

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-1: Module 2 Setting Up Your Workspace to Contain Lead Dust

- This is the module title slide.
- Announce the module and move quickly to the next slide.

Overview of this module: The table below summarizes the content and teaching methods for this module. This is for your reference. Do not cover this with the participants.

Module 2: Set Up Your Workspace to Contain Lead Dust	1 hour
<ul style="list-style-type: none">➤ What is containment?➤ Interior containment➤ Exterior containment➤ Special considerations for high dust jobs➤ <u>Activity</u>: Hands-on set-up exercise	<p><u>Key message</u>: Keep the dust in the work area and make it easier to clean up.</p> <p><u>Notes</u>: Slides are followed by an exercise.</p> <ul style="list-style-type: none">➤ Slides: 30 minutes➤ Hands-On Exercise: Students set up containment in a small area. They lay plastic and secure it. Trainer demonstrates how to do a door flap. (30 minutes) <p><u>Preparing for this module</u>: Prepare materials for hands-on exercise and identify appropriate locations for groups to work in.</p> <p><u>Materials needed</u>: See Set-Up Toolkit for list of materials needed.</p> <p><u>Options</u>: The trainer can replace the hands-on exercise on set-up with a paper-based exercise in which students look at pictures of worksites and identify good and bad practices. See Appendix 7 for Optional Exercise #2. (The trainer must use one of these two exercises.) The trainer may also choose to use the hands-on exercise later, as part of a comprehensive hands-on exercise (as shown in Lesson Plan #2).</p>

Module 2

Set-Up Your Workspace to Contain Lead Dust

6/11/03



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Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-2: Module 2 Overview

- This module covers the bulleted list of topics on the slide. Review this list with the class participants. Do not spend a lot of time on this slide as the slides in the rest of the module will answer many questions that arise.
- Module objective. The purpose of this module is to learn how to follow a few simple set-up techniques that will stop the spread of lead-contaminated dust to non-work areas.
- It is critical on this slide that participants understand the distinction between high dust and low dust jobs. The concept of high dust jobs is discussed throughout the course. The working definition in the participant notes is an informal definition that the participants may use as a guideline to differentiate between high and low dust jobs.
 - Ask the participants for examples of high and low dust jobs. Ask them about the reasoning behind their examples – why one particular job is high dust and another low dust?
 - Emphasize to the participants that the work practices and equipment used on a job and the size of the job are factors that will affect the amount of dust generated. For example, vigorous hand sanding a large work area could create enough dust that it might extend beyond five feet from the work area.

Module 2 Overview

- ◆ **What is containment?**
- ◆ **Four steps for interior activities**
 - Special considerations for high dust jobs
- ◆ **Two steps for exterior activities**
 - Special considerations for high dust jobs

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Upon completion of this module you will be able to

- Perform set-up techniques to contain lead dust and allow for easier clean-up at the end of the day and at the completion of the job.
- Identify appropriate set-up techniques for high dust jobs that may require additional containment.

What is a high dust job?

- A working definition of a **high dust job** is one that creates dust and debris that will spread beyond five feet from the area that you are working on. Conversely, a **low dust job** is one in which dust and debris will not spread beyond five feet from the work area.
- In general, jobs that involve only a small work area create less dust than jobs that involve a larger work area. However, in addition to the size of the job, the work practices (e.g., sanding), and equipment (e.g., power sander) used will affect how much dust is created. So, for example, using a power sander without a HEPA-filter vacuum attachment on a two square foot area could be considered a high dust job. Using power tools equipped with HEPA filtered vacuum attachments will create less dust than using power tools without these attachments.
- Examples of high dust jobs include:
 - Hand-scraping large areas
 - Using power sanders (e.g., orbital, belt) without HEPA equipped vacuum attachments and shrouds
 - Using electric planer without a HEPA equipped vacuum attachment and shroud
 - Removing paint with a heat gun and scraper
 - Using circular or reciprocating saw
 - Removing dry residue and paint after using chemical strippers
 - Demolishing painted surfaces using hand or power tools
 - Removing building components with painted surfaces that are in poor condition

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Module 2 Instructor Notes

Slide 2-3: What is Containment?

- This slide may best be covered using a question and answer format. The following slides in the module identify equipment needed and how to do containment set-up, so don't try to cover everything in the module on this slide.
- Questions for class discussion:
 - How does containment protect co-workers and residents? [Answer: keeps lead-contaminated dust in a specific area with workers who are trained and working with or wearing proper equipment. It also keeps residents out of the work area until the job and clean-up is complete.]
 - How does containment make clean-up easier at the end of a job? [Answer: by limiting the clean-up area to approximately the work area or two feet beyond the work area.]
- Highlight the HUD requirement for containment in pre-1978 properties that receive Federal housing assistance, as explained in the participant notes.

What Is Containment?

- ◆ **Keeping lead-contaminated dust in the work area**
- ◆ **Benefits of containment**
 - Protects residents and workers
 - Easier clean-up at the end of the job

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What is containment?

- In general, there are many degrees of containment, ranging from simple plastic sheeting on the floor surrounding a small work area to a fully sealed dust room (discussed later in this module). Some types of containment are more effective than other types. For example, a drop cloth might be considered a form of containment by some, but because it is reusable and can trap and hold dust and paint chips, it can transport lead-contaminated dust from one job site to another. It is not an effective form of containment for working in homes with lead-based paint.
- For purposes of this training, “containment” is anything that stops lead-contaminated dust from spreading beyond the work area to non-work areas.

Benefits of containment

- **Reduces the risk to you and residents.** Following the work area set-up suggestions of this module will protect you, your co-workers, and residents from the negative health effects of lead while remodeling, renovating, or painting. Reduced risk to you and co-workers is also dependent upon wearing proper personal protection equipment.
- **Easier clean-up.** The pre-work set-up process is essential to keeping lead contaminated dust within the work area where it can be easily cleaned. Proper containment of the work area helps to limit the areas you need to clean up after the job is complete. This saves time and money for clean-up.



In pre-78 properties that receive Federal housing assistance, containment is required.

Most work that disturbs paint in pre-1978 properties that receive Federal assistance, such as assistance from HUD or the U.S. Department of Agriculture Rural Housing Service, requires that containment be set up as show in this training. For work in these properties, use containment or check with the agency administering the assistance. Also check with the agency administering the assistance to find out if the occupants will be relocated during some or all of the work.

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Module 2 Instructor Notes

Slide 2-4: Current Interior Set-Up Practices Spread Lead-Contaminated Dust

- After defining containment in the previous slide, this slide identifies common set-up practices that do not contain lead-contaminated dust.
- Ask the participants: What can you identify in the illustration that indicates a lack of containment of lead dust?
 - Drop cloth. When the drop cloth is lifted and moved (even during clean-up) it will leave dust in the air and on the floor or furniture. Also, if reused at a new worksite, lead-contaminated dust from the previous worksite will move to the new site.
 - Furniture in the room that is not covered. Lead-contaminated dust will settle on the uncovered furniture and be transferred to anyone who comes in contact with it.
 - Personal belongings. Personal belongings, especially toys and beverage containers, should not be in the work area.
 - Open door and windows. Allows lead-contaminated dust from exterior work to enter the room and from interior work to get outside. Breezes entering the room from open windows also spread dust far beyond the interior work area.
 - Broom or shop vacuum. Using these two items often causes settled dust to move into the air again where it can be transported throughout the room being clean and to other rooms in the house.
- Emphasize that these practices are not wrong for all remodeling, renovation, and painting activities, but for jobs that disturb *lead-based* paint, common practices should be modified to ensure that lead dust is contained.

Current Interior Set-Up Practices Spread Lead-Contaminated Dust



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- ◆ Reusable drop cloth
- ◆ Furniture and household objects in the room
- ◆ Open doors and windows
- ◆ Broom or shop vacuum

Do not use these practices when lead is present!



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Current practice for interior set-up typically involves

- **A reusable drop cloth** is an improvement over not using any drop cloth, but it can carry dust from one job site to other job sites, and contaminate vehicles and storage areas. Some of the dust captured by a drop cloth falls to the floor when folding the cloth to carry away. However, some of the dust stays with the drop cloth. When it is used again it may contaminate the new (clean) job site with lead-contaminated dust.
- **Allowing furniture and household objects to remain in the work area** while the work is being performed. Lead-contaminated dust may fall and remain on these furnishings and objects after the job is completed. Residents could easily come into contact with the lead-contaminated dust on them and get poisoned.
- **Allowing residents access to work area** while the work is underway. The residents are then exposed to the lead-contaminated dust and can track the dust to other parts of the building where it could linger. Again, residents could easily be exposed to the lead-contaminated dust on the furnishings and get poisoned.
- **Open windows and doors** allows lead dust to float into other parts of the building or over onto neighboring property.
- **Brooms and shop vacuums are typically used to clean up.** Both clean-up methods capture some dust, but shop vacuums especially can put more dust into the air than they clean up if the filters are dirty or inadequate. Vigorous sweeping may also put a lot of dust into the air. To be effective, containment must be practiced even when cleaning up after the job.

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Module 2 Instructor Notes

Slide 2-5: Overview of Interior Set-Up Steps

- Use this slide to highlight the upcoming four steps. Do not go into detail about the steps here. This slide is merely an introduction so that participants will have a structure to organize the information.

Overview of Interior Set-Up Steps

- ◆ **Step 1: Limit access**
- ◆ **Step 2: Cover belongings that can not be moved**
- ◆ **Step 3: Cover floors**
- ◆ **Step 4: Close windows, doors, and HVAC system**
- ◆ **Special consideration for high dust jobs**

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Overview of interior set-up steps

- Details for these steps are on the following several pages. These four steps will help contain lead dust to the work area for interior jobs.
- See page 13 in the *Lead Paint Safety Field Guide* for additional information. Appendix 1 contains a copy of the text from the *Lead Paint Safety Field Guide*.

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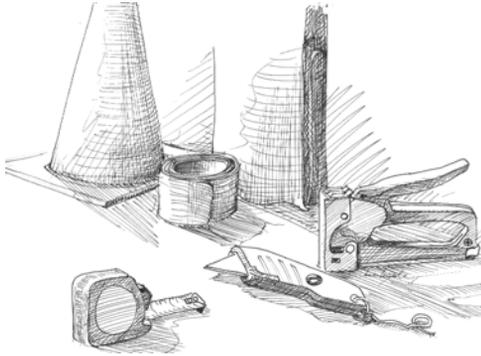
Module 2 Instructor Notes

Slide 2-6: Set-up Toolkit

- Some contractors divide their work into set-up, safe work practices, personal protective equipment, and clean-up. They then create four separate toolkits for each phase of the work. This makes it easy to keep all of the necessary supplies and equipment together in one place as work is begun, performed, and finished.
- This slide highlights important items in the **set-up toolkit**. Consider bringing in a set-up toolkit to show items or pass around in class. Actually having the toolkit in the class for participants to see first hand will bring home the message that by being organized it is easier to do set-up and containment.
- Show the class samples of the various tools and supplies that are used during set-up.
- Participants may be interested in knowing where they can go locally to obtain some of the supplies or equipment. Therefore, it might also be helpful to bring in a contractor's supply magazine and to have a general knowledge of prices and where the participants can obtain these supplies and equipment.
- Ask participants: Are any items that they would want to add to the toolkit? If so, what are they used for and how would they benefit set-up for containment?
- Note that Appendix 2 has a list of all the supplies in the toolkit.

Set-up Toolkit

- ◆ Barriers and signs
- ◆ Coverings for furniture, fixtures, plants, or outdoor play areas
- ◆ Other set-up containment items



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Typical items for work area set-up to contain lead-contaminated dust

Barriers

- Rope or other barrier
- Tape (bright color preferable)
- Saw horses
- Orange cones or other similar marker
- Signs

Coverings for Furniture, Fixtures, Plants or Out door Play areas

- Duct tape, painters tape, or masking tape
- Stapler
- Heavy plastic sheeting
- Utility knife or scissors
- Disposable mesh materials such as burlap, cheesecloth, or landscaping mesh

Other Set-Up Containment Items

- Tack pad (sticky pad for walking on to remove dust from soles of shoes)
- Small disposable towels or wipes
- Misting bottle

Ask your trainer if you have questions about where to find these supplies.

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Module 2 Instructor Notes

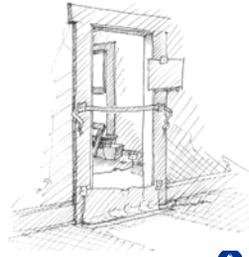
Slide 2-7: Interior Set-Up Step 1: Limit Access

- Ask participants: Have you ever limited access to your work area? If so, how? How successful was this? Would you have done this differently?
- Ask participants: Can you think of any other ways to limit access to the work area?
- Be sure to highlight all of the points on the slide if the class discussion has not addressed all of them.

Interior Set-Up

Step 1: Limit Access

- ◆ Instruct residents to stay away from work area
 - ◆ Do not allow small children (under 6 years) or pets near work area
 - ◆ Place a barrier or tape across entrances
 - ◆ Post a sign
- ◆ Do not allow eating, drinking, or smoking in the work area



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Restrict access to the work area and ask residents to stay away while work is underway

- Restricting access to the work area will avoid unnecessary exposure of residents, especially children, to lead dust and minimize its spread to non work-areas.
- Before the job starts, tell the residents to stay away from the area as much as possible. Residents and pets coming and going can easily track lead-contaminated dust throughout the home and into areas that are not being worked on and therefore to areas that are unlikely to be cleaned up promptly.
- This is especially true for small children under six years old. Be sure to explain to residents that this is for their own protection and that small children are most at risk of health problems from exposure to lead.
- You may need to provide an indication of how long you will be working in a particular area so that residents can plan ahead to obtain items that they may need before you begin working.
- Post a sign instructing people to stay out of the work area.
- The sign should be in the residents' native language if possible.

Place a barrier across entrances

- A physical barrier, such as a cone or masking tape, should be placed across doorways to remind residents to stay away, especially in buildings where more than one family lives. The barrier serves as a reminder to residents that people and pets should not enter the work area, and also signals that the area has not yet been cleaned up.

Do not allow eating, drinking or smoking in the work area

- This is primarily a protection for workers, but is also important if residents are living in or near the work area. Post signs that prohibit eating, drinking, or smoking in the work area. Dust in the air can land on food or be breathed when smoking. If food is set on an unwashed surface, it can easily pick up lead-contaminated dust, which is swallowed when eating the food.

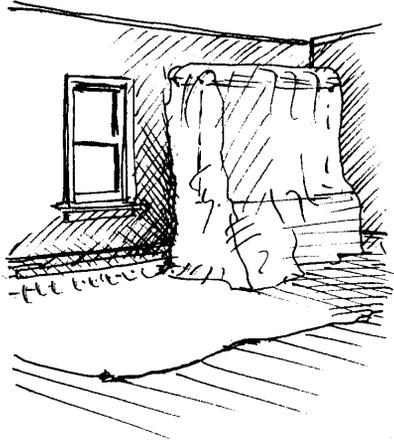
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Module 2 Instructor Notes

Slide 2-8: Interior Set-Up Step 2: Remove and Cover Belongings

- Highlight the importance of covering fixtures and furnishings to prevent dust from settling on these hard-to-clean objects.
- Emphasize that this activity is similar to the current practice to cover the furnishings with drop cloths but instead they will use plastic protective sheeting. Thicknesses of 4-6 mils are appropriate.
- Tell the participants that the dust that lands on these fixtures and furnishings can remain long after the job is complete. Also, cleaning these fixtures and furnishings could pose a hazard to the resident after the job is complete.
- Describe the illustration. Point out how *all* fixtures and pieces furniture are covered.
- Distribute pieces of plastic sheeting to the class. Allow all the participants to feel it.
- It may be helpful to know names of local hardware stores and suppliers that sell protective sheeting and the typical price per foot of common types or sizes.

Interior Set-Up Step 2: Remove and Cover Belongings



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- ◆ Remove belongings
- ◆ Cover furniture and objects in protective sheeting
 - Furniture
 - Carpet
 - Lamps, pictures, and other fixtures



2-8

Remove belongings

- For low-dust jobs, removing small items and covering furniture should adequately protect residents belongings. For high-dust jobs, see Page 2-11.

Cover furniture and other objects in the room with protective sheeting

- Cover all objects that were not removed from the room in protective sheeting. Completely cover all non-movable furniture, carpets, and other personal items with protective sheeting. Secure the protective sheeting to the floor with tape so that no dust can get onto the covered items. Optimally, everything should be removed.
- Protective sheeting such as heavy duty plastic sheeting is commonly used in many remodeling jobs. Protective sheeting can be bought at many hardware stores.
- If it is a high-dust job, remove all furniture from the work area.

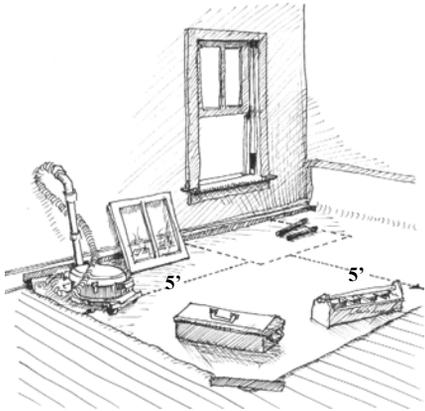
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Module 2 Instructor Notes

Slide 2-9: Interior Set-Up Step 3:Cover Floors

- Highlight the importance of covering the floor for easier clean-up of dust and debris.
- Emphasize that this activity is similar to the current practice of covering the floor with a drop cloth but instead they will use plastic protective sheeting.
- Highlight the importance of using a tack pad, removing shoe coverings (sometimes called “booties”), wiping shoes, and/or laying plastic on common traffic areas to prevent lead-contaminated dust from being carried to other areas of the building. It is quite common to find high lead-contaminated dust levels along the path from the work area to the bathroom.
- A tack pad acts like flypaper. It is a sticky paper or cloth that removes dust or debris from a workers’ shoes when they walk on it. Tack pads are available from specialty construction catalogs.
- It may be helpful to know names of local hardware stores and suppliers that sell tack pads, wipes, or shoe coverings and the typical cost of each item. If possible bring in samples of these items to show to the class.
- Advise participants of the importance of cleaning shoes each time they step off the sheeting. Tack pads may be used if available.
- Ensure that participants understand the vacuum in the picture should be a HEPA filtered vacuum.

Interior Set-Up Step 3: Cover Floors



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◆ Cover floors with protective sheeting

- At least five feet on all sides of work area
- 2nd smaller layer if using chemical strippers
- Place a tack pad at edge of protective sheeting, lay protective sheeting on frequently used walking paths to outdoors and bathrooms



2-9

Cover Floors

- Use protective sheeting to cover the floor. The protective sheeting should extend at least five feet to the left, right and front – and in some cases to the back – of the work area. It should be tightly secured to baseboard or flooring using duct tape, painters tape, or masking tape. The corner edge of the protective sheeting should be reinforced using duct tape or a staple.
- A second smaller layer of protective sheeting should be used with chemical strippers. This second layer should be taped to the top of the first layer. Place the second layer immediately below the work area. This layer will capture any waste and aid in cleaning up.
- Tools that are used frequently should be left within the work area throughout the job to avoid tracking dust to non-covered areas.
- Consider covering shoes with removable shoe covers, wiping off the tops and soles of shoes with a damp paper towel each time you step off the sheeting, or using a “tack pad” that removes dust from the soles of shoes. Immediately place used paper towels in a covered garbage bin. A tack pad can be found at most hardware stores or bought through a supply catalog; it is a sticky pad that you walk on to remove dust from the soles of your shoes. The tack pad can be taped to an outer corner of the sheeting.

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Module 2 Instructor Notes

Slide 2-10: Interior Set-Up Step 4: Close Windows, Doors, HVAC

- Closing windows, doors, and HVAC vents prevents dust from leaving the work area.
- Close and seal windows, doors, and vents in the containment zone (e.g., within five feet of the work area). If doors and windows are left open, air flows freely through the work area and into non-work areas. Because lead dust is so small, it can easily spread to other areas of the house. Less air flowing through the work area means that there is less chance that lead-contaminated dust will be blown out of the work area.

Interior Set-Up

Step 4: Close Windows, Doors, HVAC

- ◆ Close all windows and doors
- ◆ Close and seal HVAC vents

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Close and cover windows and doors

- Close windows (if no work is being done on the window) and doors, including closet and cabinet doors in the work area.
- For higher dust jobs, seal windows with protective sheeting to prevent dust from getting into the trough or on sill.
 - Cut plastic sheeting layer slightly larger than the window that you are covering.
 - Attach the plastic sheeting with tape over the window to completely seal it.
 - Make sure that the tape or the sheeting does not cover part of the area that you are working on.

Close and seal HVAC vents

- Heating ventilating and air conditioning (HVAC) systems distribute air throughout the building and thus can allow dust to move to other rooms. Close the HVAC supply and return vents in the work area and then cover them tightly with plastic sheeting to prevent air from blowing the dust out of the contained work area and to prevent dust from getting into the HVAC system.

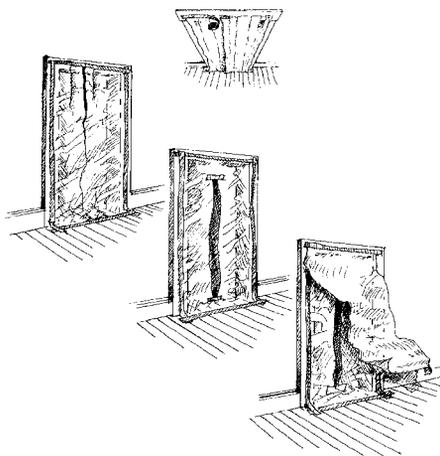
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Module 2 Instructor Notes

Slide 2-11: Special Considerations For Interior High Dust Jobs

- Ask participants for some examples of high dust jobs [these were listed earlier on page 2-2 such as sawing, use of power tools to prep painted surfaces, planing, and demolition of walls, door and window frames].
- Highlight the importance of moving fixtures and furnishings out of the high dust work area to prevent dust from settling on these hard-to-clean objects.
 - Tell the participants that the dust that can land on these fixtures and furnishings can remain long after the job is complete. Also cleaning these fixtures and furnishing could pose a hazard to the resident after the job is complete.
 - Removing residents' personal belongings will also reduce the chance that residents need to enter the work area.
- Tell the class that for high dust jobs they should seal the windows, doors, and HVAC vents with protective sheeting and tape.
 - If feasible, consider setting up a demonstration of the 2-layer "air lock" system covering the entrance to the room.
 - Remind the class about the importance of closing the HVAC vents and sealing them with protective sheeting and cardboard for high dust jobs. The cardboard protects the protective sheeting from the force of the air coming through the vents and helps maintain the seal.

Special Considerations for Interior High Dust Jobs



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- ◆ Remove furniture, fixtures and belongings from work area
- ◆ Cover door openings with a 2 layers of protective sheeting to form an “airlock”
- ◆ Close and cover HVAC vents



2-11

Remove rugs, draperies, and furniture from the work area when completing a high dust job

- Before starting work, request that the homeowner remove furniture and fixtures from the room. This will prevent lead-contaminated dust from getting into these items.

Cover door openings with a 2 layers of protective sheeting

- Covering the door with this two-layer system will contain the dust within the work area. Follow the steps below:
 - 1) Cut first plastic sheeting layer slightly wider and longer (three inches) than door frame.
 - 2) Make small “s” fold at the top of sheeting and tape to top of door frame. Make a similar “s” fold at the bottom of the sheeting and tape to flooring. This will ensure that the plastic is not taut. Staple top corners for reinforcement.
 - 3) For exiting and entering the room, cut a long vertical slit in middle of protective sheeting; leave six inches at top and bottom uncut. Reinforce the top and bottom of the slit with tape to prevent the plastic from tearing.
 - 4) Tape a second layer of protective sheeting to top of door frame. This layer is cut slightly shorter than door frame so that it will hang down flat against the first sheet of plastic.
 - 5) Tape and staple top corners of second layer to door frame and first layer. Leave hanging over first layer.
- See Page 46 in the *Lead Paint Safety Field Guide* for more information on how to put the two layer system in place.

Close and seal HVAC vents in the room

- If possible, turn off the HVAC system for work area. The vents should then be closed and covered with cardboard and protective plastic sheeting. After the work is complete the vent covers should be removed and washed. All filters for the HVAC system should be changed after any work that disturbs lead-based paint.

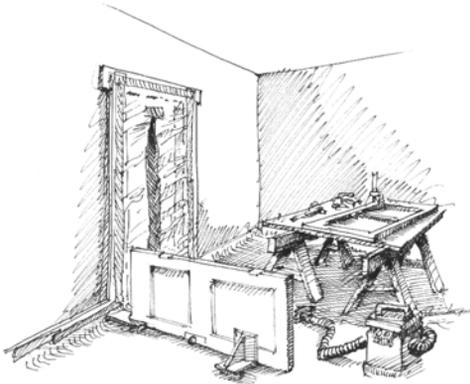
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Module 2 Instructor Notes

Slide 2-12: Special Considerations For Interior High Dust Jobs

- Ask participants what kind of work they would do in a high dust room. [Answer: Working on components that can be removed from other rooms—such as doors, windows, or cabinets—and that require extensive surface preparation. Any work that requires significant hand or power scraping and sanding, such as wall or floor surface preparation or demolition.]
- Ask the participants for examples of areas of the house that would be an appropriate choice to set-up a dust room. [Answer: A room that residents do not need to use (e.g., not the bathroom or kitchen); a room in which a lot of work would be done regardless of whether there were other components that could be moved into the room; a room that has adequate space in which to move around; a room that can be easily sealed off from the rest of the house; a room that is close to the work area.]
- When referring to the slide, point out that the recommended four interior set-up steps for high dust areas are:
 - Step 1: Limit access
 - Step 2: Remove furnishings (for low dust jobs, just need to cover furnishings)
 - Step 3: Cover the floor
 - Step 4: Seal windows, doors, and HVAC vents in the room

Special Considerations For Interior High Dust Jobs



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- ◆ For work on removable objects that create lots of dust
- ◆ Select a room that can be easily closed off
 - Follow Steps 1 through 4 for interior set-up
 - Follow the procedures for high dust jobs



2-12

Consider setting up a work room (“dust room”) for high dust-generating work on components that can be moved out of their original room and into the dust room.

- A dust room prevents the spread of lead-contaminated paint and dust to non-work areas and also makes clean-up easier.
- Use this technique for high dust activities, for example, planing and scraping doors or window sashes where you are maintaining the original windows.
- Set up a dust room if work is being done on components in a room that residents must have access to, such as the kitchen. Rather than keeping the resident out of the kitchen, remove the components to the separate dust room and complete surface preparation there. After preparation is complete, the components can be returned to the kitchen.
- You may also consider taking components off-site to work on them.

Select a room that can be easily closed off from the rest of the home to use as a dust room.

- A dust room can be any room that can be closed off. Residents should not have to enter this space for the duration of the job. For example, a spare bedroom or other unused room that residents do not need to access during the time that the work is being performed. It should not be carpeted.
- The dust room should be close to the work area, if possible.
- Follow the four set-up steps for all work with minor modifications or additions: 1) limit access, 2) remove furnishings, 3) cover the floor, 4) seal windows, doors, and HVAC vents.
- Workers should wear protective clothing, NIOSH approved respirators (e.g., N-100), and safety goggles.
- Plan your work so that necessary supplies and equipment are in the room to minimize the number of trips outside the room while work is being performed.
- See Page 14 in the *Lead Paint Safety Field Guide* for more information.

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Module 2 Instructor Notes

Slide 2-13: Current Exterior Set-Up Practices Spread Lead-Contaminated Dust

- Ask participants to describe the illustration. Highlight the drop cloth, open door and windows, paint chips, and the children playing near the work area.
- Emphasize that these practices are not wrong for all remodeling, renovation, and repainting activity, but for jobs that disturb *lead* paint, these practices should be modified slightly.
- Review how current practices are not appropriate for jobs that disturb lead paint by walking participants through the key points in the participant notes below the slide.

Current Exterior Set-Up Practices Spread Lead-Contaminated Dust



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- ◆ Ground uncovered
- ◆ Reusable drop cloth
- ◆ Paint chips
- ◆ No barriers
- ◆ Windows and doors open

Do not use these practices when lead is present!



2-13

Current practices for exterior set-up

- **Leaving the ground uncovered** allows lead contaminated dust to get into the dirt, washed into storm drains, and into nearby play areas.
- **Covering with reusable drop cloth.** Similar to the problems associated with using a reusable drop cloth for interior jobs, a reusable drop cloth for exterior jobs can carry dust from one job site to other job sites. Some of the dust captured by a drop cloth falls to the floor when folding it to carry away. However, some of the dust stays with the drop cloth to the next work site, thus potentially spreading lead-contaminated dust to a new work site.
- **Small paint chips** and piles of dirt are often overlooked. This poses a considerable hazard to small children.
- **Residents and passers-by usually have unlimited access to area.** Similar to interior work, residents and passers-by may come into contact with lead-contaminated dust and breathe or swallow it.
- **Windows and doors are left open** and may allow lead contaminated dust to enter the house.

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-14: Overview of Exterior Set-up Steps

- Use this slide to highlight the upcoming two steps. Do not go into detail about the steps here.

Overview of Exterior Set-up Steps

- ◆ Step 1: Establish work area
- ◆ Step 2: Close windows and doors
- ◆ Special considerations for high dust jobs

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2-14

Two steps for exterior set-up to contain lead dust

- Details for these steps are on the following two pages. These two steps will help contain lead dust to the work area for exterior jobs. These steps may be modified for high dust jobs.
- See page 22 in the *Lead Paint Safety Field Guide* for more information.

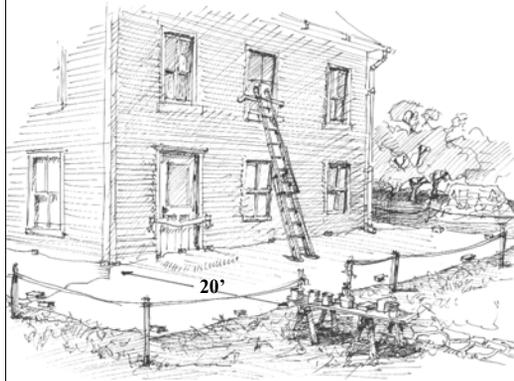
Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-15: Exterior Set-Up Step 1: Establish Work Area

- Review the importance of protecting the ground and gardens from lead-contaminated dust. This lead can remain in the dirt where children play and pose a significant risk. Covering the plants with a mesh material like landscape fabric, burlap, or cheesecloth will help reduce the amount of lead-contaminated dust that falls on the play areas and plants.
- The extra length of the protective sheeting is necessary because the wind can blow the dust further away.
- The sheeting can be taped to the house or a 2x4 can be wrapped in protective sheeting and placed next to the house if tape will not stick. At the loose edges the sheeting can be weighted down with stones, rocks, or any heavy object to prevent the sheeting from flapping or lifting off the ground.
- Saw horses, tape or orange cones remind residents and alert passers-by to stay away from the work area.
- All toys and belongs should be removed from exterior work areas as part of set-up.
- Note that putting the ladder on the plastic sheeting may cause a slip hazard. By putting a piece of plywood between the ladder and the sheeting, that hazard can be avoided. In some cases, you may also consider having someone hold the ladder from below.

Exterior Set-Up Step 1: Establish Work Area



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- ◆ **Cover the ground with protective sheeting**
 - If space permits, extend at least 10 feet from work area
 - Cover nearby vegetable gardens and children's play areas
- ◆ **Limit work area access**
 - Establish a 20 foot perimeter around work area if space permits



2-15

Cover the ground with protective sheeting

- If space permits, lay protective sheeting on the ground below the work area to at least 10 feet from the house. This creates a visible work area and helps remind residents and passers-by that they should not enter the work area unless they have a compelling need. Note: Plastic sheeting can kill plants.
- **Cover grass, shrubs, and gardens with a disposable mesh material** such as landscape fabric or burlap. Landscape fabric is an inexpensive plastic mesh that is often used by landscapers. It can be found in many plant nurseries or hardware stores. This covering will protect the soil and plants from lead contamination. Remember children often play in the dirt and may put their hands in their mouth while playing. Any dirt on their hands will go into their mouths and may be swallowed.
- **Remove toys and other items from work area** and cover all play areas including sandboxes.
- **Staple or tape the protective sheeting to the wall** of the building, or use a 2x4 wrapped in protective sheeting to hold the material next to the wall. Use heavy objects (e.g., rocks) to weight the other edges of the protective sheeting to the ground so that it won't blow in the wind.
- **When using ladders on plastic sheeting** consider placing a sturdy piece of plywood on the plastic and then setting the ladder on the plywood. This will prevent the ladder from puncturing the plastic and also will provide a stable surface for the ladder.

Limit work area access

- Limit access to work area by placing orange cones, saw horses, or tape around a 20 foot perimeter of the work area. This will help to discourage residents and passersby from entering the work area.

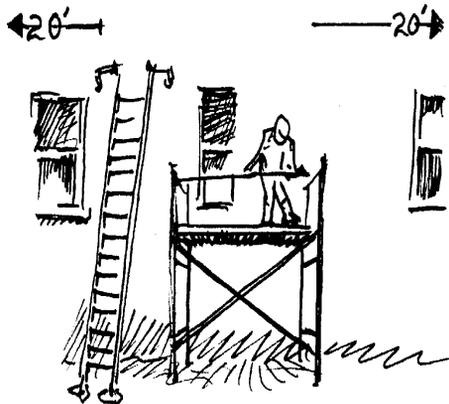
Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-16: Exterior Set-Up Step 2: Close Windows and Doors

- Describe the illustration. State the importance of closing windows and doors to prevent dust from blowing into the building.

Exterior Set-Up Step 2: Close Windows & Doors



- ◆ Close nearby doors and windows within 20 feet of the work area

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2-16

Close and cover windows and doors

- All windows and doors within 20 feet of the work area should be closed to prevent dust from entering the home. Consider requesting that the neighbors also close their windows and doors.

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-17: Special Considerations for Exterior High Dust Jobs

- State the importance of closing and sealing windows and doors with protective sheeting to prevent dust from blowing into the building.
- Doors in the work area that must be used should be sealed with the two-layer protective sheeting system describe previously. For jobs that require scaffolding, the door can be protected on the top and both sides with protective sheeting attached to the scaffolding.

Special Considerations For Exterior High Dust Jobs

◆ For high dust jobs:

- Cover doors and windows with protective sheeting
- Use the two-layer protective sheeting system to cover the door
- For multi-story jobs, attach protective sheeting to scaffolding to cover house entrance

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2-17

Cover windows and doors with protective sheeting

- For high dust jobs, close, lock, and seal windows and doors with protective sheeting. Follow the procedures for sealing doors and windows that were described earlier for interior high dust jobs.
- Entrances that must be used while work is underway should be protected with a covering when performing high dust jobs. Either place the 2-layer protective sheeting flap system over the entrance or cover the entrance with protective sheeting that is attached to scaffolding.
- If working with water, consider using landscaping mesh on the ground as described on the previous page.
- Be aware of wind conditions. On high wind days, it is not advisable to perform dust creating activities.

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-18: Setting Up

Prepare this exercise in advance. Things to prepare are:

- Have appropriate tools. This will include items such as plastic, tape, knives, and barrier tape listed in the “**Set-up Tool Kit**” in the Notes to the Instructor.
- Have work areas ready. Ideally, each work area will require the participants to move some furniture, lay plastic on the floors, and put up barrier tape or plastic in the doorway. Covering furniture is not a requirement for this exercise, but it can be done at the trainer’s discretion.
- Consult the **Skills Checklist** provided in Appendix 9 for a list of the skills needed for proper set-up.

When conducting the exercise:

1. Instruct participants to break into groups.
2. Assign each group a work area.
3. Circulate while they work to ensure they are doing the work properly. Consult the Skills Checklist provided in Appendix 9 for a list of skills they should demonstrate.
4. Coach them to stay on task and achieve their goal.
5. Give them a five minute warning.
6. At 15 minutes, tell them to stop.
7. Debrief using the next slide.

Options for trainer.

- If your training does not allow for this hands-on activity, consider replacing it with Exercise 2, found in Appendix 7.
- You may also consider performing this set-up exercise later in the course as part of a larger comprehensive hands-on module as described in Lesson Plan 2 in the Notes to the Instructor at the front of this manual. The comprehensive hands-on module combines the hands-on components from Modules 2, 3, and 4.

Exercise: Setting Up

- ◆ Work in groups of 2 or 3
- ◆ Choose the right tools and materials
- ◆ Set up the work area designated by the trainer
- ◆ You have 15 minutes

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2-18

Setting Up

This exercise gives you a chance to practice setting up. The slide provides basic instruction.

- Make groups of 2 or 3.
- Your trainer will assign you an area to set up for a job.
- Choose the right tools. Set up the work area to provide proper containment.

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-19: Debrief: Setting Up

Use this slide to debrief the exercise.

- Ask participants what was difficult about setting up.
- Point out what the participants did well and where there were difficulties.
- Demonstrate how to do some of the more difficult parts, e.g., join two pieces of plastic.
- Ask what they would have done for a larger or high-dust job. (Good answers include: Z-flap in door, seal HVAC, move or cover furniture, extend plastic farther, etc.)
- If there is time and interest, demonstrate how to set up a Z-flap in the door.

Debrief: Setting up

- ◆ How did it go?
- ◆ What were some of the hard parts?
- ◆ What would you do differently for a larger job?
- ◆ A high dust job?

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2-19

Setting Up – A debrief

Consider the questions above. Discuss as a large group.

Your trainer will demonstrate some techniques.

Lead Safety for Remodeling, Repair, and Painting

Module 2 Instructor Notes

Slide 2-20: Now You Know

- Use this slide to close out the module and make the transition to the next one.
- Emphasize that proper set-up will make the rest of their job easier, as they will see in Modules 3 and 4.

Now You Know

◆ How to set up for a job

- Interior containment
- Exterior containment
- High and low dust jobs

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2-20

Now you know how to set up for a job. In the next module, we will discuss lead safe work practices during the job.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-1: Module 3 Safe Work Practices

- This is the module title slide.
- Announce the module and move quickly to the next slide.

Overview of this module: The table below summarizes the content and teaching methods for this module. This is for your reference. Do not cover this with the participants.

Module 3: Safe Work Practices	1 hour
<ul style="list-style-type: none">➤ High risk practices➤ Safe work practices➤ Personal protection➤ Control the spread of dust➤ <u>Activity</u>: Hands-on work practices exercise	<p><u>Key Message</u>: These practices are not so different from what you already do.</p> <p><u>Notes</u>: Slides are followed by an exercise</p> <ul style="list-style-type: none">➤ Slides: 30 minutes➤ Hands-On Exercise: 30 minutes <p><u>Preparing for this module</u>: Prepare a list of tasks for participants to work on and the materials for hands-on exercise.</p> <p><u>Materials needed</u>: Traditional tools and lead safety tools listed in the Work Toolkit.</p> <p><u>Options</u>: The trainer can replace the hands-on exercise with a paper-based exercise. See Appendix 7 for Optional Exercise #3. (The trainer must use one of these two exercises.) The trainer may also choose to use the hands-on exercise later, as part of a comprehensive hands-on exercise (as shown in Lesson Plan #2).</p>

Module 3

Safe Work Practices

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3-1

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-2: Module 3 Overview

- This module presents the second of the three major steps to lead safety. Set-up was the first and cleanup, the third, is covered in the next module.
- This module covers the bulleted list of topics on the slide. Review this list with the class participants.
- **Module objective:** The purpose of this module is to teach safe work practices and how to apply them on the job.
- Mention that you will first explain what safe work practices are and then do an exercise where the participants can think about how they can apply safe work practices on the job.
- Emphasize that lead safe work practices are specific practices that have been shown to minimize the creation and spread of lead dust.

Module 3 Overview

- ◆ High risk practices to avoid
- ◆ Safe work practices and safe work practices toolkit
- ◆ Protect yourself and make a personal protection equipment toolkit
- ◆ Control the spread of dust
- ◆ Exercise
- ◆ Discussion

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3-2

Role of safe work practices

- In addition to proper set-up at the start of a job and cleanup at the end of the job, the third key strategy to minimize the spread of dust is using safe work practices.
- Lead safe work practices are specific practices that create less dust and/or control its spread better than traditional work practices.

Upon completion of this module, you will know

- What high risk work practices to avoid because they create dangerous amounts of dust and paint chips
- What safe work practices to use to reduce and control dust and paint chips
- What tools you will need
- How to apply safe work practices to common renovation, remodeling, and painting jobs

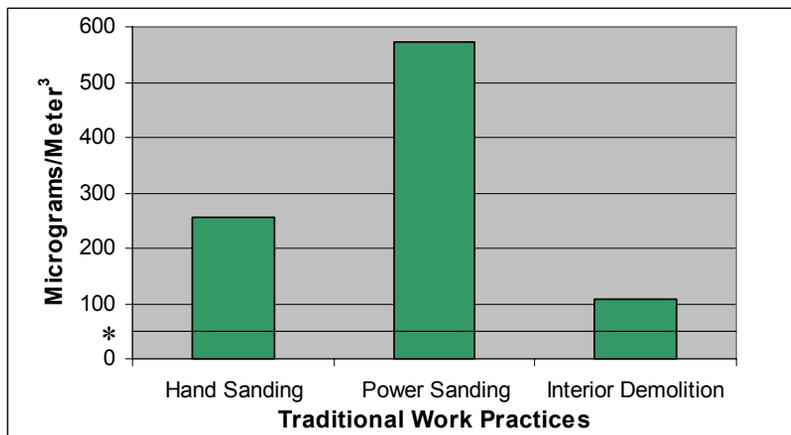
Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-3: Typical Lead Dust Creation

- This chart illustrates that traditional work practices create large amounts of dust. Point out that the chart shows amounts of dust in the air measured for three common work practices.
- The source of the data for this chart is a study that measured amounts of leaded dust in the air caused by each type of work. The dust was measured in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
- As shown in the chart, the amount of dust created by power and hand sanding and demolition is much larger than the amount of airborne leaded dust that requires special worker protection measures (also known as permissible exposure limit or PEL) under OSHA regulations. The OSHA trigger level at which special worker protection measures are required is $50 \mu\text{g}/\text{m}^3$ (50 micrograms per cubic meter). This is a time-weighted average over 8 hours.

Typical Lead Dust Creation



* OSHA's PEL, 50 $\mu\text{g}/\text{m}^3$



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3-3

Traditional work practices create large amounts of dust

- This chart shows amounts of lead dust created by three common construction practices: hand sanding, power sanding, and interior demolition.
- The amount of lead dust for each practice is significantly higher than the level where worker protection, such as respirators and protective clothing, is required by OSHA. This level is called the Permissible Exposure Limit or "PEL." This airborne dust is hard to control.
- By using safe work practices, you can control and significantly reduce the amount of dust created on the job. Controlling lead dust at the source of generation is important because dust generated into the air will eventually become settled dust on the ground. Later in this chapter, you will learn safe work practices that can replace these restricted work practices.
- The data used in the chart above are from *Lead Exposure Associated with Renovation and Remodeling Activities: Summary Report*, Prepared by Battelle for the U.S. Environmental Protection Agency, May 1997, EPA 747-R-96-005.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-4: High Risk Practices

This slide lists several practices that are known to create large amounts of dust and create exposure risks for occupants and workers. These practices are:

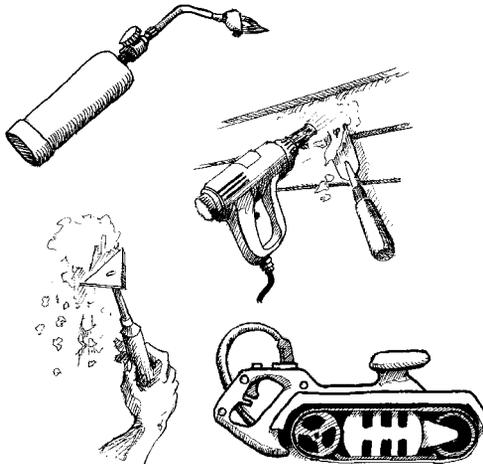
- Open flame burning or torching
- Heat gun paint removal above 1,100 degrees F
- Power sanding, grinding, or abrasive blasting without HEPA vacuum attachment (abrasive blasting includes all media: sand, walnuts, etc.)
- Extensive dry scraping or sanding

In addition, it lists paint shipping in a poorly ventilated area. This is dangerous to worker health.

Highlight that HUD prohibits all of these practices in properties receiving Federal housing assistance.

Note that the next slide also lists these same practices along with safer alternatives. Do not attempt to discuss safe work practice alternatives to these high risk practices. Focus on identifying the high risk practices and then move on to the next slide.

High Risk Practices



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- ◆ Open flame burning or torching
- ◆ Heat gun above 1,100 degrees Fahrenheit
- ◆ Power sanding, grinding, abrasive blasting without HEPA vacuum attachment
- ◆ Extensive dry scraping and dry sanding



3-4

Avoid these traditional work practices

- A key to minimizing the spread of dust and paint chips is to not use certain traditional work practices known to create large amounts of dust and debris.
 - **Open flame burning or torching of paint and using a heat gun above 1,100° F** create fumes that are dangerous for workers to breathe. Small lead particles created by burning and heating also settle on surrounding surfaces and are very hard to clean up.
 - **Power sanding, grinding or abrasive blasting**, even on a small surface, creates a large amount of leaded dust that floats in the air and then settles on surfaces inside and outside the work area.
 - **Extensive dry hand sanding and hand scraping** can also create large amounts of dust and paint chips.
- See pages 9-10 in the *Lead Paint Safety* Field Guide for more information about these practices.



These practices are prohibited in pre-1978 properties that receive Federal housing assistance. If a pre-1978 unit or the family that lives in the unit receives Federal housing assistance, the practices listed on the slide above are prohibited, unless the property has been shown to be lead-free with a lead-based paint inspection. HUD also prohibits paint stripping in a poorly ventilated space using a volatile paint stripper. States, localities, and tribes may also prohibit these practices.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-5: Safe Work Practice Alternatives to High Risk Practices

- This overhead shows the safe work practices that can be used instead of traditional practices that are restricted. All of these practices are for removing paint, one of the most dust-intensive work activities in renovation and repainting.
- When presenting these practices, it is helpful to show the class examples of some of the tools used.
 - Chemical stripping. Chemical strippers can be dangerous – for example, some caustic strippers cause burns. Methylene chloride is a suspected carcinogen. Citrus-based strippers are safer.
 - Wet sanding. Wet/dry sandpaper, sanding grit, and sanding blocks can be used with light misting.
 - Heat gun on low. Point out that the heat gun should be set to no more than 1,100°F. Note that newer heat guns don't go above 1,100°F.
 - Power tools with HEPA exhaust filter. These tools are attached to a HEPA vacuum by a hose. Later overheads in this module will cover using power tools with HEPA attachments.
- Note: HEPA stands for “high efficiency particulate air” filter. By definition, HEPA filters capture 99.97% of particles that are 0.3 microns or larger in diameter.
- In practice, contractors will want to choose the safe work practices that work best for a particular job.

Safe Work Practice Alternatives to High Risk Practices

High Risk	Safe
<input checked="" type="checkbox"/> Open flame burning or torching	✓ Wet scraping and sanding, chemical stripping, heat gun below 1,100 degrees F
<input checked="" type="checkbox"/> Heat gun on high (1,100+ degrees F)	✓ Heat gun below 1,100 degrees F
<input checked="" type="checkbox"/> Dry scraping and sanding	✓ Wet scraping and sanding
<input checked="" type="checkbox"/> Power sanding, grinding, abrasive blasting without attachment to HEPA vacuum	✓ Use of power tools with attachment to HEPA vacuum

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3-5

Alternative safe work practices for each high risk practice

- For both large and small paint removal jobs, there are safe work practice alternatives.
- Some possible alternatives are listed on the slide.
- With experience, you will determine which safe work practices work best for different tasks.

Note: HEPA (high efficiency particulate air) vacuums have HEPA-rated filters that stop 99.97% of particles of 0.3 microns or larger.

Also keep in mind

- Chemical strippers can be dangerous. Some can cause burns. Methylene chloride is suspected to cause cancer but may be appropriate for exterior work. Types of strippers range from citrus-based (safer) to more dangerous caustic strippers. Follow the manufacturer's directions when using any chemical stripper.
- If building components to be stripped can be removed, such as doors, consider having them stripped off-site at a paint stripping facility.
- Half-face negative respirators do not provide sufficient breathing protection when using methylene chloride strippers.
- See pages 9-10 in the *Lead Paint Safety Field Guide* for more information.

Lead Safety for Remodeling, Repair, and Painting

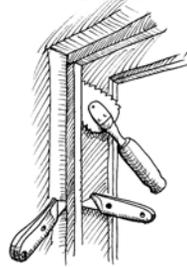
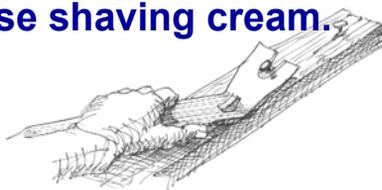
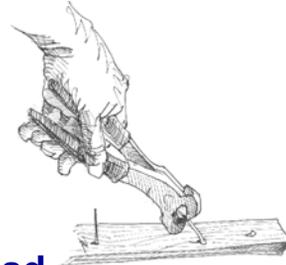
Module 3 Instructor Notes

Slide 3-6: More Safe Work Practices

- Beyond using safe work practices for paint removal, there are several other practices that contractors can use to control the spread of dust.
- As you present each of the practices on the overhead, the following props illustrate the practice.
 - Score paint. Hold up utility knife.
 - Minimize pounding, hammering. Hold up pry bar. Vise grips may be useful for pulling out nails. Use large vise grips for large nails.
 - Mist surroundings with water. Hold up mist bottle. A light misting, not soaking, is effective.
 - Mist before drilling and cutting. Worker lightly misting piece of painted trim before cutting with a hand saw.
 - Use shaving cream. Prior to drilling or coring, apply shaving cream or foam to the surface.
- Point out that using power tools on wet surfaces can be dangerous – there is a risk of electric shock and blades can slip. Misting surfaces should be done only with hand tools. You also should not mist around electrical outlets.
- To facilitate electrical safety participants should use ground fault circuit interrupters (GFCIs).

More Safe Work Practices

- ◆ Mist before drilling and cutting (hand tools only)
- ◆ Score paint
- ◆ Minimize pounding and hammering -- pry and pull instead
- ◆ Mist surroundings
- ◆ Use shaving cream.



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3-6

Additional safe work practices

- Mist before drilling and cutting to reduce dust creation and keep dust from becoming airborne and spreading beyond the work area.
- Scoring paint before separating components helps prevent paint from chipping when a paint seal is broken.
- Prying and pulling apart components and pulling nails instead of pounding create less dust and fewer paint chips. Vise grips may be useful when pulling nails.
- Frequent misting of surrounding surfaces with water helps keep dust and paint chips from becoming airborne when disturbed by work activity.
- Use shaving cream or foam prior to drilling or coring.
- Using power tools on heavily misted surfaces can be dangerous if they are wet. Tool blades can slip and water can cause electric shock. When misting, lightly mist the surface and use hand tools only. If power tools are to be used, they should be attached to a HEPA vacuum.
- EPA and HUD encourage contractors to use ground fault circuit interrupters (GFCI's) to help ensure safety while using electrical equipment.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-7: Benefits of Safe Work Practices

- This slide lists the advantages of safe work practices for workers and contractors.
- Review each of the reasons listed on the overhead.
- Emphasize that cleaning is easier if not much dust was generated in the first place.
- Because the EPA requires contractors to give their customers the lead information pamphlet, customers may have questions about how the work will be done. Contractors that rely on safe work practices will have an easier time explaining to their customers exactly how they will protect them from lead dust.
- Note that the pamphlet is in Appendix 4 and information about the Pre-Renovation Education Rule is in Appendix 5.

Benefits of Safe Work Practices

- ◆ **Protect your health**
- ◆ **Protect your family by not bringing dust home with you**
- ◆ **Protect residents, especially children**
- ◆ **Simplify daily and final cleanup**
- ◆ **Enhance reputation for knowledge and professionalism**

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3-7

Advantages for contractors

- In addition to being safer for residents, safe work practices have advantages for contractors and workers.

By effectively using safe work practices, you can

- Foster your reputation as an informed and professional contractor who recognizes the risks of lead-based paint and takes steps to help ensure resident and worker safety.
- Gain a reputation for leaving the job site cleaner than when you arrived.
- Help your customers feel safe and reduce their anxiety about the risks of remodeling and renovations.
- Have less dust and debris to clean up at the end of the job.
- Reduce risk of taking leaded dust home to your family.
- Because contractors are required to give customers the lead information pamphlet before starting work, those who use safe work practices can better respond to customer concerns raised by the pamphlet. A copy of the pamphlet is provided in Appendix 4. Information about the Pre-Renovation Education Rule, which requires contractors to give customers the pamphlet is provided in Appendix 5.

Lead Safety for Remodeling, Repair, and Painting

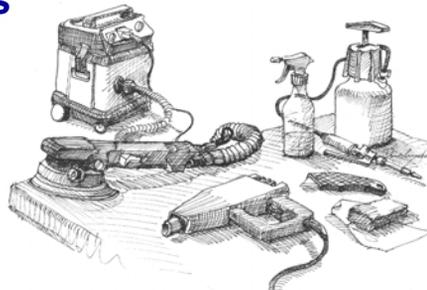
Module 3 Instructor Notes

Slide 3-8: Safe Work Practices Toolkit: Tools, Equipment, and Supplies

- These tools are necessary for most safe work practices. Later slides will explain how they are used, and give you a chance to show them to training participants.
- Refer participants to Appendix 2, where the toolkits are listed.

Safe Work Practices Toolkit: Tools, Equipment, and Supplies

- ◆ Wet/dry sandpaper, sanding sponge
- ◆ Mist bottle, pump sprayer
- ◆ Tape (painter's, duct, masking)
- ◆ Heavy duty (4-6 mil) plastic sheeting
- ◆ Heavy duty garbage bags
- ◆ Chemical stripper
- ◆ Utility knife
- ◆ Heat gun
- ◆ Vacuum with HEPA filter



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Safe work practices toolkit tools, equipment, and supplies

- There are some basic low-cost tools that you will need for safe work practices. Most of these tools and supplies are widely available from suppliers and home improvement stores.
- These tools are used to help reduce dust and for cleaning while working to keep dust under control.
- You will need several basic supplies to protect floor and ground surfaces, and bag, wrap, and clean dust as work is performed. If dust and debris are contained in plastic right after they are created, there is less chance that they will be spread beyond the work site.
- More toolkit supplies are listed on the next three pages of this manual.
- HEPA (high efficiency particulate air) filters are able to filter very small particles--to be considered a HEPA filter, it must be able to filter 99.97% of particles of 0.3 microns or larger.
- See the Tool and Supply List (Pages pages 75-76) in the *Lead Paint Safety* Field Guide for more information.
- See Appendix 2 for a complete list of supplies in the Safe Work Practices Toolkit.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-9: Safe Work Practices Toolkit: Consider Investing in New Tools

- Because many contractors use power tools on the job, it is often not possible to mist surfaces with water. It is dangerous and can cause electric shock.
- Contractors should consider investing in power tools with HEPA exhaust filter attachments or buying attachments that fit their power tools.
- All of the tools listed here are used to remove paint from large surfaces.
 - Sanders, grinders, planers, and shavers are used on wooden surfaces.
 - A needle gun is used on brick, stone, and metal surfaces.
 - Power washing equipment can be used on many types of surfaces. The runoff from power washing needs to be collected and disposed of properly. (See the modules on set-up and disposal.)
- This investment will pay off in the long run because contractors can continue to work quickly and contain dust better with these attachments and HEPA exhaust filters. It may also be possible to rent these tools.
- Point out that these attachments do not entirely eliminate the dust created by the work, so the other precautions, especially during set-up, are still important.

Safe Work Practices Toolkit: Consider Investing in New Tools

◆ Large jobs may require special tools

- Power sanders, grinders, planers, shavers with HEPA filter vacuum attachment



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3-9

HEPA equipment for power tools

- Because wet methods are appropriate and practical only when using hand tools, adapters and HEPA vacuums are necessary for power tools.
- For contractors who frequently remove paint from large surfaces, an investment in attachments to control dust can make the job go quickly and safely.
- These tools use HEPA vacuums and adapters that help contain dust and debris as they are created. A shroud helps to contain the dust and paint chips as they are created. They are carried to a HEPA vacuum by a hose attached to the shroud.
- It may be possible to rent these tools, if you decide to not invest in them.

Power washing

- Power washing can be used if runoff is properly contained and disposed.

Set-up is still important

- Proper set-up and cleanup is still important because HEPA attachments do not eliminate the possibility that work will spread dust. Nonetheless, these attachments will reduce dust levels and thereby shorten cleaning time and lower costs.
- See the Tool and Supply List (Pages pages 75-76) in the Lead Paint Safety Field Guide for more information.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-10: Protect Yourself

- Workers should take precautions to protect themselves from dust hazards on the job.

Note: These are minimal precautions. Employers must follow OSHA regulations which may require more extensive worker protection measures, especially for high dust jobs.

- As you talk about the specific worker protection precautions, refer to the following slide:
 - Worker protection. Personal protection equipment: painter's hat, coveralls, and N-100 disposable respirator. N-100 is a NIOSH rating for respirators that can be used around lead. N-100 means that the respirator has HEPA filtering capability. The disposable N-100 respirator is acceptable for small jobs but under some work conditions, OSHA may require another type of respirator.
- Workers don't need to wear gloves but should wash their hands frequently, especially before eating, smoking, and leaving at the end of the day.
 - Supervisors can buy extra-large size disposable coveralls and re-size them with duct tape. Some coveralls also have hoods to keep dust out of hair. The coveralls can be used over again at the same job site but should be disposed of at the end of the job.
- An OSHA course may specify that more involved worker protection measures be taken. Some work activities, by their nature, would trigger OSHA requirements.

Protect Yourself

◆ Workers should wear

- Painter's hat -- helps keep dust out of hair
- Disposable coveralls
 - Can be reused if not ripped
 - Repair tears with duct tape
 - Store in plastic bag
- Disposable N-100-rated respirator

◆ Wash face and hands frequently

- Helps to reduce hand-to-mouth ingestion of

◆ OSHA may require more protection



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Workers should protect themselves

- **Minimum steps** that workers can take to protect themselves include:
 - **Painter's hats** are an inexpensive way to keep dust and paint chips out of workers' hair. Painter's hats can be easily disposed of at the end of the day or job.
 - **Disposable coveralls** are a good way to keep dust off of workers clothes and reduce the chances for carrying dust to other areas of the residence as workers come and go. The coveralls can be removed when workers leave the work site and stored in a plastic bag overnight. To keep costs down, consider buying extra large size coveralls in bulk and sizing to fit workers with duct tape. Some coveralls have a hood to keep dust out of hair.
 - **Respiratory protection.** Workers should wear respiratory protection, such as an N-100 disposable respirator, to prevent them from breathing leaded dust.
 - **Workers should wash** their hands and faces periodically to avoid ingesting leaded dust. It is especially important to wash well before eating, drinking or smoking and to not do any of these in the work site. Some of the dust that settles on the face around the mouth invariably finds its way into the mouth. Workers should also wash at the end of the day before getting in their car or going home. They can take leaded dust home to their families.
- OSHA rules may require employers to take further steps to protect the health of workers on the job.
- See page 17 in the *Lead Paint Safety Field Guide* for more information on worker protection.

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Module 3 Instructor Notes

Slide 3-11: Personal Protection Equipment (PPE) Toolkit

- These basic supplies for personal protection are necessary for most safe work practices. Later slides will explain how to use them.
- Disposable towels have many uses on the job – to clean up small messes and dust, and for workers to use to wipe off dust before leaving the work site, and for washing before eating, drinking, or smoking while at work. (However, eating, drinking, smoking should not be done in the work site.)
- N-100 disposable respirators provide an inexpensive protection. These masks are designed for lead work. (Masks rated as N95 are not sufficient.) These masks are made with HEPA-rated material and look somewhat like a dust mask, are inexpensive, and easy to find in home improvement stores. Employers are responsible for following OSHA's regulations for worker safety, especially during high dusty jobs which may require a more protective type of respirator. Like all respirators, the N-100 must be used according to OSHA requirements.
- The illustration on the left is of an N-100 disposable respirator.
- Remind participants that Appendix 2 has a toolkit list.

Personal Protection Equipment (PPE) Toolkit

- ◆ Disposable hand towels
- ◆ Pre-moistened disposable wipes
- ◆ Painter's hats
- ◆ Gloves
- ◆ Coveralls
- ◆ Disposable shoe covers
- ◆ N-100-rated disposable respirator



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Personal protection equipment

- Disposable hand towels (such as paper towels) and pre-moistened wipes have multiple uses on the job. They can be used to quickly clean surfaces and by workers to wipe dust before leaving the work site and washing before eating, smoking, or drinking.
- “N-100” is a NIOSH rating for respirators. Respirators with an N-100 (or HEPA) rating are approved for use when working on lead-based paint surfaces. OSHA may require a different type of respirator rated for use around lead, depending on work conditions.
- All of the items on this list are readily available at hardware and home improvement stores. N-100 disposable respirators cost approximately \$6-7.
- See pages 75-76 Tool and Supply List in the *Lead Paint Safety Field Guide* for more information.
- See Appendix 2 for a complete list of supplies in the PPE Toolkit.

Additional equipment you should consider

- First-aid kit
- Safety glasses
- Ear protection for using power tools

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-12: Control the Spread of Dust

- This overhead presents some other steps that workers should take to control the spread of dust from the work site.
- Dust can be spread when workers leave the work site to get tools, carry away debris, take a break, leave at the end of the day, etc. The boundaries of the work site depend on the containment area. For example, it may be the area covered by protective sheeting or an entire room.
- Workers can carry dust outside the work area on their shoes and clothes. They should always wipe the tops and bottoms of their shoes and vacuum their clothes before stepping off of the protective sheeting.
- Workers should take extra precautions when cleaning before leaving for home because they can carry dust home to their families on their clothes, in their hair, on their bodies, and in their car. Studies have been conducted that measure the blood lead levels of worker families. These studies confirm that the children of workers do get poisoned by leaded dust carried home from work sites.

Control the Spread of Dust

◆ When you leave the work site

- Remove shoe coverings, HEPA vacuum or wipe shoes
- Use tack pads
- Remove coveralls or HEPA vacuum clothes

◆ At the end of the day don't take lead home to your family on your clothes or in your car

- HEPA vacuum clothes, shoes
- Change your clothes and dispose or place in plastic bag to wash separately from household laundry
- Wash hands, face
- Shower as soon as you get home

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3-12

Precautions to take when leaving the work site

- When you leave the work site (the area covered by protective sheeting or the room), take precautions to prevent spreading dust and paint chips to other parts of the residence on your clothes and shoes.
- Every time you leave the work site, wipe or vacuum your shoes before you step off of the plastic sheeting. A large tack pad on the floor can help to clean the soles of your shoes. Remove shoe coverings if you are using them.
- At the end of the day, change your clothes and wash yourself to reduce the risk of contaminating your car and taking leaded dust home to your family.
 - Before leaving the worksite, remove any protective clothing, HEPA vacuum dust from non-protective clothing, and thoroughly wash your hands and face. Throw away disposable clothing or place clothing in a plastic bag to stop dust from getting on other clothes at home.
 - As soon as you arrive at home, take a shower and be sure to thoroughly wash your hair, especially before playing with children. Wash work clothes separately from regular household laundry to stop lead particles from getting on your other clothes.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-13: Cleaning During the Job

- By nature, remodeling, repair, and paint jobs create debris which can pile up in the work site. Debris should be removed periodically to keep it from being a source of dust that can be easily spread by work activity and coming and going from the work site. For example, paint chips are easily tracked to other parts of the residence. It is important to wipe off shoes before stepping off of protective sheeting.
- Cleaning to keep debris and dust under control can be done in stages but should be done at least daily.

Cleaning During the Job

- ◆ **A clean work site reduces the spread of dust and paint chips**
- ◆ **Clean as you work**
 - HEPA vacuum horizontal surfaces
 - Remove debris frequently
 - Remove paint chips as they are created
 - As building components are removed, wrap and dispose of them immediately
- ◆ **Clean frequently (in stages, at least daily)**



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Clean the work site frequently

- Cleaning the work site frequently as the job progresses will reduce the spread of dust and paint chips. The cleaning need not be as thorough as the final cleanup. It should, however, keep debris, dust, and paint chips from piling up and spreading beyond the immediate work site.

Cleanup during the job includes

- **Removing debris frequently.** During demolition jobs, seal and dispose of construction debris as it is created.
- **Vacuuming horizontal surfaces frequently.** HEPA vacuum dust and paint chips that settle on surfaces, including protective sheeting. As workers come and go during the work day, this debris is easily spread. Periodic cleaning throughout the work day will help to minimize workers tracking dust.
- **Collect paint chips as they are created.** When removing paint, piles of paint chips can also spread outside the immediate work area as workers come and go from the work site. To keep paint chips from spreading beyond the work site, make sure that they are collected as they are created. Also, periodically vacuum (with HEPA filtered vacuum) or wet sweep and dispose of paint chips.
- **Wrapping and disposing of removed components.** When removing painted components such as windows, trim, and cabinets, wrap them in plastic sheeting and dispose of them in stages. This will prevent the spread of debris and keep residents, especially children, from coming into contact with leaded dust created by work.
- **How often should cleaning during the job take place?** The goal is to keep dust and debris under control, not to maintain a completely spotless site at all times. Every job is different, so clean when it makes sense to without hindering progress. Remove large amounts of dust, paint chips, and debris frequently, at least daily.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-14: Discussion

- Ask the participants to tell you what the safe work practices are. As you hear them, list them on the blank overhead.
- Possible responses are:
 - Using power tools with HEPA attachments
 - Wet sanding and scraping
 - Cleaning up frequently while the work is in progress
 - Using chemical stripper (without methylene chloride)
 - Scoring before prying
 - Off-site stripping
 - Heat gun on low setting
 - Minimizing pounding

Discussion

- ◆ What are the key safe work practices and equipment?

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Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-15: Exercise: Safe Work Practices

In this exercise, participants will be assigned a task. They will choose tools needed to complete that task and discuss how they will use each tool.

In most cases it will not be possible for participants to actually complete the task but they will talk through all the steps needed to complete the task and describe the practices they will use. They should be encouraged to stand up, move around, and actually walk through the steps, physically demonstrating how they would approach the task

Prepare this exercise in advance:

1. Have appropriate tools ready, including personal protective equipment. Tools to be made available should include: scrapers, sandpaper, chemical strippers, misters, personal protective equipment, etc. (See the **Safe Work Practices Toolkit** and the **PPE Toolkit**.)
2. Have work assignments ready. Make sure the assignments are appropriate to the audience, e.g., if the audience consists of painters, concentrate on paint preparation activities. For remodelers and renovators, choose common renovation tasks. For maintenance personnel, use common repairs. Examples include:
 - Fix a 4x4 foot piece of water damaged wall
 - Repaint a door
 - Change out a window
 - Rehang a door
 - Fix deteriorated exterior paint
 - Fix chipping paint on stairs or floor
3. Use the **Skills Checklist** in Appendix 9 as a reference of the steps the participants should be discussing.

When conducting the exercise:

- Instruct participants to stay in their groups.
- Assign each group a task.
- Tell them to collect the tools and personal protective equipment they need.
- Instruct them to discuss and demonstrate (when possible) as a group, how they will do the job and note anything they will do differently from their traditional practices.
- Circulate amongst the groups to make sure they stay on task. Coach them if they need help. Use the **Skills Checklist** (in Appendix 9) as a reference.
- Give them a five minute warning. Tell each group to record on a piece of paper any special practices or tools they will use.
- Tell the groups to select a reporter who will report to the class how their group would perform the assigned job.
- At 15 minutes, tell them to stop.
- Debrief using the next slide.

Options

- If this exercise is not appropriate or feasible for your training, consider using Optional Exercise #3 from Appendix 7.
- You may also choose to perform this exercise as part of a larger comprehensive hands-on exercise after Module 5, as described in Lesson Plan #2.

Exercise: Safe Work Practices

- ◆ Work in small groups
- ◆ Get an assignment from the instructor
- ◆ Choose the tools and equipment you need for the job
- ◆ Discuss how you will do the job
- ◆ On a piece of paper, list tools and practices you will use
- ◆ You have 15 minutes

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Work Practices

This exercise gives you a chance to demonstrate work practices. The slide provides basic instruction.

- Stay in your groups of 2 or 3.
- Your trainer will assign you a task.
- Choose the right tools and personal protective equipment.
- Discuss the work practices you will use. Talk about any tools or practices you will do differently from how you usually work.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-16: Debrief: Safe Work Practices

Use this slide to debrief the exercise.

- Talk through the questions listed on the slide.
- Ask the participants if they have any questions about how or when to use and of the tools/methods.

Debrief: Safe Work Practices

- ◆ What tools did you choose?
- ◆ What personal protective equipment?
- ◆ What methods did you choose?
- ◆ What was different from a non-lead job?

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Work Practices – A debrief

Consider the questions above. Discuss as a large group.

Lead Safety for Remodeling, Repair, and Painting

Module 3 Instructor Notes

Slide 3-17: Now You Know

Use this slide to close out this module and transition to the next.

Now You Know

- ◆ How to work safely with lead
- ◆ Dangerous practices
- ◆ Alternatives to traditional practices

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3-17

The practices you learned in this module will help you make less dust as you work.

In the next module, we'll talk about how to clean up properly so that no dust is left behind when the job is done.