

Curriculum Framework

Strands Explanation
Lead Poisoning Prevention Curriculum Guide
Tri-State Lead Poisoning Curriculum Project
Ottawa County, OK/Cherokee County, KS/Jasper County, MO
1999-2000

Replicated for the Kansas Childhood Poisoning Prevention Program:
Crawford, Labette, and Montgomery Counties
Fall 2002

Strands Included in this Curriculum:

The ultimate goal of this curriculum is for all students and families to be educated about lead poisoning prevention in order to ensure that all Tri-State Area homes be lead safe. In order to teach students, parents, and other community members about lead poisoning prevention, teachers need the most current information and access to activities. The content in this curriculum is based on information that is the most current available. The activities in this curriculum focus on problem solving as a critical thinking model. Please refer to the model included in this guide.

The strands included to work toward the goal of living lead safe are:

Environment: All students identify, explain, and evaluate the sources of lead poisoning in their environment.

Student awareness of the Tri-State environment is critical to their learning the information and skills to living a lead safe life. After studying this information, students will identify the primary and secondary sources of lead in their environment, including those sources particular to the Tri-State area. Students will also problem solve ways to reduce lead exposure.

Housekeeping: All students will explain the importance of certain house cleaning strategies to reduce the exposure to lead, as well as evaluate items in the home as sources of lead.

There are several cleaning strategies that are particular to homes that are in high lead exposure areas. Students will learn and practice these strategies in the classroom, as well as evaluate the impact of these strategies on family members. Students will also evaluate the use of household items in lead-related activities. These include hobbies involving the use of melted lead.

Hygiene: All students will learn and practice the importance of washing hands, wiping feet, and keeping their bodies clean in relation to lead exposure.

Hand washing is a focus for all levels in this guide. Wiping feet is also important to reduce the dust in a house or building. Students will observe and practice these habits to build overall excellent personal hygiene, as well as reduce their exposure to lead.

Nutrition: All students will study good eating habits including the selection and preparation of food to practice good nutrition and reduce the effects of lead poisoning.

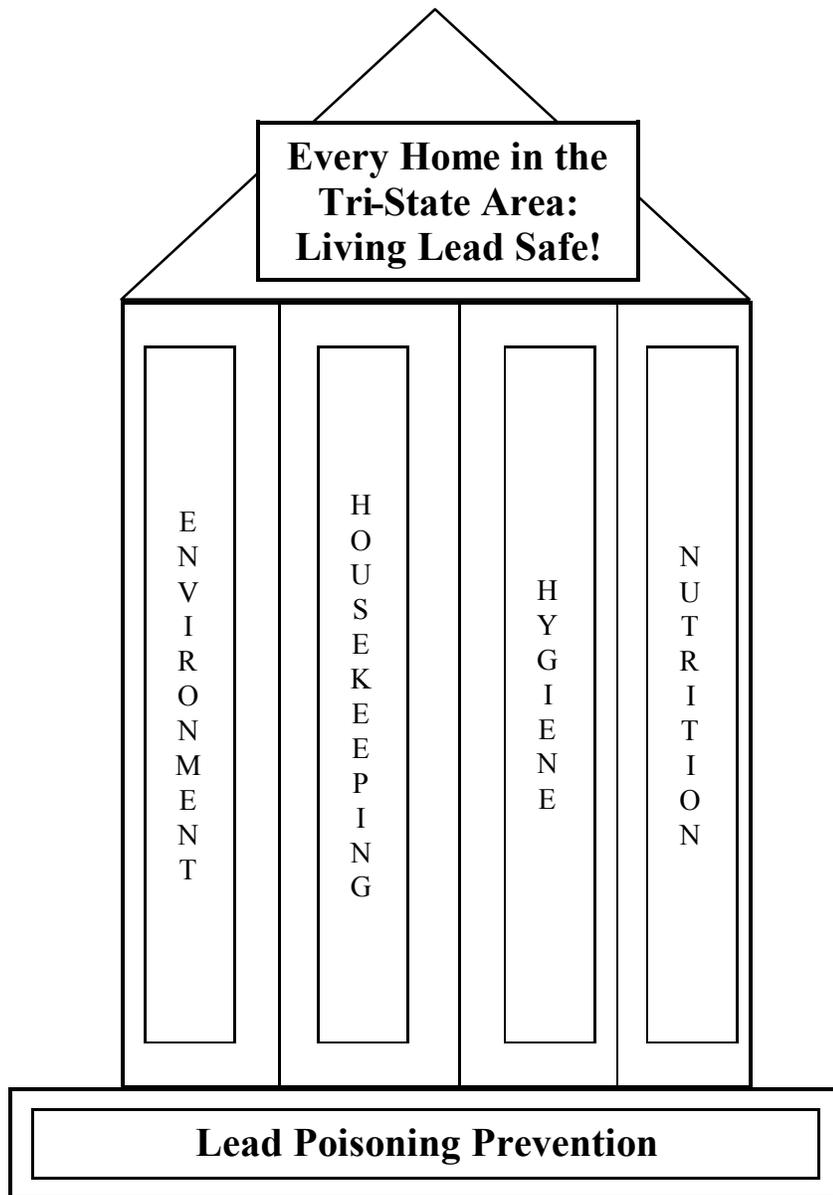
Nutrition is a cornerstone of good health. The same is true in the Tri-State area, with several added components to help reduce and prevent lead exposure. Food selection is very important, with particular attention to eating a diet that contains iron, is high in calcium, and low in fat. This is true for meals and snacks. Practicing careful food preparation is also important, including washing all vegetables and fruits and storing foods in appropriate containers will help reduce lead exposure. Student will study nutrition in their regular health, science, and FACS classes with the added perspective of living in the Tri-State area.

Lead Poisoning (Prevention): All students will learn the ways to prevent lead poisoning.

This entire curriculum addresses the prevention of lead poisoning, however, the actual specific points to preventing lead poisoning are included in the indicators in this strand. These indicators will be assessed in the culminating activities in the curriculum.

Lead poisoning is the number one preventable environmental pediatric health problem in the USA today. Students will learn the importance of blood testing, because lead poisoning may elicit no symptoms. Students will also learn the biochemistry of lead poisoning, including the effects on body systems, with particular attention to the effects on the blood and nervous system. As students progress through the program, they will learn the importance of prevention because of the devastating effects of lead poisoning on a person and the total community.

Strands Diagram
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Problem Solving Model

Problem Solving Model
Lead Poisoning Prevention Curriculum
Consequence-Based Problem Solving

1. Why is there a problem?
2. What is the problem?
3. What are possible solutions to the problem? (Brainstorming)
4. What would happen if you solved the problem in each of these ways?
5. What is the best solution to the problem?

Model Breakout and Specific Questions:

1. Why is there a problem?
2. What is the problem?
3. What are possible solutions to the problem? (Brainstorming)
4. What would happen if you solved the problem in each of these ways?
 - a. What type of consequences are important to consider?
 - b. What are the consequences?
 - c. How important is each consequence?
5. What is the best solution to the problem?

Taken from *Infusing the Teaching of Critical and Creative Thinking into Content Instruction* by Robert J. Swartz and Sandra Parks, Critical Thinking Press and Software, 1994.

PROBLEM SOLVING

Grades K-5

THE PROBLEM

<p>(Write the problem as a question)</p>
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POSSIBLE SOLUTIONS

How can I solve the problem?
(Try at least 3 solutions)

1. 2. 3. 4. 5.	
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SOLUTION CONSIDERED



CONSEQUENCES What will happen if I adopt this solution?	GOOD OR BAD	How important is the consequence?	VALUE Why?

BEST SOLUTION



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Taken from *Infusing the Teaching of Critical and Creative Thinking into Content Instruction* by Robert J. Swartz and Sandra Parks, Critical Thinking Press and Software, 1994.

PROBLEM SOLVING

Grades 6-12

THE PROBLEM

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POSSIBLE SOLUTIONS

Brainstorm at least 5 solutions

1.	
2.	
3.	
4.	
5.	

SOLUTION
SELECTED



CRITERIA Consequences to consider	CONSEQUENCES What will happen if I adopt this solution?	GOOD OR BAD	VALUE How important is the consequence? Why?

BEST SOLUTION



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Taken from *Infusing the Teaching of Critical and Creative Thinking into Content Instruction* by Robert J. Swartz and Sandra Parks, Critical Thinking Press and Software, 1994.

Scope and Sequence
Preschool-12th Grade

KCLPPP Lead Poisoning Curriculum Project
 Scope and Sequence
 Fall 2002

Code	The learner will:	Pre-K	1-2	3-5	6-8	9-12 Science	9-12 Health	9-12 FACS
E-1	List or name the primary sources of lead in a child's environment (paint, dust, and soil).	X	X	X	X	X	X	X
E-2	Describe the likelihood that their environment contains lead-based paint due to the age of the building.				X	X	X	X
E-3a	Identify sources of lead in their own environment (paint chips, dirt, chat piles, dust, car exhaust, long burning candles [with lead in the wick], hobbies and crafts involving melted lead.		X	X	X		X	X
E-3b	Identify sources of lead in their own environment (add to the above: smoke from smelters/industry).				X		X	X
E-4	Explain the importance of keeping non-food items out of the mouth (e.g.: paint chips, dirt, toys, hands, gravel/chat, jewelry [ceramic beads, metal necklaces] and snow).	X	X	X	X		X	X
E-5	Identify safe places to play: away from sources of lead (grass covered, cement or asphalt, beyond the drip line of the house).	X	X					X
E-6	Explain the lead hazards associated with different places (i.e.: busy streets, chat piles, building being remodeled).			X	X		X	X
E-7	Describe the impact of lead mine tailing on the Tri-state mining district, including the emissions of smelters. (Smelters separate the lead from tailings).				X	X	X	X
E-8	Identify household items for potential lead content: painted surfaces, window sills, door frames, porch or stair railings, play pens, cribs, painted wooden toys, newspapers, (bright and shiny) comic books, imported candy wrappers, glazed pottery, and magazines.				X		X	X
E-9	Explain why remodeling a house built before 1978 could include additional needed precautions relative to lead paint.					X	X	X

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 Scope and Sequence
 Fall 2002

Code	The learner will:	Pre-K	1-2	3-5	6-8	9-12 Science	9-12 Health	9-12 FACS
E-10	Identify steps to take to reduce lead exposure if there are lead (water) pipes in the home. (Water supply in the Tri-County area is considered safe. However, wells may be at risk and should be tested).			X	X		X	X
E-11	Identify the elements that make a child at high risk for lead exposure.				X		X	X
HK-1	Explain the importance of clean floors and carpets with a crawling baby.				X		X	X
HK-2	Explain the impact of wet mopping and wet dusting at least one time per week.				X		X	X
HK-3	Household items used in hobbies involving lead should not be used for any other purpose.				X		X	X
HY-1	Explain the importance of washing hands before eating, before bedtime, after playing with pets, and after playing or working outside.	X	X	X	X		X	X
HY-2	Explain the importance of washing toys, pacifiers, and other items that children often put into their mouths.				X		X	X
HY-3	Understand the role of wiping feet to remove dust.	X	X	X	X		X	X
L-1	Know at which age children are most at risk for lead poisoning (6 months – 6 years) and why.	X	X	X	X	X	X	X
L-2	Know that lead poisoning can only be diagnosed with a blood test.		X	X	X	X	X	X
L-3	List and describe some of the possible symptoms of lead poisoning in a child, noting that often there are no apparent symptoms.			X	X			X
L-4	Know that lead is a poison that can make someone very sick, even though a person may show no symptoms.	X	X					
L-5	Explain the importance of an annual blood to screen for lead poisoning.						X	X
L-6	Describe lead poisoning as the number one preventable environmental pediatric health problem in the USA today.				X	X	X	X

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Code	The learner will:	Pre-K	1-2	3-5	6-8	9-12 Science	9-12 Health	9-12 FACS
L-7	Describe the characteristics of lead as a metal, and why it is dangerous and prevalent in the Tri-state mining district (purposes and value as a resource).			X	X	X	X	X
L-8	Explain the importance of prenatal blood testing in relationship to lead poisoning.						X	X
L-9	Describe the impact of lead poisoning on the body's red blood cells.				X		X	X
L-10	Identify the dangers of lead exposure to an unborn child in pregnancy.						X	X
L-11	List and explain the effects of lead poisoning at low and high levels of lead contamination.				X		X	X
L-12	List and explain common symptoms of lead poisoning.		X				X	X
L-13	Explain the confusion caused by the symptoms of lead poisoning, including that many children will show no symptoms at all.				X		X	X
L-14	Describe lead poisoning as a condition.		X				X	X
L-15	Explain the societal implications of lead poisoned children.					X	X	X
L-16	Explain the effects of lead poisoning on the neurological system.				X	X	X	X
L-17	Describe the interference of red blood cell (heme) production caused by lead poisoning.					X	X	X
L-18	Describe the chemistry of lead.					X		
N-1	Identify foods that make up a balanced, healthy diet.	X	X					X
N-2	Explain the importance of a well-nourished diet for children, especially in environments with high levels of lead content.				X	X	X	X
N-3	Explain the impact of foods that are high in fat in diets of different age groups of children.							X
N-4	Describe the effects an empty stomach has on lead absorption.		X	X			X	X
N-5	Explain the need for nutritious snacks between meals, especially for children between 6 months and 6 years of age.	X	X	X	X	X	X	X

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Code	The learner will:	Pre-K	1-2	3-5	6-8	9-12 Science	9-12 Health	9-12 FACS
N-6	Analyze the effect of a diet low in calcium and iron on children in high lead content environments.				X	X	X	X
N-7	Using the food pyramid, select healthy foods for daily intake that contain iron, are high in calcium, and are low in fat.	X	X	X	X	X	X	X
N-8	Follow the steps of careful food preparation, including food storage, to avoid further lead contamination. (Avoid using containers made from leaded crystal and glazed pottery).			X			X	X
N-9	Wash vegetables and fruits carefully before food preparation and eating.		X	X	X		X	X
P-1	Name 5 ways to keep lead out of the body (wash your hands, play only on grass covered or cement/asphalt covered play areas, don't put non-food items in your mouth, eat a healthy diet, clean your house).	X	X	X				
P-2	List ways that lead poisoning can be prevented.		X	X	X		X	X
P-3	Outline the steps that can be taken to reduce environmental exposure to lead.				X	X	X	X
P-4	Identify the elements that make a child at high risk for lead exposure.				X	X	X	X