Script for “On the Workbench” Powerpoint

Slide 1: CT DEEP and CT DPH

Slide 2: On the Workbench

Say: Today we are going to talk about the harmful household chemicals that are often found on the workbench, in a shed, or in the garage.

Slide 3: Did you know home improvement products can be quite harmful to your health?

Slide 4: Typical Products found on the workbench

Say: Here are some typical products found on the workbench that may be harmful to you and the environment.

Slide 5: Typical Products found on the workbench

Say: These are the products that I will be referring to as being found “on the workbench”. They are items you normally use for home improvement projects, repairs, and car and lawn maintenance. They include:

- Oil-based paints
- Varnishes and waxes
- Paint thinners (turpentine, mineral spirits)
- Paint, floor, & varnish strippers
- Stains & Wood preservatives
- Adhesives, glues, epoxy, caulk
- Metal polish
- Mothballs
- Stain removers (spot, rug)
- Pesticides- Insect sprays, weed killer, rat/mouse poisons
- Car waxes and polishes
- Antifreeze, windshield washer fluid
- Lubricants/degreasers

Don’t be discouraged by this huge list! You probably don’t use every single product I mentioned, but it’s important to recognize and understand their environmental health impacts. First we will introduce some of the household products that may contain harmful chemicals and then we will discuss the safer, healthier alternatives.

Slide 6: Home Improvement Products

Say: **Many home improvement products are hazardous, which means they may be corrosive, reactive, flammable, or toxic. If a chemical is corrosive it will eat away at substances it comes into contact with, including skin and bone. The term reactive indicates a substance is explosive. Flammable means a substance can easily catch on fire, and toxic means a substance is poisonous to the human body. In addition, home improvement products pollute the environment.**

Slide 7: Home Improvement Products

Say: These products can trigger asthma attacks and allergic reactions. They often contain compounds that are carcinogenic. Genetic mutations and birth defects have also been caused by such chemicals after prolonged exposure.

Slide 8: Do *you* know which products may contain harmful chemicals?

Slide 9: Articles

Say: Here are some article clippings about people and pets accidentally consuming harmful household products. It's especially important to watch out for these substances because they are easily mistaken as edible. Antifreeze, windshield washing fluid, and mothballs are some of the many products that can cause severe health problems when consumed.

Slide 10: A Little chemistry

Before discussing the individual products, it is helpful to understand how they are classified scientifically. Many of the hazardous chemicals that exist in household products are defined as organic solvents. In this context, the word organic is simply a chemistry term that indicates carbon molecules are present in a chemical compound. There are many different classes of organic solvents, and many are found in everyday household products. Examples of common organic solvents include Methylene chloride, Acetone, Naphthalene, and Carbon tetrachloride. We will talk about a few of these compounds later. The point is that names like these are what you are more likely to see on the bottles of your household products.

Slide 11: Organic Solvents

Say: Organic Solvents are found in a large variety of products, such as these listed. The health effects of exposure to organic solvents range from eye and skin irritation, to headaches, fatigue, and coughing. Cancer can even develop after long-term or repeated exposure.

Slide 12: Methylene Chloride

Say: One common example of an organic solvent is Methylene chloride. This is typically found in paint strippers, varnish strippers and some pesticides. Methylene chloride decreases the ability of red blood cells to carry oxygen and has been classified by the EPA as a potential carcinogen.

Slide 13: Naphthalene

Say: Naphthalene is a chemical commonly found in epoxies and glues as well as mothball products and some pesticides and degreasers. This chemical can lead to hemolytic anemia because it breaks down red blood cells. It can also result in liver damage.

Slide 14: Mothballs, a continuing danger

Say: In the past, mothballs were primarily made of naphthalene, but today, many are made with paradicholorobenzene, a chemical that is less flammable than naphthalene but equally as toxic. Exposure to paradichlorobenzene can cause short-term and long-term problems. The only way to distinguish between the compositions of mothballs is to carefully read the label on their packaging. The mothball industry changed the composition of its product due to public concern and new environmental regulations; however, the new paradichlorobenzene mothballs are not much safer than the earlier naphthalene ones. It is important to be aware that when industries' change their products in response to public health or environmental concerns, the substituted chemical may not be better for health or the environment.

Slide 15: Ethylene Glycol

Say: Though not an organic solvent, ethylene glycol is commonly found in antifreeze and window washing fluid. This chemical is easily absorbed through skin and is damaging to the liver, kidneys, heart, and brain. It is very important to keep products containing ethylene glycol away from children. The bright blue or yellow color and sweet smell can easily be mistaken as juice.

Slide 15: Ethylene Glycol Articles

Say: Here are some article clippings about people accidentally consuming products containing ethylene glycol. It's especially important to watch out for these substances simply because they are easily mistaken as edible. Mothballs can also be easily mistaken as food by children or pets.

Slide 16: Volatile Organic Chemicals (VOC's)

Say: Another term to become familiar with is VOCs (Volatile Organic Chemicals). VOCs are a type of chemical compound that is often seen in all the products mentioned up to this point in the presentation, although they are most commonly found in aerosol sprays. VOCs are major air pollutants and cause the formation of ground-level ozone, which creates smog. Some product labels will indicate the VOC level of their product, but some will not mention anything about VOCs, so keep this in mind when selecting products.

Slide 17: VOCs

Say: Paints and varnishes are examples of products that may or may not mention VOC's on their labels. Many health effects result from VOC exposure. Exposure can trigger allergies, asthma, and respiratory illness. Dizziness, fatigue, and damage to major organs may also occur with exposure.

Slide 18: Sulfuric Acid

Say: Sulfuric acid is another harmful chemical found on the workbench. We find it in various kinds of batteries, and it is also a component of some toilet bowl cleaners. As a strong acid, it is highly corrosive to skin and can irritate and burn the throat, respiratory tract and stomach when inhaled or ingested.

Slide 19: Heavy Metals

Say: Heavy metals such as copper, zinc, lead, and cadmium are often found in pesticides, used motor oil, and wood preservatives. Health effects can start out as nausea, headaches, abdominal pain, and difficulty breathing. But if you continue to be exposed to heavy metals, learning disabilities, memory loss, central nervous system damage and arthritis can develop.

Slide 20: So, What can you do?

Say: Now we will talk about how to avoid the harmful chemicals previously mentioned. You can minimize your exposure, dispose of used products properly, lookout for signal words on product labels, buy safer alternatives, or make your own!

Slide 21: How to minimize your exposure

Say: There are a few ways to minimize your exposure if you still have to use potentially harmful products. Make sure your room or work area is properly ventilated by opening windows and doors. Use a drip tray to prevent major spills. Also, wear personal protective equipment, like safety glasses and gloves. If you want to use a face mask that is fine, but don't rely on it to prevent exposure. Face masks just block dust, not toxic fumes. Carefully read all labels and directions.

Slide 22: Proper Disposal

Do not just throw out used or old home improvement products in the trash! This causes harmful substances to be release into the environment where they can leech in the ground, contaminate local water sources, and be ingested by humans or animals. Ask your retailer if they recycle their products. Some retailers, like auto shops, will take back used car batteries or send old antifreeze through a recycling process. Municipalities host household hazardous waste collections annually or biannually, and at these events it is likely you will be able to dispose of most of the products I've mentioned. Look on your municipality's website for more details. Some towns have municipal transfer stations which will accept a variety of used products, contact your municipality for these specific details. If you live in Connecticut, check out the CT DEEP webpage for this information.

Slide 23: What to look for on Labels

Say: When purchasing safer products, or evaluating your current household items there are a few key things you should look for on the labels. The first is signal words. They usually appear like this in the fine print on the back of the item.

Slide 24: What to look for on Labels

Say: Signal words include poison, danger, warning and caution—and are used on consumer product labels to communicate acute or immediate health effects. So look for the product that is least dangerous, which will have a label that says caution or warning. Keep in mind that labels do not mention the long-term health effects that may result from continuous exposure.

Slide 25: Look for Safer Alternatives

Say: Another option when shopping is to look for safer alternatives. Different compounds or types of products can be substituted for ones that are more harmful. There are some brands of antifreeze that now use a less toxic chemical, propylene glycol, as opposed to ethylene glycol. Find products with low levels of VOCs, often times you can find this information on the product label. You can use cedar chips to repel moths and vegetable or mineral oil as metal polish. You can strip paint in a chemical free way by using sandpaper, scrapers, or heat guns. Also try incorporating Integrated Pest Management into your home. Integrated pest management (IPM) is a scientific method of managing pests starting with non-chemical pest management strategies. In the home IPM focuses first on preventing pests from entering the structure. Examples of this include repairing holes in screens, keeping garbage/trash containers covered, fixing water leaks, and reducing clutter. If pest populations exceed acceptable levels, and pesticide applications are necessary, priority is given to using the least toxic pesticide as first choice.

Slide 26: Safer Alternative: "Water Based"

Oil-based and solvent-based products, like acrylic and oil-based paints, contain many of the organic solvents that are hazardous to human health. You can recognize these chemicals by their strong "fresh paint" odor. Latex or water based paints and glue are much safer and healthier than oil-based or lead-based products, as they contain fewer organic solvents and VOCs. So as a general rule, you should seek out water-based products instead of solvent-based ones.

Slide 27: Buying Safer Alternatives

Say: When in the store buying home improvement products, try to look for products with green certification labels. These labels indicate that products are healthier for both consumers and the environment. Some commercial brands market separate lines of eco-friendly products. Buy only enough products needed to complete your task; this prevents you from storing or wasting unneeded products that may be harmful.

Slide 28: While in the Store

Say: It might be difficult to gather environmental and chemical information about products while you are shopping at the store. Salespeople might not know which particular chemical compounds are in which products, nor what environmental and health effects these chemicals can have. They might describe the environmental implications of products in unexpected ways. For example, if a salesperson tells you that a certain line of paint has less of an odor than another brand of paint, this probably means that the paint has fewer VOCs. However, you cannot know for sure until you check

the label or get a direct answer from a knowledgeable source. So be persistent! You can also call the company or check their website to get more information.

Slide 28: Make Your Own Recipes

Say: Here are some home recipes that utilize less harmful chemical substances. Club soda makes an easy windshield cleaner. You can make a BBQ cleaner or degreaser by dissolving a quarter cup of washing soda in a gallon of warm water.

Slide 29: Recipes

Say: You can easily make your own natural pesticide by mixing garlic, water, and soap and then spraying your plants with the mixture. Tarnish remover is also easy to make in a safe, healthy way.

Slide 30: Recipes

Say: And if you want to get a bit more complex, here is a recipe for milk paint.

Slide 31: Useful Resources

Say: Here we have included some government resources, databases, and websites that provide even more information on how to reduce toxics in your home.

Slide 32: Recap

Say: I hope you've learned some useful information about avoiding the harmful substances in household products. Next time you are looking for a product on the workbench or in the garage, I'm sure you will think about safer alternatives. Thank you.