

H.E.L.P. FOR KIDS PROJECT

HOME ENVIRONMENTAL REVIEW ACTION PLAN

Occupant Name _____	Reviewer _____
Address _____	Date _____
Phone Number _____	

This action plan gives you some quick information for making changes to improve the environment in and around your home for your children. Each action item that is marked provides solutions for environmental hazards that were identified on the checklist during our visit.

Some of these hazards are more important than others. We have listed the most important ones below, since we recommend that you can make those your top priorities for taking action. The other, less important, items can be tackled when time and money permits.

We understand that to solve some of these problems, you may need more information, help from professionals, or financial assistance. Please look through the resource list that was left during our visit for help in these areas.

We have also given you handouts and pamphlets that provide more detailed information for some of the actions. You will find these handouts listed in this action plan to the right of the appropriate actions.

This action plan is yours to keep. You may want to read through the unmarked action items to increase your awareness of environmental and related health issues in buildings. You can also refer to it whenever conditions in your home change or if you move to a new home.

Top Priorities for Action:

Other Recommendations or Comments:

(Note that Spanish language versions of the Home Checklist and Action Plan are available from the Community Health Partnership in Albuquerque, New Mexico at 505-266-0396.)

Item #Specific Actions RecommendedHandout**Section 1. RESIDENTS**

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| <p><input type="checkbox"/> 1.1 Children, from before birth until the end of adolescence, are very different from adults. They are growing, with cells multiplying and organ systems developing at a rapid rate. At birth their nervous, respiratory, reproductive and immune systems are not yet fully developed. Exposure to contaminants and toxic materials can affect a child's development.</p> <p>Unfortunately, behaviors in early childhood increase a child's chance of exposure to toxic materials. It is common for infants and young children to explore the world by putting things in their mouths, and with many hours spent close to the floor or ground they can easily be exposed to lead by swallowing paint dust, paint chips, or pesticide residues.</p> <p>Children also spend more time in energetic play than do most adults. Because children breathe more rapidly and deeper than adults and because their respiratory systems are still developing, they take pollutants deep into their lungs and have potentially more harmful effects from air pollutants.</p> <p>To protect children more effectively, we need to consider why they are more at risk than adults and what types of exposures affect children.</p> | <p>Health Care</p> <p>General Safety</p> <p>Hygiene</p> |
| <p><input type="checkbox"/> 1.2 Take Extra Precautions with Small Children Small children, especially those under the age of 7, are more likely to be exposed and more susceptible to lead, dust, pesticides, and a number of safety hazards.</p> | |
| <p><input type="checkbox"/> 1.3 Minimize Environmental Hazards The more time you spend at home, the more likely that you and your children are exposed to any environmental hazards that exist in your home, and the more important it is to reduce exposure to hazards.</p> | |
| <p><input type="checkbox"/> 1.4 Investigate Environmental Problems in Home When a person's health symptoms are worse at home compared to at work or on vacation, it indicates that there may be a problem related to the home environment. Some of these problems may include exposure to triggers for allergies and asthma, hazardous household products, dust, odors or fragrances, combustion gases, etc. Low level, long-term exposure to chemicals and other pollutants may lead to fatigue, depressed immune system, headaches, and other ailments. Investigate possible sources in the home, and seek medical advice.</p> | |
| <p><input type="checkbox"/> 1.5 Take CPR Class In case a child's heart or breathing stops due to illness or accident, it is a good idea for an adult in the home to be trained in proper CPR (cardiopulmonary resuscitation) techniques for infants and children. CPR and First Aid classes are offered for a small fee through the American Red Cross. For more information in Albuquerque, call the Red Cross at 265-8514.</p> | <p>First Aid & CPR</p> |
| <p><input type="checkbox"/> 1.6 Reduce Allergy/Asthma Triggers</p> <p>a) People with allergies or sensitivities can react to triggers such as dust, molds, cockroaches, pet dander, household products with strong odors, tobacco smoke, and other airborne chemicals. Their symptoms may include frequent sneezing, runny nose, itchy eyes and rashes that can develop into a chronic respiratory condition. For specific actions, see action items 1.7 - 1.13.</p> <p>b) Those with asthma can react to these same triggers with serious and life-threatening attacks. Therefore, if anyone in the home has allergies or asthma, it is much more important that action be taken to control these conditions (see action items 1.7 - 1.13). These conditions are indicated throughout the checklist with a +. Be sure to work with a health care provider on an asthma control program. If your children do not have medical insurance, see the handout on low-cost/no-cost insurance for children.</p> | <p>Asthma</p> <p>Cleaning</p> <p>Moisture & Mold</p> |

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 1.7	<p>Reduce Exposure to Tobacco Smoke and Products Smoking doesn't mix with clean air and good health. Cigarette smoke contains many toxic chemicals and irritants. Secondhand smoke (or environmental tobacco smoke -- ETS) also contains many toxic chemicals, some of which may be carcinogens, and inhaling it can make asthma worse. People with allergies may be more sensitive to cigarette smoke than others. Children exposed to smoke are more likely to have respiratory infections and asthma than those not exposed. Ear infections are also linked to exposure to secondhand smoke. Common symptoms of smoke irritation are burning or watery eyes, nasal congestion, coughing, hoarseness and shortness of breath. Avoiding the use of tobacco products in a home with children also reduces the risks:</p> <ul style="list-style-type: none"> a) that children will become future smokers b) of nicotine poisoning by small children eating tobacco products c) of fires started by small children that have access to lighted cigarettes, matches, and lighters <ul style="list-style-type: none"> ② Ask smokers kindly but firmly to smoke outdoors so household members aren't exposed. Smoke outside, away from windows and doors to prevent smoke from entering your home, especially rooms occupied by children. ② Wash your hands after smoking. Smoke odors cling to skin, hair, and clothes. ② If you smoke, quit. Quitting is a difficult process; get support from your family and friends. Talk to your health care provider if needed. 	<i>ETS- Secondhand Smoke</i>
❑ 1.8	<p>Reduce Exposure to Pet Dander and Pests Many people have allergic reactions to pet dander (small pieces of dried skin that has been shed). Dander from cats is a particularly potent allergen and affects more people than other animal allergens. Dander can collect on clothing, surfaces, or become trapped in materials such as carpet, bedding and upholstery.</p> <p>Pets can also bring dust (and lead-contaminated dust), pests (such as fleas and ticks), and possibly other outdoor contaminants (pesticides, pollens, etc.) into the dwelling. Pet-related problems may be reduced by:</p> <ul style="list-style-type: none"> ② More frequent bathing of the pet (although bathing can increase drying and shedding of skin). ② More frequent and thorough cleaning of surfaces and materials to remove dander, hair, fleas, and other contaminants. Sensitive individuals should not be present during cleaning. ② Maintaining bird cages. Do not allow children to handle droppings -- droppings can carry disease. ② Washing pet bedding, vacuum nearby floors, and use flea combs often to control fleas. Use other lower-toxicity flea control measures, such as citrus oils and soap. ② Removal of fleecy or fabric materials in rooms where pets sleep or spend time ② Not allowing pets on furniture or beds (especially those used by individuals with allergies or asthma). ② Keeping pets out of rooms where persons with allergies and asthma spend time. ② Reduce movement of pets from outside to inside of home to avoid bringing fleas into home. ② Keeping pets outside. Provide another warm, dry shelter in a garage, shed, etc. An option may be to find another good home for the pet. ② Considering the use of portable air cleaners to reduce, but not eliminate, allergens (see action item 6.2d). 	<i>Asthma Cleaning</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 1.9	<p><i>Prevent and Remove Cockroaches and Rodents and Their Allergens</i> Exposure to cockroaches and cockroach debris, and to some extent, rodents and their droppings, can trigger allergies and asthma. Since these pests grow and multiply where there is moisture and food, good sanitation is important to their control, along with sealing openings that the pests use to enter the building. Controlling pests such as insects and rodents with methods that reduce or eliminate the use of pesticides can lower exposure to the irritating and toxic chemicals found in pesticides. This approach is known as Integrated Pest Management. If pesticides must be applied, use the least toxic compound in the smallest quantities that will work and use only as-needed (when pests are observed -- avoid scheduled, or calendar, applications).</p> <ul style="list-style-type: none"> ② To kill cockroaches, place bait stations (brand names: Maxforce, Combat, Avert) or boric acid where cockroaches have been seen, but out of the reach of children. ② Clean house thoroughly after treating for roaches to reduce roach allergens. Sensitive individuals should not be present during cleaning. ② Use mechanical traps to eliminate rodents. ② Avoid contacting rodent bodies when removing. Take proper precautions during clean-up of areas with rodents to avoid diseases (e.g., hantavirus) carried by the pests. See the handout and resource list for information on avoiding exposure to rodents and the hantavirus. ② Reduce clutter (papers, boxes, debris) to minimize hiding places and shelter. ② Eliminate food (unwashed dishes, open food containers, food crumbs) and water (drips, leaks, pet dishes) sources. ② Block or caulk any openings in walls, floors, under sinks to keep pests from entering. 	<i>Pest Control</i>
❑ 1.10	<p><i>Reduce Exposure to Dust Mites</i> Dust mites are tiny relatives of the spider, so small you can't feel them and can only see them with a microscope. They are found in mattresses, bedding, upholstered furniture, carpets, and curtains. Dust mites live happily in warm, humid places (like our beds). People with allergies or asthma often have strong reactions to dust mite allergens. Mites eat the flakes of skin that people and pets shed daily. Mite populations can be reduced through the following steps (note that sensitive individuals should not be present during vacuuming):</p> <ul style="list-style-type: none"> ② Consider removing carpeting, stuffed toys, and upholstered furniture from the sensitive person's bedroom (see action item 3.20). ② Vacuum remaining carpets, furniture, and other fabric surfaces weekly -- twice weekly in the bedrooms of those with asthma and allergies. Use high efficiency filters in the vacuum to trap the dust mites and dust mite particles and keep them from being blown back into the room (see action item 3.26). ② Damp mop hard floors and damp wipe surfaces frequently to pick up the dust instead of moving it around your house. ② Use allergy-control covers on pillows and mattresses (see action item 6.2b). ② Wash sheets and stuffed animals weekly in hot water (greater than 130°F). Wash pillows and blankets every two weeks. If the house water temperature is kept below 130°F to prevent scalding (120°F to 125°F is a good range to prevent scalding), consider washing bedding at a laundromat that has hot water. Select fabric softeners and laundry detergents that have no fragrances (see handout for more information). ② If clothes are dried in a dryer, use the high heat cycle. ② Reduce humidity in the home if possible (see action items 1.11 and 3.6). Dust mites do not thrive in low humidity environments. 	<i>Asthma Cleaning</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 1.11	<p><i>Control Moisture and Molds</i> Molds are simple, microscopic organisms found indoors and outdoors. Molds need food (leaves, wood, paper, dust, dirt), a moisture source, and proper temperature to grow. If moisture is available molds can thrive and multiply. Moisture control is the key to controlling mold problems.</p> <p>Sources of indoor moisture that may cause problems include: flooding, backed-up sewers, leaky roofs, humidifiers, damp basements or crawl spaces, plumbing leaks, steam from cooking, shower/bath steam, wet clothes on indoor drying lines, clothes dryers vented indoors.</p> <p>Mold spores are tiny and lightweight, and can become airborne. Depending on a person's sensitivity, mold can cause respiratory irritations, allergic reactions and even severe poisoning.</p> <ul style="list-style-type: none"> ② Identifying and controlling the source of moisture is the most important step in controlling mold contamination. Find and fix water leaks due to plumbing, poor drainage, or leaks in roofs or foundation walls. ② Use an exhaust fan or open windows to remove moisture from cooking, bathing, or laundering. ② Where possible, remove and discard moldy materials. Be careful not to spread mold contamination to other parts of the building. Avoid exposing sensitive (allergic or asthmatic) individuals to the moldy materials. In cases of extensive contamination, call in a qualified contractor (see resource list). ② It is usually not possible to clean moldy materials completely, and the mold can quickly reappear. Fabric or fleecy (porous) materials that contain biological contaminants are especially hard to clean. For hard surfaces, scrub thoroughly with detergent to remove the mold. If scrubbing doesn't remove the mold completely, consider using a chlorine bleach solution (3 tablespoons bleach per quart water) to kill the mold (see handout). Remember to wear a suitable respirator and personal protection, and ventilate your work area, because bleach fumes can irritate the eyes, nose, and throat (see handout for more information). Do not mix products containing chlorine (bleach) with products containing ammonia -- toxic gases can be produced. ② For fabric or fleecy materials, the contaminated material should be dried and cleaned within 48 hours of becoming wet; otherwise, mold growth may be a continued problem in the material. See the handout and resource list for guidance and professional assistance on cleaning and removal. ② If humidity levels are high, consider using a dehumidifier (especially in basements). 	<i>Moisture & Mold</i>
❑ 1.12	<p><i>Reduce Strong Odors and Fragrances</i> For some people, strong odors (from the use of cleaning products, art and hobby materials, paints and thinners) and fragrances (perfumes, fabric softeners, incense, candles, air fresheners) can trigger allergic reactions and asthma. These can be reduced by:</p> <ul style="list-style-type: none"> ② Eliminating or using less of a product. ② Using a different product that has less odor. ② Using an exhaust fan or opening windows to remove the odors from the building. ② Avoiding the use of fragrances to cover up odors. ② Not using the products in the living space. 	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 1.13	<p><i>Minimize Exposure to Pollens</i> Pollens from surrounding outdoor sources can affect sensitive individuals indoors as well as outdoors. Pollen particles can enter homes along with outdoor air through open windows and doors or be tracked in on shoes, clothing and pets. To minimize exposure:</p> <ul style="list-style-type: none"> ② The sensitive individual should leave the area during raking (molds can also be stirred up by raking), mowing, gardening, or other agricultural activities. ② Keep doors and windows closed during the pollen season if possible. Don't dry the sensitive person's laundry outdoors. ② Minimize the number of times pets go in and out. ② Remove outdoor clothing and shoes on entering the home -- wipe shoes on door mats. Put a doormat at every entrance. ② Clean surfaces and materials frequently and thoroughly to remove pollens. Use high efficiency filters in the vacuum to trap pollen particles and keep them from being blown back into the room. ② If you have a forced-air furnace, use compatible high efficiency air filters to remove more small particles from the air. ② Consider using a portable air cleaner (not an ozone generator) in the rooms where the sensitive person spends the most time. 	<i>Asthma Cleaning</i>

Item #Specific Actions RecommendedHandout**Section 2. OUTDOORS AND NEARBY ENVIRONMENT**

- 2.1** *Stop Outdoor Pollutants from Entering the Home* Outdoor sources of pollution near the home may present health risks to children when they are outside. The pollution can also get into the home along with outdoor air entering through windows and doors, or brought in on shoes, clothing, or with pets. Usually when the source is closer or located upwind of the home, the risk is greater and the odors or noise are more obvious.
- ② Try to identify the source of pollution and call local authorities to check that it meets air pollution laws.
- ② Keep pollutants outside as best as you can by restricting the in and out privileges of pets, using a door mat and removing shoes, and closing doors and windows when the wind is from the direction of the pollution source.
- ② Consider using an efficient vacuum cleaner and high efficiency air filters in the furnace (if you have a forced air furnace) or air conditioner to remove more particles that find their way indoors.
- ② Consider using portable air cleaners that don't produce ozone in the bedrooms of individuals with allergies or asthma (see action item 6.2d).
- 2.2** *Keep Vehicular Pollutants Out of the Home* In addition to the noise and combustion pollutants released by vehicles, automobiles in the past produced lead particles from burning fuel with lead additives. These lead particles are still found in the soil near busy streets and can enter homes on shoes. Remove shoes and/or wipe shoes on doormats before entering home. Also see action items 2.1, 2.7f, 2.7g.
- 2.3** *Keep Dust Out* Dust can contain a number of pollutants and contaminants (see action item 2.7). Try to keep dust out during dry, windy weather by closing all outside doors and windows. Clean surfaces more frequently. Remove shoes and/or wipe shoes on doormats (see action items 2.7f, 2.7g).
- 2.4** *Avoid Area During Raking and Mowing* Molds and pollens that are stirred up during raking and mowing can trigger allergies and asthma attacks in sensitive individuals. The exposure is worse if the person is outdoors, but can also be a problem indoors. If the person stays indoors:
- ② Keep doors and windows closed during outdoor activities that stir up pollens and dust
- ② Remove outdoor clothing and shoes on entering the home -- wipe shoes on doormats at the outside doors; wash clothing as soon as possible.
- ② Consider using a portable air cleaner that doesn't produce ozone in the rooms where the sensitive individual spends the most time (see action item 6.2d).
- 2.5** *Identify Source Of Smoke And Ask For Correction* Smoke contains many pollutants that can cause respiratory irritation, cancer, and other long-term health effects. Help neighbors learn about health risks from wood smoke, and persuade them to control it. Burning dry wood and providing a lot of oxygen to the fire reduces chimney smoke. Refer to the resource list to find out whom to call if neighbors are uncooperative. Keep windows and doors closed when you can smell smoke outdoors.

2A. Drainage

- 2.6** *Correct Specific Drainage Problem* Drainage problems can allow water to enter the building, attract pests, and encourage molds to grow. You may need qualified professional assistance to solve some of these problems (see resource list).
- 2.6a** *Repair Roof Leaks* Water can travel many feet from a roof leak causing building materials in attics and ceilings to become wet (often in places you can't see). In northern climates, roof leaks can also result from ice dams in the winter, that force water under the roofing materials. Repair leaks; replace the roof if necessary.

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 2.6b	Maintain and Clean Gutters, Canales, and Downspouts Blocked gutters and canales can cause water to back up and spill onto the building or seep into the building structure. Inspect and clean them regularly, especially in the fall after leaves have dropped.	
<input type="checkbox"/> 2.6c	Repair or Install Downspouts When downspouts are missing or disconnected, water can splash onto the building and puddle near the foundation. These puddles can cause problems such as leaks or dampness in the foundation materials. Repair or attach downspouts, extending the bottom of the downspout away from the building.	
<input type="checkbox"/> 2.6d	Improve Drainage The soil and other materials near the building (including sidewalks and patios) should be graded with a slope that drains water away from the building. This avoids problems described in (2.6c).	
<input type="checkbox"/> 2.6e	Correct Other Water Problems Persistent wind-driven rain, elevated water tables, and plumbing leaks are other causes of water damage to the home. Professional assistance may be necessary.	

2B. Lead and Dust Outdoors

<input type="checkbox"/> 2.7	<p>Young children living in many older or remodeled homes are exposed to high health risks from household dust. This dust contains many pollutants that come mainly from outside the home and then build up in rugs and carpets. Pollutants found in house dust include lead, allergens, pesticides, and other toxic chemicals. These pollutants can cause allergies, asthma attacks, learning disabilities, and possibly cancer.</p> <p>Toddlers are most at risk from breathing and swallowing dust because they play on floors and put their hands in their mouths. They also have less resistance to pollutants than adults. If not detected early, children with high levels of lead in their bodies can suffer from: damage to the brain and nervous system, behavior and learning problems (such as hyperactivity, slowed growth, hearing problems, and headaches). Make sure children eat nutritious, low fat meals high in iron and calcium -- children with good diets absorb less lead.</p> <p>A common source of lead indoors is lead-based paint that deteriorates into small particles and dust. Other indoor sources may include drinking water, lead crystal and pottery, vinyl mini-blinds, hobbies, and folk remedies to treat upset stomachs.</p> <p>Outdoor sources of lead that collect in the soil can include particles of paint peeling from your dwelling or neighboring buildings, emissions from automobiles that used leaded gasoline, smelters, and some abandoned industrial or commercial facilities. The lead in the soil can be tracked into the dwelling.</p>	<i>Lead</i>
<input type="checkbox"/> 2.7a	Have Children's Blood Tested for Lead Children between the ages of 6 months and 6 years, who may have been exposed to lead, should have a simple blood test performed that measures the lead levels in their bodies. See the resource list for clinics or agencies that provide these inexpensive (or sometimes free) tests.	
<input type="checkbox"/> 2.7b	Buildings Constructed Before 1980 May Have a Lead Paint Problem Buildings constructed before 1980 may have lead-based paint on outdoor and indoor surfaces. Although the federal government banned lead-based paint from housing in 1978, this paint may have still been available and in use for several more years. Peeling paint may be caused by a moisture or water problem (see action items 2.6 - 2.6e, 3.6).	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 2.7c	<p>Test for Lead in Paint -- If Necessary, Remove/Repair Damaged Paint Lead-based paint that is covered by several layers and is in good shape usually poses little risk. However, peeling, chipping, chalking, or cracking lead-based paint is a hazard and needs immediate attention. Lead-based paint may also be a hazard if it is in a place that children can chew on or that gets a lot of wear-and-tear: windows and window sills, doors and door frames, stairs and railings, and porches and fences. The paint dust from opening doors and windows may be invisible.</p> <p>If you rent, notify your landlord of peeling or chipping paint. Have a professional test for lead in paint. Clean up paint chips immediately. Wet mop floors and use a sponge or rag to remove dust from windows. Keep children from chewing on window sills or other painted surfaces. Do not try to make repairs yourself without following the proper procedures -- you could make the problem worse. See handout and resource list for getting advice on testing and reducing lead levels in the home. Call EPA's lead hotline at 800-424-LEAD for more information.</p>	
☐ 2.7d	<p>Test for Lead in Soil -Keep Children Off Soil - Avoid Track-in of Lead-Contaminated Dust If lead-based paint was removed from your building or the next door building (if that building had lead-based paint), paint particles may have contaminated the soil near your dwelling. Consult with a specialist about whether to have the soil tested (see resource list). Children should not play in the nearby soil -- if there is grass, they can play more safely there. Pay special attention to reducing track-in of lead-contaminated dirt and dust (see action items 2.7f and 2.7g).</p>	
☐ 2.7e	<p>Follow Special Remodeling Precautions Special procedures should be followed during remodeling or repainting of buildings suspected to contain lead-based paint or asbestos. These precautions are intended to reduce the amount of lead dust that is produced, to keep occupants from entering the spaces where the renovation is occurring, and to keep the dust from entering the living spaces of children. See resource list for information on these procedures, professionals who can identify lead and asbestos hazards before the remodeling begins, and companies who are trained to do this work.</p>	
☐ 2.7f	<p>Reduce Track-in of Dust and Lead Dust Take off shoes or install doormats at all entrances. Wiping the bottom of your shoes on the mat will reduce dust significantly. 70-95% of dust on the floor comes into a house on shoes.</p>	
☐ 2.7g	<p>Use Good Doormats Doormats placed both outside and inside of doors to outside will remove dirt and contaminants from shoes and can greatly reduce indoor dust and lead levels. On the outside, a grate or mat made of very stiff bristles works well. In addition, a commercially constructed mat should be placed immediately inside the door. A commercially made doormat works better than carpet samples or remnants, but carpet samples or remnants are better than no doormat.</p>	

2C. Pest Control / Pesticides Outdoors

☐ 2.8	<p>Pesticides are poisons. While killing bugs and weeds, they may also poison children and pets, irritate eyes or skin, cause cancer, or kill birds and fish. Control pests such as insects and rodents with methods that reduce or eliminate the use of pesticides to reduce exposure to the irritating and toxic chemicals found in pesticides. This approach is known as Integrated Pest Management. It involves eliminating sources of food and water for the pests, sealing openings that the pests use to enter the building, and using non-toxic methods, such as helpful insects and hand-weeding outdoors, and baits and traps indoors.</p> <p>Buy native plants that grow well in your climate and have natural pest defenses. Try non-chemical products to control pests. Because some fertilizers are also poisonous, consider using less toxic fertilizers such as compost, aged manure, or slow-release organic fertilizers.</p>	<i>Pest Control</i>
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<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 2.8a	Limit the Use of Pesticides Use of pesticides on a regular schedule (known as 'calendar control') is not recommended, because it often means using more than is needed. If pesticides must be applied, use the least toxic compound in the smallest quantities that will work, use only as needed (when you see the pests or pest damage), and closely follow the label directions on the pesticide.	
<input type="checkbox"/> 2.8b	Do Not Permit Play Near Pesticide-treated Areas Pesticides applied to plants or surfaces outside the building for weed or insect control can linger for a minimum of 3 days. Because pesticides can be inhaled, swallowed, or absorbed through the skin, children should not be allowed to play on or near treated areas for approximately one week after treatment.	
<input type="checkbox"/> 2.8c	Wear Appropriate Protective Gear To protect yourself, or other family members you touch, wear protective gear when applying pesticides (gloves, hat, long sleeved shirt, long pants, etc.). When you are done, store the gear out of reach of children. Wash hands and any exposed skin before contact with food or children.	
<input type="checkbox"/> 2.8d	Help Neighbors to Limit Use of Pesticides If pesticides drift onto your property, they can cause harm to your family, pets, and plants. Help neighbors learn about health risks from pesticides. Refer to the resource list for agencies that can help if the neighbors are uncooperative.	
<input type="checkbox"/> 2.8e	Eliminate Pests -- Remove Attractants -- Seal Entry Points Eliminate the pests, but avoid using toxic chemicals for pest control. Use bait stations or boric acid for cockroaches and mechanical traps for rodents. Eliminate nesting materials, and sources of moisture and food. Seal openings into the attic, basement, or crawlspace that can allow entry for birds, rodents, and insects. All vent openings should be protected by sturdy, thin wire mesh with no larger than 1/4 inch spacing. Seal any gaps greater than 1/4 inch with a rodent resistant material such as brass scrub pad or concrete patch. Use silicone caulk to seal smaller openings. Take proper precautions during cleanup of areas with rodent or birds, to avoid diseases carried by the pests. See resource list and handout/fact sheet for information on avoiding exposure to rodents and the hantavirus.	<i>Hantavirus</i>

2D. Garage or Other Outbuildings

<input type="checkbox"/> 2.9	Attached Garages Can Supply Pollutants to Home Pollutants that are produced or accumulate in attached garages can easily move into the living space through gaps, openings (doors), and heating ducts. Keep the garage and garage floor clean. Install doormat between garage and home to keep pollutants from being tracked into the living area.	<i>Hazardous Household Products</i> <i>CO Alarms</i>
<input type="checkbox"/> 2.9a	Avoid Idling Car in Garage Automobile engines produce the dangerous gas, carbon monoxide (CO), when they are operating. This gas and others can quickly accumulate to dangerous levels in a garage. Drive out immediately after starting. Consider steps to reduce driving if possible.	<i>CO Alarms</i>
<input type="checkbox"/> 2.9b	Seal Return Air Leaks and Grilles in Garage Because return air ducts and plenums operate under negative pressures, they can pull in pollutants from the garage and circulate them throughout the home. Carefully seal any leaks in the duct and seal the return air grilles in the garage. Refer to the resource list for heating/cooling specialists. Eliminate sources of pollutants in the garage (such as hazardous chemicals, pesticides).	
<input type="checkbox"/> 2.10	Install an Automatic Garage Door Safety Feature Children can get caught between a closing garage door and the floor if the door comes down unexpectedly.	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 2.11	<i>Improve Storage of Hazardous Chemicals in Garage/Storage Buildings</i> Try to avoid storing pesticides or other hazardous chemicals in garages that are connected to house. Consider ventilating garages or detached storage buildings to the outside if hazardous chemicals or gas powered tools or vehicles are stored/started there. Make sure hazardous chemicals and pesticides are securely stored in original containers that don't have leaks (see action items 3.28f - 3.28i).	<i>Hazardous Household Products</i>
<input type="checkbox"/> 2.12	<i>Secure Power Tools and Other Hazardous Objects</i> Children are attracted to gas and electric power tools, but don't usually have the know-how or strength to operate them safely. Tools should be unplugged, have safety locks in place, and, if possible, be stored in locked cabinet or closet. Other objects, such as ladders, handsaws, etc., should also be out of the reach of children.	

2E. Outdoor Safety Hazards

<input type="checkbox"/> 2.13	<i>Make Sure the Play Area is Safe</i> There can be many hazardous conditions in outdoor play areas. For specific problems see action items 2.14 - 2.20d.	<i>Playground Safety</i> <i>Sun Safety</i>
<input type="checkbox"/> 2.14	<i>Fence Play Area</i> Play areas that are near streets or parking lots, railroad tracks, or a pond or other water source need to be fenced so children are kept away from these hazards.	
<input type="checkbox"/> 2.15	<i>Remove Dangerous Items from Play Area</i> The play area for children can have common items and materials (trash, pet wastes, tools) that can cause physical injury, or health problems if the children eat them or get them on their skin. Occasionally walk through the area looking for these conditions. Clean up or remove any that are found.	
<input type="checkbox"/> 2.16	<i>Protect Against Drowning Accidents</i> Drowning accidents involving children can occur very quickly. Therefore, water hazards, such as pools, hot tubs, Jacuzzis, should be guarded with a 6 foot high fence with a locked gate so children do not have access. The drain cover for a hot tub, Jacuzzi or swimming pool should be securely in place and in good condition (i.e., not cracked or broken). An emergency cut-off switch for the circulation pump motor for hot tubs and Jacuzzis should be clearly visible and unobstructed location nearby. When children are playing in or near pools or ponds, they should be under the constant supervision of a responsible individual, preferably with CPR training (see resource list). Toddlers can fall head first into a bucket and not be able to get out, so buckets or basins with water are also a water hazard and should be removed. Fill or securely cover abandoned wells.	
<input type="checkbox"/> 2.17	<i>Correct Traps and Suffocation Hazards</i> Abandoned appliances and wells can be a hazard to children. Remove and properly dispose of abandoned appliances with doors (such as refrigerators, freezers, and stoves) that children may play in or on. Until old or abandoned appliances are properly disposed of, their doors must be either permanently closed or modified so they can't be completely closed. This will help eliminate potential suffocation hazards for children.	
<input type="checkbox"/> 2.18	<i>Install Safe Railings</i> All elevated surfaces such as platforms and ramps should have railings to prevent falls. Space posts closer than 3 1/2 inches or farther than 9 inches so children's heads will not be trapped in the gap.	
<input type="checkbox"/> 2.19	<i>Learn Which Plants Are Poisonous</i> Some common plants may have poisonous leaves, stems, berries, or flowers. Learn the names of the plants in your yard and which ones are harmful to touch or eat. Meanwhile, teach children not to touch or eat any plant until they show it to you and get your approval. Move or remove any of these plants, or keep children away from them.	<i>Poisonous Plants</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 2.20	<i>Safe Playground Equipment</i> Playgrounds are common areas for injuries to children. Play structures should be spaced at least 9 feet apart to allow children space to circulate or fall without hitting another structure. Moving pieces of equipment should be located in an area away from other play structures so children have adequate room to pass from one play area to another without being struck by a moving swing or by another child exiting from a slide.	
<input type="checkbox"/> 2.20a	<i>Maintain and Repair the Equipment</i> Inspect playground equipment twice a year for changes in safety and performance. Check for loose bolts, rusty, worn or damaged parts, rotting or torn swing seats, modifications or the addition of ropes or other strangulation hazards, etc. Wood equipment may need special attention, such as sanding and re-sealing in the spring and fall to reduce splinter hazards to children.	
<input type="checkbox"/> 2.20b	<i>Remove or Repair Dangerous Parts</i> Play equipment should not have sharp points or edges that could cut skin. All protruding bolts should be shortened and/or covered, with no dangerous pieces of hardware at the top or bottom of swings. These can cut children, puncture skin, or catch clothing drawstrings, which could strangle a child.	
<input type="checkbox"/> 2.20c	<i>Maintain a Good Landing Surface</i> The risk of injury to children from falls is high. Playground equipment should have a landing surface made of a material that softens impacts and reduces injuries. The materials should be approximately 9 inches deep and extend 6 feet beyond the equipment on all sides. Some examples of materials include sand, wood chips, and mulch. Inspect this surface regularly to check for shifting and thin spots.	
<input type="checkbox"/> 2.20d	<i>Remove Objects at Head Level</i> During play, children often are not aware of objects at head level. Some examples of these objects include bars, bolts, supports, and open casement windows.	

Section 3. GENERAL INFORMATION ABOUT THE INDOORS

<input type="checkbox"/> 3.1	<i>Raise Indoor Temperatures</i> Extended periods of low indoor temperatures (especially in closets, bedrooms, bathrooms and unused rooms) increase the likelihood that moisture will condense on indoor surfaces and encourage mold growth. Try to keep temperatures in these areas above 60°F. Raise indoor temperatures by adjusting the thermostat, opening doors, opening heating valves or grilles, adding safe, supplemental heat (see Section 9), or improving insulation in walls and ceilings.	
<input type="checkbox"/> 3.2	<i>Increase Ventilation with Outdoor Air</i> All living spaces should get enough fresh outdoor air to remove odors and other pollutants that can accumulate. Usually, your nose knows when there isn't enough ventilation. To increase ventilation, operate exhaust fans or open windows whenever weather, outdoor pollution levels, and security considerations permit. Ventilation systems are available that directly provide outside air to the home (see resource list). There may be times when the outdoor air has high levels of pollutants (dust, pollen) that can cause strong reactions in individuals with allergies or asthma. Minimize outdoor air ventilation with outdoor air during these periods.	<i>Ventilation</i>
<input type="checkbox"/> 3.3	<i>Provide Ventilation to Each Room</i> To provide adequate fresh outdoor air, and to control odors and pollutants, some building codes require that at least one window in each room can be opened or that a ventilation fan be installed. If possible, repair or install windows that can be opened for ventilation. If necessary, discuss with your landlord.	<i>Ventilation</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 3.4	Fill Traps on Floor Drains Floor drains, which are commonly found in the basement, laundry room or bathroom, require a layer of water to keep sewer gases from moving into the occupied space. Sewer gases are irritating and may also be explosive in high concentrations. Occasionally, pour about 1 cup of water in the drain to fill the trap and prevent the gases from entering the building. A few drops of mineral oil on top of the water could be used to reduce evaporation.	

3A. Moisture and Water Damage

☐ 3.5	<p>Remove or Clean Moldy or Contaminated Materials -- Eliminate Moisture Source Water damaged building materials and carpet give mold and bacteria a good place to grow. Where possible, remove and discard moldy materials. Be careful not to spread mold contamination to other parts of the building and avoid exposing sensitive (allergic or asthmatic) individuals. If there is extensive contamination or contamination caused by sewage backup, you may need to consult with an expert.</p> <p>It is usually not possible to clean moldy materials completely, and the mold can quickly reappear. Fabric or fleecy (porous) materials that contain biological contaminants are especially hard to clean. For hard surfaces, scrub thoroughly with detergent to remove the mold. If scrubbing doesn't remove the mold completely, consider using a chlorine bleach solution (3 tablespoons bleach per quart water) to kill the mold (see handout). Remember to wear a suitable respirator and personal protection, and ventilate your work area, because bleach fumes can irritate the eyes, nose, and throat (see handout for more information). Do not mix products containing chlorine (bleach) with products containing ammonia -- toxic gases can be produced.</p> <p>For fabric or fleecy materials, the contaminated material should be dried and cleaned within 48 hours of becoming wet; otherwise, mold growth may be a continued problem in the material. See the handout and resource list for guidance and professional assistance on cleaning and removal.</p> <p>To control future mold problems, it is very important to eliminate the sources of moisture that caused the mold growth (for example, repair leaks, improve drainage, exhaust cooking and bathing moisture - see action items 2.6 - 2.6e, 5.5, 5.10, 7.3). Moisture and water can cause paint to peel, flake, and bubble, and wall paper to detach from the wall surface.</p>	<i>Moisture & Mold</i>
☐ 3.6	<p>Reduce Moisture Sources Windows that are frequently fogged on the inside usually indicate a strong moisture source inside the building, such as leaks, flooding, or cooking and bathing activities. Fogging is also common in cold climates on windows with only one layer of glass. Eliminate or reduce the moisture sources and use exhaust fans or open windows while cooking and bathing (see action items 2.6 - 2.6e, 5.5, 5.10, 7.3). Also consider using a dehumidifier in the home.</p>	<i>Moisture & Mold</i> <i>Ventilation</i>
☐ 3.7	<p>Maintain Humidifiers / Dehumidifiers Humidifiers and dehumidifiers can be a source of excess moisture and may cause mold problems. When poorly maintained, they can be a breeding ground for bacteria and other microorganisms. Water storage pans and tanks should be periodically inspected and cleaned. Ultrasonic humidifiers with mold or other contamination can produce very fine airborne particles that can be easily breathed deep into the respiratory system.</p> <p>Periodically inspect and clean dehumidifier coils and intake screens with a vacuum cleaner brush. Ice can form when the coils or screens are dirty or blocked, or due to failure of the device's thermostat.</p>	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 3.8	<p>Limit the Number of Plants Plants inside the home can be a source of dust and moisture. Plants can collect dust that is hard to clean and that eventually gets into the air. Watering the plants increases the amount of moisture in the air of a home, and the moist soil around the plants can allow mold to grow. Both the dust and the mold can cause respiratory difficulties for sensitive individuals and asthmatics. To reduce these sources, avoid over-watering and consider limiting the number of plants in the house, or removing plants from the bedrooms of sensitive individuals.</p> <p>Learn the names of your plants and which, if any, are poisonous.</p>	<p><i>Moisture & Mold</i></p> <p><i>Poisonous Plants</i></p>

3B. Other Indoor Air Pollutants and Sources

☐ 3.9	<p>If Someone Has Symptoms, Consider Formaldehyde Testing and Control Formaldehyde is a colorless, pungent smelling gas that can cause watery eyes, burning sensations in the eyes and throat, nausea, and difficulty in breathing in some people. It is considered by the EPA to be a probable carcinogen. High levels may trigger asthma attacks. Sources of formaldehyde include building materials, pressed wood furniture, fabrics, smoking, household products, and unvented combustion appliances. High formaldehyde levels are more likely to be a problem in new buildings or after remodeling, because formaldehyde-containing materials tend to release more formaldehyde when they are new. After several years, the amount of formaldehyde given off is usually less of a concern.</p> <p>If anyone has the above symptoms, consider having indoor air tested for formaldehyde levels. If necessary, it may be advisable to seal formaldehyde-emitting surfaces, or to remove the materials. Refer to the handout and resource list for assistance on testing and options for control.</p>	<i>Formaldehyde</i>
☐ 3.10	<p>If You Suspect the Presence of Asbestos, Consider Testing and Control Asbestos is a mineral fiber that has been used commonly in a variety of construction materials for insulation and as a fire retardant. The most dangerous asbestos fibers are too small to see. After they are inhaled they can remain in the lungs. Asbestos can cause lung cancer. Symptoms don't show up for many years. Smoking combined with exposure to asbestos increases the risk of lung cancer.</p> <p>Today, asbestos is most commonly found in older homes in pipe and furnace insulation materials, "popcorn" ceilings, and floor tiles. Some remodeling practices such as cutting or sanding may disturb the asbestos and release asbestos fibers into the air. If asbestos is left undisturbed the fibers will not release into the air.</p> <p>For professional advice on testing of suspected material and options for control or removal, see the resource list.</p>	<i>Asbestos</i>
☐ 3.11	<p>Consider Measuring Radon Levels in Your Home Radon is a colorless, odorless, radioactive gas. Exposure to high levels of radon can lead to lung cancer. The most common source of indoor radon is in the soil or rock on which homes are built. It enters homes through dirt floors, cracks in concrete floors and walls, and floor drains. In some areas, water from wells is also a major source of radon in a home.</p> <p>The underlying soil and geologic features in some regions of the country are more likely to cause high radon levels in buildings. The U.S. EPA recommends that all homes should be tested for radon. See the resource list for testing information and services.</p>	<i>Radon</i>
☐ 3.12	<p>Control Radon, If Levels are 4 pCi/L, or Above If indoor radon levels measured on the ground floor were 4 pCi/L, or higher, and the home is on well water, consider having the radon level in the water tested.</p> <p>The U.S. EPA recommends reducing the level of radon in homes with an average radon concentration of 4 pCi/L or greater. There are several ways to reduce indoor radon levels, but it generally requires a specialist to diagnose and install these options. Consult the resource list or the Radon Hotline (800-323-9727) for information on reducing radon.</p>	<i>Radon</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 3.13	<i>Use Methods Other than Ozone Generators for Reducing Indoor Air Pollution</i> Some air cleaners produce ozone when they are used. Even at low concentrations, ozone can cause health effects, including lung and throat irritation and shortness of breath. It may also aggravate chronic respiratory disease, such as asthma. Because it can be difficult to control the ozone levels in a room during air cleaner/ozone generator use, levels can exceed public health standards. At levels below these standards, ozone generally has little, or no, effect on reducing indoor air pollution. Instead of using an ozone generator, consider eliminating the pollutant source(s), adding outdoor air ventilation, or using proven portable air cleaners that don't produce ozone (see action item 6.2d). See the handout for more information on ozone generators.	<i>Ozone</i>
<input type="checkbox"/> 3.14	<i>Minimize Use of Candles</i> The smoke from candles commonly used in homes has been found to contain very small particles and metals, such as lead. These materials can be breathed into the lungs or collect on surfaces in the home where children can get them on their hands and then put them in their mouths. If sensitive individuals breathe the particles, they can cause respiratory problems, while lead is a serious hazard to small children (see action item 2.7). Candle smoke can also cause surfaces in the home to become dirty. Heavily-scented candles and candles in small containers are suspected of producing more airborne particles. Avoid regular burning large numbers of candles.	

3C. Lead Indoors

<input type="checkbox"/> 3.15	<i>Test for Lead -- Clean Frequently and Thoroughly</i> Remodeling and paint removal can produce small lead-contaminated particles and dust that settle on surfaces, furniture, and carpeting in the home. Consider having a professional lead test performed on dust and other materials in your home (see resource list). Conduct thorough and frequent cleanings to remove particles and dust (see action items 3.23 - 3.26).	<i>Lead</i>
<input type="checkbox"/> 3.16	<i>Test Old Painted Toys and Furniture for Lead</i> Lead exposure is of highest concern for children under 7 years old. Some old painted toys and furniture may contain lead-based paint. If you have toys or furniture such as these you may want to consider having them tested for lead. See the resource list for testing resources.	<i>Lead</i>
<input type="checkbox"/> 3.17	<i>Remove Vinyl Blinds that May Contain Lead</i> Use only mini-blinds that are lead-free. Look at the packaging and labels on new blinds. If there is no lead-free label, then assume that the blinds have lead additives. When exposed to sunlight and heat, vinyl blinds that contain lead can produce lead dust, which is easy for children to swallow when playing indoors.	<i>Lead in Vinyl Blinds</i>

3D. Pest Control Inside the Home

<input type="checkbox"/> 3.18	<i>Repair or Replace Damaged Screens</i> Damaged window screens can allow insects, rodents, and birds to enter the home. The sharp edges can also injure children.	<i>Pest Control</i>
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3E. Carpet

<input type="checkbox"/> 3.19	<i>Precautions with Wall-to-Wall and On Slab Carpet</i> Wall-to-wall carpet tends to gather dust and other settled contaminants, because it is more difficult to clean than hard surfaces. These contaminants can be stirred up into the air and cause respiratory irritation for sensitive individuals; they are also a good food source for developing molds. Frequent and thorough vacuuming using vacuums with high-efficiency filters/bags, especially in areas with heavy traffic, can remove much of the dirt. However, periodic deep carpet cleaning, such as hot water or 'steam' extraction, is also recommended (carpet and pads must be dried within 24 hours to prevent mold growth). Carpeted concrete floors that are above a water source (such as a high water table), or have poor drainage underneath or around the edge are more likely to develop moisture condensation and mold growth in the carpet, carpet pad, and on the concrete floor.	<i>Carpet Moisture & Mold Cleaning</i>
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<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 3.20	Consider Removing Old Wall-to-Wall Carpeting Dust, mold spores, pet dander, dust mite allergens, and pesticides settle in carpets and, because it can be difficult to clean carpets thoroughly, they accumulate as the carpet ages. Consider removing old carpet, to alleviate asthma or allergies. However, since new carpets may have high levels of chemicals that may be hazardous when breathed, consider buying 'green label' carpet, airing out new carpet in a garage or other unoccupied space before installing, or installing hard surface flooring (tile, wood, etc.).	<i>Carpet</i>
<input type="checkbox"/> 3.21	Shag and Plush Carpets Trap More Dirt and Are More Difficult to Clean Level loop carpets (tight weave) tend to hold less dirt and dust and are easier to clean rather than plush or shag. Carpet with cloth backing rather than rubber and with low Volatile Organic Compound (VOC) levels reduce the toxic compounds you breathe.	<i>Carpet</i>
<input type="checkbox"/> 3.22	Secure Carpets and Rugs Secure carpet and area rugs with a rubber mat to hold in place and reduce slips and falls. When installing new carpet, or securing existing carpet, consider not gluing carpet down to reduce exposure to toxic glues. Instead, use rubber mats or tack strips.	<i>Carpet</i>

3F. Cleaning

<input type="checkbox"/> 3.23	Increase Frequency of Cleaning Vacuum carpets, furniture, and other fabric surfaces to remove dust, mites and other debris. If anyone has asthma, carpets should be vacuumed once a week, and bedroom carpets twice a week. Use high efficiency filters in the vacuum to trap the particles and keep them from being blown back into the room (see action item 3.26). Damp mop hard floors and damp wipe surfaces frequently to pick up the dust instead of moving it around your house. If there is lead in the home, store mops, rags, and buckets so that they are inaccessible to children.	<i>Cleaning</i> <i>Carpet</i>
<input type="checkbox"/> 3.24	Perform Thorough Cleaning A very thorough cleaning of <u>all</u> surfaces can reduce accumulated dust, dust mites, and pet dander so that less is available to irritate sensitive individuals. These thorough cleanings have been found to have a long-lasting effect on particle levels in buildings. Pay special attention to vacuuming upholstered furniture (use high efficiency filters/bags on the vacuum -- see action item 3.26) and consider removing very old cloth-covered furniture. Dust, dust mites, and pet dander will build up in old cloth furniture and may cause asthmatics and people with allergies to sneeze, wheeze, and have difficulty breathing.	<i>Cleaning</i> <i>Carpet</i>
<input type="checkbox"/> 3.25	Clean Area Rugs Thoroughly Area rugs are easier than wall-to-wall carpet to clean thoroughly. It can be done by laundering in a washing machine, having them picked up and cleaned by a professional rug cleaning service, or vacuuming both sides of area rugs. Turn rugs carefully to avoid stirring up dust. Vacuuming the underside will more thoroughly remove the dirt and dust. Vacuum up the dirt on the floor, then flip the rug and vacuum the top side again (use high efficiency filters/bags on the vacuum -- see action item 3.26). Sensitive individuals should not be present during vacuuming.	
<input type="checkbox"/> 3.26	Use Higher Efficiency Vacuum Bags A dusty odor when vacuuming is usually caused by very fine particles that are not captured and held by the filter/bag, but are blown back into the room. When anyone, especially children or people with asthma, breathe in this dust it can cause irritation to the lungs. Use high efficiency bags, labeled 'microfiltration' or 'HEPA', that can be purchased at most retail stores like Wal-Mart or Target. These bags will cut down on the amount of dust released into the indoor air. Check bag and/or belt monthly. Replace bag when half full.	<i>Cleaning</i>
<input type="checkbox"/> 3.27	Remove and Wash Work Clothes Separately Don't wear dirty work clothes in the house. Take them off when you get home and wash them (separate from other clothes) as soon as possible to reduce the chance of contaminating other clothing.	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
3G. Hazardous Household Products		
❑ 3.28	<p>Exposure to hazardous materials in cleaners, art and hobby supplies, and pesticides can take place from swallowing, inhaling, or absorption through the skin. Accidental swallowing is the most likely cause of trouble for children, but strong odors and fragrances can also cause problems. Keep children away from areas where hazardous materials or pesticides are used and store all hazardous materials in locked cabinets.</p> <p>When they play with paints and markers, children are likely to put them in their mouths or decorate their hands and faces. Make sure children use only products that are non-toxic and be sure that they wash their hands after playing with any art materials.</p>	<p><i>Hazardous Household Products</i></p> <p><i>Arts-Crafts-Hobbies</i></p> <p><i>Poison</i></p>
❑ 3.28a	<p>Secure Tobacco, Alcohol, and Medicines Since children often explore by putting things in their mouth, and by mimicking adult behaviors, make dangerous items such as tobacco and alcohol products and medicine inaccessible by storing them in a locked cabinet. Overdoses of medicine or swallowing tobacco products or cigarette butts can be toxic and/or fatal to children 6 years in age, or younger.</p>	
❑ 3.28b	<p>Consider Using Less-Hazardous Products:</p> <p>a) Substitute unscented and non irritating products</p> <p>b) Use water based, low toxicity paints and marking pens</p> <p>c) Use non-toxic cleaning products (baking soda, white vinegar, liquid soap)</p> <p>d) See handout for additional suggestions.</p> <p>e) Don't overuse any product. Follow instructions carefully to minimize its use.</p>	
❑ 3.28c	<p>Use Outdoors or With More Ventilation Even if children are not using the products themselves, the fumes and odors can be strong enough to trigger asthma attacks and cause other adverse health reactions. Use hazardous products outdoors, provide more ventilation by opening two windows and using a fan, or use in an area with an exhaust fan operating.</p>	
❑ 3.28d	<p>Wear Gloves and Goggles To avoid contact with these materials, and to keep children from contacting the product on your hands, wear gloves and goggles when using corrosive products or pesticides. When you are done, rinse, remove gloves, and store out of reach of children, or discard.</p>	
❑ 3.28e	<p>Don't Mix Hazardous Products Some mixtures of hazardous products can be flammable, explosive, or give off toxic gases/fumes. Be especially careful not to mix products containing ammonia with products containing chlorine (bleach, some cleansers).</p>	
❑ 3.28f	<p>Store Flammable Materials Away From Fire and Heat To avoid the risk of leaks or fumes from flammable materials being ignited, move flammable materials away from fire or source of heat.</p>	
❑ 3.28g	<p>Make Hazardous Products Inaccessible To make hazardous products less accessible to children, move these products above the reach of children, and place in a storage cabinet with a lock, preferably above floor level. Where possible, remove hazardous products from the living space.</p>	
❑ 3.28h	<p>Store Hazardous Products Safely Never store hazardous products in pop or milk bottles. It is easy for children to mistake poisons for beverages when they are in familiar drink containers. Even in an inaccessible and locked cabinet, leaking fluids from damaged containers can come into contact with children.</p>	
❑ 3.28i	<p>Dispose Of Unsafe Products Properly Never dispose put pesticides or hazardous products down a septic (toilet or sink) or storm sewer drain, in the trash, or dumped on the ground. Follow label instructions when disposing of these products. Use them up (if they haven't been banned since their purchase) or take them to a hazardous waste collection site. See the resource list and handout for more information.</p>	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 3.28j	Post Poison Control Number Near Phone If your child is poisoned, immediate access to poison control information may save their life.	Poison

3H. Arts, Crafts, and Hobbies

☐ 3.29	<p>Hazardous art and hobby products include adhesives, paints, spray coatings, markers, photography chemicals, and many specialized products for different hobbies. Other countries do not have the same safety regulations as the United States; it is safest to buy art materials made in the United States.</p> <p>Of special concern is lead from soldering activities and products used by children, since children are more susceptible to toxic chemicals than adults.</p> <p>Products that are used often and in unventilated areas can be very dangerous. It is best to engage in these activities out of the living area: outdoors, or in a ventilated garage, shed, or room separate from the home. The ventilation can be provided by opening 2 windows and using a fan, or by operating an exhaust fan.</p> <p>Learn more about the risks of these activities and appropriate safety equipment to minimize hazards to you and other family members.</p>	<p>Hazardous Household Products</p> <p>Arts-Crafts-Hobbies</p> <p>Poison</p>
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3I. Drinking Water

☐ 3.30	<p>Adjust Hot Water Temperature Hot water below 110°F is not hot enough to kill all the disease organisms that may be in the water, and is also less effective for cleaning and proper hand washing. However, at temperatures of 130°F, and above, the risk of scalding increases, especially for children, disabled, and the elderly. Water temperatures of at least 130°F are required to kill dust mites during washing of bedding, rugs, etc. Therefore, in homes where dust mite control is important, temperatures should be kept at 130°F, while in other homes, 120°F to 125°F may be a better setting. Also, anti-scalding devices can be installed on faucets, bathtub, and showers. Bedding could also be washed at a laundromat where hot water is available. For assistance, see the resource list.</p>	Drinking Water
☐ 3.31	<p>Consider Testing for Lead in Water Some water pipes, fittings, and fixtures may contain lead. The lead may leach out of pipes into tap water. Contact your water supplier (see resource list) for information about the likelihood of lead in the water pipes in your area. If you suspect that the plumbing contains lead, consider having your water tested for lead. See the resource list for agencies and companies that can help with testing.</p>	Drinking Water
☐ 3.32	<p>Reduce Lead in the Drinking Water If you suspect that you have lead in your house plumbing, or are unsure, and water from the faucet hasn't been used in 6 hours, flush pipes by running cold water for at least 2 minutes. Use only cold water for drinking, cooking, and especially for making baby formula. Hot water is more likely to leach lead from pipes.</p>	Drinking Water
☐ 3.33	<p>Periodically Test Private Well Water Because private wells are not regularly monitored, they are more likely to have undetected contaminants that could cause short-term and long-term health problems. Consult a testing laboratory or public health/environmental agency for advice on specific tests (see resource list).</p>	Drinking Water
☐ 3.33a	<p>Test Water if Unusual Smell, Taste, or Appearance Some water problems can cause the water to have an obvious and unusual smell, taste, or appearance. If your water has any of these characteristics, it should be tested. Consult a testing laboratory or public health/environmental agency for advice on specific tests (see resource list). Note that some water pollutants do not have color, taste, or odor signs.</p>	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 3.33b	Test Water Periodically Conditions in and around wells can change over time, such as with pesticide applications, chemical spills, and neighboring septic systems that develop leaks, or are over-loaded. Therefore, periodic testing of private well water can help to identify hazardous pollutants that have entered the well or water table. See the resource list for the names of agencies and companies that can advise you and perform the testing.	
<input type="checkbox"/> 3.33c	Secure a Supply of Safe Drinking Water If the drinking water has been contaminated, prompt action may be necessary. Until the problem can be corrected, it is a good idea to get water for drinking and cooking from an uncontaminated source or to use bottled water. Also minimize showers -- they can easily release water contaminants into the air. See the resource list for agencies and companies that can provide guidance on correcting water quality problems.	

3J. Indoor Safety Hazards

<input type="checkbox"/> 3.34	Install and Test Smoke Detectors To alert your family to possible fires in the dwelling, equip your home with at least one smoke detector on each floor, preferably located outside the bedrooms. Test them monthly and replace batteries twice a year (for example, at the change-over to and from daylight savings time).	<i>Smoke Detectors</i>
<input type="checkbox"/> 3.35	Install a Fire Extinguisher A fire extinguisher that is ready for use should be located in the kitchen (also possibly near the fireplace or wood stove) in case a fire occurs. If the fire has already begun to spread or the fire extinguisher was unable to extinguish the fire, all occupants should evacuate the building and contact the fire department. Remember, fires can spread very rapidly -- they may double in size every minute -- and quickly block exits and escape paths.	<i>Fire Extinguishers</i>
<input type="checkbox"/> 3.36	Cover Unused Electrical Outlets with Safety Caps Cover unused electrical outlets with safety caps to prevent small children from inserting their fingers or metal objects and being injured from electrical shock.	<i>General Safety</i>
<input type="checkbox"/> 3.37	Tie Up Long Cords Keep window covering cords out of reach of children. They can become entangled in the cords and strangle.	<i>General Safety</i>
<input type="checkbox"/> 3.38	Use Safety Gates and Window Guards to Restrict Access Use safety gates at top and bottom of stairs to prevent small children from being injured due to falls. Gates can also keep small children out of areas that have hazardous activities, equipment, or products. Use window guards to keep children from falling from upstairs windows.	<i>General Safety</i>
<input type="checkbox"/> 3.39	Secure Electrical Cords Out of Way Secure lamp and appliance cords so children can't pull them down or trip over them.	<i>General Safety</i>
<input type="checkbox"/> 3.40	Keep Walkways, Doorways, and Stairs Clear Keep walkways, doorways, and stairs in good repair and clear of toys and other items to reduce injury due to falls or trips.	<i>General Safety</i>
<input type="checkbox"/> 3.41	Modify or Retrofit Interior Locking Doors Children can lock themselves in a room or a closet either on purpose or by accident. During an emergency, a locked door can keep a child from being helped by an adult. Interior door locks can be disabled or replaced by non-locking doors. Newer interior door locks often come with a special key that unlocks the door in case of an emergency.	<i>General Safety</i>
<input type="checkbox"/> 3.42	Shield Hot Surfaces To prevent burns, children should not be able to touch devices that can reach very high temperatures, such as fireplaces, wood stoves, floor furnaces, radiators, and electric heaters.	<i>General Safety</i>

Section 4. LIVING AND FAMILY ROOMS

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 4.1	Maintain Suitable Indoor Temperatures and Humidity When indoor temperatures remain below 60°F for extended periods, it is more likely that moisture will condense on cool indoor surfaces and lead to mold growth (see action item 3.1). Likewise, indoor humidity levels above 50% encourage dust mite growth, while levels above 60% stimulate moisture condensation and mold growth (see action item 3.6).	<i>Moisture & Mold</i> <i>Ventilation</i>
<input type="checkbox"/> 4.2	Remove or Thoroughly Clean Old Cloth-Covered Furniture Dust, dust mites, and pet dander will build up in old cloth furniture and may cause asthmatics and people with allergies to sneeze, wheeze, and have difficulty breathing (see action item 1.10). Pay special attention to vacuuming upholstered furniture and consider removing or replacing very old cloth-covered furniture. Use high efficiency filters in the vacuum -- see action item 3.26	<i>Asthma</i> <i>Cleaning</i>
<input type="checkbox"/> 4.3	Keep Pets Off Furniture and Beds To minimize the exposure of persons with allergies and asthma to pet dander, keep pets off furniture and beds. If they do sleep on these items, vacuum the surfaces or launder the bedding more frequently. See action item 1.8	<i>Asthma</i> <i>Cleaning</i>

Section 5. KITCHEN

<input type="checkbox"/> 5.1	Reduce the Refrigerator Temperature to 35°F - 40°F Disease-causing bacteria grow more rapidly in food stored in refrigerators with temperatures greater than 45°F.	<i>Food Safety</i>
<input type="checkbox"/> 5.2	Lower Freezer Temperature to 0°F, or Lower The freezer temperature should be 0°F, or lower, to keep foods fresh and safe for an extended period of time.	<i>Food Safety</i>
<input type="checkbox"/> 5.3	Clean Refrigerator Coils and Drip Pan More Frequently Dust and dirt on the refrigerator coils can be a source of airborne irritants to persons with allergies and asthma, and can increase the energy use of the appliance. The coils, usually located on the back or bottom of the refrigerator, should be cleaned periodically (preferably at least every 6 months) -- this is accomplished most easily with a vacuum cleaner. The drip pan, often found under the refrigerator or near the motor, collects moisture produced during operation of the refrigerator and allows it to re-evaporate back into the room. Water standing in this pan is an ideal place for molds and slimes to grow. When the pan dries, these become airborne and act as a potential allergen to many people. Therefore, the pan should be removed and cleaned at the same time as the coils.	
<input type="checkbox"/> 5.4	Consider Removing Carpeting It is difficult to keep carpets in the kitchen or bathroom dry and clean. Food crumbs can collect in the kitchen carpet and attract roaches and rodents. Moisture in carpet can promote mold growth. Consider removing kitchen and/or bathroom carpeting. Replace carpeting with hard, smooth flooring, or use washable rugs with slip-proof pads underneath.	<i>Carpet</i>
<input type="checkbox"/> 5.5	Repair Water Leaks And Remove/Repair Damaged Material Repair water leaks and remove or repair any damaged material to reduce mold growth and places for roaches to live. Roaches like to hide in warm, moist, and dark areas and in cracks less than 3/16 of an inch wide.	<i>Moisture & Mold</i> <i>Pest Control</i>
<input type="checkbox"/> 5.6	Reduce Moisture in Kitchen Fogging of kitchen windows probably means that large amounts of moisture are being produced in the kitchen. The moisture can lead to mold and cockroach problems. Reduce kitchen humidity by covering pots, opening windows, or using the exhaust fan above the stove.	<i>Moisture & Mold</i> <i>Ventilation</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 5.7	Child-Proof Cabinets Dangerous exposures and poisonings to toxic household chemicals, medicines, and tobacco can occur when they are handled, breathed or swallowed (see action item 3.28). Try to substitute non-toxic or low toxic cleaners and pest control measures (see action items 2.8 and 3.28b). To keep small children from getting into hazardous materials, the cabinets should be secured with devices that they are unable to open. Rubber bands can be removed easily by children and are not secure. Consider storing materials in high cabinets above floor level (see action item 3.28g).	<i>General Safety</i>
<input type="checkbox"/> 5.8	Unvented Combustion Appliances Kitchen stoves and ovens that use gas, propane or wood can give off hazardous combustion gases and particles. For example, carbon monoxide (CO) can have short-term health effects and at high levels can cause death; nitrogen dioxide (NO ₂) can cause respiratory irritation and long-term respiratory problems; and wood smoke can cause cancer. See action item 9.1. Cooking appliances are usually not vented to the outdoors. They can be safe to use if they are properly tuned and an open window or exhaust fan is available to remove the gases and particles.	<i>Carbon Monoxide & Combustion Appliances Ventilation</i>
<input type="checkbox"/> 5.9	Tune Stove or Oven Burners A properly tuned gas kitchen range and oven produces a steady blue flame and produces small amounts of carbon monoxide. A gas range or oven that has flickering or steady bright yellow or orange colors in the flames may be producing larger amounts of this pollutant. In this case, the range and/or oven burners should be tuned by a professional (see resource list). Common causes of yellow flames are dirty burners and gas being supplied at too high a pressure.	
<input type="checkbox"/> 5.10	Install and Use Kitchen Exhaust Fan/Range Hood Using a kitchen exhaust fan/range hood, properly vented to the outdoors, when the cook top or oven are used will help improve indoor air quality by removing odors and moisture produced during cooking. And for gas ranges and ovens, the fan will also remove the more hazardous combustion pollutants such as fine particles and carbon monoxide. If there is no fan, open kitchen windows during cooking.	<i>Ventilation</i>
<input type="checkbox"/> 5.11	Clean or Repair/Replace Kitchen Exhaust Fan A fan that is dirty or is not working properly will not be able to remove odors, moisture and pollutants from the range and oven.	<i>Ventilation</i>
<input type="checkbox"/> 5.12	Use Exhaust Fan or Range Hood While Cooking Using a range hood, properly vented to the outdoors, every time the range or oven is used will help improve indoor air quality by removing these unwanted pollutants.	<i>Ventilation</i>

5A. Pest Control

<input type="checkbox"/> 5.13	Clean Up To Avoid Roach And Rodent Problems a) Bags of flour, sugar, open boxes of cereal, etc. should be sealed in durable plastic, metal, glass, or ceramic containers. b) Frequently wash off kitchen counters and table with a clean damp sponge. c) Avoid leaving empty pop bottles and cans, litter, or unwashed dishes around. d) Eliminate water leaks, drips, or standing water. e) Store garbage in a container with a tight fitting lid. f) Mop the kitchen floor every week.	<i>Pest Control</i>
<input type="checkbox"/> 5.14	Store Hazardous Products Away From Food Store hazardous products away from food to avoid contamination. In addition, many chemicals look like food and can be easily mistaken (mothballs and gumdrops, apple juice and wood cleaner, mouthwash and window cleaner).	<i>Hazardous Household Products</i>
<input type="checkbox"/> 5.15	Never Use Insect Sprays Around Food Sprayed insecticides are more likely than liquids or solids to contaminate foods and preparation surfaces. The pesticides can then be eaten along with the food. Don't spray kitchen counters for roaches or other pests. Use sprays as a last resort.	<i>Pest Control</i>

Item #Specific Actions RecommendedHandout**Section 6. BEDROOMS**

- | | | |
|-------------------------------|---|-------------------------------------|
| <input type="checkbox"/> 6.1 | <i>Raise Temperature of Closet</i> To reduce moisture and mold problems in closets, consider leaving closet doors open or ajar to warm closet walls, especially on outside walls of the home. Leaving an approved ceiling light on in the closet may also be enough to raise the temperature of the closet. | <i>Moisture & Mold</i> |
| <input type="checkbox"/> 6.2a | <i>Consider Removing Carpeting, Stuffed Toys, Or Upholstered Furniture</i> These furnishings can collect dust, dander, and dust mites and can aggravate the health conditions of individuals with asthma or allergies (see action items 1.8, 1.10, 3.19, 3.20). | <i>Cleaning</i> |
| <input type="checkbox"/> 6.2b | <i>Consider Purchasing Allergy Control Covers</i> These covers for pillows and/or mattresses may help those with allergies or asthma. We spend the most time in our homes sleeping in bedding that can provide a wonderful home for dust mites (and dust mite allergens). Encasing pillows and mattresses will significantly reduce exposure to dust mites and their allergen. The covers are available from some department and bedding stores or from specialty supply mail order companies (see resource list). | <i>Asthma</i>
<i>Cleaning</i> |
| <input type="checkbox"/> 6.2c | <i>Keep Pets Out Of Bedrooms</i> Reducing exposure to pet dander during sleeping hours can reduce symptoms for people with asthma and allergies. See action item 1.8. | <i>Asthma</i> |
| <input type="checkbox"/> 6.2d | <i>Consider Using a Portable Air Cleaner</i> Small, portable air cleaners can help to reduce airborne dust and some allergens that are triggers for people with allergies or asthma. These devices work well in small rooms, such as bedrooms. The devices must be regularly maintained (usually replacement of filters) to continue to operate properly. Avoid devices that produce ozone. See the handout for more information. | <i>Air Cleaning Equipment</i> |
| <input type="checkbox"/> 6.3 | <i>Open Bedroom Windows While Sleeping</i> To reduce indoor pollution levels, open bedroom windows at night to let in more fresh outdoor (only do this if there is little outdoor air pollution, and weather and security conditions permit). When the outdoor air has high levels of pollen or dust, do not open windows in the bedrooms of individuals with allergies or asthma. | <i>Ventilation</i> |
| <input type="checkbox"/> 6.4 | <i>Air Out Dry Cleaned Clothes</i> The chemicals used to dry clean clothes are hazardous pollutants that can linger in clothing. Remove plastic bag coverings and air out dry-cleaned clothing outdoors -- or in a garage, to avoid collecting pollens or dust on the clothing if the wearer has allergies or asthma -- before storing in closets. Dry clean only those clothes that require its use. As an alternative to dry cleaning some businesses now offer wet cleaning processes that do not use toxic chemicals, but still clean all types of clothing. | |
| <input type="checkbox"/> 6.5 | <i>Air Out Any Clothing Stored In Mothballs</i> Air out mothballed clothing, outdoors or in a garage (to avoid collecting pollens or dust on the clothing if wearer has allergies or asthma), before wearing or storing in the home. Avoid breathing in mothball chemicals; they are possible carcinogens. Mothballs can be mistaken for gum drops or other candy. Keep out of reach of children. Consider alternatives to mothballs, such as cedar chips and strips. | <i>Hazardous Household Products</i> |

6A. Crib Safety

- | | | |
|------------------------------|--|--------------------|
| <input type="checkbox"/> 6.6 | <i>Keep Cribs Safe</i> Babies can suffocate or strangle in unsafe cribs when they become trapped between poorly fitting or broken parts. The crib should have sturdy latches, slats spaced no more than 2 3/8 inches apart, fitted mattress with no more than 2 finger width to crib side, and rail 36 inches above top of mattress. Use only crib sheets that do not easily come loose from the mattress. Repair, modify, or replace unsafe cribs. | <i>Crib Safety</i> |
|------------------------------|--|--------------------|

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
<input type="checkbox"/> 6.7	Babies Should Sleep on Back or Side Place babies on their back or side in a crib with a firm, flat mattress and no soft or fluffy bedding or pillows underneath to reduce risk of suffocation, or sudden infant death syndrome (SIDS).	<i>Crib Safety</i>

Section 7. BATHROOMS & UTILITY ROOMS

<input type="checkbox"/> 7.1	Consider Installing a Bathroom Exhaust Fan To reduce moisture and mold, install a bathroom exhaust fan that is properly vented to the outdoors and preferably connected to a timer. Another option is to always open a window.	<i>Moisture & Mold</i> <i>Ventilation</i>
<input type="checkbox"/> 7.2	Clean or Repair/Replace Bathroom Exhaust Fan Fans that are dirty or are not working properly will not remove the moisture from the bathroom.	<i>Moisture & Mold</i> <i>Ventilation</i>
<input type="checkbox"/> 7.3	Use Exhaust Fan While Bathing Operate the bathroom exhaust fan during bathing. If a timer is available, continue operating the fan for 30 minutes after bathing. These procedures will help remove moisture produced during and after baths or showers, and will limit mold growth. Also use a squeegee to wipe down shower walls and tub.	<i>Moisture & Mold</i> <i>Ventilation</i>
<input type="checkbox"/> 7.4	Vent Clothes Dryers to the Outdoors The exhaust from clothes dryers contains large amounts of moisture, lint fibers and particles and should be vented to outdoors. Gas dryers also produce combustion pollutants, with carbon monoxide a special concern. When vented to an indoor or enclosed space, the accumulation of moisture can cause mold problems to develop, and build-up of lint can create a fire hazard.	<i>Moisture & Mold</i> <i>Ventilation</i>
<input type="checkbox"/> 7.5	Do Not Hang Wet Laundry Indoors To Dry Moisture from wet laundry can raise indoor humidity levels, causing moisture problems and mold to grow. If possible, use a clothes dryer vented to the outside, hang clothes outdoors (when pollen and dust levels will not affect family members with allergies and asthma), or hang clothes in a bathroom with the exhaust fan on.	<i>Moisture & Mold</i> <i>Ventilation</i>

Section 8. BASEMENT OR CRAWLSPACE

<input type="checkbox"/> 8.1	Correct Moisture Problem Repairs may involve drainage, downspouts, and foundation dampproofing. See action item 8.3 for basements and 8.4 for crawlspaces. Consult with a specialist (see resource list) on correcting a basement/crawlspace moisture problem.	<i>Moisture & Mold</i> <i>Crawlspaces</i>
<input type="checkbox"/> 8.2	Consider Removing Carpets Carpeting on concrete floors, especially in basements, is more likely to cause moisture condensation and mold development in the carpet, carpet pad, and on the concrete. To control the moisture and mold in basement carpets: <ul style="list-style-type: none"> ② Inspect carpet and pad regularly for mold and moisture ② Increase the basement temperature ② Use a dehumidifier ② Control other moisture sources (see action item 8.1) ② Remove moldy carpets and pads. Consider replacing the carpet with a hard flooring material, since new carpet may also become contaminated. 	<i>Moisture & Mold</i> <i>Carpet</i>
<input type="checkbox"/> 8.3	Consider Using a Dehumidifier If the basement has a moisture problem, consider using a dehumidifier in the basement to remove moisture from the air. Empty and clean the water pan frequently.	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 8.4	Cover Exposed Soil with Plastic Sheeting In areas with high water tables and wet soil conditions, the amount of moisture that enters a crawlspace from the soil should be reduced. Cover bare soil in the crawlspace with durable plastic sheeting (such as 6 mil black plastic). Overlap the edges of the sheeting approximately 12 inches and anchor with boards, gravel, bricks, or other weights.	<i>Crawlspaces</i>
❑ 8.5	Crawlspace Ventilation Mold (and moisture) in the crawlspace can damage the building, enter the home, and cause respiratory distress in sensitive individuals. However, crawlspace moisture and mold problems are not usually solved by opening the foundation vents that are required by most building codes. In fact, in some climates (such as those with high humidity), these vents can allow more moisture to enter the crawlspace and make matters worse. The best way to control these problems is to: 1) Correct drainage problems (see action items 2.6 - 2.6e). 2) Install a ground cover to reduce moisture entry from the soil (see action item 8.4). 3) Repair any plumbing leaks. Exhaust fans may also need to be installed to remove air from crawlspaces that have other, unavoidable air pollutants (for example radon). It is advisable to consult with a specialist on crawlspace moisture, mold, and contaminant problems. See the handout and resource list for more information.	<i>Crawlspaces</i>

Section 9. HEATING AND COOLING EQUIPMENT

❑ 9.1	Combustion appliances (gas or propane stove or furnace, wood stove, fireplace) have a strong influence on ventilation in a home. All combustion appliances need air to burn their fuel. When operating, the demand for air is quite high. If that air is being drawn from inside the home, then a combustion appliance causes outdoor air to be pulled in through cracks around windows and doors. Even properly operating combustion appliances produce small amounts of carbon monoxide and other pollutant gases. But in faulty appliances, these pollutants can be produced in much larger quantities. Carbon monoxide is a colorless, odorless gas that interferes with the delivery of oxygen throughout the body. At high concentrations it can cause unconsciousness and death. Lower concentrations can cause dizziness, headaches, weakness, nausea, confusion, and disorientation. Carbon monoxide from improperly operating combustion appliances causes many deaths every heating season. Some air conditioning equipment, that operates by burning gas, also has the potential for causing a carbon monoxide problem during warm weather.	<i>Carbon Monoxide & Combustion Appliances</i> <i>CO Alarms</i>
❑ 9.2	Don't Heat Your Home With Unvented Combustion Appliances Unvented combustion appliances release dangerous pollutants, including carbon monoxide, directly into the dwelling. They should not be used to heat the home. Vent or remove kerosene or portable propane heaters in the home. Do not use a cooking stove to heat your home. Burning charcoal generates large amounts of carbon monoxide.	<i>Carbon Monoxide & Combustion Appliances</i> <i>CO Alarms</i>
❑ 9.3	Regularly Inspect and Clean Chimney The chimney should be inspected and cleaned at least once a year to make sure that the chimney can remove smoke and hazardous gases from the firebox. Cleaning also reduces the risk of chimney fires. Consider contracting with a chimney professional for these services.	<i>Carbon Monoxide & Combustion Appliances</i> <i>CO Alarms</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 9.4	Inspect Wood Stove/Fireplace If you can see or smell smoke inside the dwelling during use of a fireplace or wood stove (after initial start-up), it usually means the device is not venting properly. This smoke contains many hazardous compounds and particles. There can be many reasons for poor venting, but opening a nearby window during use of the fireplace or wood stove, sometimes helps. Otherwise, have the fireplace/wood stove checked by a professional (see resource list). Consider repairing or replacing wood stove or venting equipment, or using it less often.	<i>Carbon Monoxide & Combustion Appliances</i>
☐ 9.5	Limit Storage of Firewood Indoors Do not store more than a couple of days worth of firewood inside. Wood can increase the indoor moisture levels and may be a source of insects and molds, and a nesting place for rodents.	
☐ 9.6	Use Gas Log Fireplaces Only If They are Properly Vented Gas log fireplaces are often not vented or the fireplace damper has been closed/sealed. The combustion process releases carbon monoxide and other contaminants, along with moisture into the home. Only use these devices if they are properly vented. Have the device professionally inspected for proper venting (see resource list for local utility companies and private contractors).	<i>Carbon Monoxide & Combustion Appliances</i>
☐ 9.7	Inspect and Repair Damaged Vent Pipe A damaged vent pipe can cause combustion gases, including carbon monoxide, to leak into the living space. Call a qualified heating specialist to inspect the vent pipe and repair it if necessary.	<i>Carbon Monoxide & Combustion Appliances</i>
☐ 9.8	Inspect for Leaking Fuel or Gases Leaking combustion gases are hazardous to your family's health. Leaking fuels (including heating oil, natural gas and propane) can lead to fires or explosions. Have heating equipment checked for proper operation by a heating specialist (see resource list). Call the gas company immediately if you smell propane or natural gas.	
☐ 9.9	Consider Professional Testing for Backdrafting and Spillage Indoor air quality researchers suspect that much of the heating equipment in homes has a problem with proper venting of hazardous combustion gases. Typical problems include: <ul style="list-style-type: none"> ② "Spillage": when the gases do not enter the vent (chimney) but "spill" into the home for a prolonged time after start-up ② "Backdrafting": when pressures in the house cause air to move down the vent and into the house rather than pulling the combustion gases out of the building. These conditions can be difficult to identify and detect -- tests should be performed by a professional (see resource list).	<i>Ventilation</i>
☐ 9.10	Install Carbon Monoxide Alarm Install a carbon monoxide (CO) detector/alarm as a precaution against CO poisoning from all sources, including combustion appliances. A CO alarm should be installed near each separate bedroom area. For each bedroom area, the best location for the alarm is at the entryway to the most frequently-used bedroom of an adult. The alarm can warn you of dangerous levels of CO and give you time to leave the home before becoming ill. A basic CO alarm can be purchased at many retail or hardware stores for \$25-35.	<i>CO Alarms</i> <i>Carbon Monoxide & Combustion Appliances</i>
☐ 9.11	Take Prompt Action -- Call Immediately for Emergency Services If the CO alarm has sounded, it has indicated the presence of dangerous levels of CO. If anyone has symptoms of CO poisoning (see action item 9.1), then determine if everyone in the home is accounted for, evacuate the home, and call for emergency medical and repair services from a phone outside the home. <p>If there are no symptoms, try resetting the alarm. If the alarm persists, open all doors and windows, turn off all CO sources (furnaces, stoves, heaters, etc.), and call immediately for an emergency service visit by a specialist (see resource list) to inspect the possible causes of high CO levels. Do not wait for the alarm to sound again before calling.</p>	<i>CO Alarms</i>

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
❑ 9.12	<p>Look for Cause of Odors The moldy or dusty odors that you smell when the heating or cooling equipment is on could be related to moisture, mold, or dirt in the system. The contaminants that are making the odors can cause reactions in individuals with allergies or trigger attacks in asthmatics. If the problem persists, it is advisable to call a qualified heating and cooling specialist to inspect the equipment. For possible contamination in the ducts, see 9.13. Dusty odors when an electric baseboard, steam, or hot water system starts up indicate a need to vacuum around the finned radiators. This will also improve efficiency. See the resource list for contacts on assessing the source of the odors.</p>	<i>Moisture & Mold</i>
❑ 9.13	<p>Should Your Ducts be Cleaned? Ductwork can collect dirt, dust, and debris. If moisture is also available, mold can grow. A commonly asked question is "Should I have my air ducts cleaned?". Because the benefits of duct cleaning are usually uncertain, the U.S. EPA does not recommend that ducts be cleaned, except on an as-needed basis. It is normal to have some dust in ducts. You may want to consider having your ducts cleaned if they are visibly contaminated with substantial mold growth, pests or vermin, or are clogged with large deposits of dust or debris.</p> <p>If you decide to have your ducts cleaned, learn more about duct cleaning from the handout, then carefully select a knowledgeable and reputable company. Avoid the use of biocides and duct sealants (they may pose a health hazard to the occupants).</p>	<i>Ductwork and Air Cleaning Equipment</i>
❑ 9.14	<p>Measure Radon Levels in Homes with Return Ducts Below the Slab Because return air ducts and plenums operate under negative pressures, they can pull radon and other soil air pollutants from below the floor. Measure radon in these homes (see action item 3.11). If indoor radon levels are 4 pCi/L, or greater, consider abandoning these below-slab ducts, and re-routing through other locations. It is also possible that a properly-designed radon control system can be effective in lowering indoor radon levels, while leaving the below-slab ducts in place (see action item 3.12).</p>	<i>Radon</i>
❑ 9.15	<p>Replace Air Filters More Frequently Routinely replace the air filters in the heating/cooling equipment to get rid of the dirt and contaminants that were removed from the air and captured by the filter, and to keep the heating/cooling equipment operating efficiently. Replace air filters in heating equipment at least once each year, and if air conditioning is also used, the air filters should be replaced at least one more time each year.</p> <p>Choose replacement filters that have a moderate to high efficiency and do not degrade the performance of the heating/cooling equipment. They will remove more of the fine particles that can get into your lungs. Pleated filters are becoming available in common sizes and are more efficient than the inexpensive, flat fiberglass filters. Consult with a heating and cooling contractor on upgrading your filters, or visit a local building supply store (or Sears) to make your own selection.</p>	
❑ 9.16	<p>Maintain or Remove Humidifier Humidifiers attached to furnaces or ducts are often in a poor state of repair and may cause moisture and mold to collect in the ducts and other heating/cooling system components. Consider removing the humidifier or turning off the water supply (this may require a heating/plumbing specialist). Otherwise, routinely inspect and clean the humidifier to remove build-up of deposits, mold or bacterial contamination.</p>	
❑ 9.17	<p>Service Heating Equipment Regularly A heating specialist should inspect, clean, and if necessary, adjust/repair all heating equipment (including hot water tank) at least once each year (preferably before the heating season). This routine maintenance will improve the equipment's performance, reduce its production of pollutants, and correct other hazardous conditions before they get worse.</p>	

<u>Item #</u>	<u>Specific Actions Recommended</u>	<u>Handout</u>
☐ 9.18	<i>Service Cooling Equipment Regularly</i> A specialist should perform routine maintenance of cooling equipment at least once each cooling season to remove unwanted sources and accumulated moisture, and mold/bacterial growth. All cooling equipment either produces or uses water as part of its operation. If not properly maintained, this water can blow into ducts, overflow or leak from plugged or rusty drip pans. This will cause mold to grow in ducts and other equipment components, on coils, in drip pans, and on evaporative cooler pads. The cooling pan in evaporative cooling units should be inspected monthly during cooling season (can often be performed by occupants).	

Note: The use of brand names in these actions is not an endorsement of the products by the project sponsors.

Tracking Information

Occupant Name _____	Reviewer _____
Address _____	Date _____
Phone Number _____	

Follow-up

- Mailed postcard back to [*local organization*] _____
- Reminder phone call (2 weeks after visit)
Outcome: _____

- Follow-up call (6 weeks after visit):
Outcome: _____

