead



CAUTION

Label Reading Activity-Letter size copy



WARNING

Label Reading Activity-Letter size copy



**DANGER /
POISON**

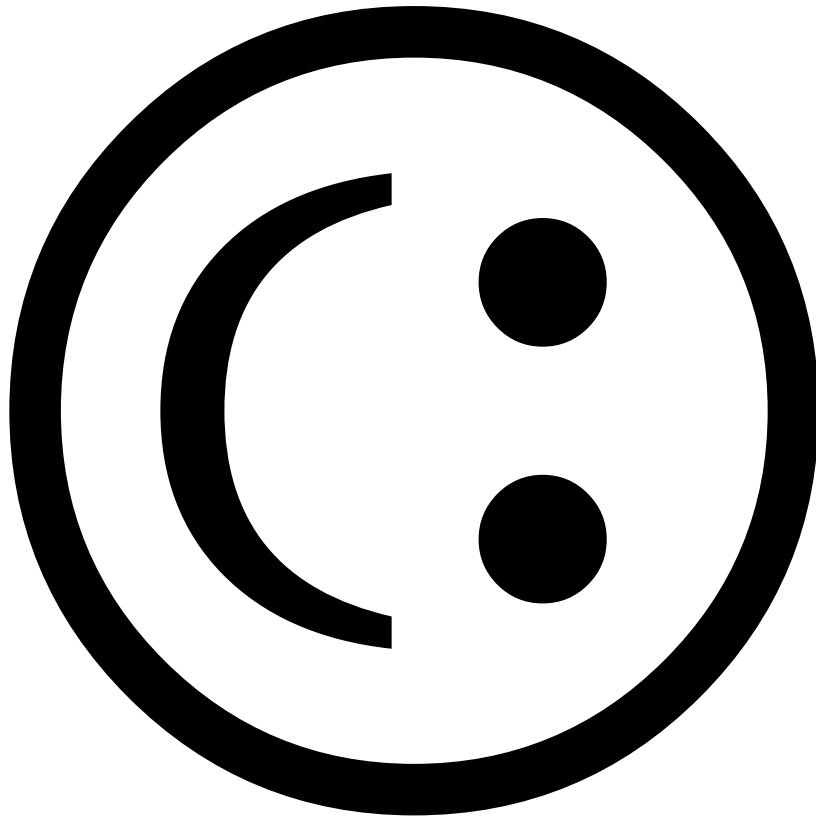
Label Reading Activity-Letter size copy



NON-TOXIC

Label Reading Activity-Letter size copy





Label Reading Activity-Letter size copy

MAKING YOUR WAY THROUGH THE HAZARDOUS LABEL MAZE

SIGNAL WORDS ON LABELS

(Not In Order)

WARNING | NON-TOXIC | DANGER OR POISON | CAUTION

Poster-Label Reading Activity



Signal Words Defined By The U.S. Environmental Protection Agency

**DANGER OR
POISON:**

A taste to a teaspoon taken by mouth
could kill an averaged-sized adult.



WARNING:

A teaspoon to an ounce by mouth
could kill an averaged-sized adult.



CAUTION:

An ounce to over a pint taken by
mouth could kill an average-sized adult.

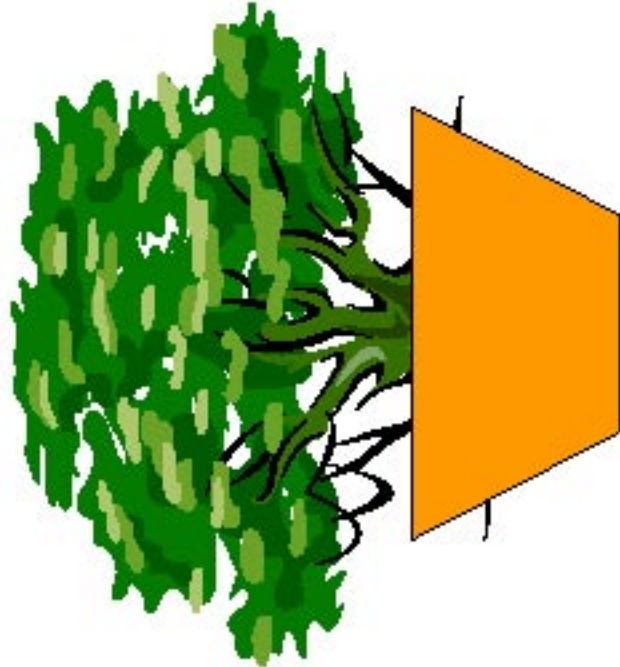
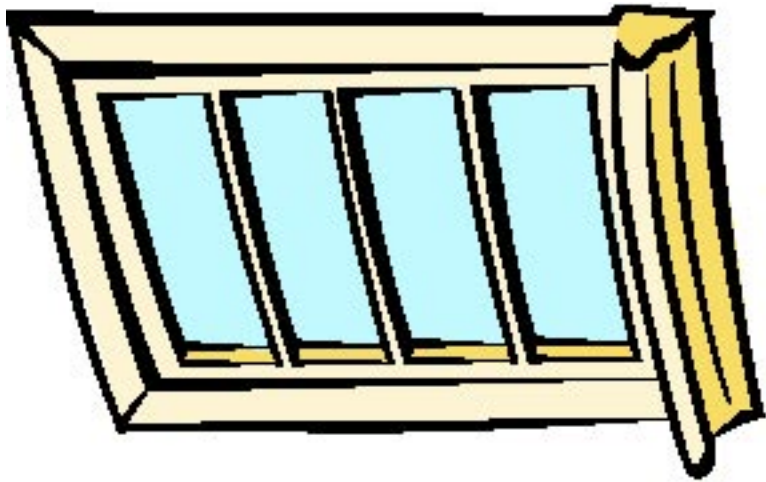


NON-TOXIC:

No label needed.



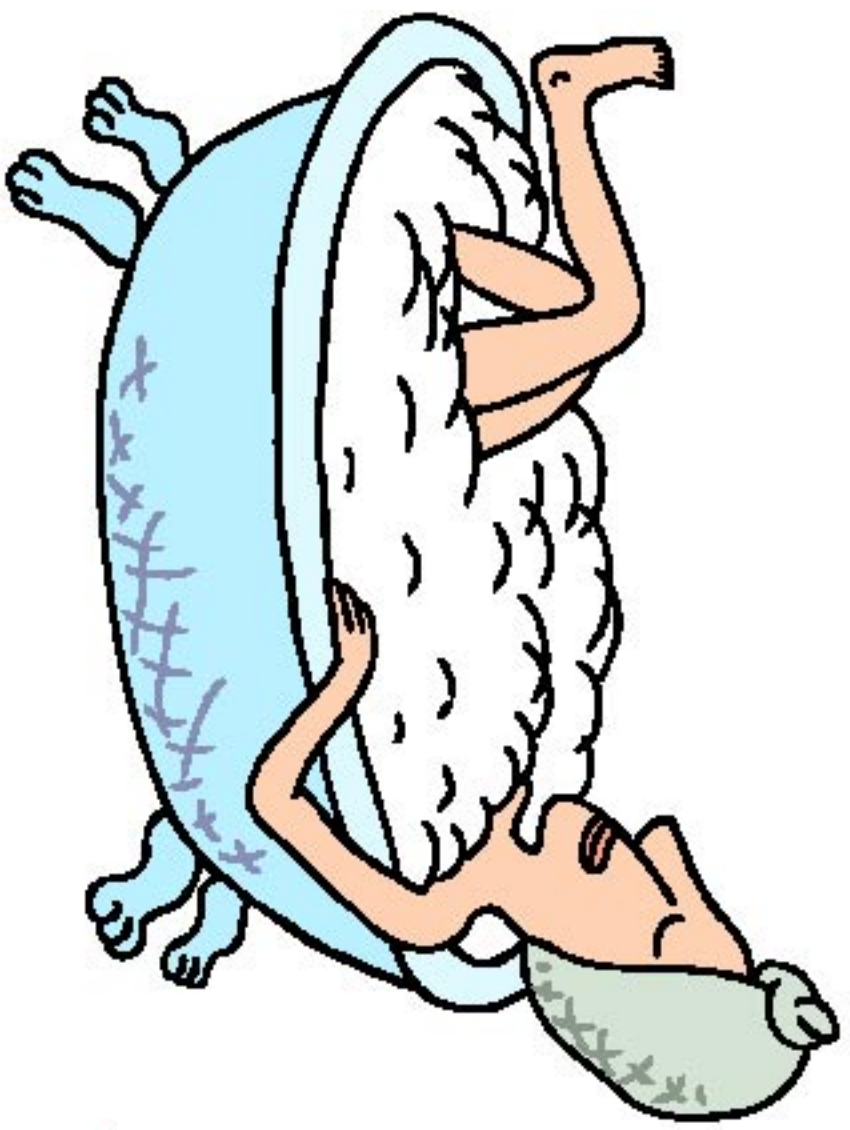
BEDROOM



Poster or Overhead

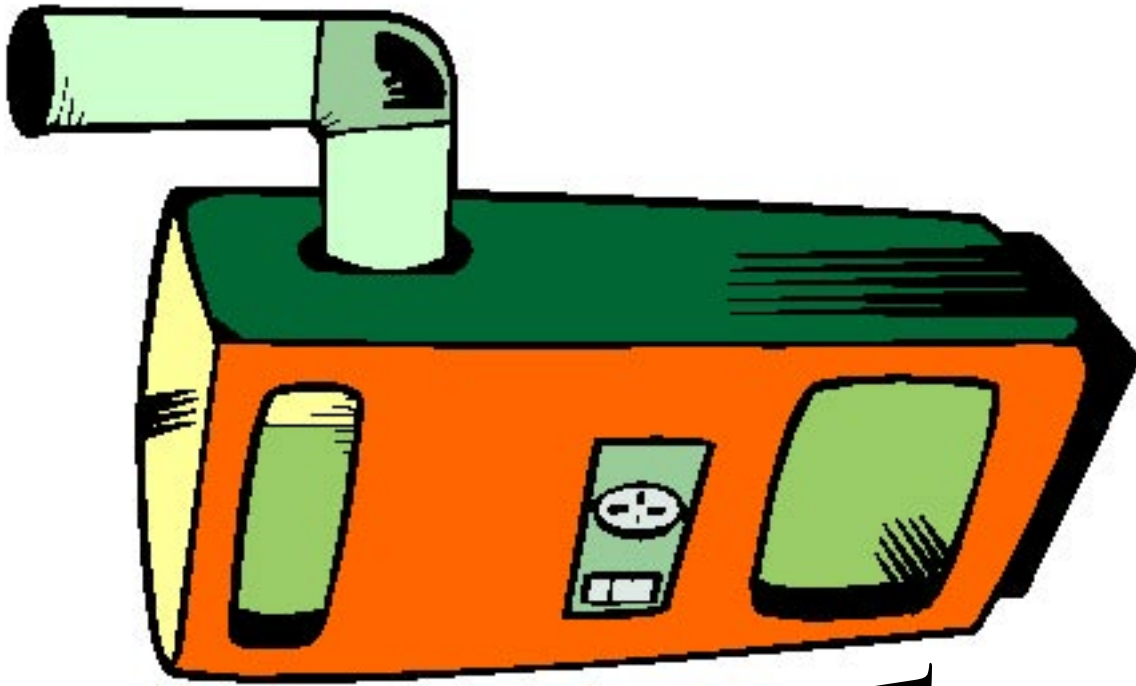


BATHROOM



Poster or Overhead

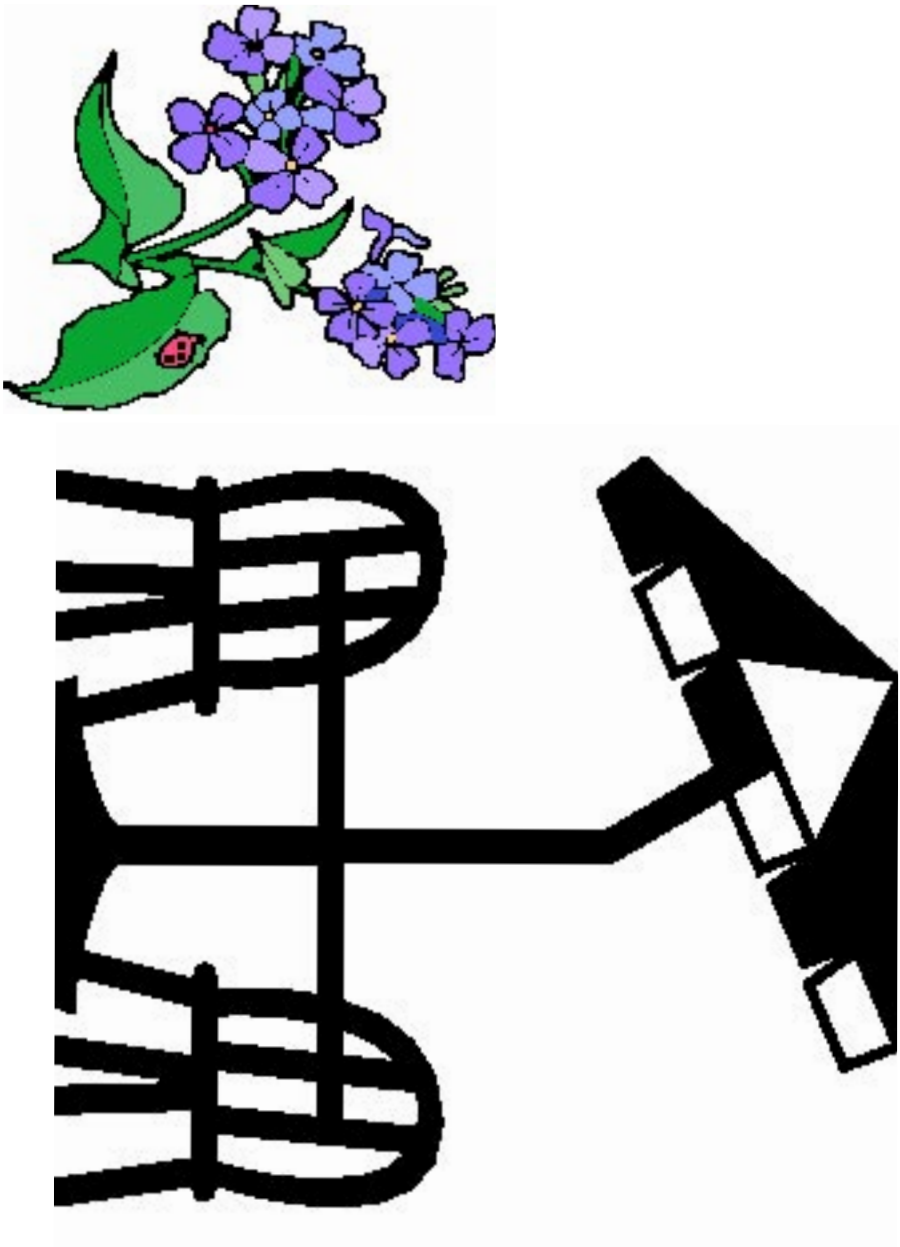




UTILITY ROOM

Poster or Overhead

OUTDOORS



Poster or Overhead



GARAGE



Poster or Overhead



Conclusion

While all of the grim facts about airborne toxics may be unsettling, most people are only exposed to minute levels of hazardous chemicals. Furthermore, knowledge is power and the more you know, the better you can protect yourself. You can obtain many publications about health risks from airborne toxics from the U.S. Environmental Protection Agency and other sources, most of them at no charge.

For more information

Learn more about indoor air pollution:

www.epa.gov/ebpages/airindoorairepollution.html

Learn about an air toxics monitoring project being conducted in St. Louis:

www.stlcap.org

Learn what your car contributes to air pollution:

www.epa.gov/greenvehicles/

Learn how to be energy smart, save money, and prevent pollution:

www.energystar.gov

Did you know that your bathroom cleaner is probably a pesticide?

Learn more from this EPA site. Great for kids related info for adults.

Detailed label reading information:

www.epa.gov/kidshometour/tour.htm#view

Learn more about air toxics:

www.epa.gov/air/toxicair/index.html

More information on product evaluation:

www.epa.gov/opptintr/epp/cleaners/select/

Find some great recipes to clean everything:

www.metrokc.gov/hazwaste/house/cleaners.html

The national number for poison control is

1-800-222-1222.

Keep this number posted by your telephone.

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MISSOURI BOTANICAL GARDEN

IN THE AIR

Detox Your Domicile

This brochure is provided as a part of the Adult Education Module.

For more information see www.inthear.org

What are Toxic Air Pollutants?

Toxic air pollutants are pollutants that have been shown to harm human health. They can cause serious health problems for people, animals, and plants. They may damage the environment.

Toxic air pollutants come from many sources: mobile sources such as cars and trucks, point sources such as industry and manufacturing, and area sources such as our homes and small businesses. What many people do not realize is that everyday products we use in and around our homes contribute significantly to air and water pollution.

Many people are concerned about pollution and its effects on human health. Hazardous air pollutants are controlled by federal laws that are implemented by the U.S. Environmental Protection Agency. The mission statement of the USEPA is the following:

“ . . . to protect human health and to safeguard the natural environment — air, water, and land — upon which life depends.”

By mentioning all three aspects of the environment in its mission statement—air, water, and land—the USEPA indicated it would tackle environmental problems through a “multimedia approach.” This approach means the three environmental elements (or media) are considered as inseparable parts of a whole. For example, airborne toxics pollute the air, and settle on land. From the land, they are flushed into rivers, lakes, and streams. As a result, people may be exposed to chemicals through breathing air and by coming in contact with contaminated soil and water and eating contaminated plants.

A Word About Risk

Determining your health risk from pollution involves several factors:

- What chemical have you been exposed to and how toxic is it?
- What was the amount you were exposed to?
- What length of time were you exposed?

Some people may be more sensitive to toxic pollutants, such as infants and toddlers, the elderly, and those with medical conditions. For example, while fumes from drying paint or varnish are bad for everyone they may aggravate conditions such as asthma or emphysema.

You should know how and where to get information about the properties of commonly used chemicals. How might someone become exposed to them? What dangers to human health and the environment do they pose?

Even though home products, that contain toxic chemicals, are considered to be safe if used according to label directions, they remain toxic and contribute to air and water pollution.

Strategies for Reducing Your Exposure to Household Chemicals

Look at your inventory of the chemicals in your household. You can reduce your exposure to some of these chemicals in several ways.

Consider the following:

Reduce your highest totals first, by substituting a safer product or cutting down on how often you use it.

Eliminate chemicals with a warning statement of Poison or Danger. These chemicals may pose the highest degree of potential risk.

If you use a product once a year or less often, can you eliminate it altogether?

If you have decided to replace or dispose of a chemical product, follow the instructions on the label. If in doubt, contact your local or state agencies for more information.

Notes on possible substitutions and other ideas:

Special Thanks To:

For more information about free education materials including Detox Your Domicile, see <http://www.intheair.org>

Inventory of Household Chemicals

| Product name. What is it used for? | X Hazard level? (from chart below) | Y How often is it used? (from chart below) | X + Y = Total Score | Is a Substitute Available? |
|---------------------------------------|--|--|------------------------|----------------------------------|
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As you look around your home for the chemicals you use, think about storage issues as well. Do you have safer places to store these products?

Hazard Level: read the label and rate accordingly **Estimate How Often You Use this Product?**

| | |
|------------------|---|
| Poison or Danger | 3 |
| Warning | 2 |
| Caution | 1 |

| | |
|-------------------------|---|
| More than once a week | 5 |
| Weekly | 4 |
| Monthly | 3 |
| A couple times per year | 2 |
| Once a year or less | 1 |

Non-toxic products do not require a warning label and do not need to be scored.

Signal Words Defined By The U.S. Environmental Protection Agency

DANGER OR POISON:

A taste to a teaspoon taken by mouth could kill an averaged-sized adult.



WARNING:

A teaspoon to an ounce by mouth could kill an averaged-sized adult.



CAUTION:

An ounce to over a pint taken by mouth could kill an average-sized adult.



NON-TOXIC:

No label needed.



I Am Just One Person. Can I Really Make a Difference?

The good news is yes. While it would take the efforts of many to make a measurable dent in overall pollution levels, you can reduce your personal exposure by changing what you do in your own home. By finding safer substitutes for products you use in your home, you can save money and reduce your exposure to toxic chemicals. Many other ways exist to reduce pollution by changing habits and attitudes.

Clean Air All-Purpose Cleaner

- 2 tablespoons vinegar
- 2 teaspoons of borax
- 16 oz. of very hot water
- 1 tablespoon liquid soap (like castile or dishsoap)
- Essential fragrance oil

Mix vinegar and borax in a clean empty spray bottle with hot water. Shake until borax dissolves, then add liquid soap. You may add several drops of essential oil for a pleasing scent. Spray on appliances, walls, countertops, tile, shower, toilet, etc. and wipe clean.

Some Air Fresheners Work By Covering Up Odors Not By Cleaning the Air
Substitute potpourri scented with a natural oil.

Be careful when choosing scented candles. They can produce pollutants when burned and some wicks may contain lead.

Did You Know That Many Bathroom Cleaners Contain Pesticides?

A low-impact sanitizer is isopropyl alcohol. Wipe on clean surfaces and let dry.

Save Electricity

Most of the electricity in the United States is made from burning coal. Less electricity used means less pollution entering the atmosphere. Look for appliances that have EPA's Energy Star logo.



Quit Smoking

Tobacco smoke contains many hazardous air pollutants. Children are at higher risk for respiratory problems and ear infections if they live in a household with a smoker. Consider smoking outside to reduce exposures to second-hand smoke.

BBQ

Use a gas grill, or if using charcoal, start your fire using a charcoal chimney instead of lighter fluid.

Yard Work

Minimize the use of gas-powered engines for jobs that can be done by hand.

Compost Happens

Compost your leaves and grass clippings and even vegetable and fruit scraps from your kitchen. If you live in an apartment or do not have room for an outdoor compost pile, consider vermicomposting.



Go Native

To reduce water usage and prevent pollution from fertilizers and pesticides, landscape with native plants.

Keep Exposure To Dry Cleaning Chemicals To A Minimum
In laboratory studies, tetrachloroethylene (perc) has been shown to cause cancer in animals. If a dry cleaned item has a strong chemical odor, do not accept it until it has been properly dried. Shop for environmentally friendly cleaners that do not use perc or avoid dry cleaning altogether.

Avoid Exposure To Products Containing Methylene Chloride

Methylene chloride is found in paint strippers, adhesive removers, and in some aerosol spray paints. It has been known to cause cancer. Methylene chloride is converted to carbon monoxide in the body and can cause symptoms similar to carbon monoxide poisoning. Look for safer substitutes such as No VOC (volatile organic compounds), or Low VOC formulas.

Some Good News

Many houseplants clean the air by removing small amounts of toxics such as formaldehyde and carbon monoxide. Some plants to look for: philodendron, spider plant, peace lily, and aloe vera.

How Can We Reduce Mobile Source Pollution?

Good automobile maintenance and proper tire pressure saves money and prevents pollution.

Combine errands into one trip.

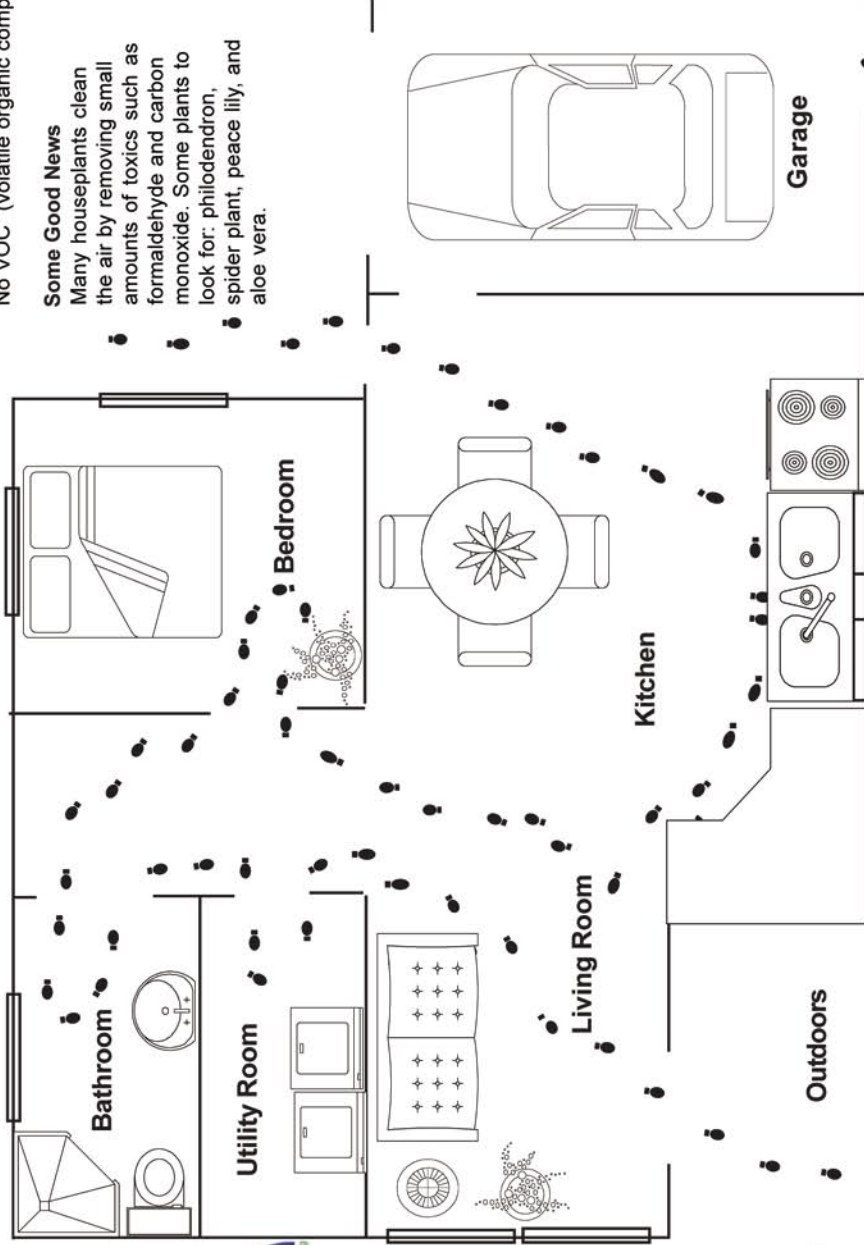
Take mass transit. Share a ride or car pool. Car pooling can dramatically reduce the number of cars on the road and total miles driven. It can save you money, too.

In the summer, refuel vehicles during the cooler parts of the day to lessen the impact of gas fumes.

Benzene Blues

Keep exposure to benzene a minimum.

Benzene is known to cause cancer and is a component of gasoline. It is found in tobacco smoke, stored fuels, paint supplies, and auto emissions. Use only approved containers for gasoline and other fuels.



Who Knows What Lurks Beneath The Kitchen Sink?

Many of our common cleaning products can be a source of air and water pollution. Read labels and follow instructions even if you use the product frequently. Look for safer alternatives. Many can be made at home at a fraction of the cost of commercially prepared cleaning products. "Green Cleaners" are available in stores but read the ingredients. Green can mean just about anything.

Dispose Of Household Chemicals And Their Containers Properly

Improper disposal of chemicals and their containers threatens our air and water quality. Use all of the product as intended. Follow all package instructions.