Lead Awareness in Indian Country: Keeping our Children Healthy!

PREFACE

This Curriculum is meant to provide tribal communities an educational tool to discuss potential lead exposure and promote in-home activities that parents, grandparents, childcare providers and others can do to reduce childhood lead exposure.

Several pilots were conducted in partnership with Oneida Community Health and Environmental Health Safety and Land Management Programs, the Shoshone-Bannock Tribes, the Eight Northern Indian Pueblos Council, Inc., EPA Region 5 and EPA Region 6. Over 200 tribal representatives contributed to the success of this Curriculum by developing content, reviewing information and evaluating messages and use.

EPA
United States
Environmental Protection
Agency

Lead Awareness in Indian Country: Keeping our Children Healthy!

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INTRODUCTION

The ***Lead Awareness in Indian Country: Keeping our Children Healthy!*** Curriculum (Curriculum) is designed to be a user-friendly tool to educate tribal communities about lead exposure and promote in-home activities to reduce and/or prevent potential exposure to lead. The Curriculum identifies key information to empower individuals to act within their own homes to protect their children and communities. Several preventative actions such as effective cleaning techniques, proper handwashing and good nutrition can be taken by parents, grandparents, child care providers and others to reduce children's potential exposure to lead.

This Curriculum was developed in collaboration with tribal partners to:

- Raise awareness in tribal communities about childhood lead exposure;
- Expand understanding of lead's potential impacts on children's health and cultural practices; and
- Encourage actions that can be taken to reduce and/or prevent childhood lead exposure.

Children's exposure to lead may come from multiple sources and can cause irreversible and life-long health effects. Lead is particularly dangerous to children because their growing bodies absorb more lead than adults due to mouthing and hand-to-mouth behaviors (Ref. 1). Children's brains and nervous systems are particularly sensitive to lead's damaging effects. In fact, lead can affect other organs (e.g., kidneys) and systems (e.g., muscular) in the body (Ref. 2). No safe blood lead level in children has been identified. Even low levels of lead in children's blood can result in:

- Behavior and learning problems;
- Lower intelligence quotients (IQ);
- Increased hyperactivity;
- Slowed and stunted growth;
- Hearing problems; and
- Anemia.

At high levels, lead can cause:

- Coma;
- Seizures; and
- Death, in some cases.

During pregnancy, lead is released from the mother's bones along with calcium and can pass from the mother, exposing the fetus or breastfeeding infant to lead. This can result in serious effects to the developing fetus and infant, including

- Causing the baby to be born too early or too small;
- Hurting the baby's brain, kidneys and nervous system;
- Increasing the likelihood of learning or behavioral problems; and
- Putting the mother at risk for miscarriage.

The ***Lead Awareness in Indian Country: Keeping our Children Healthy!*** Curriculum is designed to balance diverse community backgrounds, technical information and localized knowledge to allow community leaders (i.e., instructors) an opportunity to plan and deliver unique messages within each structured module.

Four educational modules make up the Curriculum:

- *Module 1: Understanding Lead* - provides an overview of lead, its impacts and actions that can be taken to reduce potential lead exposures and lead poisoning;
- *Module 2: Effective Cleaning Techniques* - explains and demonstrates recommended cleaning techniques for reducing household lead dust;
- *Module 3: Personal Hygiene and Nutrition* - focuses on the connections between personal hygiene and nutrition for children and potential exposure to lead; and
- *Module 4: Hiring Lead Professionals* - emphasizes the importance of hiring a certified lead professional to follow lead-safe work practices to reduce exposure to lead.

Each module consists of materials (i.e., lesson plan, worksheet, key messages, presentation slides and kids activity sheet) to facilitate interactive sessions with participants. Instructors do not need to be experts on lead to conduct these educational sessions. The Curriculum is designed to provide community leaders a step-by-step guide through each module with outlined approaches, background information, resources and examples.

The *Using the Curriculum* section provides instructors an in-depth understanding of how to use the materials and guidance to prepare and present the information. Instructors may choose to conduct modules in a manner and pace that best works for their community, whether conducted all at once or individually over time. This Curriculum is intended to provide instructors a starting point to hold informed conversations within their communities and encourage behavioral changes to protect children from potential lead exposure.

References

1. Agency for Toxic Substances and Disease Registry. Case Studies in Environmental Medicine: Lead Toxicity. 2017. Available at https://www.atsdr.cdc.gov/csem/csem.asp?csem=34&po=0. [Accessed August 20, 2020].
2. U.S. Environmental Protection Agency. Protect Your Family from Lead in Your Home. 2020. Available at https://www.epa.gov/lead/protect-your-family-lead-your-home. [Accessed March 30, 2020].

USING THE CURRICULUM

The ***Lead Awareness in Indian Country: Keeping our Children Healthy!*** Curriculum (Curriculum) was designed with the input of over 200 tribal representatives to raise awareness and educate tribal communities about childhood lead exposure. The Curriculum provides technical information and encourages the inclusion of local knowledge and culture. Instructors have the flexibility to plan and deliver messages within each of the four modules to fit their own community and participants' needs. Make the Curriculum your own!

The target audience is broad - parents, grandparents, tribal leaders, teachers, child care workers, healthcare providers, youth (ages 12 and up) and anyone interested in learning more about lead and protecting children. The Curriculum is designed to be taught by community leaders with experience educating and training members of their tribal community but does not require instructors to be experts on lead or lead exposure. These community leaders may include teachers, outreach specialists, educators, environmental staff, social workers, community health workers and youth leaders.

The Curriculum

The Curriculum consists of four modules designed to be delivered sequentially, although the modules may be used individually or in a different order. It is recommended to start with *Module 1: Understanding Lead*, since it is an introduction to the topic and contains information covered in more detail in subsequent modules. To make the sessions personal and relevant to participants, the Curriculum was designed to be adapted by instructors to include relevant stories, images and videos from their communities.

Module 1: Understanding Lead – This module educates participants on potential sources of lead exposure, and lead's impacts and health effects on humans, wildlife, the environment and cultural practices. Module 1 empowers participants with practical actions they can take to reduce potential exposure to lead. By the end of Module 1 participants will:

- Recognize potential sources of lead exposure;
- Understand impacts and effects of lead exposure;
- Learn simple actions to reduce lead exposure; and
- Know the importance of testing children's blood lead levels.

Module 2: Effective Cleaning Techniques – This module explains and demonstrates cleaning techniques recommended to reduce household lead dust and potential lead exposure in the home. The cleaning techniques can be performed by any person. Module 2 includes a discussion on how to avoid re-contaminating an area once it has been cleaned. By the end of Module 2, participants will:

- Understand the importance of proper cleaning techniques to prevent exposure to lead;
- Learn about lead dust;
- Recognize potential lead dust traps in the home;
- Know which materials are recommended to clean lead dust; and
- Identify cleaning techniques that are most effective in reducing lead dust.

Module 3: Personal Hygiene and Nutrition Practices – This module focuses on how good personal hygiene habits and healthy nutritional practices may limit absorption of and reduce exposure to lead in children. Module 3 includes discussions on the benefits that personal hygiene and good nutritional practices can have to help reduce potential exposure to lead. By the end of Module 3 participants will:

- Learn specific personal hygiene techniques that help reduce potential childhood lead exposure;
- Identify foods that contain calcium, iron and vitamin C; and
- Understand nutritional practices and foods that may limit the absorption of lead.

Module 4: Hiring Certified Lead Professionals – This module informs participants on what to do if a home, child care facility or preschool built before 1978 contains lead-based paint. Module 4 discusses the need to hire certified lead professionals and the differences between a lead-based paint inspection and lead-based paint risk assessment. By the end of Module 4, participants will:

- Understand the difference between a lead-based paint inspection and a lead risk assessment;
- Learn that renovation, repair and painting (RRP) jobs in a pre-1978 home with lead-based paint creates lead dust;
- Recognize the difference between lead abatement and renovation, repair and painting projects; and
- Understand what must be done by Lead-Safe Certified Firms when conducting lead renovation activities.

Module Materials

Each module includes the following materials to facilitate interactive sessions with participants:

Lesson Plan – The lesson plan provides a detailed guide for instructors on how to teach the information in each module. Each lesson plan outlines necessary preparation, suggested materials, outcomes, demonstrations, direct notes to instructors and references. “Notes” boxes with background information and space for instructors to take their own notes are included within each lesson plan.

Presentation Slides – The presentation slides (i.e., PowerPoint) are the main tool used by instructors to deliver the lesson plan to participants. Lesson plan content is included within the notes section of each slide. Instructors should edit the presentation slides to incorporate relevant stories, images and videos, and remove any slides they do not plan to use during the session. If access to technology is limited, instructors can use hard copies (paper handouts of the slides).

Worksheet – The worksheet is an interactive tool to facilitate discussion and review significant concepts. The intention of each worksheet is to help participants become familiar with the information presented. Worksheets include various exercises and questions for participants to record answers and are intended to be completed during sessions. Instructor notes are provided on how and when to use worksheets.

Key Messages – The key messages document outlines main points of information intended for participants to remember. This take-home resource summarizes information covered during each session and highlights preventative actions participants can take in their own homes to reduce their family's potential exposure to lead. Instructors can provide these documents with the worksheet or at the end of the session.

Kids Activity Sheet – The kids activity sheet is a handout for elementary school children that offers fun puzzles, games and coloring that present easier to understand concepts from each lesson plan. The activity sheet could either be completed by the child on their own or with the help of someone older, and can be given to participants as a take-home resource.

Appendices are included at the end of the Curriculum to provide additional information to assist instructors:

- *Appendix A: Foods that Contain Calcium, Iron and Vitamin C* – A table of over 150 foods known to contain calcium, iron and/or vitamin C.
- *Appendix B: Renovation, Repair and Painting Projects for Do-It-Yourselfer*s – Safeguards to follow to prevent lead dust from spreading throughout your home when completing do-it-yourself renovation, repair or painting projects.
- *Appendix C: Glossary* – A list that defines key terms used throughout the Curriculum.
- *Appendix D: Supplemental Resources* – A list of additional resources, including videos, that instructors or participants may find helpful to understand information covered in the Curriculum.

Actions to Reduce Lead Exposure Infographic

The *Actions to Reduce Lead Exposure Infographic* (Infographic) is a visual aid designed to show participants actions they can take to lower and prevent their family's potential exposure to lead. These eight actions are highlighted and discussed throughout the Curriculum:

1. Keep Homes Clean & Dust Free.
2. Eat a Diet High in Iron, Calcium & Vitamin C.
3. Wash Hands.
4. Play in Grass.
5. Hire Certified Lead Professionals.
6. Shower & Change.
7. Wash Toys, Pacifiers & Bottles.
8. Run Your Water.

The placement of these eight actions at the beginning of Module 1 provides real-time advice before diving into detailed discussions. Understanding preventative actions early may lower a participant's anxiety since the instructor provides methods to prevent potential lead exposures right away. In addition, each preventative action is then

reinforced later with additional information throughout the Curriculum to focus on doable solutions, connecting back to the Infographic.

The Infographic is a flexible communications tool that can be used by instructors and communities to:

- Announce the Curriculum – Use the Infographic on flyers and other promotional materials to advertise a community's upcoming event;
- Evaluate Learning – Use the Infographic throughout Curriculum sessions to check knowledge and reiterate actions that can be taken in the home;
- Remind Participants – Use the Infographic as part of participant follow-up to remind them how to start new actions that may prevent potential exposure to lead; and
- Inform Non-participants – Use the Infographic as a stand-alone resource to educate the community about actions that can be taken to reduce potential lead exposure.

Teaching Strategies

The Curriculum format is designed to establish community-based learning where learning and teaching strategies come together to focus on meaningful community engagement. With advance preparation, instructors can adjust each session appropriately to capture and incorporate personal and local observations and real-life scenarios unique to that community.

The opportunity to include thoughtful knowledge and ideas is based on the instructor's interaction with participants and the use of the Curriculum content. The Curriculum was built to enrich learning experiences, discuss pertinent issues of that community and work toward identifying relevant solutions.

Communication and activities play a critical role in the learning process. Within the Curriculum, instructors will find built-in opportunities to interact with participants such as open-ended questions and optional demonstrations. Educating participants in a meaningful way comes from the instructor's use of materials and planned interactions. For example, the worksheets provide participants the ability to connect with and reinforce Curriculum topics.

Through preparation, instructors will become more comfortable with materials and think through meaningful ways to customize presentation slides and certain topics within lesson plans by adding relevant stories, images and videos, and removing any slides they do not plan to use during that session.

Instructors should familiarize themselves with all the materials provided within the Curriculum to have a strong understanding of the information. Information within each module builds upon previous content. Therefore, instructors need to be familiar with all of that information even if they choose to teach only a few modules. This ensures that instructors have a strong starting point to teach and a thorough understanding of all the lead-related topics covered. Instructors should read each lesson plan to:

- Identify which module(s) they will present;
- Consult with knowledgeable parties to prepare;
- Invite others to present information with them;
- Gather personal, community or regional information, stories, photos, etc. that would be useful to build learning experiences; and
- Identify additional resources that may be important to participants such as brochures and phone numbers for future follow-up.

For some participants, certain suggestions such as cleaning and good hygiene practices may be sensitive topics if participants have clutter-filled homes, difficulty discarding possessions or bad hygiene habits. Instructors should be aware of how participants react to information presented and use terms such as “we” and “us” throughout teachings and discussions.

Promoting Attendance

Instructors should develop a plan or consider ideas on how to increase attendance and community involvement as they start to review the Curriculum. However, an instructor should keep things simple. Instructors should feel comfortable with organizing sessions and should not overwhelm themselves with too many extra items. To maximize the number of participants from the community, instructors should think about using creative partnerships.

Instructors may want to work with local entities, such as parent groups and associations; school and community organizations; health and community associations; and environmental, housing and government agencies. Partnering with others will provide an existing network of people to invite to sessions as well as identify opportunities to think about what would appeal to the audience (i.e., parents, grandparents, tribal leaders, teachers, child care workers, healthcare providers, youth) and anyone interested in learning about protecting children from potential lead exposure.

Tips for planning a successful session may include:

- Pulling a team together;
- Identifying a budget to provide refreshments, free child care or door prizes - think about giving out items that align with the modules such as cleaning supplies, nutritious foods, free services, etc.;
- Choosing a location that is both convenient and appealing;
- Holding sessions in conjunction with other short events;
- Checking community calendars to ensure there are no scheduling conflicts;
- Scheduling session(s) multiple times;
- Providing translation services;
- Organizing a potluck meal; and
- Getting an announcement out through innovative means - such as sending flyers home with students, advertising sessions in the local paper and partnering with organizations to include flyers in newsletters and weekly items such as paychecks.

Module 1: Understanding Lead

Photo provided by Zender Environmental and Health Group

Module 1: Understanding Lead provides an overview of lead, its impacts and actions that can be taken to reduce potential lead exposure and lead poisoning. This module is developed to ensure that attendees understand the seriousness of lead exposure and steps to prevent lead poisoning. By the end of Module 1, participants will:

- Recognize potential sources of lead exposure;
- Understand impacts and effects of lead exposure;
- Learn simple actions to reduce lead exposure; and
- Know the importance of testing children's blood lead levels.

Instructor Preparation

*To prepare for **Module 1: Understanding Lead**, the instructor should take the following steps:*

- *Preview the lesson plan to identify sections where examples, stories and local information may be inserted.*
- *Reach out to tribal personnel and seek other resources to find local information and partners, if possible.*
- *Invite a tribal or local healthcare provider or environmental health professional to participate in the session and be available to answer attendees' questions about childhood blood lead levels and testing. Review the Centers for Disease Control and Prevention's (CDC) website for information on their recommendations on children's blood lead levels: www.cdc.gov/nceh/lead/prevention/blood-lead-levels.htm.*
- *Research and identify sources of lead exposure(s) in your community.*
- *Discuss with tribal leaders, elders and staff your intentions to conduct the training and whether they have any stories related to lead and lead exposure they would like shared during this session.*
- *Make copies of the Module 1 worksheet, key messages and kids activity sheet (1 copy per participant).*
- *Edit the Module 1 Presentation Slides to incorporate relevant stories, images and videos. Remove presentation slides you do not plan to use during the session.*
- *Use the "Notes" boxes provided in the lesson plan for personal notes.*

***Instructor Notes** written in italics can be found throughout the lesson plan. These notes are intended to guide the instructor through the discussion and presentation and are not meant to be read out loud during the session.*

Notes:

Suggested Materials

- Laptop and projector to display Presentation Slides
- Flipchart
- Markers
- *Module 1 Worksheet*
- *Module 1 Key Messages*
- *Module 1 Kid's Activity Sheet*
- Pens or pencils
- Hard copies of presentation slides to hand out to participants (optional)

If access to technology is limited, you can use hardcopies of presentation slides.

Outcomes

Upon the completion of Module 1, participants will be able to:

- List three sources of lead exposure;
- List three health effects of lead exposure in children;
- Explain how lead impacts our cultural practices and wildlife; and
- List three actions that can minimize or eliminate potential exposure to lead.

Outline

Notes:

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Lead Poisoning
Lead poisoning is a sickness caused by swallowing or breathing lead (Ref. 1).

I. Introduction (10 minutes)

Instructor Note: *Allow participants to introduce themselves. Use the questions below to determine participants' current knowledge and awareness of lead and lead poisoning. Record participants' responses on a flipchart for future reference. Remember to place an emphasis on the sentence: "Please keep in mind that lead exposure and lead poisoning are preventable – we can take actions to reduce potential exposure to lead, and there are laws in place to protect us."*

You may have heard of lead or lead poisoning before today but may not know much about it. Our goal today is for you to walk away with an understanding of lead. We will learn:

- What lead is;
- Where lead is found;
- How lead can harm both children and adults; and
- Potential impacts on the environment, wildlife and cultural practices.

Please keep in mind that lead exposure and lead poisoning are preventable – we can take actions to reduce potential exposure to lead, and there are laws in place to protect us. At the end of this session, we will discuss several actions we can take as a community and as individuals to reduce potential lead exposure.

Before we begin, I have a few questions for the group to gain a better understanding of what you already know about lead and lead poisoning:

1. How many of you have ever heard of lead or lead poisoning before today? ***Instructor Note:*** *This can be as simple as having participants raise their hands or respond with "yes" or "no" or you can allow participants time to share specific stories.*

2. What are some things you have heard about lead or lead poisoning? ***Instructor Note:*** *This is another good time to allow participants to share specific pieces of information and/or stories.*

3. Does anyone know what year their house or apartment was built; was it built before or after 1978? For those of you who live in a house or apartment built before 1978, this session is going to provide you with information about lead-based paint that may be in your home.

Let's make a list of questions you have about lead and the health impacts of being exposed to lead with the hope that by the time we have covered all of the modules included within the *Lead Awareness in Indian Country: Keeping Our Children Healthy!* Curriculum we will have covered and answered all your questions. If you do not have a question right now, you are more than welcome to come up and add your question later. ***Instructor Note:*** *Allow participants time to think and then have them share their questions. Have a participant write questions on the flipchart so you can facilitate the conversation. Refer back to the flipchart throughout.*

I would like to acknowledge that the information we are covering today may seem alarming, but when we become aware of and educated on this subject, we are empowered to take preventative action to safeguard our health. Preventing lead exposure in young children (under age six) is especially important because as their bodies grow and develop, they are more vulnerable to the permanent harmful impacts of lead. As parents, grandparents, teachers, tribal leaders and others who care about our community wellbeing, we can take simple actions right now to prevent lead exposure, which at the same time can benefit the overall health of our land and our families. Exposure to lead is preventable!

Instructor Note: *Give a copy of the Module 1 Worksheet, Module 1 Key Messages and a pencil to each participant.*

Here are two handouts we will use today, the worksheet and key messages. We will use the worksheet during this session as a discussion tool and to review what we learned together. The key messages is a take-home resource that summarizes information covered.

Let's go over the image on the front of the worksheet. The image shows simple actions we can take to reduce potential exposure to lead. We will learn more details about each action throughout different sessions.

a. Actions to Reduce Potential Lead Exposure

- Clean your home once a week using a clean, wet or damp cloth, sponge or mop to minimize dust, which may contain lead.

- Eat a well-balanced diet with foods high in calcium, iron and vitamin C to help reduce the absorption of lead.

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Notes:

Hiring a Certified Lead Professional

It is important to hire a certified lead professional who is trained to address lead hazards safely when: a) abating a home or child care facility built before 1978 to correct lead hazards permanently, and b) disturbing paint in a renovation, repair or painting project in homes or child care facilities built before 1978.

When Can Lead Be Seen?

In the case of lead service lines for water, you can identify them easily (if they are accessible) by carefully scratching the pipe with a key. If the pipe is made of lead the area you scratched will turn a bright silver color (Ref. 2).

- Use soap and water (warm or cold) to wash children's hands several times a day, especially after playing outside or with animals.
- Play in grass and dirt not contaminated with lead, and use designated picnic, camping and hiking areas.
- Hire a certified lead professional when renovation, repair or painting will disturb painted surfaces in a home built before 1978. Keep family out of the work area.
- Change and wash clothes, remove shoes and shower to avoid tracking lead into the home from soil, work sites or hobbies.
- Wash daily any items your child uses regularly, such as pacifiers and toys, to minimize exposure to dust, which may contain lead.
- Flush your home's pipes by running your tap, taking a shower or doing a load of laundry or dishes before drinking or cooking.

These are a few of the actions we can take to reduce our potential exposure to lead. Later in this session, we will revisit these actions and learn more.

II. Potential Sources of Lead Exposure (15 minutes)

Instructor Note: *This section is meant to provide participants with a brief introduction. Various examples of exposure are provided; actual exposure depends on a variety of factors, such as: source, location, manufacturing processes, age and condition of products. Throughout this section, emphasize that these are potential sources of lead exposure so as not to alarm participants. If needed, use information provided within the Taking Action section to assist with your discussion.*

a. What is Lead?

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead is mined and then used in products to make them durable and last longer. Once lead is used in a product, it is nearly impossible to identify with the naked eye. Lead does not biodegrade or disappear from the environment over time.

b. Where is Lead Found and How is it Used?

Lead has been mined and used for a long time and can be found in many different products and places. Where do you think lead can be found? Take a moment to glance around the space we are in and think about your everyday activities. Pencils may come to mind, but they are made with graphite and not lead.

Instructor Note: *Give participants time to think and talk with each other. If they are unable to think of something, you can either prompt them by suggesting items or simply state: "Don't worry if you cannot think of something. Today we will learn where lead is found and how to prevent exposure."*

Congress has passed several laws related to lead. These laws address lead in paint, dust and soil; lead in the air; lead in water; and disposal of lead waste. As a result, these laws limit the amount of lead that can be in products, outdoor air, emissions from some industrial sources, waste waters and more.

Unfortunately, lead can be found in all parts of our environment – the air, soil, water and inside our homes. Much of our exposure comes from human activities involving the use of fossil fuels, past use of leaded gasoline; some types of industrial facilities (e.g., mining and manufacturing); leaded aviation fuel and past use of lead-based paint in homes.

Historically, lead compounds were added to paints to enhance color, reduce corrosion or shorten drying time. Lead-based paint, if present in older homes built before 1978, may be a major source of exposure to lead to those who live there. When painted surfaces are not properly maintained, paint can deteriorate, peel, chip, chalk or crack. When lead-based paint is old and worn or is subject to constant rubbing (as on doors and windowsills), lead-based paint chips and dust can scatter and become a hazard. These hazards can be breathed in or swallowed by children, residents and workers. Lead dust can also be scattered when paint is disturbed during renovation, repair or remodeling.

Today, one of the most common ways children can be exposed to lead is through contact with lead-based paint chips and dust in buildings and homes that have lead-based paint present when they put toys, fingers and other objects in their mouths as part of their normal behavior. Lead-based paint has a "sweet" taste, which makes it appealing to young children, so they may also lick or bite chewable lead-based paint surfaces.

Notes:

Leaded Gasoline

In 1990, the Clean Air Act was amended to ban lead in gasoline, and it became effective January 1, 1996. However, leaded gasoline may still be used for off-road uses, including aircraft, racing cars, farm equipment and marine engines.

Leaded gasoline can be absorbed through the skin (Ref. 3).

Housing Built Before 1978

Lead-based paint was banned for use in housing in 1978. Houses built before 1978 may contain some lead-based paint. Find out more at: www.epa.gov/lead.

Notes:

Exemptions to Ban of Lead-Containing Paint and Certain Products Bearing Lead-Containing Paint

The United States banned the use of lead-based paint (paint containing lead more than 90 parts per million) in residential paint and some consumer products. However, there are several exemptions to the ban on lead-based paint. For example, lead-based paint may be used in:

- *Agricultural and industrial equipment;*
- *Traffic and safety markings;*
- *Billboards and road signs;*
- *Lawn and garden equipment;*
- *Appliances;*
- *Motor vehicles and boats;*
- *Mirrors that are part of furniture; and*
- *Artists' paints and related materials (Ref. 4).*

Housing Built Before 1986

Lead can enter drinking water through the corrosion of plumbing materials, especially where the water has high acidity or low mineral content that corrodes pipe fixtures. The use of any pipe, plumbing fitting or fixture, solder or flux was banned in 1986. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. Find out more at: www.epa.gov/lead.

When lead-based paint is in good condition and is not on an impact or friction surface, like a window, the paint is usually not a hazard. Childhood lead exposure and lead poisoning from lead-based paint and other sources is preventable. The key is to keep children from coming into contact with lead. Throughout the Curriculum we will discuss how to limit contact with lead to prevent exposure.

Later in the Curriculum *(Module 2)*, we will discuss how cleaning techniques can limit a child's contact with lead-based paint chips and dust as well as discuss how you should hire a certified lead professional to test and work on older homes or buildings *(Module 4)*.

Lead and lead compounds have been used in a wide variety of products found in and around our homes, including paint used on some farm equipment and boats; imported pottery, scented candles and older mini blinds; glassware; toys; ceramicware; solder; batteries; ammunition; old cell phones that are in disrepair and cosmetics (e.g., lipstick).

Lead can enter drinking water when plumbing materials that contain lead corrode. The most common sources of lead in drinking water are from lead pipes, faucets and fixtures. Lead pipes are more likely to be found in older cities and homes built before 1986. You may be wondering if it is safe to take a bath or shower using water suspected of containing lead. The answer is yes. Bathing and showering should be safe for you and your children, even if the water contains lead. Human skin does not absorb lead in water (Ref. 5).

Lead can be released into the environment from industrial sources and contaminated sites, such as former lead smelters. Improper disposal or recycling of lead-acid batteries, improper storage of metal parts such as machinery components, and abandoned mines may also contribute to lead in the environment.

Some traditional pottery made in other countries labeled as "lead free" may contain lead in the glazes and/or decorations covering the surface. If clay pieces are not manufactured properly, lead glaze can leach into food and drinks that are prepared, stored or served in these dishes.

Certain pottery and other forms of ceramicware are made with earthenware, a porous form of clay that must be glazed to hold food or liquid. Glazing applies and fuses a thin, glass-like coating onto the surface of the clay to seal its pores. The glaze – which may contain lead to facilitate the melting of glaze particles – fuses to the piece when it is fired in a kiln, a

special oven used to bake clay. When pieces are fired at the proper temperature for the proper amount of time, essentially all the lead is bound into the glaze. If a piece is not properly fired, the lead glaze may not fuse to the earthenware and may contaminate food and drinks when used to prepare, store or serve food and drinks (Ref. 6).

Today, many potters of traditional or 'folk' pottery have switched to non-lead glazes. Traditional potters instead are using other techniques such as an inner coating of pitch (pine sap), burnishing (polishing) the surface and applying white slip. Many Native American traditional and non-traditional potters use traditional paint recipes created from local plants and mineral sources; however, some do use commercial paints.

Many households in Indian country consist of hunting families that rely on the use of firearms to acquire food year-round. Elevated lead exposure has been correlated with subsistence hunting communities when game meat is harvested with lead ammunition. Additionally, discharging firearms in poorly ventilated areas, cleaning firearms, or handling lead ammunition can also be a source of exposure to lead and other chemicals known to be toxic.

While it is against federal law to use lead ammunition to hunt waterfowl most hunting ammunition currently sold in the United States is lead-based. High velocity lead-core bullets explode upon impact, sending out a plume of lead dust along with hundreds of tiny fragments into the targeted animal. In big game, this source of lead can travel up to 18 inches away from the wound channel, inadvertently ending up in game meat processed for consumption. For example, X-ray studies of venison donated to food banks across the country have documented health risks to humans from lead exposure. Public health officials recommend the use of non-lead ammunition as the simplest and most effective solution to lead poisoning, in both humans and wildlife, arising from the consumption of deer killed with lead ammunition. In addition, food pantries and their clients should be made aware of possible lead fragments in venison; processors of deer should use best practices to avoid lead exposure from venison (Refs. 7 - 9).

Solid copper bullets and slugs have been produced for big game hunting with increasing effectiveness since the 1980s. Today high-performance, non-lead ammunition is available in a wide range of brands and calibers from most manufacturers. Since non-lead ammunition retains its weight upon impact, it delivers high-performance results while also

Notes:

Traditional Pottery

There is no way of knowing if traditional pottery has lead unless you know the techniques used to create that piece of pottery. Techniques vary from potter to potter, tribe to tribe and region to region.

If clay or natural pigments are collected from an area contaminated with lead, traditional pottery may contain lead. Today many potters of traditional or 'folk' pottery have switched to non-lead glazes, but they may still be using old kilns that were once used for firing lead-containing glazes, unintentionally contaminating the "lead free" pottery with lead residues that remain in the kiln from past usage. Because the lead may not fuse into the non-lead glaze, it may contaminate food when the pottery is used with food (Ref. 6).

Notes:

Elevated Blood Lead Level
A single blood lead test at or above the CDC blood lead reference value. For more information on CDC's current blood lead reference value, visit: www.cdc.gov/nceh/lead/prevention/blood-lead-levels.htm.

Superfund Site
Superfund is a program administered by EPA in cooperation with state and tribal governments. It allows EPA to clean up contaminated hazardous waste sites and to compel responsible parties to perform cleanups or reimburse the government for cleanups led by EPA. For more information about Superfund, visit: www.epa.gov/superfund.

preventing potential lead exposure in game meat harvested with firearms. Lead-free hunters also play an important role in ecosystem health and species conservation, since the use of non-lead ammunition avoids the risk of lead exposure to both humans and wildlife.

Lead products are commonly used for hunting, fishing and making field equipment. In some cases, people melt lead to cast their own bullets, sinkers, decoys and other metal items. This process emits lead into the air and deposits lead particles into the workspace, and on their clothes, shoes and hair. Proper ventilation and equipment are important to reduce potential lead exposure.

Identifying personal uses of lead products is important. For example, in Cherokee Nation, a child was found to have a confirmed high level of lead in their body (elevated blood lead level) after making fishing sinkers with their father. Identifying the source of exposure took time. The environmental staff checked all sources of paint and other potential sources in the home (even though they lived in post-1978 housing) and checked the parents' work environment. The source was not found until a follow-up search of the garage, where a pile of lead fishing sinkers was discovered. This was determined to be the source of the child's exposure to lead. In this case, the father, with the help of his children, made his own fishing sinkers using lead. Lead fishing sinkers are typically made from 100% lead. It only takes a small amount of lead to harm a child; however, there are lead-free tackle options available, which would eliminate this source of exposure.

Lead is known to have leached into soil and groundwater at some Superfund sites, including the Tar Creek Superfund Site in northeastern Oklahoma. The Tar Creek Site is just one example of a Superfund Site located within or near tribal boundaries that impacts a tribe's air, water and land.
Instructor Note: *You may choose to share the story of the Tar Creek Superfund Site as shared by the Quapaw Nation or another example relevant to your community.*

i. Tar Creek Superfund Site: A Story from Quapaw Nation

Today, the Quapaw Nation works hard to clean their land and water to reduce the effects of lead and other pollution that disproportionately affect Quapaw tribal members. The Tar Creek Superfund Site also pollutes the lands and waters of seven other tribes through the portions of the Spring and Neosho watersheds that flow across the site and cross

their tribal lands, affecting fishing as well as consumption, medicinal and ceremonial uses of plants.

During both World Wars, bullets and bombshells were made from metals mined in and near Quapaw lands, which resulted in 500 million tons of chat (i.e., crushed limestone, dolomite, and rocks left over from the metal ore separation process). In the 1960s, lead and mining companies ceased operations of these mines and left chat piles that measured as high as 10 stories. Mining activities and associated waste contaminated the soil, sediment, groundwater and surface water, and settled dust from the piles blew across the region. Today, mining impacts continue to be felt near tribal members' homes.

In the late 1970s, the groundwater started to run red as a result of pollution from the heavy metals (lead, zinc, iron and arsenic), and the community started to link the effects of mining to health and developmental issues of young children. In fact, local doctors noticed children seemed to get sick often and teachers observed state testing scores significantly lagged in comparison to others outside the region.

In the 1980s, mining-related issues, such as sinkholes, started to become more prevalent, and people began to understand the health and environmental impacts of contamination from the mines. In 1983, the federal government designated a 40-square mile area as the Tar Creek Superfund Site. In 2006, an Army Corps of Engineers study showed that almost 9 out of 10 buildings in Picher, Oklahoma, were susceptible to collapse (due to unstable land from undermining of the site for lead and zinc and the removal of protective pillars beneath the surface). In 2008, the federal government provided funding for residents and business owners in Picher to relocate. Many residents were reluctant to leave a place they had called home for generations.

Today, the Quapaw Nation, along with state and federal partners, continue to clean up the 40-square-mile lead and zinc mining area – land and a community that have been left with pollution, adverse health effects, ruined property values and cultural losses. Most remediation work now involves removing chat piles, excavating contaminated soils and adding passive water treatment units. New wells must be drilled and cased through the contaminated aquifer and into a clean aquifer below. The Quapaw Nation is also utilizing filter-based semi-continuous air monitors in the Picher area to measure concentrations of lead and dust in the air at the site.

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Due to the destruction and contamination of natural resources, many Quapaw tribal members have ceased or greatly reduced their traditional gathering and use of natural resources to limit exposure. The Quapaw Nation recommends avoiding the use of carpeting in the home and wet mopping hard surfaces to minimize dust. Water trucks also routinely spray the unpaved roads to minimize dust kicked up by traffic, since most unpaved county roads in the area were graveled with chat.

Unfortunately, lead can remain in the environment for many years and enter soil and water. Lead in soil can settle on or be absorbed by plants grown for fruits or vegetables, or plants used as ingredients in food, including dietary supplements (Ref. 10). Some plants that grow in soils with a high lead concentration can absorb lead from the soil with most of the lead remaining in the roots and, in some rare cases, even making its way to the aboveground parts of the plant (Ref. 11).

Lead can also be found on the outside surface of plants, either by sticking to the roots or by settling on the leaves and stems when lead dust is spread through the air. Lead ingested by animals or absorbed by or found on the surface of plants can then be passed along the food chain when they are consumed by both wildlife and humans (Refs. 12 & 13). For example, lead in soil can be ingested due to hand-to-mouth activity that is common for young children and from eating vegetables that may have taken up lead from soil in the garden or field (Ref. 14). Lead in soil may also be inhaled if resuspended in the air or tracked into a house on the bottom of shoes.

A number of potential sources of lead exposure have been discussed as well as several actions we can take to reduce and/or prevent exposure to lead. We will continue our discussion of preventative actions during this and subsequent sessions.

c. Are There Other Sources of Lead in the Community?

Instructor Note: *Use this time to discuss potential sources of lead exposure unique to your community. Ask participants: "Are there sources of lead exposure in our community?" Be prepared to discuss known sources of lead such as, if appropriate, a Superfund Site, an abandoned mine, or improperly stored automobile parts and batteries.*

III. Vulnerable Populations (5 minutes)

Notes:

All humans may potentially be exposed to lead; however, certain groups are more vulnerable than others to lead's harmful effects, including young children under the age of six, pregnant women and adults who are exposed to lead through their jobs, hobbies and/or cultural practices.

a. Children

Lead is particularly dangerous to young children under the age of six because their growing bodies absorb more lead than adults, and their developing brains and nervous systems are more sensitive to lead's damaging effects.

Babies and young children's exposure to lead can be higher because they often put their hands and other objects into their mouths that may be contaminated by lead from dust or soil. This could include a pacifier dropped on the floor or ground covered with lead dust or eating paint chips or soil that contains lead.

Children may be exposed to lead by eating food or drinking water that contains lead. This includes drinking powdered formula made with lead-contaminated water (Ref. 15), eating lead dust that has settled on food and food preparation surfaces, eating game meat with lead particles, and eating food or drinking liquids stored or cooked in lead crystal or lead-glazed pottery and dishes. Food and liquids stored or served in lead crystal or lead-glazed pottery or porcelain can become contaminated because lead can leach from these containers into the food or liquid.

Various toys and other products may contain lead. Older toys and furniture passed down in the family, antique doll furniture or toy jewelry could contain lead-based paint or contain lead in the material it is made from. This could become a problem if children bite or swallow toys or toy jewelry that contain lead. Parents can stay up to date on product and toy recalls due to lead contamination and other issues by visiting the Consumer Product Safety Commission's website: http://www.cpsc.gov/.

b. Adults, Including Pregnant Women

Working in certain jobs may increase adults' potential exposure to lead, such as: renovation or repair of older homes and buildings; painting; construction; refinishing furniture; smelting; mining; auto repair and working at hazardous waste sites. Engaging in hobbies, such as making

Notes:

Definition of Pica

Pica is eating nonfood items, such as clay, soil, paint chips or paper (Ref. 17), which do not contain significant nutritional value. Iron-deficiency anemia and malnutrition are two of the most common causes of pica, followed by pregnancy. In these individuals, pica is a sign that the body is trying to correct a significant nutrient deficiency. Treating this deficiency with medication or vitamins often resolves the problem (Ref. 18).

stained glass, making ammunition, shooting at a gun range or using certain folk remedies, may increase adults' potential exposure to lead. These activities can cause lead dust or soil to get onto your skin, in your hair and clothing, which can then be transferred to the interior of your car or home, creating additional lead exposure for the rest of your family.

A pregnant woman's exposure to lead from all previously mentioned sources is of concern because it can result in exposure to her developing fetus. While most common in 1- and 2-year old children, some pregnant women may also be exposed to lead from the intentional ingestion or mouthing of soil, clay or pottery, which is a behavior known as pica. Some people may also partake in the deliberate consumption of earth's (clay, soil and rocks) as part of their cultural practices. Pica can result in serious health effects to both the mother and her developing fetus if the sources of clay, soil and rocks contain lead.

IV. Impacts and Effects of Lead Exposure (15 minutes)

Lead is found in many different places and has harmful effects on human health. Lead exposure in humans can cause negative health impacts, which often occur with no obvious symptoms and frequently go unrecognized. Lead impacts the environment and wildlife. Wildlife symptoms are easier to recognize than those of humans.

a. Health Effects of Lead

There is no known safe level of exposure to lead. Even small amounts of lead in the blood of children can result in:

- Behavior and learning problems;
- Lower IQ and hyperactivity;
- Slowed growth;
- Hearing problems; and
- Anemia.

In rare cases, high amounts of lead can have devastating effects on children, including seizures, coma and in some cases, even death.

Adults exposed to lead can suffer from:

- Nerve disorders;
- Increased blood pressure and incidence of hypertension;
- Decreased kidney function;

- Reproductive problems (in both men and women); and
- Memory and concentration problems.

Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. During pregnancy, lead is released from the mother's bones along with calcium and can pass from the mother, exposing the fetus or breastfeeding infant to lead, especially when the mother does not receive adequate calcium through her diet. This can result in serious effects to the developing fetus and infant, including:

- Causing the baby to be born too early or too small;
- Hurting the baby's brain, kidneys and nervous system;
- Increasing the likelihood of learning or behavioral problems; and
- Putting the mother at risk for miscarriage.

b. Health Effects of Lead on Wildlife

Like humans, ingestion of lead in the food web can also impact wildlife species. Animals can be exposed to lead from mining, facility emissions and lead-based paint, but research indicates that the ingestion of lead fishing tackle and spent lead ammunition are two of the major sources of exposure in wildlife (Ref. 19). This includes the direct ingestion of spent lead shot and bullet fragments. Secondary lead poisoning can occur when predators and scavengers target wounded prey that has been shot and animal parts or gut piles left by hunters that contain lead fragments from spent ammunition (Ref. 20). This source particularly impacts scavenging bird species such as hawks, eagles, vultures, condors, ravens, magpies, jays, etc. Lead poisoning affects their muscles, nerves, kidney function, reproductive systems, flight capacity and can result in paralysis and starvation.

Waterfowl species, such as loons, ducks, geese and swans, are also commonly affected by lead ingestion through the consumption of spent lead shot and used sinkers or tackle. However, many other types of birds can also be affected. Upon ingestion of sufficient amounts of lead, birds may show behavioral changes, such as: unsteady legs, droopy wings, accidents when trying to land, and in more severe cases, blindness and the inability to hold up their head.
Other symptoms include listlessness (e.g., spiritless), vomiting, diarrhea and impaired flight.

Lead poisoning can also occur in mammals, such as raccoons, bears, wolves and foxes. Lead exposure for these mammals can result in vomiting, loss of appetite, diarrhea,

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Amphibians

Amphibians' exposure to lead is thought to result from the ingestion of lead-contaminated sediment and lead contained in their food or dissolved in water. It is not believed to be through the direct ingestion of spent ammunition and fragments (Ref. 21).

lethargy and uncoordinated body movements. Repeated exposures over time can result in anemia, convulsions, blindness, coma or death.

Lead exposure in amphibians, such as toads and frogs, can result in an increase in skin shedding, sluggishness and decreased muscle tone.

Given rising concerns over known and potential impacts of lead on wildlife (Ref. 19), many tribes are taking action to increase the use of non-lead alternatives for fishing and hunting activities within their tribal lands. For example, the Menominee Tribe requires non-lead ammunition for any harvesting of animals for food. The Flathead Indian Reservation Tribes require the use of non-toxic shot for both waterfowl and upland bird hunting, as well as the use of non-lead lures or sinkers for fishing (Ref. 22). Other tribal nations, such as the Hopi Tribe, Navajo Nation, Confederated Tribes of Siletz Reservation, Confederated Tribes of the Umatilla Indian Reservation and a handful of smaller tribes have either passed resolutions or proposed recommendations to include a non-lead ammunition component in their hunting guidelines.

The Nez Perce Tribe of north-central Idaho initiated regional dialogue on this topic and established a Hunter Stewardship and Safety Program centered on lead-free subsistence hunting. The program offers an ammunition exchange option and facilitates community outreach to share awareness about the human health and wildlife conservation benefits of choosing to switch to copper-based ammunition when harvesting food. As non-lead options for both fishing and hunting have continued to increase, some First Nations in Canada have also urged more leadership on this issue.
Instructor Note: *Check with your tribe to see if they have similar recommendations or resolutions on lead ammunition and fishing tackle. In 1991, the U.S. Fish and Wildlife Service banned the use of lead shot nationwide for hunting waterfowl (duck, geese, swans and coots). For more information on shot types that are approved as nontoxic for waterfowl hunting in the U.S., visit:* https://www.fws.gov/birds/bird-enthusiasts/hunting/nontoxic.php.

c. Potential Impacts of Lead on Cultural Practices

Lead, like other heavy metals, has the potential to impact cultural practices and subsistence lifeways. From the catching of fish, to the gathering of plants, to the harvesting of wild game, or the collecting of wood and other life-sources, subsistence lifeways are vulnerable to heavy metal exposure because they are intricately linked to the ecological

communities and processes of living landscapes. All of these life supporting links can be eroded or destroyed from exposure to heavy metals that would otherwise stay out of harm's way underground. Tribes and indigenous populations are extremely diverse in terms of lands, languages, cultures and diets, and are closely linked to the environment and natural resources. Due to their connection and dependence on the environment for the survival of their culture(s) and their subsistence practices, tribal and indigenous populations may have different potential sources of exposure to lead.

Are you aware of specific stories of how lead has already impacted our community? ***Instructor Note:*** *Give participants an opportunity to share a story. If they cannot think of one, be prepared to share a story about how cultural practices and/or subsistence foods may have been impacted by lead contamination.* Below are a few examples:

- Hunting deer, moose, elk and game – Most hunting ammunition is lead-based, which means both wildlife and humans are at risk of lead exposure from the consumption of spent ammunition in game meat and internal organs of an animal used as food (Refs. 23 & 24). In a recent study completed in North Dakota, participants who ate any wild game had higher blood lead levels than participants who did not consume wild game (Ref. 25). Lead exposure cannot be eliminated by cutting out the bullet wound channel and trimming meat at the site of impact. The typical lead-core bullet loses 30-40% of its weight in big game animal carcasses; hundreds of fragments are dispersed when a lead bullet is fired into an animal, making it impossible to remove all fragments. Using lead-free ammunition is the best way to avoid this risk of exposure.

- Gathering traditional and cultural foods – Many traditional and cultural foods are gathered in natural areas that may be contaminated with lead (or other harmful materials); thus it is important to wash items thoroughly with clean water sources prior to eating. For example, to reduce the risk of exposure to lead, one southwest tribe makes sure its members thoroughly wash watercress and wild onions grown in the early spring to remove any contaminated soil from the plant's surface. Another northwest tribe, living in an area with known lead soil contamination, recommends washing and then removing the skins of water potatoes prior to cooking and eating to reduce exposure. Overall, it is a good practice to thoroughly wash gathered foods

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prior to cooking and eating as well as to understand whether possible exposure scenarios exist in your community.

- Burning materials and ingredients for cultural and medicinal activities – Many tribal activities involve burning different materials for traditional, cultural and medicinal practices. In some cases, ashes and smoke have been found to be contaminated with chemicals, such as when unknowingly burning wood coated with lead-based paint. It is important to know the source of the materials being burned to prevent community members from being exposed to lead through both ingestion and breathing.

- Using natural life sources for various items – Natural resources are commonly used to create cultural items, such as clay and soil for makeup and paints. However, it is important to know whether natural resources being used are contaminated with lead before using them. Consider other options if possible. Hire a professional or contact a lab to test for the presence of lead in natural resources.

- Returned museum artifacts – Museum artifacts were often preserved using mercury, arsenic, lead and other toxic chemicals. Although chemists are working on ways to clean them well enough for reuse, it is important to understand that some older items may contain lead or other harmful chemicals and thus increase potential exposure to lead. When these artifacts are returned, be sure to ask questions about the prior preservation processes used.

V. Taking Action (15 minutes)

Lead exposure and lead poisoning are preventable. In fact, many groups and tribes throughout the country have implemented their own programs and projects over the years to lower their exposure to lead and its harmful effects. Throughout the course of the different *Lead Awareness in Indian Country: Keeping Our Children Healthy!* sessions, we will discuss different actions that you can take to reduce potential exposure to lead. Please pull out your worksheet as we continue our discussion of actions you can take at home to reduce your family's potential exposure to lead.

a. Keep Homes Clean & Dust Free

- Wet mop floors and hard surfaces (e.g., porches) to minimize lead dust.
- Wipe down hard surfaces such as countertops, window sills and doors jambs with a wet cloth.
- Inspect and maintain all painted surfaces to guard against deterioration.
- Wet wipe the area immediately if you notice any peeling, chipping, chalking or cracking paint.

b. Eat a Diet High in Iron, Calcium & Vitamin C

- Ensure family members eat a well-balanced diet of fruits, vegetables, grains, dairy and protein foods. Foods that are higher in calcium, iron and vitamin C can help reduce the absorption of lead. Children with healthy diets absorb less lead.
- Wash all food, including traditional and cultural foods gathered in natural areas, thoroughly with safe water sources prior to eating. This would remove soil or lead dust that may have adhered to the surface.
- Do not eat food or drink water cooked or stored in chipped or cracked lead-crystal, lead-glazed pottery or lead-porcelain cookware.
- Use only cold water for drinking, cooking and preparing baby formula. Use water from a safe source to mix baby formula. Heat up cold water on the stove or in a microwave if hot or warm water is needed. Boiling water does not remove lead from water.
- Know the sources of natural resources, ingredients, herbs, etc. being used for various purposes to prevent exposure to lead through ingestion or breathing.
- Check local, tribal and regional fish advisories for recommendations on fish consumption for pregnant women, children under 15 years of age and the general public. This includes recommendations on numbers to be consumed per month for specific fish and whether it is recommended to eat only the fillet or the whole fish.
- Switch to non-lead ammunition and fishing tackle when harvesting wild game and fish for food, when possible.

c. Wash Hands

- Use soap and water (warm or cold) to wash children's hands several times a day, especially after playing outside or with animals.

Notes:

Using Hand Sanitizer

There are differences between washing hands with soap and water and cleaning them with hand sanitizer. Alcohol-based hand sanitizers do not kill all types of germs and they may not remove harmful chemicals, such as pesticides and heavy metals, such as lead. Handwashing with soap and water reduces the amounts of all types of germs, pesticides and metals on hands.

For more information, read Handwashing and Hand Sanitizer Use at Home, at Play, and Out and About at https://www.cdc.gov/handwashing/pdf/hand-sanitizer-factsheet.pdf.

Notes:

- Adults should wash hands after participating in activities where they may have come in contact with lead.

d. Play in Grass

- Guide children to play in grassy or non-contaminated bare soil areas, especially if play areas are near roadways, junk yards, older buildings and uncontrolled or abandoned sites or properties.
- Use designated picnic, camping and hiking areas.
- Teach children to wipe and remove their shoes and to wash their hands after playing outdoors.
- Wipe off pets' paws prior to bringing them indoors.
- Place dust mats both inside and outside your home.

e. Hire Certified Lead Professionals

- For homes built prior to 1978, hire a certified lead professional for renovation and repair work. Keep residents out of the work area during renovation or repair work which disturbs painted surfaces in older homes and buildings until the work area is cleaned.
- When having home renovations, repairs or painting done, make sure your contractor is Lead-Safe Certified and follows lead-safe work practices per the requirements of EPA's Renovation, Repair and Painting Rule. These professionals have special training and are certified to perform this type of work.
- If you are renting your home or apartment and think it may contain lead-based paint or lead hazards, make sure your landlord or tribal housing authority hires a Lead-Safe Certified contractor to do renovation, repair and painting work.

f. Shower & Change

- Clean or remove work clothes and shoes before entering your home to avoid tracking in lead from soil, work sites or hobbies. Store work clothes and shoes in a designated area outside the home.
- Wash work clothes separately from other family members' clothes.
- Shower after participating in activities where you may have been exposed to lead to remove any lead dust from your skin and hair.

g. Wash Toys, Pacifiers & Bottles

- Wash children's bottles, pacifiers and toys, like stuffed animals, often.
- Do not let children chew on painted toys, window sills or other painted surfaces.

h. Run Your Water

- Before drinking, flush your home's pipes by running the tap, taking a shower, doing laundry or doing a load of dishes. The amount of time to run the water will depend on whether your home has a lead service line or not, and the length of the lead service line. Residents should contact their water utility for recommendations about flushing times in their community.
- Use only cold water for drinking, cooking and making baby formula. Remember, boiling water does not remove lead from water.
- Use a filter certified to remove lead. Read the directions to learn how to properly install and use your cartridge and when to replace it. Using the cartridge after it has expired can make it less effective at removing lead. Do not run hot water through the filter.
- Clean your faucet's screen (also known as an aerator) regularly. Sediment, debris, and lead particles can collect in your aerator. If lead particles are caught in the aerator, lead can get into your water.
- Contact your water utility or a licensed plumber to determine if the pipe that connects your home to the water main (called a service line) is made from lead.
- Contact your water utility to have your water tested and to learn more about the lead levels in your drinking water.
- Check with your health department or nearby water utilities that use ground water for information on the water in your area, if your drinking water comes from a private well (or cistern).
- Be aware of any construction or maintenance work that could disturb your lead service line. Construction may cause more lead to be released from a lead service line.

i. Get Your Child Tested

Instructor Note: *Participants may have questions regarding the specifics of blood lead testing or what happens if a child's blood lead level is elevated. No specific blood lead reference*

Notes:

Private Well Water Testing

- *Lead can contaminate ground water in private wells due to the local geology. If you have a private well, you should consider testing the well water periodically. Only use laboratories that are certified to do drinking water tests. To find a certified laboratory in your state, you can contact:*
- *A State Certification Officer (to get a list of certified water testing labs in your state, visit: https://www.epa.gov/dwlabcert/contact-information-certification-programs-and-certified-laboratories-drinking-water).*
- *Your local health department, which may also test private well water for free.*
- *Your local Indian Health Service or tribal environmental services may be able to test for lead and other contaminants in private wells.*

Regulations on Private Wells

EPA does not regulate private wells, nor does the Agency provide recommended criteria or standards for individual wells. For information regarding the importance of testing private wells and guidance on technologies that may be used to treat or remove any contaminants, visit: www.epa.gov/privatewells.

While state, local and tribal governments may develop regulations related to private wells, private well owners are responsible for the safety of their water.

Notes:

Blood Lead Testing in Pregnancy

Routine blood lead testing of pregnant women is recommended in clinical settings that serve populations with identified risk factors for lead exposure. Blood lead testing of all pregnant women in the United States is not recommended (Ref. 27).

level is mentioned in this lesson plan because the Centers for Disease Control and Prevention (CDC) periodically updates its recommendations on children's blood lead levels. Please visit CDC's website for the most up-to date information on their recommendations on children's blood lead levels at www.cdc.gov/nceh/lead/prevention/blood-lead-levels.htm. Only answer the questions you are knowledgeable about and comfortable with answering. If your tribe or local health clinic has a blood lead testing program for children, it is recommended that you invite a program representative to join you for this part of the session or direct participants to that program.

Raise your hand if your children or grandchildren have been tested for lead in the past.

The only way to know if a child has lead in their blood is to have a blood test (Ref. 26). Because lead exposure often occurs with no obvious symptoms, it frequently goes unrecognized. No amount of lead is safe for children. It is generally recommended that children be tested at ages one and two.

Contact your healthcare provider, local health department, clinic or hospital if you would like more information about testing your children or family members for lead.

VI. Conclusion (10 minutes)

Today we discussed sources of lead exposure; how lead harms children and adults; its impacts on the environment and wildlife; and actions that you can take to prevent potential exposure to lead. The upcoming modules will go into more detail about how to effectively clean your home to reduce exposure; good hygiene practices for both kids and adults, including nutritional information and how and when to hire a certified lead professional to remove lead from the home.

In order to review what we have learned today, please flip over the worksheet and answer the fill-in-the-blank questions on *Potential Sources of Lead Exposure* and *Taking Action*. You will have about five minutes to answer as many questions as possible and then we will go over the answers as a group. ***Instructor Note:*** *At the end of the five minutes, go over the correct answers. It is recommended that you include this as part of your conclusion; however, you can choose to have participants answer the questions at home.*

I also have a few questions for the group:

1. What are the potential health effects of children exposed to lead?
2. What are the impacts of lead on the environment and wildlife?
3. Does anyone have any questions about the information covered?

To receive general information about lead or ask questions, you can call the National Lead Information Center (NLIC). The NLIC provides the public and professionals with information about lead, lead hazards and prevention. Call and speak with a specialist Monday through Friday, 8:00 am to 6:00 pm Eastern time (except federal holidays) at 1 (800) 424-LEAD [5323]. Hearing- or speech-challenged individuals may access this number through TTY by calling the Federal Relay Service at 1-800-877-8339. ***Instructor Note:*** *Participants can find this number on both the worksheet and key messages.*

Thank you for participating in this session. Here is the *Module 1 Kids Activity Sheet* for you to take home. The kids activity sheet has several activities that teach children about what we learned today. ***Instructor Note:*** *Give each participant a copy of the Module 1 Kids Activity Sheet.*

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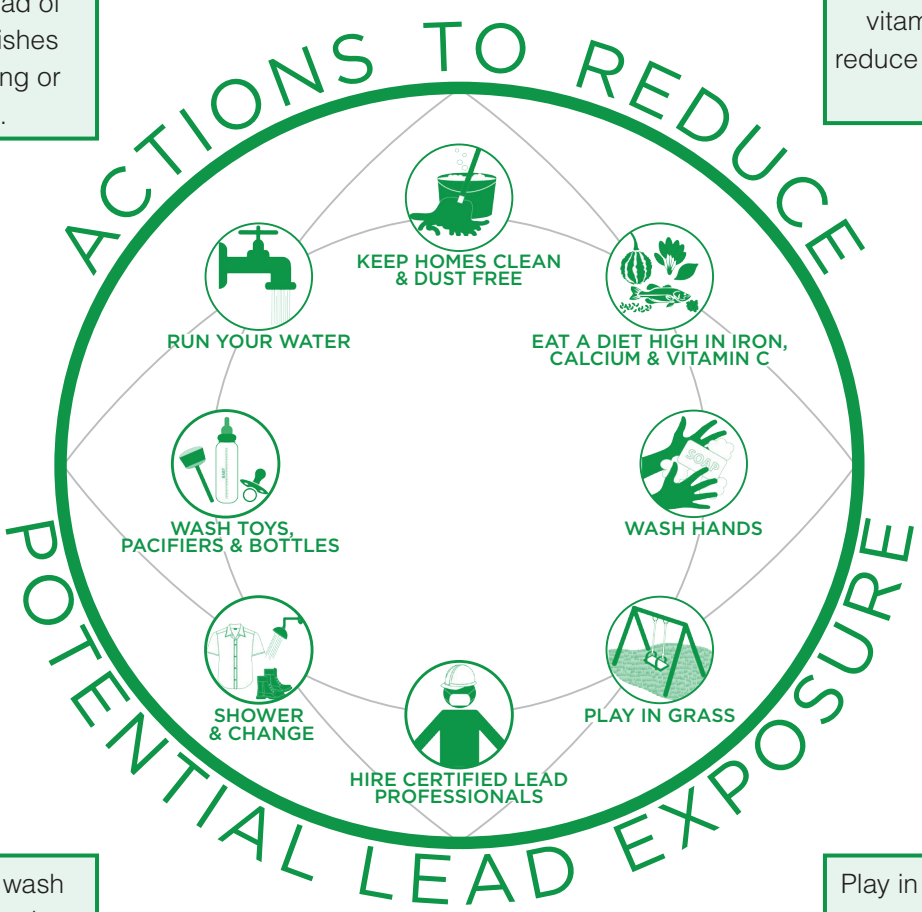
UNDERSTANDING LEAD

Preventing lead exposure in young children (under age six) is especially important because as their bodies grow and develop, they are more vulnerable to the permanent harmful impacts of lead. As parents, grandparents, teachers, tribal leaders and others who care about our community wellbeing, we can take simple actions right now to prevent lead exposure, which at the same time can benefit the overall health of our land and our families.

Clean your home once a week using a clean, wet or damp cloth, sponge or mop to minimize dust, which may contain lead.

Flush your home's pipes by running your tap, taking a shower or doing a load of laundry or dishes before drinking or cooking.

Eat a well-balanced diet with foods high in calcium, iron and vitamin C to help reduce the absorption of lead.



Wash daily any items your child uses regularly, such as pacifiers and toys, to minimize exposure to dust, which may contain lead.

Use soap and water (warm or cold) to wash children's hands several times a day, especially after playing outside or with animals.

Change and wash clothes, remove shoes and shower to avoid tracking lead into the home from soil, work sites or hobbies.

Hire a certified lead professional when renovation, repair, or painting will disturb painted surfaces in a home built before 1978. Keep family out of the work area.

Play in grass and dirt not contaminated with lead, and use designated picnic, camping and hiking areas.

For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323)

LEAD: SOURCES AND ACTIONS

Directions: The columns below contain information regarding potential sources of lead exposure and actions we can take to reduce exposure. Fill in the blanks using the best word from each column's word box. Answers can be found at the bottom of the page.

Potential Sources of Lead Exposure

boats	lead-acid	plants
candles	lead-based	
drinking	mined	

- Lead has been _____1_____ and used for a long time and can be found in many different products and places.
- Improper disposal or recycling of _____2_____ batteries may release lead into the environment.
- The paint used on some farming equipment and _____3_____ could contain lead.
- Lead has also been found in a variety of products found in our homes, including: imported scented _____4_____, toys, glassware, ceramicware and cosmetics.
- _____5_____ paint, if present in older homes built before 1978, may be a major source of exposure to lead to those who live there. Lead-based paint was banned for use in housing in 1978.
- The most common sources of lead in _____6_____ water are from lead pipes, faucets and fixtures.
- Lead ingested by animals absorbed by or found on the surface of _____7_____ can be passed along the food chain when they are consumed by both wildlife and humans.

Taking Action

blood	cold	water
chew	painted	wipe
cleaned	wash	

- Inspect and maintain all _____1_____ surfaces to guard against deterioration.
- Do not let children _____2_____ on painted toys, window sills or other painted surfaces.
- Keep residents out of the work area during renovation or repair work which disturbs painted surfaces in older, pre-1978, homes and buildings until the work area is _____3_____.
- Use only _____4_____ water for drinking, cooking and preparing baby formula.
- _____5_____ all food thoroughly with safe water sources prior to eating, including foods gathered in natural areas.
- Teach children to _____6_____ and remove their shoes and to wash their hands after playing outdoors.
- Contact your _____7_____ utility or a licensed plumber to determine if the pipe that connects your home to the water main (called a service line) is made from lead.
- The only way to know if a child has lead in their blood is to have a _____8_____ test.

Of all the actions mentioned today, I think _____ would be the easiest for me to do in my home.

ANSWERS
Sources: 1. mined 2. lead-acid 3. boats 4. candles 5. lead-based 6. drinking 7. plants
Taking Action: 1.painted 2. chew 3. cleaned 4. cold 5. wash 6. wipe 7. water 8. blood

UNDERSTANDING LEAD

Lead may affect our health, the environment and cultural practices. There are numerous actions we can take to reduce potential exposure to lead.

WHAT IS LEAD AND WHAT ARE SOME POTENTIAL SOURCES OF EXPOSURE?

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead is mined and then used in products to make them durable and last longer. Once lead is used in a product, it is nearly impossible to identify with the naked eye. Lead does not biodegrade or disappear from the environment over time.

Much of our exposure comes from human activities involving the use of fossil fuels, past use of leaded gasoline; some types of industrial facilities (e.g., mining and manufacturing); leaded aviation fuel and past use of lead-based paint in homes. Lead has also been found in a wide variety of products found in and around our homes including paint used on farm equipment and boats, ceramicware, toys, plumbing materials and some ammunition and fishing tackle.

One of the most common ways children can be exposed to lead is through contact with lead-based paint chips and dust in older buildings and homes that have lead-based paint present when they put toys, fingers and other objects in their mouths as part of their normal behavior. Lead-based paint has a "sweet" taste, which makes it appealing to young children. Lead-based paint was banned for use in housing in 1978. Homes built before 1978 may contain lead-based paint. When lead-based paint is in good condition and is not on an impact or friction surface, like a window, the paint is usually not a hazard.

We can reduce our potential exposure with a few simple actions, such as: washing our hands several times a day, cleaning our homes using wet washing or washing daily the items our children use regularly.

WHY SHOULD WE BE CONCERNED ABOUT LEAD?

Lead exposure can cause negative health impacts, which often occur with no obvious symptoms and frequently go unrecognized. The only way to know if someone has lead in their blood is to have a blood test.

Babies and young children's exposure to lead can be higher because they often put their hands and other objects into their mouths that may be contaminated by lead from dust or soil. Lead is particularly dangerous to young children under the age of six because their growing bodies absorb more lead than adults, and their developing brains and nervous systems are more sensitive to lead's damaging effects. According to the Centers for Disease Control and Prevention, no safe blood lead level in children has been identified. Even small amounts of lead in the blood of children can result in:

- Behavior and learning problems;
- Lower IQ and hyperactivity;
- Slowed growth;
- Hearing problems; and
- Anemia.

For adults, potential exposure to lead is increased by working in certain jobs such as: renovation or repair of older homes and buildings, painting, construction, refinishing furniture, smelting, mining, auto repair and working at hazardous waste sites. Engaging in hobbies, such as making stained glass, making ammunition, shooting at a gun range or using certain folk remedies, may increase adults' potential exposure to lead.

A pregnant woman's exposure is of concern because it can result in exposure to her developing fetus causing the baby to be born too early or too small; hurting the baby's brain, kidneys and nervous system; and putting the mother at risk for miscarriage.

Like humans, ingestion of lead in the food web can also impact wildlife species. Animals can be exposed to lead from numerous sources, but research indicates the ingestion of lead fishing tackle and spent lead ammunition are two of the major sources of exposure. Lead exposure and lead poisoning can result in vomiting, diarrhea, impaired flight, behavioral changes, loss of appetite, lethargy and uncoordinated body movements. Lead exposure can also affect their reproductive systems and even result in death.

Lead, like other heavy metals, has the potential to impact cultural practices and subsistence lifeways. From the catching of fish, to the gathering of plants, to the harvesting of wild game or the collecting of wood and other life-sources, subsistence lifeways are vulnerable to heavy metal exposure because they are intricately linked to the ecological communities and processes of living landscapes. All of these life supporting links can be eroded or destroyed from exposure to heavy metals that would otherwise stay out of harm's way underground. Tribes and indigenous populations are extremely diverse in terms of lands, languages, cultures and diets, and are closely linked to the environment and natural resources. Due to their connection and dependence on the environment for the survival of their culture(s) and their subsistence practices, tribal and indigenous populations may have different potential sources of exposure to lead.

WHAT CAN I DO TO REDUCE MY FAMILY'S POTENTIAL EXPOSURE TO LEAD?

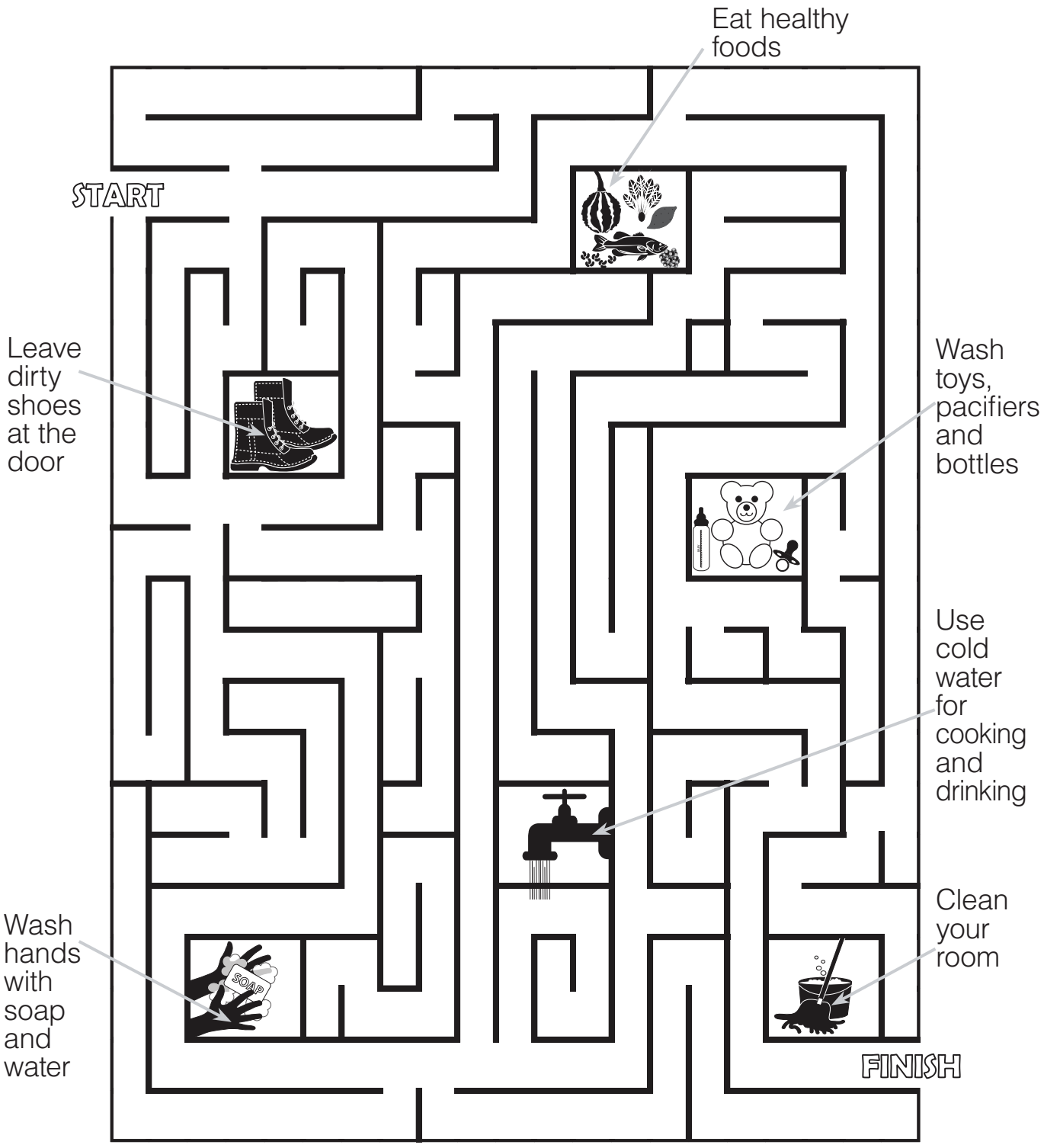
Lead exposure is preventable – we can start with a few actions at home, such as those shown below, to reduce potential exposure to lead.

WHERE CAN I LEARN MORE?

For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323) or visit www.epa.gov/lead.

Maze Fun

Lead is a metal that might be in paint in your house and is not good for our body. Make your way through the maze and learn 6 actions you can take to keep your family healthy.



Fill in the Blanks

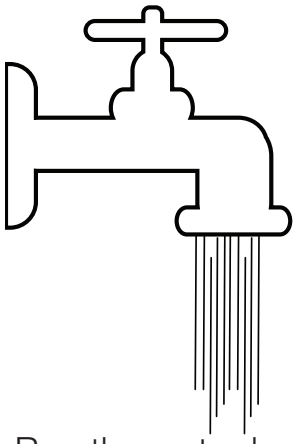
Fill in the blank with the best word from the word box for each statement below:

fruits	soap	toys	shoes	cold

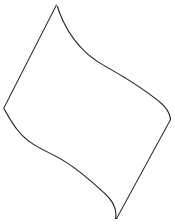
1. Use _____ water for drinking or cooking.
2. Wash your hands with _____ and water several times a day.
3. Remove your _____ when you come inside after playing or working outdoors.
4. Wash bottles, pacifiers and _____ , like stuffed animals, often.
5. Eat plenty of _____ and vegetables.

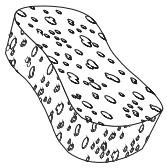
Answers: 1. cold; 2. soap; 3. shoes; 4. toys; 5. fruits

Color Time



Run the water before drinking or cooking.





Use a wet cloth, sponge or mop to clean.

To keep my family healthy, I will...

Draw or write which action you will do to keep your family healthy.

Module 2: Effective Cleaning Techniques

Module 2: Effective Cleaning Techniques explains and demonstrates recommended cleaning techniques for reducing household lead dust, which is one of the most common sources of lead exposure for young children. By practicing simple cleaning techniques routinely, families can reduce their potential exposure to lead. By the end of Module 2, participants will:

- Understand the importance of proper cleaning techniques to prevent exposure to lead;
- Learn about lead dust;
- Recognize potential lead dust traps in the home;
- Know which materials are recommended to clean lead dust; and
- Identify cleaning techniques that are most effective in reducing lead dust.

Instructor Preparation

*To prepare for **Module 2: Effective Cleaning Techniques**, the instructor should take the following steps:*

- *Preview the lesson plan to identify sections where examples, stories and local information may be inserted.*
- *Reach out to tribal personnel and seek other resources to find information and partners, if possible.*
- *Contact your tribal and/or local health departments and ask if they have a High Efficiency Particulate Air (HEPA) vacuum available to loan to residents.*
- *Make copies of Module 2 worksheet, key messages and kids activity sheet (1 copy per participant).*
- *Gather cleaning supplies and materials for demonstrations and the group activity.*
- *For the Group Activity: Lead Dust Clean-Up – Select a location (window or floor) in the meeting space to be used and prepare the location for cleaning by sprinkling with wood shavings, or tiny pieces of paper to simulate lead dust.*
- *For the Optional Demonstration, prepare a flat, hard surface such as a table or spot on the floor using corn starch or flour to represent lead dust.*
- *Edit the Module 2 Presentation Slides to incorporate relevant stories, images and videos. Remove presentation slides that you do not plan to use during the session.*
- *Review Module 4: Hiring Certified Lead Professionals for background information on when to hire a certified lead professional to conduct lead-based paint inspections or risk assessments.*
- *Use the "Notes" boxes provided in the lesson plan for personal notes.*

***Instructor Note** written in italics can be found throughout the lesson plan. These notes are intended to guide the instructor through the discussion and presentation and are not meant to be read out loud during the session.*

During this module, emphasize that the household cleaning techniques described throughout are specific to areas that may contain lead dust or lead-based paint chips.

Notes:

Suggested Materials

- Laptop and projector to display presentation slides
- *Module 2 Worksheet*
- *Module 2 Key Messages*
- *Module 2 Kids Activity Sheet*
- 2 buckets or a double bucket with warm water
- All-purpose cleaner
- 2 mops
- Roll of paper towels
- Sponges and cloths
- Trash bags
- Wood shavings, flour, corn starch or shredded paper (to simulate lead dust)
- Gloves (this is optional since participants will not be cleaning up actual lead dust)
- Pens or pencils
- Hard copies of presentation slides to hand out to participants (optional)

If access to technology is limited, you can use hard copies of presentation slides.

Instructor Note: *Consider using an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.*

Outcomes

Upon the completion of Module 2, participants will be able to:

- List three lead dust traps typically found in homes;
- List three items used to clean lead dust in the home;
- Demonstrate proper cleaning techniques; and
- Explain how to prevent re-contaminating previously cleaned areas of the home.

Outline

Notes:

Safer Choice Standard

Consider an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.

Optional Demonstration

Demonstrate the benefits of wet washing by using corn starch or flour to represent lead dust:

1. Gather participants around a flat, hard surface, such as a table or a spot on the floor, and sprinkle corn starch or flour across the surface.

2. Divide the area in half. Clean one-half with a dry cloth and the other half with a wet cloth dipped in bucket 1 (as described in step 1 of wet washing).

3. Show participants both cloths and have them examine the cleaned area. Ask participants: which cleaning technique (wet or dry) did the better job of cleaning up the dust? ***Instructor Note:*** *The answer is the technique using the wet cloth.*

Notes:

Lead Dust

Lead in household dust results from indoor sources, such as old lead-based paint on surfaces that are frequently in motion or bump or rub together (referred to as friction surfaces, such as when doors or windows are opened and closed), deteriorating old lead-based paint on any surface, home repair activities, lead-contaminated soil tracked from the outdoors into the indoor environment, or even from lead dust on clothing worn at a job site (Ref. 2).

I. Introduction (5 minutes)

In ***Module 1: Understanding Lead***, we learned about potential sources of lead exposure; health effects of lead exposure in children; potential impacts of lead on cultural practices and wildlife; and actions that can minimize or eliminate potential exposure to lead. Examples of these actions include washing children's hands often and removing shoes before entering your home to avoid tracking in lead from soil, work sites and/or hobbies.

Do you think that cleaning your house using specific cleaning techniques could help reduce potential exposure to lead?
Instructor Note: *Allow participants a moment to think and respond.*

Yes! You can reduce your family's potential exposure to lead in the home by using specific cleaning techniques that allow you to safely remove lead dust and paint chips.

Lead dust can form when lead-based paint is scraped, sanded or heated. It also forms when painted surfaces containing lead bump or rub together (Ref. 1). For today's discussion, lead dust is defined as household dust that contains lead.

Today, we will discuss and practice some recommended cleaning techniques for areas in the home where there is peeling, chipping, deteriorating or cracking lead-based paint and where lead dust is formed.

When areas with lead-based paint or lead dust are not cleaned properly it may increase risks to families, especially to children under age six and pregnant women. Therefore, it is important to use the cleaning methods introduced in this module to reduce your family's potential exposure to lead.

II. Lead Dust Traps (15 minutes)

A lead dust trap is a space or object where lead dust can easily gather on, in or under. Many areas or surfaces in homes could have lead dust. High-traffic areas where you and your family spend most of their time within the home such as the living room, kitchen and bedrooms are common places where dust gathers. Surfaces that receive a lot of wear-and-tear (use) can deteriorate lead-based paint into dust particles and chips over time, causing these areas to be common sources of lead dust.

Unfortunately, high-traffic areas also tend to be the favorite spots for children to play. Babies and young children often put their hands, feet or toys into their mouths, which may result in swallowing or breathing in lead dust. Lead-based paint has a "sweet" taste, which makes it appealing to young children, so they may also lick or bite chewable lead-based painted surfaces. Children's hands are small and can fit in tight places that are often missed during cleaning.

By concentrating cleaning efforts on areas where lead dust is commonly trapped, potential exposure to lead dust can be dramatically reduced. Any lead dust missed during cleaning or spread by using inappropriate cleaning techniques such as dry sweeping or dusting can easily spread to other areas of the home, including those that have already been cleaned, and then be swallowed or breathed in by children and adults. This means that thorough cleaning using effective techniques is important. Cleaning is a great way to prevent potential lead exposure.

a. Potential Dust Traps

Instructor Note: *Give a copy of the Module 2 Worksheet, Module 2 Key Messages and a pencil to each participant.*

Here are two handouts we will use today, the worksheet and key messages. We will use the worksheet during this session as a discussion tool and to review what we learned together. The key messages is a take-home resource that summarizes information covered.

What are some areas in the home that could have high levels of lead dust? Using the front of the worksheet, discuss with a partner which areas in the home you think could be lead dust traps. There are six areas in the home considered to be lead dust traps. The home shown in the worksheet has at least six lead dust traps. Find and circle them all. ***Instructor Note:*** *Allow participants several minutes to complete the activity and then go over the answers below. Answers are provided upside down on the bottom of the front page of the worksheet.*

As we go over answers, make sure you have the correct items circled on your worksheet. You can also use your worksheet to take notes.

1. Floors and Baseboards – Lead dust can be dispersed from deteriorated lead-based paint applied on floors and baseboards. Carpets and rugs can contain lead dust dispersed from deteriorated lead-based paint on floors, baseboards and walls.

Notes:

Safer Choice Standard
Consider an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.

Optional Demonstration
Demonstrate the benefits of wet washing by using corn starch or flour to represent lead dust:
1. Gather participants around a flat, hard surface, such as a table or a spot on the floor, and sprinkle corn starch or flour across the surface.
2. Divide the area in half. Clean one-half with a dry cloth and the other half with a wet cloth dipped in bucket 1 (as described in step 1 of wet washing).
3. Show participants both cloths and have them examine the cleaned area. Ask participants: which cleaning technique (wet or dry) did the better job of cleaning up the dust? ***Instructor Note:*** *The answer is the technique using the wet cloth.*

Notes:

2. Windows and Window Sills – Lead-based paint on windows, window sills and troughs (the area between the interior window sill and the storm window frame) can chip or flake as a home ages and after repeatedly opening and closing, resulting in lead dust settling on and around windows.

3. Air Duct Covers and Radiators – The surfaces or covers of air ducts (areas along walls and floors covered by metal grates) and radiators can be coated with dust, although the concentration of lead dust in this area generally is not as high as in other areas of the home.

4. Doors and Door Frames – Dust from lead-based paint can be dispersed into the air from painted walls, windows and floors and then settle on doors and door frames. Lead from outside sources may also stick to the surface of exterior doors and then be tracked inside the home.

5. Stairs, Railings and Banisters – Walking on stairs painted with lead-based paint causes the paint to flake and chip, which disperses lead dust on stairs, railings and banisters.

6. Furniture – Lead dust dispersed into the air can settle and collect on furniture, such as tables and couches, and then re-enter the air when you vacuum, dust or sweep.

Excessive clutter may prevent you from effectively cleaning your home as various items in your home could be potential lead dust traps.

III. Recommended Cleaning Techniques (20 minutes)

Cleaning lead dust traps weekly can reduce your family's exposure to lead. Windows, doors, floors, and furniture need regular cleaning because lead dust is hard to completely remove and can quickly re-collect.

What specific cleaning techniques do you think might be important to incorporate into our cleaning habits to help safely remove lead dust from the home? ***Instructor Note:*** *Allow participants a moment to think and respond before describing the recommended techniques. While it is recommended to have two buckets for wet washing, it is not required.*

Wet washing, using wet or damp items, is the best way to clean lead dust. Specifically, in the case of lead dust, this means cleaning areas at least weekly with a mop, cloth or sponge, warm water and a general all-purpose cleaner, using two buckets (or a split bucket, if available). Two buckets assist in preventing dust from being redistributed to newly cleaned surfaces. Areas that should be wet washed include windows, window sills and troughs, doors, floors, stairs, furniture and air ducts. Remember: Never mix ammonia and bleach products because they can form a dangerous gas. Follow instructions on the label of all cleaning products used and keep cleaning products out of the reach of children.

Follow these steps for wet washing when cleaning:

1. In bucket 1, mix general all-purpose cleaner and warm water.

2. Fill bucket 2 with warm water – this will be your clean rinse water to frequently rinse off mop heads, cloths and sponges while cleaning.

3. Put on gloves.

4. Use a damp paper towel to remove loose paint chips and debris and then place the used paper towel in a garbage bag and seal for disposal.

5. Use a cloth, sponge or mop dipped in bucket 1 (the cleaning solution) and clean all surfaces thoroughly.

6. Use a clean cloth, sponge or mop that has been dipped in bucket 2 (the clean rinse water) to rinse the newly cleaned area.

7. Thoroughly rinse mop heads, cloths and sponges (preferably in a sink or area not used for food preparation) when finished cleaning.

a. Cleaning Techniques to Reduce Indoor Lead Dust

Wet washing is the general cleaning technique recommended to reduce indoor lead dust in your home. For each of the six lead dust traps mentioned earlier (and listed on your worksheet) there are specific cleaning recommendations we will discuss now.

Notes:

Safer Choice Standard

Consider an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.

Optional Demonstration

Demonstrate the benefits of wet washing by using corn starch or flour to represent lead dust:

1. Gather participants around a flat, hard surface, such as a table or a spot on the floor, and sprinkle corn starch or flour across the surface.

2. Divide the area in half. Clean one-half with a dry cloth and the other half with a wet cloth dipped in bucket 1 (as described in step 1 of wet washing).

3. Show participants both cloths and have them examine the cleaned area. Ask participants: which cleaning technique (wet or dry) did the better job of cleaning up the dust? ***Instructor Note:*** *The answer is the technique using the wet cloth.*

Notes:

i. Floors, Baseboards, Carpets and Rugs

Clean floors and baseboards with a clean wet mop, cloth or sponge and a general all-purpose cleaner. Vacuum carpets and rugs often using a vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filter, which traps extremely small particles such as lead dust. Regular vacuum cleaners not equipped with a HEPA filter can spread lead dust into the air and disperse it around the home.

- Do not use mops with a scrubber strip attached when cleaning uncarpeted floors, as the scrubber strips will wear away any painted surfaces.
- Do not use powered buffing or polishing machines, or vacuums with beater bars that may wear away the painted surface of uncarpeted floors.
- Do not dry sweep.
- Do not shake or beat carpets and rugs, vacuum them instead.

ii. Windows and Window Sills

Clean windows, window sills and troughs with a damp cloth or sponge and a general all-purpose cleaner. Window sills and troughs with large amounts of dust may require using a vacuum cleaner equipped with a HEPA filter. After vacuuming, follow up by cleaning with a damp cloth or sponge and a general all-purpose cleaner. Standard vacuum cleaners may be used if there is no visible dust or debris from chipping or flaking paint (Ref. 3).

iii. Air Duct Covers and Radiators

Clean the surface of air duct covers (areas along walls and floors covered by metal grates) and radiators monthly using a clean wet cloth or sponge and a general all-purpose cleaner. Frequently replace all air filters (including HEPA filters) in the furnace or heating, ventilation and air conditioning (HVAC) system.

iv. Doors, Door Frames, Walls and Other Painted Surfaces

Wipe down doors, door frames, walls and other painted surfaces with a clean, wet cloth or sponge and a general all-purpose cleaner. Do not use:

- Steel wool, scouring pads and abrasive cleaners;
- Solvent cleaners that may dissolve paint; or
- Excessive rubbing of spots, as this may wear away any painted surfaces.

v. Stairs, Railings and Banisters

Clean stairs, railings and banisters with a wet mop, cloth or sponge and a general all-purpose cleaner.

vi. Furniture

Dust furniture weekly with furniture polish to prevent the spread of dust into the air. Upholstered furniture, such as couches, do not generally have high concentrations of lead dust that other surfaces do; however, regular cleaning with a HEPA vacuum or a wet washing method is recommended.

b. Group Activity: Lead Dust Clean-Up

Now that we have discussed the recommended way to clean lead dust, it is your turn to practice what you have just learned. As a group we are going to clean this room as if we think it has lead dust. ***Instructor Note:*** *Break participants into four groups, assigning each group specific steps in the wet washing process discussed earlier.*

- *Group one will start by preparing the cleaning solution in bucket one and filling bucket two with clean rinse water;*
- *Group two will then collect any visible loose "chips and dust" using damp paper towels, placing them in a garbage bag and sealing for disposal;*
- *Group three will then mop or wipe up the area using a damp mop, cloth or sponge dipped in bucket one; and*
- *Group four will finish by rinsing the area using a different damp mop, cloth or sponge dipped in bucket two.*

Encourage participants to pay attention to other groups. As participants clean, check techniques and answer questions.

What are your initial thoughts after practicing the recommended cleaning techniques for reducing lead dust? ***Instructor Note:*** *Allow participants time to think and respond. Then ask the questions below:*

1. How similar are these techniques to how you already clean your home?

2. What might be hard about changing your cleaning techniques and habits?

3. What wet washing step did we skip during the group activity? ***Instructor Note:*** *We skipped the last step of thoroughly rinsing mop heads, cloths and sponges, since we were not actually cleaning up lead dust, just items that represented lead dust.*

Notes:

Safer Choice Standard
Consider an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.

Optional Demonstration
Demonstrate the benefits of wet washing by using corn starch or flour to represent lead dust:
1. Gather participants around a flat, hard surface, such as a table or a spot on the floor, and sprinkle corn starch or flour across the surface.
2. Divide the area in half. Clean one-half with a dry cloth and the other half with a wet cloth dipped in bucket 1 (as described in step 1 of wet washing).
3. Show participants both cloths and have them examine the cleaned area. Ask participants: which cleaning technique (wet or dry) did the better job of cleaning up the dust? ***Instructor Note:*** *The answer is the technique using the wet cloth.*

Notes:

IV. Helpful Hints (10 minutes)

Imagine that you have just finished cleaning your home using the techniques we just discussed and practiced. What should we do to avoid re-contaminating the area? ***Instructor Note:*** *Allow participants time to think and respond, and then share the information below.*

We should:

- Wash hands and cleaning supplies in a sink (or area) that preferably is not used for food preparation.
- Wash the sink itself after washing your cleaning supplies, so that lead dust does not remain in the sink.
- Wipe off your shoes after cleaning to avoid tracking dust around your home.
- Wash clothes and shoes worn while cleaning separately from other laundry.
- Shower and wash hair when you finish cleaning.

Some additional hints for cleaning:

- Declutter your home.
- Clean yourself out of a room by starting at the furthest point within the room and work your way to the doorway.
- Clean from top to bottom in every room.
- Wipe down walls and areas along the floor up to five feet in either direction of the object you are cleaning in case lead dust has blown around.
- Remove and wash curtains and mini-blinds before you wash the windows.
- If using aerosols or sprays, spray onto the cloth rather than directly onto furniture to avoid blowing lead dust around.

Other things to keep in mind:

- Wash toys, bottles, pacifiers and stuffed animals regularly.
- Keep children from chewing painted areas or old painted toys.
- Regularly check for paint chips or dust – if you see some, remove carefully with a damp paper towel and discard in the trash, then wipe the surface clean with a wet paper towel. If renting a house or apartment, notify the landlord of any cracked or peeling paint.

- Clean faucet screens (also known as an aerator) regularly by unscrewing it from the bottom of the faucet and run water through the screen (holding it right side up and upside down). Lead particulate and sediment can build up behind faucet aerators and be a potential source of exposure.

V. Conclusion (10 minutes)

During today's session, we focused on recommended cleaning techniques to reduce potential exposure to lead in our homes. Let's do a quick review of the information we covered.

- What are some lead dust traps in the home? ***Instructor Note:*** *Some possible answers may include windows, doors, floors, air duct covers, stairways, toys, pacifiers, stuffed animals, baby bottles, etc.*

Turn your worksheet to the side labeled *Lead Dust Cleaning Techniques*. Work with the person sitting next to you to match each lead dust trap with recommended cleaning technique. A cleaning technique can be matched to more than one lead dust trap since the same technique is recommended for cleaning more than one area in the home. ***Instructor Note:*** *Allow participants a few minutes to complete the matching exercise and then review answers with the whole group. Answers can be found upside down under the Recommended Cleaning Technique column.*

Look at the *Helpful Hints* section at the bottom of your worksheet to finish our review. ***Instructor Note:*** *Go through the Helpful Hints questions together.*

1. After cleaning your home using the recommended cleaning techniques, what should you do to avoid re-contaminating the area(s) you just cleaned? Select all that apply.
   - ❑ Wash hands and cleaning supplies in a sink (or area) that preferably is not used for food preparation.
   - ❑ Wash the sink itself after washing your cleaning supplies, so that lead dust does not remain in the sink.
   - ❑ Shower and wash hair when you finish cleaning.
   - ❑ Wipe shoes off after cleaning to avoid tracking lead dust around your home. ***Instructor Note:*** *All answers are correct.*

Notes:

Safer Choice Standard
Consider an all-purpose cleaner that meets the EPA Safer Choice Standard. Search for products using this website: https://www.epa.gov/saferchoice/products.

Optional Demonstration
Demonstrate the benefits of wet washing by using corn starch or flour to represent lead dust:
1. Gather participants around a flat, hard surface, such as a table or a spot on the floor, and sprinkle corn starch or flour across the surface.
2. Divide the area in half. Clean one-half with a dry cloth and the other half with a wet cloth dipped in bucket 1 (as described in step 1 of wet washing).
3. Show participants both cloths and have them examine the cleaned area. Ask participants: which cleaning technique (wet or dry) did the better job of cleaning up the dust? ***Instructor Note:*** *The answer is the technique using the wet cloth.*

Notes:

2. True or False – I should remove and wash curtains and mini-blinds AFTER I wash the windows. ***Instructor Note:*** *False, do this BEFORE washing the windows.*

3. True or False - Many items in my home are potential lead dust traps, and clutter could prevent me from effectively cleaning my home. ***Instructor Note:*** *True, it is easier to clean when a home is not cluttered.*

What are new cleaning techniques you will start using in your home? Use the box at the bottom of your worksheet to write down an answer. ***Instructor Note:*** *If you have time, have a few participants share what they wrote down.*

Possible answers may include:

- *Cleaning windows, doors, floors, stairs and furniture once a week.*
- *Using a wet or damp cloth, sponge or mop.*
- *Washing children's bottles, toys, pacifiers and stuffed animals regularly.*

Does anyone have any questions about today's topic?

If you would like more information about cleaning lead dust, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD, or your local health department or clinic. **Instructor Note:** *Participants can find this number on both the worksheet and key messages.*

Thank you for participating in this session. Here is the *Module 2 Kids Activity Sheet* for you to take home. The kids activity sheet has several activities that teach children about what we learned today. ***Instructor Note:*** *Give each participant a copy of the Module 2 Kids Activity Sheet.*

VI. References

1. U.S. Environmental Protection Agency. Protect Your Family from Lead in Your Home. 2017. Available at https://www.epa.gov/lead/protect-your-family-lead-your-home. [Accessed March 4, 2020].
2. U.S. Environmental Protection Agency. Protect Your Family from Exposures to Lead: Dust. 2017. Available at https://www.epa.gov/lead/protect-your-family-exposures-lead#sources. [Accessed March 4, 2020].
3. U.S. Environmental Protection Agency. Protect Your Family from Exposures to Lead: Maintain You Home's Condition. 2017. Available at https://www.epa.gov/lead/how-make-your-home-lead-safe#Maintain. [March 4, 2020].

EFFECTIVE CLEANING TECHNIQUES

LEAD DUST TRAPS

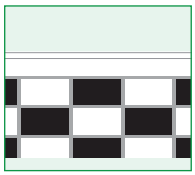
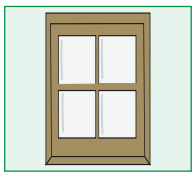
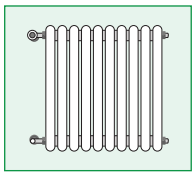
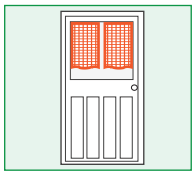
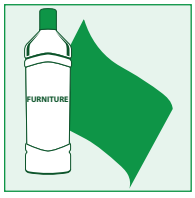
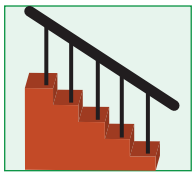
Lead in household dust (lead dust) can form when lead-based paint is scraped, sanded or heated. It also forms when painted surfaces containing lead bump or rub together. A lead dust trap is a space or object where lead dust can easily gather on, in or under.

Directions: This home has at least six lead dust traps. Find and circle them all.

ANSWERS
1. floors, carpets, rugs, and baseboards 2. windows and window sills 3. air duct covers and radiators 4. doors and door frames 5. stairs, railing, and banisters 6. furniture

LEAD DUST CLEANING TECHNIQUES

Directions: Draw a line to match each lead dust trap with a recommended cleaning technique. A cleaning technique can be matched to more than one lead dust trap since the same technique is recommended for cleaning more than one area in the home.

Lead Dust Trap		Recommended Cleaning Technique	
1. Floors, baseboards, carpets and rugs		A. 	Wet cloth or sponge and all-purpose cleaner
2. Windows and window sills			
3. Air duct covers and radiators		B. 	Wet mop, cloth or sponge and all-purpose cleaner or HEPA-filter vacuum
4. Doors and door frames		C. 	Dust with furniture polish and a cloth
5. Stairs, railings and banisters		D. 	Wet mop, cloth or sponge and all-purpose cleaner
6. Furniture			

ANSWERS
1. B 2. A 3. A 4. A 5. D 6. C

HELPFUL CLEANING HINTS

1. After cleaning your house using the recommended techniques, what should you do to avoid re-contaminating the area(s) you just cleaned? Select all that apply.
   - ☐ Wash hands and cleaning supplies in a sink (or area) that preferably is not used for food preparation.
   - ☐ Wash the sink itself after washing your cleaning supplies, so that lead dust does not remain in the sink.
   - ☐ Shower and wash hair when you finish cleaning.
   - ☐ Wipe off your shoes after cleaning to avoid tracking dust around your home.
2. TRUE or FALSE - I should remove and wash curtains and mini-blinds AFTER I wash the windows.
3. TRUE or FALSE - Many items in my home are potential lead dust traps, and clutter could prevent me from effectively cleaning my home.

ANSWERS
1. all are correct 2. False 3. True

After today I am going to start using the following cleaning technique(s) in my home

_____.

EFFECTIVE CLEANING TECHNIQUES

You can reduce your family's potential exposure to lead dust in the home by using specific cleaning techniques that allow you to safely remove lead dust particles and paint chips.

WHAT IS LEAD DUST?

Lead dust is household dust that contains lead. Lead dust can form when lead-based paint is scraped, sanded or heated. Lead dust also forms when painted surfaces containing lead bump or rub together, such as when windows are opened and closed, or from deteriorating old lead-based paint.

WHAT IS A LEAD DUST TRAP AND WHAT ARE SOME EFFECTIVE CLEANING TECHNIQUES?

A lead dust trap is a space or object where lead dust can easily gather on, in or under. Many areas in your home could be a potential lead dust trap. Wet washing weekly with a mop, cloth or sponge, warm water and a general all-purpose cleaner is the best way to clean up lead dust.

There are specific cleaning methods for different areas of the home as detailed in the table below.

AREA OF THE HOME	POTENTIAL LEAD DUST TRAP	RECOMMENDED CLEANING TECHNIQUE
Floors, Baseboards, Carpets and Rugs	Lead dust can be dispersed from deteriorated lead-based paint applied on floors and baseboards. Carpets and rugs can contain lead dust dispersed from deteriorated lead-based paint on floors, baseboards and walls.	Clean floors and baseboards with a clean, wet mop, cloth or sponge. Vacuum carpets using a vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filter, which traps extremely small particles such as lead dust.
Windows and Windowsills	Lead-based paint on windows, window sills and troughs (area between the interior window sill and the storm window frame) can chip or flake as a home ages and after repeatedly opening and closing resulting in lead dust settling on and around windows.	Clean windows, sills and troughs with a clean, wet cloth or sponge. Window sills and troughs with large amounts of dust may require using a vacuum cleaner equipped with a HEPA filter. After vacuuming, follow up by cleaning with a damp cloth or sponge.
Air Duct Covers and Radiators	The surfaces or covers of air ducts (areas along walls and floors covered by metal grates) and radiators can be covered with dust, although the concentration of lead dust is generally not as high as in other areas of the home.	Wipe the surface of air ducts and radiators monthly using a clean, wet cloth or sponge. Frequently replace all air filters (including HEPA filters) in the furnace and heating, ventilation and air conditioning (HVAC) system.

AREA OF THE HOME	POTENTIAL LEAD DUST TRAP	RECOMMENDED CLEANING TECHNIQUE
Doors, Doorframes, Walls and other Painted Surfaces	Dust from lead-based paint dispersed into the air from painted walls, windows and floors can settle on doors and door frames. Lead from outside sources may also stick to the surface of exterior doors and then be tracked inside the home.	Wipe down doors, door frames, walls and other painted surfaces with a clean, wet cloth or sponge.
Stairs, Railings and Banisters	Walking on stairs painted with lead-based paint causes the paint to flake and chip, which disperses lead dust on stairs, railings and banisters.	Clean stairs, railings and banisters with a clean, wet mop, cloth or sponge.
Furniture	Lead dust dispersed into the air can settle and collect on furniture, such as tables and couches, and then re-enter the air when you vacuum, dust or sweep.	Dust furniture weekly with furniture polish to prevent the spread of dust into the air. Regularly clean upholstered furniture, such as a couch, with a HEPA vacuum or with wet washing.

CLEANING HINTS:

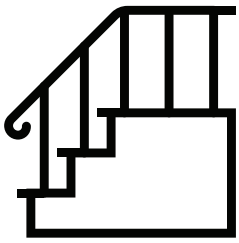
- Declutter your home.
- Clean yourself out of a room by starting at the furthest point within the room and work your way to the doorway.
- Clean from top to bottom in every room.
- Wash hands and cleaning supplies in a sink (or area) that preferably is not used for food preparation.

WHERE CAN I LEARN MORE?

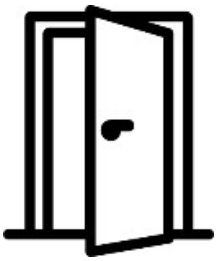
For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323) or visit www.epa.gov/lead.

Crossword Puzzle

Down:

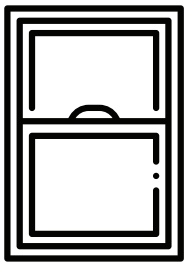


1



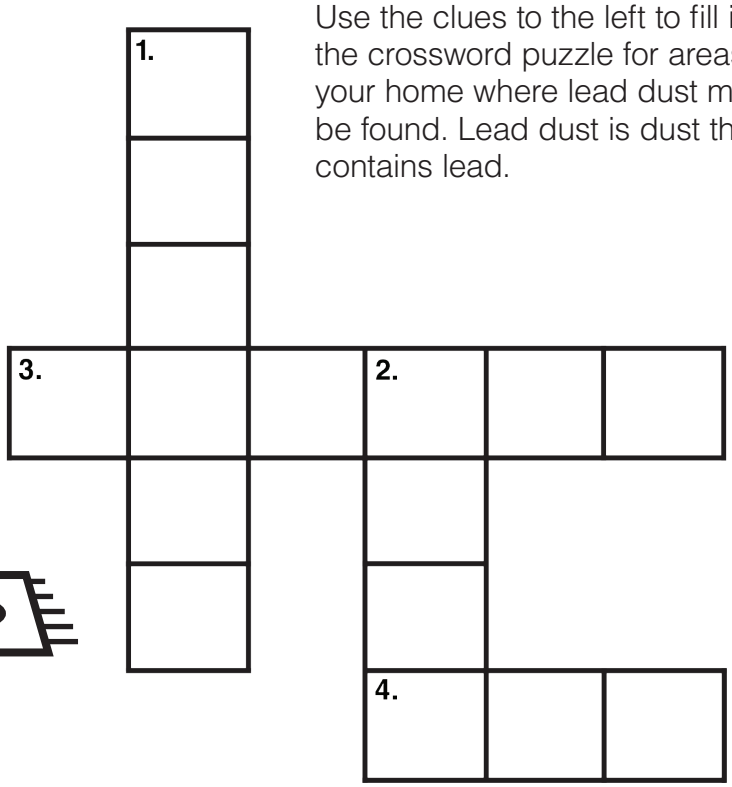
2

Across:



3

4



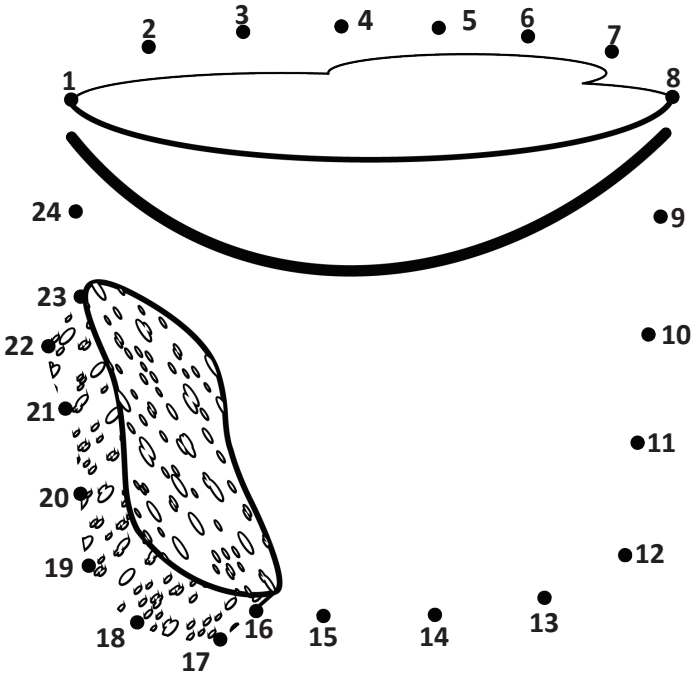
Use the clues to the left to fill in the crossword puzzle for areas in your home where lead dust may be found. Lead dust is dust that contains lead.

Answers: 1 down: stairs, 2 down: door, 3 across: window, 4 across: rug

Connect the Dots

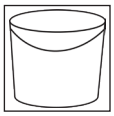
Wet washing uses a wet cloth, sponge or mop for cleaning.

Join the dots starting and ending at 1 to discover two items you may use when cleaning.



Seek and Find

Cleaning weekly keeps our homes lead dust free. Can you find the supplies needed to clean this home?


Bucket


Mop

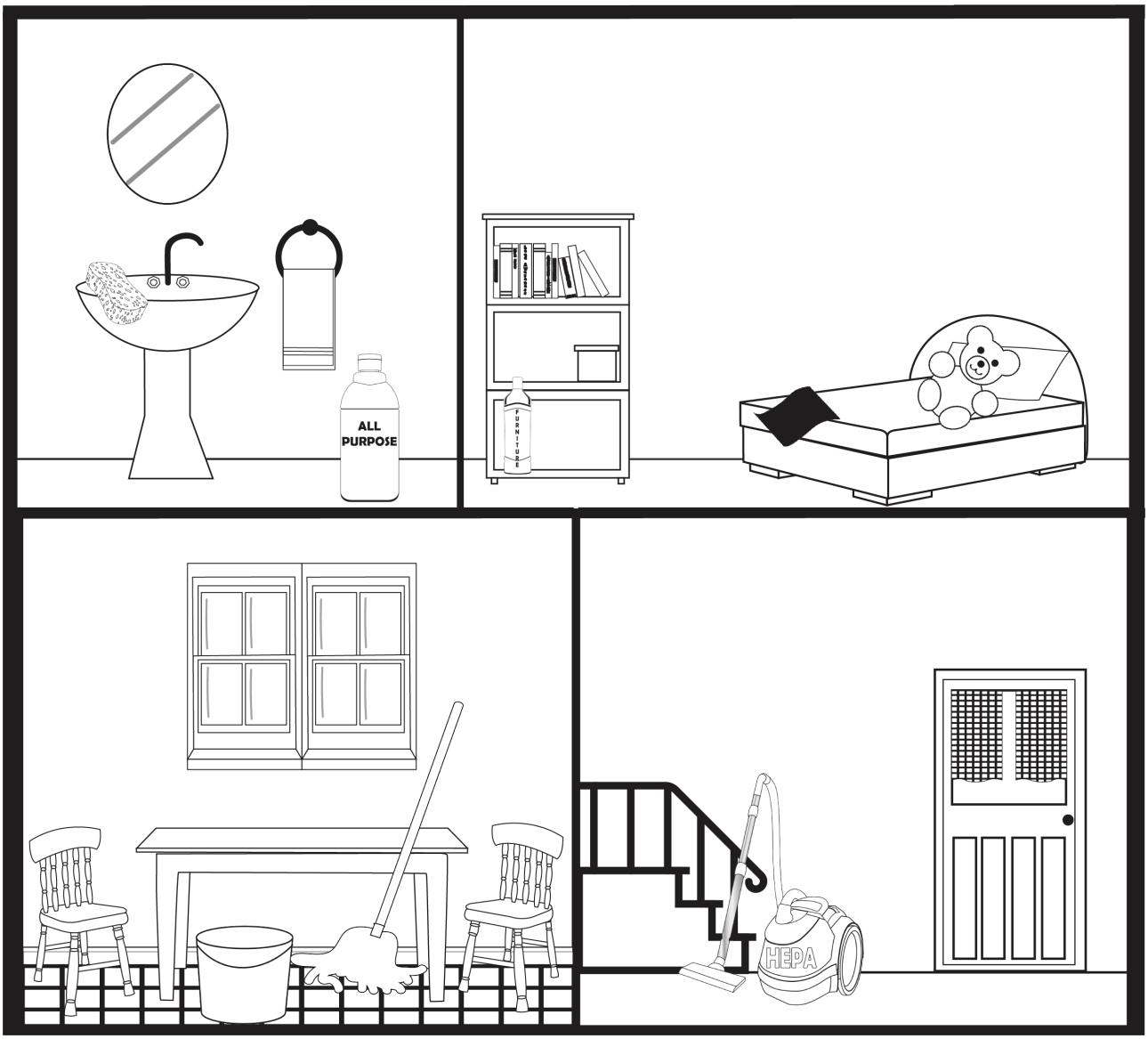

Sponge

All-purpose Cleaner


Cloth

Furniture Polish

HEPA Vacuum



Tell an adult if you find peeling paint.

Module 3: Personal Hygiene & Nutrition

Module 3: Personal Hygiene and Nutrition focuses on the connections between personal hygiene, nutrition for children and potential exposure to lead. Good personal hygiene and healthy nutritional practices can limit absorption of and reduce exposure to lead in children. By the end of Module 3 participants will:

- Learn specific personal hygiene techniques that help reduce potential childhood lead exposure;
- Identify foods that contain calcium, iron, and vitamin C; and
- Understand nutritional practices and foods that may limit the absorption of lead.

Instructor Preparation

*To prepare for **Module 3: Personal Hygiene and Nutrition**, the instructor should take the following steps:*

- *Preview the lesson plan to identify sections where examples, stories and local information may be inserted.*
- *Reach out to tribal personnel and other resources to find local information and partners, if possible.*
- *Contact tribal leaders, elders, staff and other community members to compile a list of your tribal community's local/traditional foods and snacks that are not listed in the Module 3 Worksheet.*
    - *Using Appendix A: Foods that Contain Calcium, Iron and Vitamin C and Appendix D: Supplemental Resources, determine which of your tribal community's local/traditional foods contain calcium, iron and/or vitamin C.*
    - *On the blank Local/Traditional Foods slide in the presentation, add your tribal community's local/traditional foods to the appropriate row – Calcium, Iron or Vitamin C (or create a table on flipchart paper if needed).*
    - *Compile a list of your tribal community's common snacks that contain calcium, iron, and/or vitamin C.*
    - *Find images of your tribal community's local/traditional foods and snacks (optional).*
- *Make copies of Module 3 worksheet, key messages and kids activity sheet (1 copy per participant).*
- *Gather materials for the Handwashing Demonstration.*
- *Gather foods and utensils needed for the Healthy Snack Activity.*
- *Gather any materials needed for the optional demonstration and activities included in Module 3:*
    - *Black Light Activity; and*
    - *Reading Food Nutrition Fact Labels.*
- *Edit the Module 3 Presentation Slides to incorporate relevant stories, images and videos. Remove presentation slides you do not plan to use during the session.*
- *Use the "Notes" boxes provided in the lesson plan for personal notes.*

***Instructor Notes** written in italics can be found throughout the lesson plan. These notes are intended to help guide the instructor through the discussion and presentation and are not meant to be read out loud during the session.*

Notes:

Suggested Materials

- Laptop and projector to display presentation slides and videos
- Flipchart and markers
- Pens and pencils
- *Module 3 Worksheet*
- *Module 3 Key Messages*
- *Module 3 Kids Activity Sheet*
- Masking tape
- Faucet with running water or buckets of water
- Soap
- Paper towels
- Utensils and food to make a healthy snack
- *OPTIONAL* black light kit (black light powder, black light oil, ultraviolet lamp)
- *OPTIONAL* nutrition facts labels

If access to technology is limited, you can use hardcopies of presentation slides.

Outcomes

Upon the completion of Module 3, participants will be able to:

- List three personal hygiene habits that can reduce potential lead exposure in children;
- List three healthy snacks for children that may help reduce the impact of potential lead exposure;
- Explain how meals and snacks can become contaminated with lead during preparation; and
- Discuss actions that can be taken in the home to reduce potential exposure to lead.

Outline

Notes:

Notes:

I. Introduction (10 minutes)

Good personal hygiene and healthy nutritional practices may assist in reducing the absorption of lead in a child's body. It is important that everyone, not just parents and caregivers, understand the beneficial impacts that simple actions, such as consistent hand washing and feeding children healthy foods, can have to help reduce the risk of lead exposure. Today, we will discuss simple actions we can take to reduce potential exposure to lead by focusing on personal hygiene and nutrition.

I am going to define a few words that will be used throughout our discussion.

1. Hygiene – Actions taken to keep our bodies clean, such as washing our hands or hair and taking a bath.

2. Nutrition – The process of consuming food or beverages necessary for health and growth, which our bodies need to stay alive and healthy.

3. Nutrient – A substance in food or beverages that provides nourishment for growth and the maintenance of life.

To better understand what we already know and think about personal hygiene and nutrition, I have a few questions for the group. If you do not know the answers, that is fine. We will cover all the information shortly. ***Instructor Note:*** *Depending on time, ask one or all four questions. Record participants' responses on flipchart paper and post them in a place that will be visible throughout the session.*

1. What are examples of good personal hygiene behaviors for children? ***Instructor Note:*** *Answers may include: washing hands after playing outside and going to the bathroom; covering your mouth when you cough or sneeze; brushing teeth twice a day; bathing regularly.*

2. What foods do you think should be part of a healthy diet for children? ***Instructor Note:*** *Answers may include: fruits and vegetables.*

3. What are some nutrients that are important for our health? ***Instructor Note:*** *Answers may include: vitamins, minerals, calcium, magnesium, protein, water and fiber.*

4. What nutrients may limit the absorption of lead in children's bodies? ***Instructor Note:*** *Answers include: calcium, vitamin C and iron.*

Some of the personal hygiene and nutritional tips that we will discuss today may be actions you already follow.

II. Personal Hygiene (15 minutes)

Taking care of our bodies and keeping ourselves and surroundings clean and clutter-free are important to maintain good health. To minimize the possibility of illness and reduce children's potential exposure to lead, teaching children good personal hygiene habits is essential. Adults can teach children good personal hygiene by:

- Making sure they wash their hands several times a day.
- Keeping their fingernails and toenails trimmed short.
- Bathing them daily.
- Pinning pacifiers to their clothes.
- Washing bottles and pacifiers daily.
- Washing toys often.
- Washing clothes and shoes soiled by lead dust or soil separately from other items.

One way young children ingest lead is through dust or soil contaminated by lead-based paint or other sources of lead that settles on their hands as they play. When children put their hands in their mouths, they may swallow lead-contaminated dust or soil, which can then get into their bloodstream. Elements of good hygiene, such as consistent handwashing, reduces the likelihood of this happening and is the best way to reduce the number of germs on children's hands in most situations. Children should wash their hands with soap:

- Before eating, drinking and sleeping;
- After using the bathroom; and
- After playing outdoors or with animals.

When children wash their hands, they should wash with soapy water for at least 20 seconds, and then dry their hands thoroughly with a clean towel or paper towel. While warm water is preferred, cold water is better than not washing. Hands should not be wiped off or dried on their clothes, which could be contaminated. Six steps are recommended for effective handwashing.

Notes:

Using Hand Sanitizer

There are differences between washing hands with soap and water and cleaning them with hand sanitizer. Alcohol-based hand sanitizers do not kill all types of germs and may not remove harmful chemicals, such as pesticides and heavy metals, such as lead. Handwashing with soap and water reduces the amounts of all types of germs, pesticides and metals on hands.

For more information, read Handwashing and Hand Sanitizer Use at Home, at Play, and Out and About at https://www.cdc.gov/handwashing/pdf/hand-sanitizer-factsheet.pdf.

Notes:

Optional Black Light Activity

Before beginning the demonstration, ask participants: why is warm, soapy water important? Then:

1. *Show participants your seemingly clean hands and ask if they look dirty – you may even want to walk around the room to allow participants to get a closer look.*
2. *Put black light powder on your hands and then show them to the participants. Explain that the powder represents tiny particles of lead. Now show participants your hands under the black light. The powder will glow in areas where your hands are dirty.*
3. *Run your hands quickly under running water and then show participants your hands under the black light again. Participants will see that the black light powder is still present, demonstrating that simply running your hands under water is not a good method of hand washing as it relates to lead.*
4. *Wash hands thoroughly following the Handwashing in 6 Steps procedure outlined. End the demonstration by showing your clean hands under the black light.*

a. Handwashing in 6 Steps

Step 1: Wet hands with clean, running water.

Step 2: Add soap, then rub hands together making a soapy lather. Do this away from the running water; be careful not to wash the lather away.

Step 3: Scrub the front and back of hands, between fingers and under nails. Wash for at least 20 seconds, the amount of time it takes to sing the ABCs once or the Happy Birthday song twice.

Step 4: Rinse hands from wrists to fingertips under clean, running water. Let the water run back into the sink, not down to your elbows.

Step 5: Dry hands thoroughly with a clean towel or paper towel.

Step 6: Turn off the faucet with the used towel. Remember, dirty hands turned on the faucet.

Following these six steps will ensure that children are getting lead dust off their hands. This information is found in the key messages handout, a take-home resource that summarizes information covered today. ***Instructor Note:*** *Give a copy of the Module 3 Key Messages to each participant.*

b. Handwashing Demonstration

Instructor Note: *Use the six steps of handwashing outlined above to have participants wash their hands. You will need liquid hand soap, a faucet with running water, and paper towels. If you do not have access to a faucet with running water, you can use buckets for the demonstration: one bucket for the faucet and one bucket for the sink. One participant can pour water from a bucket into the other bucket simulating a faucet while another participant washes their hands. If possible, expand the demonstration to include the optional Black Light Activity. As an alternative you can show a video, such as this one from the Centers for Disease Control and Prevention:* https://www.cdc.gov/cdctv/healthyliving/hygiene/wash-your-hands.html.

c. Outdoor Best Practices

This session mainly focuses on indoor activities. However, we may be exposed to lead in our outdoor environments through contaminated soil or breathing in dust containing

lead. Exterior lead-based paint from houses and buildings can flake or peel, and then get into the soil. Past use of leaded gasoline in cars, from industrial sources, or even from contaminated sites, including former lead smelters, can contaminate soil.

Some plants that grow in soils with a high lead concentration can absorb lead from the soil with most of the lead remaining in the roots and, in some rare cases, even making its way to the aboveground parts of the plant. A certified professional can remove (or partially remove) contaminated soil and replace it with "clean" soil.

How can we reduce potential exposure to lead while outdoors in areas suspected or known to be contaminated with lead? How can we prevent lead from getting inside our homes?
Instructor Note: *Allow participants time to think and share with the group.*

To reduce potential exposure to lead while outdoors we can:

- Check the exterior of your home, including porches and fences, for deteriorating paint.
- Cover bare soil with grass, plants, gravel, or wood chips, especially near the exterior walls of your home.
- Play in grass and dirt not contaminated with lead, if possible.
- Wash outdoor toys and playground equipment regularly using an outside faucet or hose.
- Use designated picnic, camping, biking and hiking areas.

To avoid tracking soil into your home:

- Put doormats outside and inside all entryways.
- Remove shoes before coming inside.
- Wipe pet's paws prior to bringing them indoors.
- Remove soil from clothes, toys, pets and equipment outside, if possible.

Instructor Note: *Give a copy of the Module 3 Worksheet and a pencil to each participant. Go through the Personal Hygiene questions together.*

We will use the worksheet during this session as a discussion tool and to review what we learned together. Look at the *Personal Hygiene* section at the top of your worksheet.

1. List two personal hygiene habits that may assist in reducing children's potential exposure to lead.

Notes:

Notes:

Use Caution When Eating Imported Foods

Use caution when consuming international candies, spices and other foods. On occasion, foods and food products imported to the United States have been found to contain high levels of lead. Not all countries have set the same standards to reduce the amount of lead in paint, foods and other products (Ref. 2).

Instructor Note: *Answers may include washing children's hands several times a day; trimming children's fingernails and toenails short; daily baths; pinning pacifiers to their clothes; washing bottles and pacifiers daily; washing toys often; and washing clothes and shoes soiled by lead dust or soil separately.*

2. You should wash your hands with soapy water for at least _____ seconds. ***Instructor Note:*** *The answer is 20.*

III. Nutrition (25 minutes)

Instructor Note: *Familiarize yourself with the lists of foods, meals and snacks provided in the lesson plan and be prepared to share examples to start the conversation. If you need additional ideas, use Appendix A: Foods that Contain Calcium, Iron and Vitamin C which is a list of over 150 general and local/traditional foods that are known to contain calcium, iron and/or vitamin C. Record participants' ideas on foods, meals, and snacks, preferably on flip chart paper.*

Specific nutritional choices you and your children make are crucial. Proper nutrition is important for a child's overall growth, development, learning and more. Creating healthy eating habits will maintain our health and reduce the risk of diseases. Everything we eat and drink matters, which is why it is important to include a variety of vegetables, fruits, whole grains, proteins and dairy products in our diets (Ref. 1).

a. Eating a Healthy Diet with Key Nutrients to Reduce Lead Absorption

Eating a variety of foods gives children the vitamins and minerals they need to grow up healthy. When children do not have enough calcium or iron in their bodies, their bodies may absorb lead instead of these nutrients. Calcium, iron and vitamin C are natural blockers that may help reduce the absorption of lead in the bloodstream.

A diet rich in important nutrients such as calcium, iron and vitamin C plays an essential role in reducing the absorption of lead:

- Calcium helps bones stay strong and may keep lead out. Foods that contain calcium include:
    - Milk and milk products, such as yogurt and cheese;
    - Broccoli;

- Canned salmon and sardines; and
- Foods with added calcium, such as orange juice and soy milk.

- Iron may block lead from being absorbed. Foods that contain iron include:
  - Lean red meats, fish, chicken and eggs;
  - Beans, peas, green leafy vegetables and lentils;
  - Iron-fortified cereal, bread and pasta; and
  - Dried fruit, such as raisins and apricots.

- Vitamin C increases the absorption of iron, which may decrease the absorption of lead. Foods that contain vitamin C include:
  - Citrus fruits, such as oranges and grapefruit;
  - Kiwi, strawberries and melon; and
  - Tomatoes, potatoes and peppers.

A couple of other important facts to understand regarding children and preventing the absorption of lead are:

- An overall unhealthy diet high in fat and oil may increase the rate of lead absorption; and
- A child with an empty stomach will absorb more lead.

What other foods, in addition to those already mentioned, do you think we can provide our children to ensure they are getting calcium, iron and/or vitamin C in their diets?
Instructor Note: *Allow participants time to think and respond before showing them the Foods that May Help Reduce the Absorption of Lead table that is in the worksheet and presentation. Foods are listed by the nutrient they contain the most of: calcium, iron or vitamin C.*

Look at the *Foods that May Help Reduce the Absorption of Lead* table on your worksheet.

1. Did we mention any of these foods earlier?
2. Are any foods already in your family's diet?

Take a moment to carefully read through the *General Foods* column and circle all the foods you and your family eat.

Notes:

Notes:

Foods that May Help Reduce the Absorption of Lead	
Nutrients	**General Foods**
Calcium (mineral needed to build and maintain strong bones)	almonds, bone broth, broccoli, canned salmon, cheese, chia seeds, collard greens, cottage cheese, crab, edamame, figs, okra, milk, non-dairy milk, nopal cactus pads, prickly pear, sardines, seaweed, sweet potatoes, tofu, white beans, whole wheat bread, yogurt
Iron (mineral critical to blood function)	apricots, asparagus, beans, beef, bison, black walnuts, chicken, clams, eggs, fish, fish eggs, hazelnuts, lentils, liver, mushrooms, mussels, mustard greens, oats, oysters, peanut butter, peas, pine nuts, pumpkin seeds, prunes, raisins, salmon, scallops, shrimp, spinach, venison, water potato, wild rice
Vitamin C (vitamin that protects the body from disease and increases the absorption of iron)	apples, bananas, bell peppers, black-berries, blueberries, brussels sprouts, cabbage, cantaloupe, cauliflower, chestnuts, citrus fruits, corn, green beans, honeydew, huckleberries, kale, kiwi, leeks, parsnips, pears, plums, potatoes, raspberries, rhubarb, squash, squid, strawberries, tomatoes, turnips, watercress

Count the number of foods you circled and then record the number in the box below the table. ***Instructor Note:*** *Share with participants the number of foods in the General Foods column eaten in your home. Ask a few of the participants to share the number of foods eaten in their home.*

Do you think the table is missing any foods, specifically any local/traditional foods eaten in our community? Take a few minutes to compare your thoughts with others and write these under the Local/Traditional Foods column on your worksheet, listing them by the nutrient you think they contain the most of: calcium, iron or vitamin C. ***Instructor Note:*** *Allow participants a few minutes to discuss; share your findings based on Appendix A and your own research.*

Based on my own research, this table lists some of our local/traditional foods that contain these three nutrients. Each food is listed by the nutrient it contains the most of: calcium, iron or vitamin C.

Foods That May Help Reduce the Absorption of Lead	
Nutrients	**Local/Traditional Foods**
Calcium (mineral needed to build and maintain strong bones)	***Instructor Note:*** *Please include your tribe's local/traditional, foods that contain calcium here.*
Iron (mineral critical to blood function)	***Instructor Note:*** *Please include your tribe's local/traditional foods that contain iron here.*
Vitamin C (vitamin that protects the body from disease and increases the absorption of iron)	***Instructor Note:*** *Please include your tribe's local/traditional foods that contain vitamin C here.*

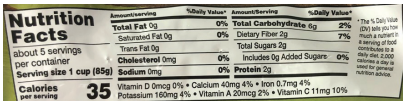
i. Optional Activity: Reading Nutrition Facts Labels

Instructor Note: *After discussing foods that contain calcium, iron and vitamin C, you may want to conduct the optional Reading Nutrition Facts Labels Activity. The purpose of this activity is for participants to practice reading nutrition facts labels to determine and compare the amount of calcium, iron and vitamin C of foods available for purchase at local stores. Nutrition facts labels are usually found only on packaged foods (e.g., canned, frozen and dried foods) and not fresh produce. You can use the labels provided or find your own examples. For more information on reading and understanding nutrition facts labels, visit:* https://www.fda.gov/food/nutrition-education-resources-materials/how-understand-and-use-nutrition-facts-label.

Notes:

Condensed Tomato Soup

Notes:



Frozen Green Beans

Purchasing fresh or minimally processed foods may not always be an option depending on where you live. What are some other forms in which we eat fruits, vegetables and protein? ***Instructor Note:*** *Answers may include: frozen meals, canned goods, fruit juice or dried foods.* Frozen, canned and dried fruits and vegetables and 100% fruit and vegetable juices are delicious and provide nutrients for a healthy diet. What are some advantages to frozen, canned or dried foods? ***Instructor Note:*** *Answers may include: you can enjoy certain foods no longer in season; and frozen, canned and dried foods do not spoil as soon as fresh foods.*

To understand the ingredients and nutrition content of packaged foods, we need to read the nutrition facts label. Does anyone read nutrition facts labels? What information is included on nutrition facts labels? ***Instructor Note:*** *Possible answers include serving size, calories, total fat, sodium, dietary fiber, sugars, calcium, etc.*

There is a lot of information on these labels and today we are going to review how we can use them to ensure our families are getting calcium, iron and vitamin C in their diets, which may prevent the absorption of lead. Where on the label can we find information about vitamin and mineral content? If we look at the bottom of the nutrition facts label, we will find a list of the vitamins and minerals that this food contains and the percent daily value (%DV) of each. The %DV shows how much a nutrient in one serving of the food contributes to your daily diet. The %DVs are based on the Daily Values for key nutrients, which are the amounts of nutrients recommended per day for Americans. The %DV provided on a nutrition facts label are based on a 2,000 calorie diet, and the number of calories recommended varies from individual to individual. For example, most children 4 to 8 years old need only between 1400 and 1600 calories a day.

Which of the three nutrients, calcium, iron or vitamin C, does the tomato soup contain? ***Instructor Note:*** *Allow participants time to think. The answer is all three nutrients.*

Which of the three nutrients do the frozen green beans contain? ***Instructor Note:*** *Allow participants time to think. The answer is all three nutrients.*

Which of these two foods contains the most calcium? ***Instructor Note:*** *Allow participants time to think. The answer is a serving of frozen green beans, because it has a higher %DV of calcium in one serving.*

b. Meal Ideas

Instructor Note: *A few sample meal ideas are included below (Ref. 3).*

Here are a few meal ideas that contain calcium, iron and/or vitamin C.

Breakfast:

- Oatmeal, sliced banana and 100% orange juice.
- Vegetable omelet, apple sauce and low-fat milk.
- French toast, orange slices, yogurt and 100% fruit juice.
- Iron-fortified cereal with low-fat milk, topped with raisins.
- Wild rice porridge with berries.

Lunch:

- Turkey & tomato sandwich, coleslaw and low-fat milk.
- Tuna salad sandwich on whole-grain bread and pear slices.
- Lean cheeseburger on a whole-grain bun and 100% cranberry juice.
- Shrimp, squash and brussels sprouts.

Dinner:

- Sloppy joe, watermelon and low-fat milk.
- Macaroni and cheese, stewed tomatoes and melon slices.
- Chicken, rice, green beans and berries.
- Salmon, rice and bell peppers.

What other meal ideas do you have that include all three nutrients? ***Instructor Note:*** *As participants share their ideas with the group, record their answers on flipchart paper. If needed, extend the time for this part of the session to accommodate a longer discussion.*

Notes:

Notes:

Optional Healthy Snack Preparation

Gather materials needed to *prepare a snack. Instruct participants to wash their hands before preparing.*

Provide directions on how to prepare the snack and explain which of the three nutrients are found within the snack.

When participants eat the snack, ask them:

- *Do you think your child(ren) would eat this snack?*
- *Would you prepare this for your family?*

If the snack has cultural significance, discuss those benefits too.

c. Healthy Snacks

As mentioned earlier:

- An overall unhealthy diet high in fat and oil may increase the rate of lead absorption; and
- A child with an empty stomach will absorb more lead.

We can provide children tasty, healthy snacks that are part of a nutritious diet. For example, a snack could be:

- Air-popped popcorn;
- Applesauce;
- Fruit, such as: strawberries, melons, bananas, pears, oranges or peaches;
- Peanut butter on whole-grain crackers, apples or celery;
- Various jerky such as: salmon, venison, elk or beef;
- Low-fat or fat-free yogurt topped with fruit and/or iron-fortified cereal;
- Frozen 100% fruit juice pops;
- Cheese and whole-grain crackers;
- Nuts, sunflower seeds and dried fruits, including 100% fruit leather; or
- Hummus and raw vegetables.

What are other healthy snacks? On the worksheet, the *Healthy Snacks* section lists examples of healthy snacks on the left. Put an "X" in the box next to the snacks you already feed your children or family, and a "star" next to those you could easily add to their diet. Think about how you might modify these snacks to better fit your family's needs and preferences.

Next, work with a partner to write down other snack ideas on the right side of the *Healthy Snacks* section. ***Instructor Note:*** *Have participants share their snack ideas with the group while you write them down on the flipchart paper.*
As an option, prepare a healthy snack with the group.

d. Food Preparation

We should take extra precautions when preparing food for children, as lead is nearly impossible to see or smell. Lead can potentially make its way into our food.

- Lead can enter tap water used to prepare and wash food when plumbing materials that contain lead corrode. We should use only cold water for cooking and drinking as hot water will dissolve lead more quickly than cold water and is likely to contain

increased lead levels. If hot water is needed, it should be taken from the cold water tap and heated on a stove or in a microwave oven. Boiling water does not remove lead from water. Before drinking or cooking, flush your home's pipes by running the tap, taking a shower, doing laundry or doing a load of dishes. If you use a filter certified to remove lead read the directions to learn how to properly install and use your cartridge and when to replace it. Using the cartridge after it has expired can make it less effective at removing lead.

- Canned goods in the U.S. are welded closed at the seams and do not use lead; however, lead solder can still be found in cans made in other countries (Refs. 5 and 6). Over time, lead solder may seep into the can and mix with the food, contaminating it. Avoid buying imported canned foods.

- Crystal, glazed pottery and porcelain are all popular items used for serving, heating or eating food, and can also be a source of lead exposure. Do not eat food or drink water cooked or stored in these items if they are chipped or cracked. In general, try to avoid using any crystal, pottery or porcelain made with a lead glaze.

- Lead dust that settles on countertops can contaminate food. Keep your kitchen clean, and wash countertops with an all-purpose cleaner before preparing food.

e. Outdoor Best Practices

When preparing or eating food outdoors, there are some actions we need to keep in mind to reduce potential exposure to lead. Based on everything you have learned so far, what could we do while outdoors to reduce potential exposure to lead in areas that you suspect or know are contaminated?
Instructor Note: *Allow participants time to think. After a minute, have them share with the group. Below are possible responses:*

- Use water from clean sources for drinking, cooking or washing.
- Eat on a clean surface such as a picnic table or blanket.
- Avoid eating food that falls on the ground.
- Switch to non-lead ammunition and fishing tackle when harvesting wild game and fish for food, when possible.
- Clean utensils and surfaces where fish and game meats will be dressed to prevent cross-contamination.

Notes:

Lead Solder

- *Solder is a metal that is melted and used to connect other pieces of metal together (Ref. 4).*
- *In 1995, the United States banned the use of lead solder on all food cans, including imported products. However, lead solder is still used in other countries and could be found in cans imported to the United States (Refs. 5 and 6).*

Notes:

Lead and Hunting

Most ammunition contains lead, which means both wildlife and humans who consume them can be exposed to lead (Ref. 7). In a recent study completed in North Dakota, participants who ate any wild game had higher blood lead levels than participants who did not consume wild game (Ref. 8). While it has been suggested that you can limit lead exposure by cutting around the site of the lead bullet in animals and removing the surrounding tissue, this is not sufficient. Typically, hundreds of metal fragments are dispersed when a lead bullet is fired into animal carcasses, making it nearly impossible to remove all the fragments.

Many households in Indian country consist of hunting families that rely on the use of firearms to acquire food year-round. Elevated lead exposure has been correlated with subsistence hunting communities when game meat is harvested with lead ammunition. High-velocity lead-core bullets explode upon impact, sending out a plume of lead dust along with hundreds of tiny fragments into the targeted animal, ending up in game meat processed for consumption. High-performance, non-lead ammunition has become increasingly available in a wide range of brands and calibers. Using lead-free ammunition is the best way to avoid potential exposure to lead.

f. Fish

Instructor Note: *FDA and EPA have issued advice regarding eating fish, which is geared toward women who are or may become pregnant, as well as breastfeeding mothers and parents of young children, helping them make informed choices when it comes to fish that is healthy and safe to eat (Ref. 9). Keep in mind that while Reference 9 is focused on mercury, the general information also applies to lead and other contaminants. It is recommended that you also investigate your area's fish consumption advisories that could come from the federal, state, tribal and/or local government.*

Fish is a high-quality source of protein. Unfortunately, lead and other contaminants may accumulate in fish, meaning fish could be a potential source of lead exposure. However, this potential exposure to lead can be reduced by the way fish is prepared, such as: removing their organs, fat and skin (where lead and other contaminants may accumulate).

If you eat game fish, eat the smaller, younger fish (within legal limits); they are less likely to contain contaminants than larger, older fish. Eat panfish such as bluegill, perch, stream trout and smelt. They feed on insects and other aquatic life and are less likely to contain contaminants (Ref. 10).

Check federal, state, tribal, and/or local fish advisories for recommendations on fish consumption for pregnant women, children under 15 years of age and the general public. This includes recommendations on numbers to be consumed per month for specific fish and whether it is recommended to eat only the fillet or the whole fish.

Instructor Note: *You may choose to include a live demonstration (done by you or someone else) on the proper ways to clean fish and remove their skin, fat, and internal organs.*

IV. Conclusion (10 minutes)

Notes:

Good personal hygiene and proper nutrition for children may help in reducing their potential exposure to lead.

When children put their hands in their mouths, they may swallow lead-contaminated dust or soil, which can get into their bloodstream. Elements of good personal hygiene, such as consistent handwashing and bathing, reduce potential exposure to lead.

One of the easiest and most effective things that parents and caregivers can do to reduce potential exposure to lead is to teach children to wash their hands properly many times throughout the day. Children should wash their hands or have their hands washed:

- Before eating, drinking and sleeping;
- After using the bathroom; and
- After playing, especially outdoors or with animals.

Eating a well-balanced diet is important for children's long-term health and development. To help reduce the absorption of lead, children should eat foods high in:

- Calcium;
- Iron; and
- Vitamin C.

In summary, proper nutrition is important and eating a variety of foods will give children the vitamins and minerals they need to grow up healthy. When children do not have enough calcium or iron in their bodies, their bodies may absorb lead instead of these nutrients. An overall unhealthy diet high in fat and oil may increase the rate of lead absorption.

Instructor Note: *Below are questions that you may select to gauge participants' understanding. Use their responses to facilitate a discussion.*

1. *What are some examples of foods high in calcium, iron and/or vitamin C?*

2. *Which of these foods, meals or snacks we covered today are you going to add to your children's diet this week? Write your answers on the worksheet.*

3. *Are there other meals and/or snacks high in calcium, iron and vitamin C that you would prepare at home? Write your answers on the worksheet.*

Notes:

4. *What are some other actions we covered today that we can do at home to reduce exposure to lead? Answers may include some of the following:*

- *Wash children's hands, bottles, pacifiers, and toys often.*
- *Use only cold water for drinking, cooking and making baby formula.*

Thank you for participating in this session. Does anyone have any questions about the information covered? Here is the *Module 3 Kids Activity Sheet* for you to take home. The kids activity sheet has several activities that teach children about what we learned today. ***Instructor Note:*** *Give each participant a copy of the Module 3 Kids Activity Sheet.*

V. References

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10. U.S. Environmental Protection Agency. Should I Eat the Fish I Catch? Available at https://www.epa.gov/choose-fish-and-shellfish-wisely/should-i-eat-fish-i-catch-brochure-2014. [Accessed February 11, 2020].

Notes:

PERSONAL HYGIENE AND NUTRITION

PERSONAL HYGIENE

1. List two personal hygiene habits that may assist in reducing children's potential exposure to lead:

   1. _____

   2. _____

2. You should wash your hands with soapy water for at least_____ seconds.

ANSWERS
1. There are many possible answers
2. 20

NUTRITION: FOODS THAT MAY HELP REDUCE THE ABSORPTION OF LEAD

Providing children with healthy, nutritious meals and snacks that include calcium, iron and vitamin C benefits their overall health and can limit the absorption of lead. A child with an empty stomach may absorb more lead. Below is a chart of foods listed by the nutrient it contains the most of: calcium, iron or vitamin C.

Directions:

1. In the General Foods column, circle foods you feed your family.
2. In the Local/Traditional Foods column, write other foods eaten in your community that contain calcium, iron or vitamin C.

Nutrients	General Foods	Local/Traditional Foods
Calcium (mineral, needed to build and maintain strong bones)	almonds, bone broth, broccoli, canned salmon, cheese, chia seeds, collard greens, cottage cheese, crab, edamame, figs, okra, milk, non-dairy milk, nopal cactus pads, prickly pear, sardines, seaweed, sweet potatoes, tofu, white beans, whole wheat bread, yogurt	
Iron (mineral, critical to blood function)	apricots, asparagus, beans, beef, bison, black walnuts, chicken, clams, eggs, fish eggs, hazelnuts, lentils, liver, mushrooms, mussels, mustard greens, oats, oysters, peanut butter, peas, pine nuts, pumpkin seeds, prunes, raisins, salmon, scallops, shrimp, spinach, venison, water potato, wild rice	
Vitamin C (vitamin, protects the body from disease and promotes the absorption of iron)	apples, bananas, bell peppers, blackberries, blueberries, brussels sprouts, cabbage, cantaloupe, cauliflower, chestnuts, citrus fruits, corn, green beans, honeydew, huckleberries, kale, kiwi, leeks, parsnips, pears, plums, potatoes, raspberries, rhubarb, squash, squid, strawberries, tomatoes, turnips, watercress	

In my home we eat _____ (number) of the foods in the General Foods column.

HEALTHY SNACKS

Directions: Below are examples of snacks that contain calcium, iron and/or vitamin C. Put an "x" in the box next to the snacks you already feed your children or family, and a ★ next to those you could easily add to their diet. What are other healthy snacks that contain one or more of these nutrients? Write your ideas in the blank spaces below.

- ☐ Air-popped popcorn
- ☐ Applesauce
- ☐ Strawberries, melons, bananas, pears, oranges or peaches
- ☐ Peanut butter on whole-grain crackers, apples or celery
- ☐ Jerky such as: salmon, venison, elk or beef
- ☐ Yogurt topped with fruit and/or iron-fortified cereal
- ☐ Frozen 100% fruit juice pops
- ☐ Cheese and whole-grain crackers
- ☐ Nuts and sunflower seeds
- ☐ Dried fruits, including 100% fruit leather
- ☐ Hummus and raw vegetables

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

This week, I am going to add _____ to my children's diet.

Other foods and snacks I would like to add to my children's diet include:

1. _____

2. _____

3. _____

4. _____

For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323)

PERSONAL HYGIENE AND NUTRITION

Good personal hygiene habits and healthy nutritional practices can limit absorption of and reduce exposure to lead.

WHAT ARE PERSONAL HYGIENE HABITS THAT CAN REDUCE POTENTIAL LEAD EXPOSURE?

One way young children ingest lead is through dust or soil that settles on their hands as they play. When children put their hands in their mouths, they may swallow lead-contaminated dust or soil, which can then get into their bloodstream. Good personal hygiene habits, such as consistent handwashing, reduces the likelihood of this happening and is the best way to reduce the number of germs on children's hands in most situations. Children should wash their hands with soap several times a day using the Six Steps of Handwashing.

Step 1: Wet hands with clean, running water.

Step 2: Add soap, then rub hands together making a soapy lather. Do this away from the running water; be careful not to wash the lather away.

Step 3: Scrub the front and back of hands, between fingers and under nails. Wash for at least 20 seconds, the amount of time it takes to sing the ABCs once or the Happy Birthday song twice.

Step 4: Rinse hands from wrists to fingertips under clean, running water. Let the water run back into the sink, not down to your elbows.

Step 5: Dry hands thoroughly with a clean towel or paper towel.

Step 6: Turn off the faucet with the used towel. Remember, dirty hands turned on the faucet.

HOW CAN WE REDUCE POTENTIAL EXPOSURE TO LEAD WHILE OUTDOORS?

Children may be exposed to lead in outdoor environments through contaminated soil or breathing in dust containing lead. To reduce potential exposure to lead while outdoors we can:

- Check the exterior of your home, including porches and fences, for deteriorating paint.
- Wash outdoor toys and playground equipment regularly.
- Use designated picnic, camping, biking and hiking areas.
- Use water from clean sources for drinking, cooking or washing.

To avoid tracking soil into your home:

- Put doormats outside and inside all entryways.
- Remove shoes before coming inside.
- Wipe pets' paws prior to bringing them indoors.

HOW MAY NUTRITION ASSIST IN REDUCING THE ABSORPTION OF LEAD?

Eating a variety of foods gives children the vitamins and minerals they need to grow up healthy. When children do not have enough calcium or iron in their bodies, their bodies may absorb lead instead of these nutrients. A diet that includes foods rich in calcium, iron and vitamin C may assist in reducing the absorption of lead.

Important facts to understand are:

- An overall unhealthy diet high in fat and oil may increase the rate of lead absorption; and
- A child with an empty stomach will absorb more lead.

Review the *Module 3 Worksheet* for information on specific foods that contain calcium, iron and vitamin C.

WHAT ARE SOME MEALS THAT CONTAIN CALCIUM, IRON AND/OR VITAMIN C?

BREAKFAST:

- Oatmeal, sliced banana and 100% orange juice
- Vegetable omelet, apple sauce and low-fat milk
- French toast, orange slices, yogurt and 100% fruit juice
- Iron-fortified cereal with low-fat milk, topped with raisins
- Wild rice porridge with berries

LUNCH:

- Turkey & tomato sandwich, coleslaw and low-fat milk
- Tuna salad sandwich on whole-grain bread and pear slices
- Lean cheeseburger on a whole-grain bun and 100% cranberry juice
- Shrimp, squash and brussels sprouts

DINNER:

- Sloppy joe, watermelon and low-fat milk
- Macaroni and cheese, stewed tomatoes and melon slices
- Chicken, rice, green beans and berries
- Salmon, rice and bell peppers

WHERE CAN I LEARN MORE?

For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323) or visit www.epa.gov/lead.

Handwashing

Dust and soil can get on your hands when you play. You should wash your hands with soap many times a day using the Six Steps of Handwashing:

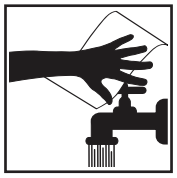
1. **WET** your hands.

2. Add **SOAP** and lather.

3. **SCRUB** and sing the Happy Birthday song twice.

4. **RINSE**.

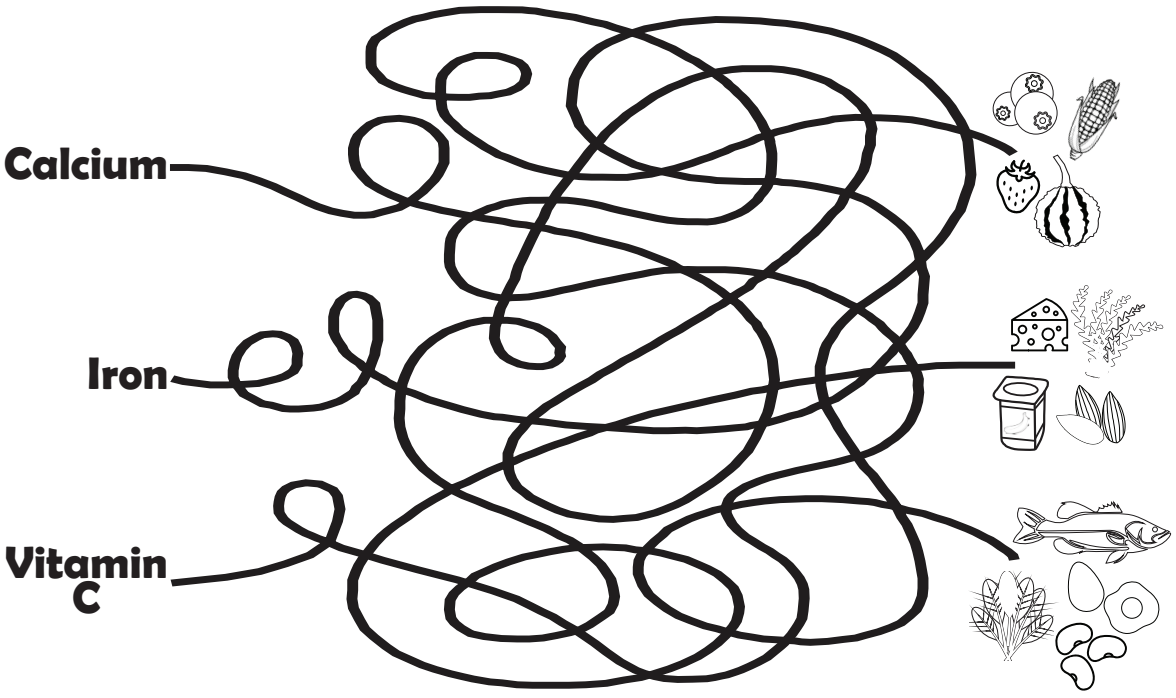
5. **DRY** your hands with a clean towel.



6. Turn **OFF** the water with your towel.

Follow the Trail

Healthy foods with calcium, iron and vitamin C help our bodies grow. Follow the trails to find delicious foods with calcium, iron or vitamin C.



Vitamin C: Strawberries, blueberries, corn, squash
Calcium: Cheese, yogurt, almonds, seaweed
Iron: Beans, fish, spinach, eggs

Word Search

Calcium, iron and vitamin C are found in fruits, vegetables and other healthy foods. Look for and circle healthy foods that have calcium, iron and vitamin C.

V Y I Z U I Y V T Q F S H D F V R Q
Y A B X M M I M D H X Q W P B H A N
H U K Z H M H N F S O U F X B I I B
V O Y G D C Y J U V O A G O U X S E
C U B F I J O L M U J S M J H X I A
L O E Z X L G M C E A H J T Z O N N
A F M U G H B R O C C O L I S M S S
M M V M F A F V J M B Y H I N M A E
S W R M H K D G X V G Q Y X Z U O C
M K V A E S E A W E E D D U H B A A
Z W S A A M T D O N S A A A O X F E
U C O R N B E R R I E S L F G V E C
T R B I J S Y W A S G P M Y W H X S
B Z S Y G M C N N O M I O J A I S S
J D B X V Z Z Y G N M K N R R P F N
K C C H E E S E E M P A D A P P L E

ALMONDS
APPLE
BEANS
BERRIES
BROCCOLI
CHEESE
CLAMS
CORN
RAISINS
ORANGE
SEAWEED
SQUASH
VENISON
YOGURT

Module 4: Hiring Certified Lead Professionals

Photo provided by Shaun West, Environmental Programs Manager, Cherokee Nation

Module 4: Hiring Certified Lead Professionals emphasizes the importance of hiring a certified lead professional who will use lead-safe work practices to reduce exposure to lead when: (a) abating a home, child care facility or preschool built before 1978 to address identified lead-based paint or lead-based paint hazards, or (b) disturbing paint in renovation, repair and painting (RRP) projects in homes, child care facilities or preschools built before 1978. By the end of Module 4, participants will:

- Understand the difference between a lead-based paint inspection and a lead risk assessment;
- Learn that renovation, repair and painting (RRP) jobs in a pre-1978 home with lead-based paint creates lead dust;
- Recognize the difference between lead abatement and renovation, repair and painting projects; and
- Understand what must be done by Lead-Safe Certified Firms when conducting lead renovation activities.

Instructor Preparation

*To prepare for **Module 4: Hiring Certified Lead Professionals**, the instructor should take the following steps:*

- *Preview the lesson plan to identify sections where examples, stories and local information may be inserted.*
- *Reach out to tribal personnel and other resources to find local information and partners, if possible.*
- *Locate and create a list of nearby certified lead abatement firms using one of the links below (depending on where you live):*
  - *EPA-authorized lead-based paint abatement programs include Cherokee Nation, Upper Sioux Community, Lower Sioux Indian Community in the State of Minnesota, Minnesota Chippewa Tribe – Bois Forte (Nett Lake), AL, AR, CA, CO, CT, DC, DE, GA, HI, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, NE, NH, NJ, NC, ND, OH, OK, OR, PA, RI, TN, TX, UT, VT, VA, WA, WV or WI: https://www.epa.gov/lead/lead-based-paint-activities-professionals#map*
  - *EPA runs the lead-based paint abatement program where there is not an EPA-authorized program (in states and areas of Indian country not listed above): https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearchAbatement*
- *Locate and create a list of nearby certified lead RRP firms: https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearch*
- *Research the range of costs for both lead abatement and RRP professionals in your area.*
- *Identify the name and contact information for the local tribal housing authority.*
- *Watch the EPA Lead-Based Paint Safe Work Practices video at https://www.youtube.com/watch?v=XqUssA-PsD0 before leading the session.*
- *Familiarize yourself with Appendix B: Renovation, Repair and Painting Program: Do-It-Yourselfers in case participants have questions about conducting small-scale projects themselves.*

Notes:

- *Make copies of the Module 4 worksheet, key messages and kids activity sheet (1 copy for each participant).*
- *Edit the Module 4 Presentation Slides to incorporate relevant stories, images and videos. Remove presentation slides you do not plan to use during the session.*
- *Use the "Notes" boxes provided in the lesson plan for personal notes.*

Instructor Notes *written in italics can be found throughout the lesson plan. These notes are intended to help guide the instructor through the discussion and presentation and are not meant to be read out loud during the session.*

Suggested Materials

- Laptop and projector to display presentation slides and video
- EPA Lead-Based Paint Safe Work Practices (YouTube) video
- *Module 4 Worksheet*
- *Module 4 Key Messages*
- *Module 4 Kids Activity Sheet*
- Pencils or pens
- The Lead-Safe Certified Guide to Renovate Right (download at: https://www.epa.gov/lead/renovate-right-important-lead-hazard-information-families-child-care-providers-and-schools)

If access to technology is limited, you can use hard copies of presentation slides.

Outcomes

Upon the completion of Module 4, participants will be able to:

- List three potential lead-based paint hazards;
- Compare the difference between a lead-based paint inspection and a lead risk assessment;
- List three things that Lead-Safe Certified Firms do when conducting renovation, repair and painting activities; and
- Explain how to find a Lead-Safe Certified Firm.

Outline

Notes:

Notes:

I. Introduction (10 minutes)

In this session, we are going to discuss what to do if you are concerned that your home, child care facility or preschool, whether owned or rented, contains lead-based paint. In 1978, the federal government banned the residential use of lead-based paint, which made residential lead-based paint no longer available for purchase in stores. The focus of this session will be on housing, child care facilities or preschools built prior to 1978. Before we begin, I have a few questions for the group to gain a better understanding of what you already know:

1. Has anyone ever heard that you should hire a certified lead professional to do work on your home? ***Instructor Note:*** *This can be as simple as having participants raise their hands to respond with "yes" or "no" or you can allow participants time to share.*
2. When should we hire certified lead professionals?
3. How can you tell if your home has lead-based paint and that you might need to hire a certified lead professional?
4. ***Instructor Note:*** *Show participants the two photos of houses.* Looking at these photos can you tell which house has lead-based paint? ***Instructor Note:*** *Allow participants a moment to think and respond.* It is not possible to tell just by looking at these houses if they have lead. We know there is lead in the house on the left photo example because the paint was analyzed and was found to contain lead. The other house was built in 2007.

Throughout this session, I will use the phrase "pre-1978 homes" to refer to homes, child care facilities or preschools built before 1978.

The federal government banned the sale of paint containing lead for use in residential homes in 1978 to reduce children's exposure to lead. If your home was built before 1978, it may have lead-based paint on interior and/or exterior surfaces. In some instances, lead-based paint may have been purchased before it was banned, stored and then used years later.

Today, lead-based paint may still be present under layers of paint in pre-1978 homes. If paint is kept intact and surfaces are kept clean, children can live safely in a home containing lead-based paint. However, when painted surfaces are not

properly maintained, paint can deteriorate, peel, chip, chalk or crack, becoming a hazard. When lead-based paint is old and worn or is subject to constant rubbing (as on doors and window sills) lead-based paint chips and dust can scatter and become a hazard. These hazards can be breathed in or swallowed by children, residents and workers. Lead dust can also be scattered when paint is disturbed during renovation, repair or remodeling. In addition, lead-based paint chips, dust and contaminated soil can end up on a child's hands and toys which younger children put in their mouths, leading to ingestion of lead.

If painted surfaces are deteriorating and you are concerned that they may contain lead-based paint, what would be the first step to take to reduce potential exposure to lead in your home? ***Instructor Note:*** *Allow participants a moment to think and then ask them to share their answers with the group.*

A good first step would be to check with the local tribal housing authority or environmental department to get more information. If you own your home, hire a certified lead professional to conduct a lead inspection and/or a lead risk assessment. Another possible first step is to clean using the techniques, such as wet mopping, covered in *Module 2*. We will discuss lead inspections and lead risk assessments in more detail later.

When renovation, repair and painting (RRP) jobs occur in a pre-1978 home with lead-based paint, the disturbance of the paint creates lead dust, which can be inhaled or swallowed. Even if you try to keep the work area neat and clean, lead dust cannot be contained unless proper lead-safe work practices are followed. Therefore, it is important to have a Lead-Safe Certified Firm perform the work. We will discuss this later.

II. Deteriorating Lead-Based Paint Hazards (10 minutes)

Deteriorating lead-based paint (peeling, chipping, chalking or cracking paint) is a hazard and needs immediate attention. A lead-based paint hazard is any condition resulting from deteriorating paint, which causes exposure to lead from paint, dust or soil. Lead-based paint is usually not a hazard if it is in good condition and is not on an impact or friction surface like a window or door jamb or surfaces that children chew.

Instructor Note: *Give a copy of the Module 4 Worksheet, Module 4 Key Messages and a pencil to each participant.*

Notes:

Maintain Your Home's Condition

It is important to maintain the lead-painted surfaces in your home. Lead-based paint in good condition is usually not harmful. If your home was built before 1978:

- *Regularly check your home for chipping, peeling or deteriorating paint. Fix small areas (under six square feet) of damaged paint as soon as possible.*
- *Regularly check all painted areas that rub together or get lots of wear, like windows, doors and stairways. You can reduce the amount of lead dust created by fixing areas in the home that bump or rub together. One example of this would be adjusting a tight-fitting door to reduce the chance of creating lead dust.*
- *Regularly check for paint chips or dust – if you see some, remove carefully with a damp paper towel and discard in the trash, then wipe the surface using the wet washing method discussed in Module 2. (Ref. 1)*

Notes:

The home shown on the worksheet has eight lead-based paint hazards. Using the worksheet, find and circle the areas in the home where it looks like the paint is peeling, chipping, chalking or cracking.

Let's review the answers and see if you found all eight lead-based paint hazards. ***Instructor Note:*** *The correct answers are circled within the presentation slides and can be found upside down at the bottom of the worksheet.*

The lead-based paint hazards in this home, where the paint is deteriorating, peeling, chipping, chalking or cracking are:

1. Door (bedroom)
2. Wall (bathroom)
3. Windows (kitchen)
4. Trim/door frame (living room)
5. House exterior
6. Soil
7. Railing (outside)
8. Stairs (outside)

Areas where lead-based paint is disturbed can become dangerous when paint chips form and dust is created. Lead-based paint chips and dust can settle on food preparation surfaces, floors, rugs, furniture, children's toys, pets and many other surfaces and objects.

Settled lead dust can also re-enter the air when the home is vacuumed or swept, or when people walk through it. Families have been exposed to and affected by lead after scraping, sanding or heating (from a heat gun or torch) lead-based paint, which releases lead dust into the air. Lead in soil can also be a hazard when children play in bare lead-contaminated soil or when people bring lead-contaminated soil into their home on their shoes. Lead dust from RRP work, if not conducted in a lead-safe manner, remains in a home long after the work is completed.

Caring for painted surfaces in your home is important, especially those surfaces that you suspect of having lead-based paint. Owners and occupants should check for deteriorating paint (peeling, chipping, chalking or cracking paint) and monitor activities that may disturb painted surfaces. Remember that lead-based paint is usually not a hazard if it is in good condition and is not on an impact or friction surface like a window, that can create dust when the painted surfaces rub against each other when opened or closed.

Lead-based paint chips, which you can see, and lead dust, which you may not be able to see, can both be hazards. The only way to find out if paint, dust or soil lead hazards exist is to test them, which is what we will be talking about next.

III. Testing Your Home for Lead (10 minutes)

The only way to know if your home has lead-based paint in it is to have it tested. Has anyone ever had their home tested for lead-based paint? ***Instructor Note:*** *If someone responds yes, give them time to share their experience.*

There are two options available to test your home for lead-based paint: a lead-based paint inspection or a lead-based paint risk assessment. For either option, you should hire a certified lead professional. These professionals have special training and are licensed to perform these types of in-home tests. Lead inspections and lead risk assessments are important steps to take to find out if your home has lead-based paint, the results of which can help you make decisions on managing lead-based paint and lead hazards.

If you are renting your home or apartment and think it may contain lead-based paint or lead hazards, you should contact your landlord or tribal housing authority about hiring a certified lead professional. ***Instructor Note:*** *Provide participants with any landlord or tribal housing authority contact information you find.*

If you are purchasing a home, real estate contracts must include a specific warning statement about lead-based paint. Buyers have up to 10 days after signing the real estate contract to check for lead. ***Instructor Note:*** *For more information on real estate disclosures about potential lead hazards, visit: https://www.epa.gov/lead/real-estate-disclosures-about-potential-lead-hazards.*

a. Lead-Based Paint Inspection

A lead-based paint inspection is an activity that tells you if your home has lead-based paint and where lead-based paint is located. The inspection will not tell you whether your home currently has lead hazards or how to deal with them. A trained and certified lead inspector will inspect the paint in your home using a portable X-ray fluorescence (XRF) instrument or take small paint samples for laboratory analysis.

Notes:

XRF Instrument

An XRF instrument is a hand-held, portable machine used to analyze lead in paint. For most painted surfaces, the XRF instrument can determine whether or not lead-based paint is present. It works similar to an X-ray machine at the doctor's office, but the process is different. Instead of taking a picture, the XRF instrument tells how much lead is in the paint, typically in milligrams of lead per square centimeter of surface (Ref. 2). Special training is needed to operate the machine.

Notes:

Lead Test Kits

Lead test kits are another option that can be used to determine if regulated lead-based paint is absent (not present) in homes, child care facilities or preschools. EPA has recognized three lead test kits to use when complying with the RRP rule. When used by a trained professional, these kits can reliably determine that regulated lead-based paint is absent via a negative result. The kits recognized by EPA are the 3M™ LeadCheck™, D-Lead® and the State of Massachusetts lead test kits. The State of Massachusetts kit is only available to Massachusetts state certified risk assessors and lead inspectors.

For more information visit: https://www.epa.gov/lead/lead-test-kits.

- A lead-based paint inspection is most helpful:
  - When buying a home;
  - When signing a lease; and
  - Before renovating.

Instructor Note: *If your tribe has access to an XRF instrument, invite a trained operator to come to the session and demonstrate how the XRF instrument works.*

b. Lead-Based Paint Risk Assessment

A lead-based paint risk assessment is an activity that tells you if your home has any lead hazards from lead in paint, dust or soil and what actions to take to address those hazards. A trained and certified lead risk assessor will collect samples of deteriorated paint, dust and soil and send them to a laboratory for analysis and/or may use an XRF instrument.

- A lead-based paint risk assessment is most helpful:
  - If your home is known or suspected to contain lead-based paint; and
  - To develop a plan to address existing hazards.

When you hire a certified lead professional to either conduct a paint inspection or a risk assessment, you can expect to receive the testing results anywhere from a few hours to a few days.

IV. Lead Abatement (10 minutes)

Lead abatement is designed to permanently eliminate existing lead-based paint hazards. There are four types of lead abatement: replacement, removal, enclosure and encapsulation. While replacement and removal completely remove lead-based paint, enclosure and encapsulation methods are applied on top of lead-based paint in good condition without removing the lead-based paint.

The decision to conduct lead abatement in a home can be determined by different parties, such as:

- A tribal, state or local government may order lead abatement if a child has been diagnosed with an elevated blood lead level;
- A certified lead professional recommends lead abatement after a lead-based paint inspection or risk assessment; or
- The homeowner may choose lead abatement.

Lead abatement involves specialized techniques beyond the training of most residential contractors, and you should hire a

trained and certified lead abatement contractor. EPA requires individuals and firms who perform lead abatement projects in homes, child care facilities or preschools built before 1978 to be certified and follow specific work practices. Lead abatement can create even more dangerous lead hazards if done improperly. If lead abatement is necessary, you should always use a lead abatement firm or professional who has been trained and certified by a tribal, state or an EPA lead-based paint program.

Currently, there are four tribes with EPA-authorized lead-based paint programs: Cherokee Nation, Upper Sioux Community, Lower Sioux Indian Community in the State of Minnesota and Minnesota Chippewa Tribe - Bois Forte (Nett Lake). Most states and two territories are authorized by EPA to run their own lead-based paint abatement programs. EPA administers the lead-based paint program only in areas where tribes, states or territories are not authorized by EPA to operate their own lead-based paint programs.

Lead-Based Paint Programs		
	EPA-authorized Lead-Based Paint Programs	**EPA-administered Lead-Based Paint Programs**
Tribes	Cherokee Nation, Upper Sioux Community, Lower Sioux Indian Community in the State of Minnesota, Minnesota Chippewa Tribe – Bois Forte (Nett Lake)	All Other Tribes
States	AL, AR, CA, CO, CT, DC, DE, GA, HI, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, NE, NH, NJ, NC, ND, OH, OK, OR, PA, RI, TN, TX, UT, VT, VA, WA, WV, WI	AK, AZ, FL, ID, MT, NV, NM, NY, SC, SD, WY
Territories	Puerto Rico, Virgin Islands	American Samoa, Guam, the Northern Marianas
Websites	https://www.epa.gov/lead/lead-based-paint-activities-professionals#map	https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearchAbatement

Notes:

EPA-authorized versus EPA-administered

EPA-authorized – Several federal environmental laws authorize EPA to provide the authority for Indian tribes to implement and manage certain environmental programs. For more information, visit: https://www.epa.gov/tribal/tribal-assumption-federal-laws-treatment-state-tas.

EPA-administered – EPA is responsible for implementing federal environmental statutes in Indian country. In the absence of a federally approved tribal program, EPA retains program implementation authority. Currently, EPA maintains responsibility for the implementation of the vast majority of federal environmental statutes in Indian country.

Notes:

Instructor Note: *If you have internet access, go to the appropriate website and show participants how to find a lead abatement firm in their area.*

When a lead abatement takes place in your home, a certified lead abatement professional will follow lead-safe work practices, which include:

- Relocating children and pregnant women away from the home (or child care facility) until after the work is completed;
- Removing all furniture, carpets, drapes, etc.; and
- Covering everything that remains with plastic drop cloths.

V. Renovation, Repair and Painting (RRP) Rule (15 minutes)

Before we begin our discussion about the Renovation, Repair and Painting (RRP) Rule, let's watch a short EPA video that discusses tribal lead-based paint safe work practices.
Instructor Note: *Play EPA's Lead-Based Paint Safe Work Practices (YouTube) video,* https://www.youtube.com/watch?v=XqUssA-PsD0.

Any time surfaces painted with lead-based paint are disturbed during common renovation, repair and painting (RRP) activities like sanding, cutting and replacing windows, this can create hazardous lead dust and chips, which can be harmful to both adults and children.

RRP projects are typically performed at the option of the property owner for aesthetic or other reasons, or as interim control actions (such as: repairing damaged painted surfaces or planting grass to cover contaminated soil) to minimize lead hazards. RRP projects are not designed to permanently eliminate lead-based paint hazards.

The RRP rule requires firms to be certified and their employees trained (either as a certified renovator or on-the-job by a certified renovator) in the use of lead-safe work practices that minimize occupants' exposure to lead hazards by:

- Containing the work area;
- Minimizing the dust;
- Cleaning up properly; and
- Disposing of waste properly to prevent lead contamination.

Federal law requires that individuals receive a copy of the EPA document, *"The Lead-Safe Certified Guide to Renovate Right"* before renovating six square feet or more of painted surfaces in a room for interior projects or more than twenty square feet of painted surfaces for exterior projects. The law applies to any project in a pre-1978 home involving window replacement or demolition regardless of the size of the area disturbed. ***Instructor Note:*** *Show the slide with the picture of the EPA document, "The Lead-Safe Certified Guide to Renovate Right," to the participants:* https://www.epa.gov/lead/renovate-right-important-lead-hazard-information-families-child-care-providers-and-schools. *Additional requirements may exist for federal assistance housing (see box).*

In preparing for RRP projects in a pre-1978 home, Lead-Safe Certified renovators may:

- Take a paint chip sample and send it to a laboratory for analysis or use an XRF instrument to determine if lead-based paint is present;
- Use EPA-recognized test kits (except in housing receiving federal assistance); or
- Presume that lead-based paint is present and use lead-safe work practices.

If renovation, repair or painting is being conducted and lead-based paint is present or in any pre-1978 home that has not been shown to be lead-free, then the work is required to be done by a Lead-Safe Certified firm who must:

- Be approved by EPA or an EPA-authorized tribal or state program;
- Use qualified trained individuals who follow specific lead-safe work practices to prevent lead contamination; and
- Provide you with a copy of EPA's lead hazard information document, *The Lead-Safe Certified Guide to Renovate Right* (https://www.epa.gov/lead/renovate-right-important-lead-hazard-information-families-child-care-providers-and-schools), before conducting renovations in pre-1978 homes.

Notes:

The U.S. Department of Housing and Urban Development (HUD) Lead Safe Housing Rule

HUD's Lead Safe Housing Rule applies to most pre-1978 federally owned housing and pre-1978 housing receiving federal assistance. It does not cover child-occupied facilities outside of residential housing. The requirements of HUD's rule are similar to EPA's RRP Rule, but there are some differences (Refs. 3 to 5). The main differences between the RRP Rule and HUD's Lead Safe Housing Rule are that HUD's rule has:

- *More specific occupant protection and worksite preparation requirements;*
- *Additional prohibited methods of paint removal;*
- *A smaller worker area requiring lead safe work practices;*
- *RRP certification for all workers on the project;*
- *Clearance testing that must be completed by a certified lead risk assessor or inspector; and*
- *More specific occupant notification requirements.*

For more detailed information visit: https://www.hud.gov/program_offices/healthy_homes/enforcement/lshr.

Notes:

One tribe and 14 states are EPA-authorized to run their own RRP programs. EPA administers the RRP program in most states, territories and tribes, as shown in the RRP Programs table.

RRP Programs		
	EPA-authorized RRP Programs	**EPA-administered RRP Programs**
Tribes	Minnesota Chippewa Tribe – Bois Forte (Nett Lake)	All Other Tribes
States	AL, DE, GA, IA, KS, MA, MI, NC, OK, OR, RI, UT, WA, WII	All Other States
Territories	None	All Territories
Websites	https://cfpub.epa.gov/flpp/pub/index.cfm?do=-main.firmSearch	

If you live in a pre-1978 home and need to hire a renovator or contractor, make sure you use an EPA, tribal or state Lead-Safe Certified renovation firm in your area. To find one, visit EPA's website: https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearch. ***Instructor Note:*** *If you have internet access, go to the website and show participants how they can find a Lead-Safe Certified firm in their area.*

When hiring a Lead-Safe Certified contractor to do RRP work on your home or child care facility, make sure to look for EPA's Lead-Safe Certified Firm logo.

Use a certified lead inspector or risk assessor to check to see if there is lead paint in your home prior to doing any RRP work yourself. If lead is present, you should hire a Lead-Safe Certified firm to perform the RRP job.

The RRP Rule typically does not apply to homeowners renovating, repairing or painting their own homes, unless the home or a portion of the home is a rental or is used to provide child care services. Do-it-yourself projects can easily create dangerous lead dust. Protect your family and home – work

safely, control the dust and clean up completely. ***Instructor Note:*** *If participants want to discuss this further, then utilize the list of safeguards identified in Appendix B: Renovation, Repair and Painting Program: Do-It-Yourselfers.*

Please pull out and flip over your worksheet to the section labeled *Understanding Lead Terms*. We are going to do a quick review about the differences between a lead inspection, lead risk assessment, lead abatement and the RRP rule. Write the number of the term next to its definition and then we will go over the correct answers as a group. ***Instructor Note:*** *The correct answers are at the end of the Important Lead Terms to Know section on the worksheet.*

VI. Lead Abatement Activities Versus RRP Projects (10 minutes)

Lead abatement activities and RRP projects may sometimes look similar, but they are two separate programs that require different certifications and are regulated differently by EPA.

Lead abatement is a specialized activity designed to eliminate lead-based paint hazards in pre-1978 homes. RRP projects in pre-1978 homes are often undertaken for reasons unrelated to lead issues. The differences and similarities between the two activities are shown in the Lead Abatement Activities Versus RRP Projects table. ***Instructor Note:*** *This table can also be found in the Module 4 Key Messages handed out at the beginning of the session.*

Notes:

Lead Abatement Activities Versus RRP Projects			
	Lead Abatement Activities	**Similar or Different**	**RRP Projects**
Purpose	• Permanently eliminate existing lead-based paint hazards	Different	• Conduct renovations, repairs or painting to reduce lead-based paint hazards
Initiated By	• Tribal, state or local government • Voluntary request by property owner	Different	• Voluntary request by property owner
Certifications	• Individuals must be trained and certified in lead abatement activities • Firms must be certified to conduct lead abatement activities	Similar	• Individuals must be trained and certified in RRP activities • Firms must be certified to conduct RRP activities
Occupant Protection	• Firms are required to make sure occupants are out of the home, child care facility or preschool	Different	• Firms are not required to make sure occupants are out of the home, child care facility or preschool • Firms must distribute EPA's *The Lead-Safe Certified Guide to Renovate Right* before starting renovation work • Occupants should not be present in the work area
Learn More	About lead abatement and EPA's Lead-Based Paint Program at: https://www.epa.gov/lead/lead-abatement-inspection-and-risk-assessment		About EPA's RRP certification and training program at: https://www.epa.gov/lead/renovation-repair-and-painting-program

To continue reviewing what we learned today, answer the questions in the *Lead Abatement and Renovation, Repair and Painting (RRP) Review* section at the bottom of your worksheet. ***Instructor Note:*** *Allow participants time to answer the questions and then go over the correct answers with the whole group. Correct answers can be found upside down at the bottom of the worksheet.*

VII. Conclusion (10 minutes)

A lead-based paint hazard is any condition resulting from deteriorating paint (peeling, chipping, chalking or cracking), which potentially causes exposure to lead from paint, dust or soil. We learned that lead-based paint hazards may be found in common areas of homes that include:

1. Doors;
2. Walls;
3. Windows;
4. Trim/door frames;
5. House exterior;
6. Soil;
7. Railings; and
8. Stairs.

I have a few discussion questions for the group:

1. What are lead-based paint activities? ***Instructor Note:*** *Lead-based paint activities include lead-based paint inspections, lead risk assessments and lead abatements (elimination of lead-based paint hazards). Lead inspections are designed to locate all lead-based paint in a home and lead risk assessments are designed to identify lead hazards and management strategies. Individuals must be trained and certified to conduct lead-based paint activities, and firms must be certified.*

2. What are lead abatement activities? ***Instructor Note:*** *Lead abatement activities are designed to permanently eliminate existing lead-based paint hazards. They may be ordered by a tribal, state or local government in response to a lead-poisoned child or other reason or may be undertaken voluntarily at any time.*

   There are four types of lead abatement: replacement, removal, enclosure and encapsulation. While replacement and removal completely remove lead-based paint, enclosure and encapsulation methods are applied on top of lead-based paint in good condition without removing the lead-based paint.

   Individual lead abatement contractors must be trained and certified to conduct lead abatement jobs. Cherokee Nation, Upper Sioux Community, Lower Sioux Indian Community in the State of Minnesota, Minnesota Chippewa Tribe – Bois Forte (Nett Lake) are four tribes that have EPA-authorized lead-based paint programs. Most states and two territories are authorized by EPA

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to run their own lead-based paint programs. EPA administers the lead-based paint program in areas where states, territories or tribes are not authorized by EPA to operate their own lead-based paint programs. For help in locating a certified lead abatement firm in your area, visit the EPA website.

3. What are RRP projects? ***Instructor Note:*** *RRP projects that involve renovation, repair and painting activities like sanding, cutting and replacing windows and are typically performed at the option of the property owner. They are not designed to permanently eliminate lead-based paint hazards. Individual renovators must be trained and certified in lead-safe work practices, and firms must be certified. One tribe, Minnesota Chippewa Tribe – Bois Forte (Nett Lake), and 14 states are EPA-authorized to run their own RRP programs. EPA administers the RRP program in most states, territories and tribes. To search for Lead-Safe Certified RRP firms, visit the EPA website. When hiring a Lead-Safe Certified contractor to do RRP work make sure to look for EPA's Lead-Safe Certified Firm logo.*

Lead abatement and RRP activities may sometimes look similar, but they serve different purposes and require different certifications.

To receive general information about lead or ask questions, you can call the National Lead Information Center (NLIC). The NLIC provides the public and professionals with information about lead, lead hazards and prevention. Call and speak with a specialist Monday through Friday, 8:00 am to 6:00 pm Eastern time (except federal holidays) at 1 (800) 424-LEAD [5323]. Hearing- or speech-challenged individuals may access this number through TTY by calling the Federal Relay Service at 1-800-877-8339.

Thank you for participating in this session. Does anyone have any questions about the information covered? ***Instructor Note:*** *Give each participant a copy of the Module 4 Kids Activity Sheet to take home with them.*

VIII. References

1. U.S. Environmental Protection Agency. How to Make Your Home Lead-Safe: Maintain Your Home's Condition. Available at https://www.epa.gov/lead/how-make-your-home-lead-safe#Maintain. [Accessed October 2, 2020]

2. U.S. Environmental Protection Agency. EPA Model Lead-Based Paint Abatement Worker Training Course. 2004. Available at https://www.epa.gov/lead/epa-model-lead-based-paint-abatement-worker-training-course. [Accessed March 2, 2020].

3. U.S. Environmental Protection Agency. Steps to Lead Safe Renovation, Repair and Painting. 2011. Available at https://www.epa.gov/lead/steps-lead-safe-renovation-repair-and-painting-october-2011. [Accessed March 2, 2020].

4. U.S. Department of Housing and Urban Development. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. 2012. Available at https://www.hud.gov/program_offices/healthy_homes/lbp/hudguidelines. [Accessed March 2, 2020].

5. U.S. Environmental Protection Agency and US Department of Housing and Urban Development. Lead Safety for Renovation, Repair, and Painting: Model Certified Renovator Initial Training Course: Student Manual. 2011. Available at https://www.epa.gov/sites/production/files/2014-05/documents/initial_renovator-student_oct2011_0.pdf. [Accessed March 12, 2020].

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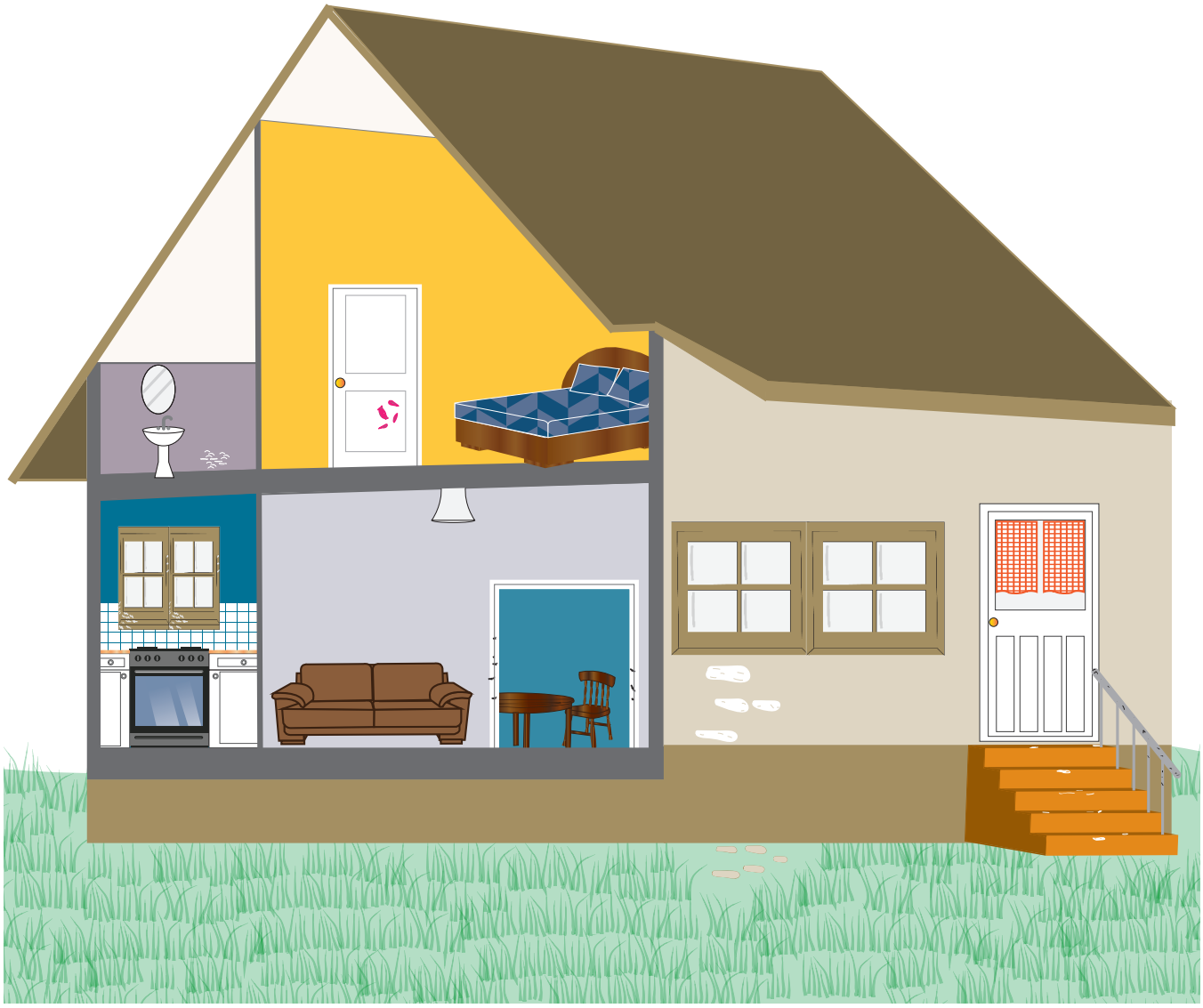
HIRING CERTIFIED LEAD PROFESSIONALS

LEAD-BASED PAINT HAZARDS

A lead-based paint hazard is any condition resulting from deteriorating (peeling, chipping, chalking or cracking) paint, which causes exposure to lead from paint, dust or soil.

Directions: This home has eight lead-based paint hazards. Find and circle areas in this home where it looks like paint is peeling, chipping, chalking or cracking.



ANSWERS
1. bedroom door 2. bathroom wall 3. kitchen windows 4.(living room) trim/door frame 5. house exterior paint 6. soil 7. railing 8. stairs

UNDERSTANDING LEAD TERMS

Directions: Write the number of the term next to its definition.

Terms

1. Lead-based paint inspection
2. Lead-based paint risk assessment
3. Lead abatement
4. Renovation, Repair and Painting (RRP) Rule

Definitions

_____ An activity designed to permanently eliminate lead-based paint hazards. There are four options: replacement, removal, enclosure and encapsulation. Replacement and removal activities completely remove lead-based paint. Enclosure and encapsulation methods are applied on top of lead-based paint in good condition without removing the lead-based paint.

_____ An activity that tells you if your home has any lead hazards from lead in paint, dust or soil and **what actions to take to address those hazards**. Most helpful if a home is suspected or known to contain lead-based paint or to develop a plan to address existing hazards.

_____ An activity that tells you if your home has lead-based paint and **where lead-based paint is located**. Most helpful when buying a home, signing a lease and before renovating.

_____ A federal law that requires firms that disturb painted surfaces in homes, child care facilities and preschools, built before 1978 to be certified and their employees trained in the use of lead-safe work practices that minimize occupants' exposure to lead hazards by: containing the work area; minimizing dust; cleaning up properly; and disposing of waste properly to prevent lead contamination.

ANSWERS
3, 2, 1, 4

LEAD ABATEMENT AND RENOVATION, REPAIR AND PAINTING (RRP) REVIEW

1. TRUE OR FALSE - Anytime you disturb surfaces painted with lead-based paint, even if the paint is covered by layers of newer paint, you risk creating hazardous lead dust.

2. TRUE OR FALSE - Lead abatement projects are designed to permanently eliminate lead-based paint hazards.

3. TRUE OR FALSE - RRP firms are not required to be trained and certified when working on pre-1978 homes.

4. TRUE OR FALSE - I should look for this logo when hiring a contractor for RRP work.

5. A Lead-Safe Certified contractor must follow lead-safe work practices that (select all that apply):
   - ☐ Contain the work area.
   - ☐ Dispose of waste properly.
   - ☐ Clean up thoroughly.
   - ☐ Avoid generating large amounts of lead dust.

ANSWERS
1. TRUE 2. TRUE 3. FALSE 4. TRUE 5. all apply

HIRING CERTIFIED LEAD PROFESSIONALS

Hire a certified lead professional to follow lead-safe work practices when: (a) abating a home, child care facility or preschool built before 1978 to address identified lead-based paint or lead-based paint hazards, or (b) disturbing paint in renovation, repair and painting projects in homes, child care facilities or preschools built before 1978.

COULD MY HOME HAVE LEAD-BASED PAINT?

The federal government banned the sale of paint containing lead for use in residential homes in 1978 to reduce children's exposure to lead. If your home was built before 1978, it may have lead-based paint on interior and/or exterior surfaces or under layers of paint. In some instances, lead-based paint may have been purchased before it was banned, stored and then used years later.

Children can live safely in a home if lead-based paint is kept intact and surfaces are kept clean. However, when painted surfaces are not properly maintained, paint can deteriorate, peel, chip, chalk or crack, becoming a hazard.

The only way to know for certain if your home has lead-based paint is to have painted surfaces tested.

HOW CAN I TEST MY HOME FOR LEAD?

There are two options available to test your home for lead: a lead-based paint inspection or a lead-based paint risk assessment. For either option a certified lead professional should be hired. If you rent your home or apartment and think it may contain lead-based paint or lead-based paint hazards (any condition resulting from deteriorating paint, which causes exposure to lead from paint, dust or soil), you should contact your landlord or tribal housing authority. If purchasing a home, real estate contracts must include a specific warning statement about lead-based paint. Buyers have up to 10 days after signing the real estate contract to check for lead.

WHAT IS A LEAD-BASED PAINT INSPECTION?

A lead-based paint inspection is an activity that tells you if your home has lead-based paint and where lead-based paint is located. A trained and certified lead inspector will inspect the paint in your home using a portable X-ray fluorescence (XRF) instrument (pictured to the right) or take small paint samples for laboratory analysis.

WHAT IS A LEAD-BASED PAINT RISK ASSESSMENT?

A lead-based paint risk assessment is an activity that tells you if your home has any lead hazards from lead in paint, dust or soil and what action to take to address those hazards. A trained and certified lead risk assessor will collect samples of deteriorated paint, dust and soil and send them to a laboratory for analysis and/or will use an XRF instrument.

WHAT SHOULD I DO IF I HAVE LEAD-BASED PAINT IN MY HOME?

A home that contains lead-based paint does not necessarily present a health risk. If lead-based paint is in good condition, owners and occupants should regularly monitor and check for deteriorating (peeling, chipping, chalking or cracking) paint. If painted surfaces are deteriorating, this may create a hazard that requires immediate attention and a certified lead professional should be hired.

HOW CAN I ELIMINATE LEAD-BASED PAINT FROM MY HOME?

Lead abatement is designed to permanently eliminate existing lead-based paint hazards. There are four types of lead abatement: replacement, removal, enclosure and encapsulation. Replacement and removal completely remove lead-based paint, while enclosure and encapsulation methods are applied on top of lead-based paint in good condition without removing the lead-based paint. Hire a trained and certified lead abatement contractor to perform a lead abatement. EPA requires individuals and firms who perform lead abatement projects in homes, child care facilities or preschools built before 1978 to be certified and follow specific work practices.

Renovation, Repair and Painting (RRP) projects are typically performed at the request of the property owner for aesthetic or other reasons, or as interim control actions (e.g., repairing damaged painted surfaces or planting grass to cover contaminated soil) to minimize lead hazards. Contractors who disturb painted surfaces in homes, child care facilities and preschools built before 1978 must be trained and certified and follow lead-safe work practices.

Lead abatement activities and RRP projects may sometimes look similar, but they are two separate programs that require different certifications and are regulated differently by EPA. The differences and similarities between these two activities are shown in the table below.

LEAD ABATEMENT ACTIVITIES VERSUS RRP PROJECTS

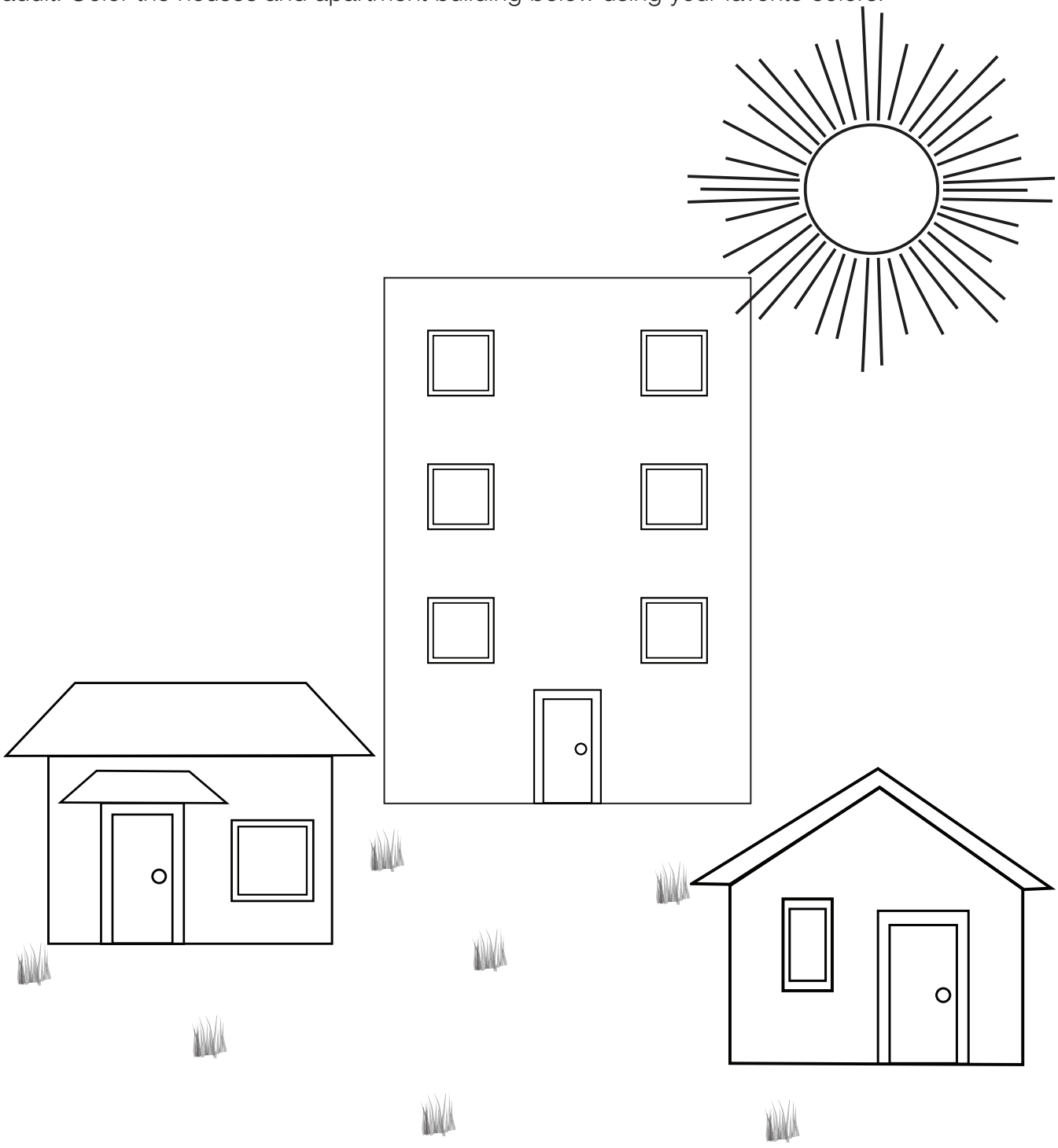
	Lead Abatement Activities	Similar or Different	RRP Projects
Purpose	• Permanently eliminate existing lead-based paint hazards	Different	• Conduct renovations, repairs or painting to reduce lead-based paint hazards
Initiated By	• Tribal, State or local government • Property owner's voluntary request	Different	• Property owner's voluntary request
Certifications	• Individuals must be trained and certified in abatement activities • Firms must be certified to conduct abatement activities	Similar	• Individuals must be trained and certified in RRP activities • Firms must be certified to conduct RRP activities
Occupant Protection	• Firms are required to make sure occupants are out of the home, child care facility, or preschool	Different	• Firms are not required to make sure occupants are out of the home, child care facility or preschool • Firms must distribute EPA's *The Lead-Safe Certified Guide to Renovate Right* before starting renovation work • Occupants should not be present in the work area

WHERE CAN I LEARN MORE?

For more information, contact the National Lead Information Center (NLIC) at 1-800-424-LEAD (5323) or visit www.epa.gov/lead.

Color Time

Older houses and apartments may have lead-based paint. If you find peeling paint, tell an adult. Color the houses and apartment building below using your favorite colors.



Color by Number

Trained and certified workers can help make your home safe for you and your family, if your home has lead-based paint. Color the picture according to the key:

1 - orange 2 - brown 3 - yellow 4 - white 5 - blue

When someone works on a house or apartment with lead-based paint they will:

- Wear coveralls, gloves and a mask.
- Remove furniture, rugs and curtains.
- Cover everything with plastic.
- Ask everyone to stay out of the work area.

KEEP OUT Stay out of the work area until work is done.

APPENDIX A: FOODS THAT CONTAIN CALCIUM, IRON & VITAMIN C

Over 150 foods that contain varying amounts of calcium, iron and/or vitamin C are listed below. This table is an unofficial source (provided by tribal representatives) that provides examples of local/traditional foods and items found in a grocery store that can be part of an overall healthy diet. For more detailed information about nutrient content in the foods below, please visit the U.S. Department of Agriculture's FoodData Central at https://fdc.nal.usda.gov/.
Instructor Note: *Use this table to identify foods during Module 3.*

Food	Calcium	Iron	Vitamin C
Acorns	x	x	
Almonds	x	x	
Amaranth	x	x	x
Antelope		x	
Asparagus			x
Avocado	x	x	x
Bananas	x	x	x
Barnacles	x	x	
Beach asparagus	x	x	x
Beans	x	x	
Bear		x	
Beech nuts	x	x	x
Bell peppers	x	x	x
Beluga whale	x	x	
Biscuit root/Cousin		x	x
Bison		x	
Bitter root			x
Black walnuts	x	x	
Blackberries	x	x	x
Blue camas bulb	x	x	x
Blueberries	x	x	x
Bone broth	x	x	
Breadfruit	x	x	x
Broadleaf arrowhead/Water potato/Wapato leaf & root	x	x	x
Broccoli	x	x	x
Brussels sprouts	x	x	x
Butternuts	x	x	x
Cabbage	x	x	x
Cantaloupe	x	x	x
Caribou		x	

Food	Calcium	Iron	Vitamin C
Carrots	x		x
Cattail	x	x	x
Cauliflower			x
Cheese	x		
Chestnuts	x	x	x
Chia seeds	x	x	
Chicken		x	
Chokecherries	x	x	x
Cholla buds	x	x	
Cinnamon	x	x	
Clam	x	x	
Cloudberries	x		x
Corn			x
Collard greens	x		x
Cottage cheese	x		
Cow parsnip/Indian celery/Indian rhubarb/Pushki	x	x	
Crab	x	x	x
Dandelion greens	x	x	x
Dark green leafy vegetables	x	x	x
Duck	x	x	
Edamame	x	x	x
Eggs	x	x	
Elk		x	
Fiddleheads	x	x	x
Figs	x	x	x
Fireweed/Ciilaaq leaves	x	x	x
Fish eggs	x	x	x
Fish liver		x	
Garlic	x		x
Grapes	x		x
Grapefruit	x		x
Green beans	x	x	x
Green chile (New Mexico chile)	x	x	x
Hazelnuts	x	x	x
Hickory nuts	x	x	x
Honeydew	x	x	x
Huckleberries	x	x	x
Kale	x		x
Kiwi			x
Lamprey eel	x	x	x

Food	Calcium	Iron	Vitamin C
Leeks	x	x	x
Lemon	x		x
Lentils	x	x	x
Lime	x	x	x
Liver		x	
Maple syrup		x	
Mesquite beans (flour)	x	x	x
Milk	x		
Moose		x	x
Mushrooms	x	x	x
Mussels	x	x	x
Mustard greens	x	x	x
Nettles	x	x	
Nodding onion	x	x	x
Non-dairy milk	x	x	
Nopal	x	x	x
Oats	x	x	
Okra	x	x	x
Oranges	x		x
Oysters	x	x	
Parsnips		x	x
Peaches		x	x
Peanut butter	x	x	
Pears	x	x	x
Peas	x	x	x
Pima lima beans	x	x	
Pine needles	x	x	x
Pine nuts	x	x	
Pistachios	x	x	
Plums	x	x	x
Popcorn		x	
Potatoes			x
Prairie turnips	x	x	x
Prickly pear	x	x	x
Pumpkin/Squash seeds	x	x	
Purslane	x	x	x
Quail		x	x
Quinoa	x	x	
Rabbit		x	
Raisins	x	x	x

Food	Calcium	Iron	Vitamin C
Ramp/Wild leek	x	x	x
Raspberries	x	x	x
Rhubarb	x	x	x
Rose hips	x	x	x
Salmon, fresh		x	
Salmon, canned	x	x	
Salmonberries	x	x	x
Sardines	x	x	
Scallops		x	
Sea cucumber	x	x	
Sea lion	x	x	
Sea urchins	x	x	x
Seaweed/lettuce	x	x	x
Seal liver	x	x	
Seal meat		x	
Sesame seeds		x	
Shrimp	x	x	
Smelt	x		
Snails		x	
Sochan	x	x	x
Spinach	x	x	x
Spruce tip tea			x
Squash	x	x	x
Squid	x	x	x
Squirrel		x	
Strawberries	x	x	x
Sunflower seeds	x	x	
Sweet potatoes	x	x	x
Tangerine	x		x
Taro	x	x	x
Tepary bean	x	x	
Tofu	x	x	
Tomatoes	x	x	x
Trout	x		
Tuna fish		x	
Tundra tea	x	x	x
Turkey		x	
Turnip	x	x	x
Venison		x	
Walrus	x	x	

Food	Calcium	Iron	Vitamin C
Watercress	x		
Watermelon	x	x	x
White beans	x	x	
Whole wheat bread	x	x	
Wild raspberries	x	x	x
Wild rice		x	
Willow leaves	x	x	x
Wocas/Yellow pond lily seeds and tuber	x	x	
Yams	x	x	x
Yogurt	x		

APPENDIX B: RENOVATION, REPAIR AND PAINTING PROJECTS FOR DO-IT-YOURSELFERS

The Lead Renovation, Repair and Painting (RRP) Rule typically does not apply to homeowners renovating, repairing or painting their own homes, unless the home or a portion of the home is a rental or is used to provide child care services. Do-it-yourself projects can easily create dangerous lead dust. Protect your family and home – work safely, control the dust and clean up completely.

Follow these safeguards to prevent lead dust from spreading throughout your home and exposing your family to lead dust.

Work Safely

- Remove all furniture, area rugs, curtains, food, clothing and other household items until cleanup is complete.
- Items that cannot be removed from the work area should be tightly wrapped with plastic sheeting and sealed with tape.
- Cover floors with plastic sheeting.
- If working on a larger job, construct an airlock at the entry to the work area.
    - The airlock consists of two sheets of thick plastic. One sheet is completely taped along all four edges.
    - The plastic sheet is then cut down the middle.
    - The second sheet is only taped along the top and acts as a flap covering the slit in the first sheet of plastic.
- Turn off forced-air heating and air conditioning systems. Cover vents with plastic sheeting and tape the sheeting in place.
- Close all windows in the work area.
- If disturbing paint, when using a hand tool, spray water on lead-painted surfaces to keep dust from spreading.

Get the Right Equipment

- It is important to get the right equipment to protect you and your family from lead exposure.
- NIOSH-certified disposable respirator with a HEPA (High-Efficiency Particulate Air) filter (N-100, R-100, or P-100).
- HEPA filter-equipped vacuum cleaner. Regular household vacuums may release harmful lead particles into the air.
- Wet-sanding equipment (e.g., spray mister), wet/dry abrasive paper, and wet sanding sponges for “wet methods.”
- Two buckets and all-purpose cleaner. Use one bucket for the cleaning solution and the other bucket for rinsing. Change the rinse water frequently and replace rags, sponges and mops often.
- Heavy-duty plastic sheeting and heavy-duty plastic bags.

- Tape. Use tape to completely seal the plastic sheeting in place (e.g., covering furniture and air vents to construct an airlock).
- Protective clothing. To keep lead dust from being tracked throughout your home, wear clothes such as coveralls, shoe covers, hats, goggles, face shields and gloves .

Follow Good Work Practices

Plan for and complete a home RRP project using lead-safe work practices as outlined in EPA's Steps to Lead Safe Renovation, Repair and Painting: October 2011 found at https://www.epa.gov/sites/production/files/2013-11/documents/steps_0.pdf.

Consider Hiring a Certified Lead Abatement Contractor or Inspector

Anytime you cut into surfaces painted with lead-based paint, even if the paint is covered by layers of newer paint, you risk creating hazardous lead dust. You can reduce the risk of lead exposure in your home by hiring a certified lead inspector to check to see if there is lead-based paint in your work area. If there is lead, then you may want to have a trained and certified lead abatement contractor remove the lead from the area before you begin the work. To locate contractors who perform lead abatement and inspection activities in your area, visit: https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearchAbatement.

Consider Hiring a Certified RRP Contractor

If you have or think you may have lead-based paint in your home, it is best to hire a trained lead-safe certified RRP contractor. These contractors have been trained in special methods to minimize dust and clean up thoroughly to reduce the chance of lead contamination. To locate contractors who are lead-safe certified in your area, visit: https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearch.

Call the National Lead Information Center at 1-800-424-LEAD (5323) for more information.

APPENDIX C: GLOSSARY

Blood lead level – The amount of lead in blood, measured in micrograms per deciliter (µg/dl).

Blood lead test – Test that measures how much lead is in blood.

Elevated blood lead level – A single blood lead test at or above the U.S. Centers for Disease Control and Prevention (CDC) blood lead reference value. For more information on CDC's current blood lead reference value, visit: https://www.cdc.gov/nceh/lead/prevention/blood-lead-levels.htm.

EPA-administered – In the absence of an EPA-authorized program, EPA retains program implementation authority and directly implements programs under federal environmental statutes in Indian country. Currently, EPA directly implements the vast majority of programs under federal environmental statutes in Indian country.

EPA-authorized – Several federal environmental laws provide authority for EPA to authorize eligible Indian tribes to administer environmental programs established under those statutes in the same manner as states. For more information, visit: https://www.epa.gov/tribal/tribal-assumption-federal-laws-treatment-state-tas.

High Efficiency Particulate Air (HEPA) filter – A special filter which traps extremely small particles such as lead dust. For more information, visit: https://www.epa.gov/indoor-air-quality-iaq/what-hepa-filter-1.

Hygiene – Actions taken to keep our bodies clean, such as washing our hands or hair and taking a bath.

Lead – A naturally occurring element found in small amounts in the earth's crust.

Lead abatement – An activity designed to permanently eliminate lead-based paint hazards. There are four options: replacement, removal, enclosure and encapsulation. Replacement and removal activities completely remove lead-based paint. Enclosure and encapsulation methods are applied on top of lead-based paint in good condition without removing the lead-based paint.

Lead-based paint – Paint with lead levels greater than or equal to 1.0 milligram per square centimeter (mg/cm^2), or more than 0.5% by weight (as defined by the federal government).

Lead-based paint hazard – Any condition resulting from deteriorating (peeling, chipping, chalking or cracking) paint, which causes exposure to lead from paint, dust or soil.

Lead-based paint inspection – An activity conducted by a trained and certified lead-based paint inspector that tells you if your home has lead-based paint and where lead-based paint is located.

Lead-based paint risk assessment – An activity conducted by a trained and certified lead-based paint risk assessor that that tells you if your home has any lead hazards from lead in paint, dust or soil and what actions to take to address those hazards.

Lead dust – Lead in household dust, formed when lead-based paint is scraped, sanded or heated. It also forms when painted surfaces containing lead bump or rub together.

Lead dust trap – Space or object where lead dust can easily gather on, in or under.

Lead poisoning – Sickness caused by swallowing or breathing lead.

Lead-Safe Certified firm – Renovation firm certified by an EPA-approved training provider in lead-safe work practices for renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities and preschools built before 1978.

Lead-safe work practices – A group of techniques that reduce the amount of dust produced by renovation activities.

Minimally processed – Minimal processing may include: (a) those traditional processes used to make food edible or to preserve it or to make it safe for human consumption, e.g., smoking, roasting, freezing, drying and fermenting, or (b) those physical processes which do not fundamentally alter the raw product and/or which only separate a whole, intact food into component parts, e.g., grinding meat, separating eggs into albumen and yolk and pressing fruits to produce juices.

Nutrient – A substance in food or beverages that provides nourishment for growth and the maintenance of life.

Nutrition – The process of consuming food or beverages necessary for health and growth, which our bodies need to stay alive and healthy.

Pre-1978 home – (for the purposes of this curriculum) – Homes, child-occupied facilities or preschools built before 1978.

Renovating, Repair and Painting (RRP) Rule – Requires that firms performing renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities and preschools built before 1978 have their firm certified by EPA (or an EPA authorized state or tribe), use certified renovators who are trained by EPA-approved training providers and follow lead-safe work practices.

Wet washing – The use of wet or damp items (e.g., wash cloth, mop) for cleaning.

X-ray fluorescence (XRF) instrument – A hand-held, portable machine used to analyze lead in paint.

APPENDIX D: SUPPLEMENTAL RESOURCES

The following is a list of resources containing additional information on the topics covered in the Curriculum. Resources are categorized by topic.

Blood Lead Levels

1. Centers for Disease Control. Blood Lead Levels in Children. 2020. Available at https://www.cdc.gov/nceh/lead/prevention/blood-lead-levels.htm. [Accessed March 30, 2020].
2. Centers for Disease Control. Recommended Actions Based on Blood Lead Level. 2019. Available at https://www.cdc.gov/nceh/lead/docs/lead-levels-in-children-fact-sheet-508.pdf. [Accessed March 30, 2020].

Cleaning

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