

US EPA ARCHIVE DOCUMENT

Avoiding Dangers in the Dirt

1 The City Garden

Directions: Read the following passage.



Mei, her husband, and their four young children live just outside the city. They own a two-family house and have a small backyard.

In early spring, Mei decided to plant a vegetable garden in her yard. She went to the hardware store to buy seeds and the garden tools she needed—a rake, a hoe, and a small shovel. When she got home, she pulled up all the grass in the backyard. She dug shallow rows in the soil, placed the seeds in the ground, covered them, and watered them.

By late spring, the vegetable plants began to sprout from the earth. Mei watched her garden closely. She chased away the neighborhood animals that bothered her vegetables. She checked each leaf for bugs. When summer arrived, she was ready to harvest and eat the carrots, lettuce, tomatoes, turnips, and beans she had planted.

But Mei's excitement soon ended. Her husband was worried about environmental dangers. He said that her garden was probably polluted with chemicals, such as lead. The houses in their neighborhood contained lead paint. The paint

from the houses crumbled into the soil. Her husband also said that he was worried about their children playing in the garden soil. Apparently, the children could be poisoned by the lead in the soil.

Mei was disappointed. She did not know what to do. She was so worried that she called the local health department. The health department officials made her feel a little better. Mei learned that vegetables growing in soil do not absorb much lead. She learned that there were certain things she could do to prevent lead contamination in the future. The health department officials said to add compost to the soil and to plant fruiting or leafy vegetables, such as lettuce or tomatoes, because they take in less lead than potatoes, carrots, turnips, and other root crops. And finally, the health department officials told her to wash her vegetables with vinegar and water, peel the root crops, and throw away the outer leaves of lettuce because dust with lead settles on garden plants.

Mei harvested her vegetables that summer and followed the local health department recommendations. However, she did not know what to do about her children. The health department officials told her that soil lead was more dangerous to children who play in it than to children who eat vegetables grown in it. Mei decided to test her children and her soil for lead.

2 Vocabulary

Directions: Review the vocabulary words below and define each using simple English terms.

city(ies) (<i>n.</i>)	yard(s) (<i>n.</i>)
vegetable(s) (<i>n.</i>)	garden(s) (<i>n.</i>)
hardware store(s) (<i>n.</i>)	tool(s) (<i>n.</i>)
rake(s) (<i>n.</i>)	hoe(s) (<i>n.</i>)
shovel(s) (<i>n.</i>)	grass (<i>n.</i>)
dirt (<i>n.</i>)	soil (<i>n.</i>)
dig (<i>v.</i>)	seed(s) (<i>n.</i>)
chase (<i>v.</i>)	bother (<i>v.</i>)
animal(s) (<i>n.</i>)	grow (<i>v.</i>)
root(s) (<i>n.</i>)	turnip(s) (<i>n.</i>)
lettuce (<i>n.</i>)	carrot(s) (<i>n.</i>)
tomato(es) (<i>n.</i>)	bug(s) (<i>n.</i>)
harvest (<i>v.</i>)	lead (<i>n.</i>)
polluted (<i>adj.</i>)	environmental (<i>adj.</i>)
chemical(s) (<i>n.</i>)	leaf(ves) (<i>n.</i>)
absorb (<i>v.</i>)	health department(s) (<i>n.</i>)
crop(s) (<i>n.</i>)	compost (<i>n.</i>)
danger (<i>n.</i>)	plant (<i>v.</i>); plant(s) (<i>n.</i>)

3

Review and Discuss

Directions: Review “The City Garden” and answer the following questions.

1. Where does Mei live? _____

2. Who lives with Mei? _____

3. What did Mei plant in her garden? _____

4. What did Mei’s husband tell her about the garden? _____

5. Why do you think Mei was so disappointed? _____

6. Why did Mei worry about lead in her soil? _____

7. What did the local health department recommend Mei do? _____

8. Did Mei eat the vegetables she grew? _____

9. If the soil contains lead, what do you think Mei should do to protect her children from lead poisoning? _____

10. How do you think the lead gets from the soil into Mei's children? _____

4 Topics for Discussion

Directions: Describe some of your experiences with gardening, food, and the environment. Answer the following questions.

1. Have you ever planted a home garden? Have you thought about planting a home garden? _____

2. What did you grow in your garden? Or what would you grow in your garden? _____

3. Did you worry about any environmental dangers, such as pollution, bugs, or lead? _____

4. Have you ever tested your soil for lead? _____

5. Do you know anyone in your neighborhood who has lead in his or her soil? _____

6. Is your neighborhood in the city? _____

5 Testing Your Soil for Lead

Directions: Read the directions below for testing lead in the soil. Then follow the directions and collect soil samples from home. Bring your samples to the next class. Your teacher will locate the nearest testing laboratory and mail class samples to be tested.

The danger of the lead in soil depends on (1) the amount of lead in the soil around your house and (2) the amount of soil that gets into your child.

To find out the lead content of your soil, you need to test it. The test results will tell you what to do about low, medium, high, or very high levels of soil lead.

If you have children, select areas in your yard where children normally play. Soil in other areas, such as near the outside of your house or garage, or near the street, may also contain lead.

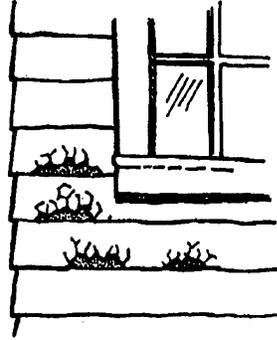
- Select area(s) of your yard to sample.
- With a clean spoon, take soil from the top one-half inch of each area you have selected.
- Collect about one cup of soil and place it in a clean, ordinary plastic bag. Cut out any plants or grass that are growing in your sample. Do not pull the grass out. Plant roots may stay in the sample.

6 Protecting Your Child from Lead in the Soil

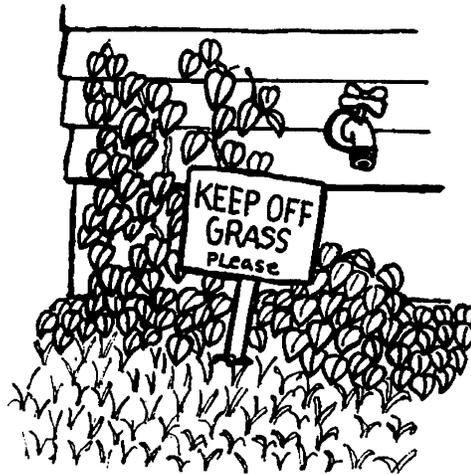
Directions: Read the safety tips below. Do you practice any of them?

If the amount of lead in your soil is high (greater than 300 parts per million of lead), and if the soil is not covered with many plants or thick grass, *then* you should consider one or more of the following suggestions to make your soil safer.

Control peeling house paint. Call your local health department for appropriate methods.



Plant and maintain grass or ivy.



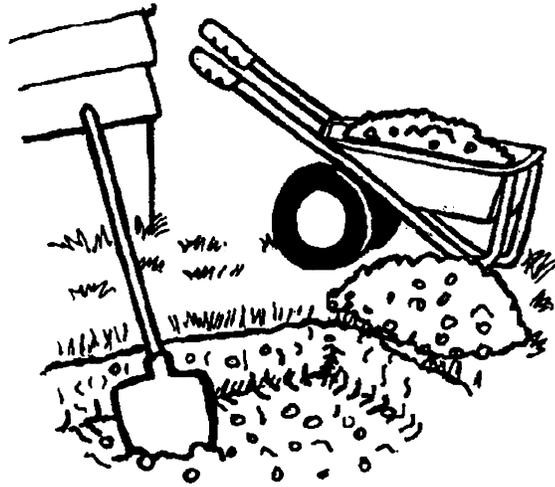
Cover the soil with a thick layer of gravel, wood chips, or other materials.



Pave the area.



As a last alternative, remove the top six inches of soil and replace it with uncontaminated soil.

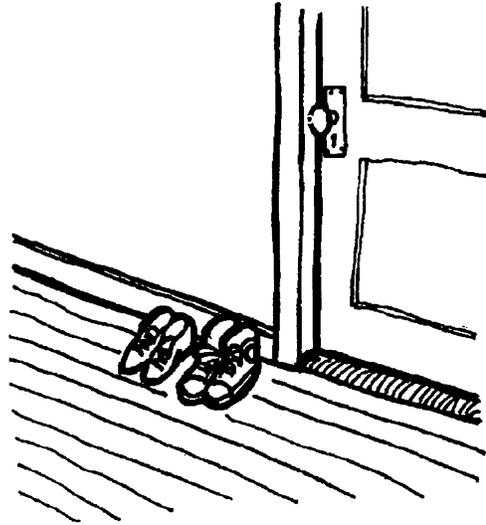


Here are some other ways to stay healthy:

Wash children's hands before eating.



Have all family members and guests take off their shoes before entering the house so that lead dust from the soil will not get inside.



Prepare and eat nutritious meals that include fruits and vegetables; foods high in calcium, such as milk; and foods high in iron, such as meat, and iron-fortified cereals.

