Be Aware of Lead and Other Environmental Health Hazards in the Home

Acknowledgements

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Introduction

Children can become ill easier than adults from environmental problems. This includes lead poisoning and unhealthy environments. Young children spend a lot of their time in childcare facilities. Childcare facilities must have a healthy environment. This training teaches childcare staff about preventing lead poisoning and maintaining healthy environments. It will allow childcare staff to know how different factors affect children's health. It will teach how to prevent them. This training can also be used to teach parents.

This curriculum is divided into two parts. Part 1 focuses on lead poisoning prevention. Part 2 focuses on healthy homes for childcare facilities. The curriculum includes best practices from the Eco-Healthy Child Care® (EHCC) checklist (updated February 2018). Each lesson in the curriculum should take a minimum of 30 minutes. Each lesson contains learning objectives, learning outcomes, content, an interactive activity, and references.

The curriculum evaluation is to get feedback from the trainee. After you complete the training, please take a few minutes to fill out the evaluation form at the end of the curriculum.

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Part I. Lead Poisoning Prevention

Lead Curriculum

Section I. - Lead Poisoning

30 minutes

Learning Objectives:
- To define lead poisoning
- To explain the history of lead poisoning

Learning Outcomes:
- Explain what is meant by lead poisoning
- Describe the history of lead poisoning

What is Lead Poisoning?

Lead is a substance that can be harmful to the body. Lead poisoning is a health problem and it is caused by lead or lead dust. Lead or lead dust goes into the body and into the blood. Lead or lead dust inside the body causes lead poisoning. Lead can affect every part of the body. Blood lead levels is defined as the amount of lead in the blood. Five (5) micrograms per deciliter (mg/dL) and higher means that a person has an elevated blood lead level (EBLL). Elevated blood lead levels occur if a person is lead poisoned. There is no safe blood lead level in children. Lead poisoning can be hard to identify because children with EBLLs may seem healthy. Symptoms usually do not appear until dangerous levels have been identified.

There is *no* safe blood lead level in children. Five (5) mg/dL means an elevated blood

Lead poisoning is a problem for children. Lead poisoning occurs more in children. There is more lead poisoning in children because of brain development and mouth-to-hand habits. Some children are more likely to be poisoned by lead. Children who are minorities, recent immigrants, poor, living in poor rental homes, and whose parents work with lead are more likely to be poisoned by lead.

History of Lead

The United States has tried to end lead poisoning. But lead poisoning still occurs. Lead poisoning occurs because lead is still in tap water. Lead goes into the water system. Then lead goes into tap water. Laws in 1986 and 1996 about safe drinking water decreased the amount of lead in tap water. The law defined 15 parts per billion or below as safe for drinking water.

The United States has tried to end lead poisoning. The United States stopped companies from putting lead in paint in 1978 and in gasoline. The work of the United States has decreased lead poisoning of children from 1976-1980. There has been a decrease in lead poisoning in children. But, more work needs to be done.

Materials Needed:

- Markers
- Typing Paper
- Cell Phones or Tablets

Activity:

SEARCH AND CREATE: Divide into groups. Each group must come up with 1 fact about lead. Use this fact to design a catchy motto that would talk about lead.

References

At-Risk Populations. (2015, February 23). Retrieved March 20, 2019, from https://www.cdc.gov/nceh/lead/tips/populations.htm

Childhood Lead Poisoning. (2017, January 12). Retrieved March 20, 2019, from https://ephtracking.cdc.gov/showLeadPoisoningEnv

Friis, R. H. (n.d.). Essentials of Environmental Health (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Water. (2016, February 18). Retrieved March 20, 2019, from https://www.cdc.gov/nceh/lead/tips/water.hmt

Section II. - Lead Poisoning and Human Health

30 minutes

Learning Objectives:
- To identify ways to become lead poisoned
- To identify the health effects of lead poisoning

Learning Outcomes:
- Discuss how children are poisoned by lead
- Identify symptoms of lead poisoning
- Explain the effects of lead poisoning in children

Routes of Exposures

Lead can be harmful when it goes into the body. Lead can go into the body by breathing, eating, or drinking. Lead is most harmful to children. Children younger than six years old are harmed the most. Children putting things in their mouth could cause lead poisoning. Taking lead into the body through the mouth is the most common way to be lead poisoned. Taking lead into the body through the mouth is increased in children who have pica. Pica is a craving for something that is not food (examples: dirt and paper). Breathing in lead or lead dust, the passing of lead or lead dust from a pregnant woman to her unborn baby or through breast milk to a baby are other ways that children are lead-poisoned.

Pica is a craving for something that is not food. Examples are:

Signs and Symptoms

Lead poisoning has zero to very little symptoms. Testing is the only way to know. There are signs and symptoms when blood lead levels are high. The symptoms in children are developmental delays, learning difficulties, irritability, loss of appetite, weight loss, sluggishness and tiredness, abdominal pain, vomiting, constipation, hearing loss, seizures, and pica. There are symptoms of lead poisoning in newborns. The symptoms are being born prematurely, having a lower birth weight, and having delayed growth.

Health Effects

Small amounts of lead in the blood can be harmful. Lead poisoning can harm every part of the body. The brain is harmed the most by lead poisoning. Lead can limit a child's brain and physical development. The damage to the brain from lead poisoning is permanent. Anemia and lead poisoning may occur together. Lead poisoning can also harm the kidneys and the reproductive system. Coma, vomiting, and death can happen if blood lead levels are really high. It can cause decreased intelligence, problems with brain function, decreased growth, and hearing problems.

Materials Needed:

- Paper
- Pen/Pencil

Activity:

ACT IT OUT: Divide into pairs and act out a scene where a childcare staff member is telling a parent about lead poisoning (one participant acts as the parent and one participant acts as the childcare staff member). In this activity, the childcare staff member must discuss why lead poisoning is a health concern for children, ways that a child can become lead poisoned, symptoms of lead poisoning, and health effects of lead poisoning. Each pair can take turns in each role.

References

Lead poisoning. (2016, December 06). Retrieved March 21, 2019, from https://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms-causes/syc-20354717

Pregnant Women. (2015, December 08). Retrieved March 21, 2019, from https://www.cdc.gov/nceh/lead/tips/pregnant.htm

Section III. - Identifying Sources of Lead

30 minutes

Learning Objectives:

- To identify indoor sources of lead that are found in childcare facilities and homes
- To identify outdoor sources of lead that are found in playgrounds or associated with hobbies
- To explain the chances of childhood lead poisoning due to the parents' workplace

Learning Outcomes:

- Identify the sources of lead hazards

Indoor Sources of Lead

Lead poisoning can come from inside and outside. Lead can be found in childcare facilities, homes, and playgrounds. Children breathe, eat, sleep, and play in these areas, making lead poisoning common in children.

Indoor Sources of Lead in the Childcare Facility

Children spend more time awake at childcare facilities than at home. Lead can be found in childcare facilities. Lead can be found in childcare facilities built before 1978, especially if there is interior wall paint that is chipping. (Note: paint was bought before 1978) and chipping windowsill paint (Note: paint was bought before 1978). Lead can be found on rugs and floors inside childcare facilities. Lead can be found in tap water from pipes and water wells with lead in them. Lead can be found in food (Note: when food has been contaminated with lead). Lead can be found in old toys made before 1978 as well as new toys that have lead paint. Lead can be found in arts and crafts that do not have an AP seal (Note: An AP seal means arts and crafts are safe).

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Indoor Sources of Lead in the Home

Children eat, breathe, sleep, and play at home. These homes or apartments can contain lead.

Lead can be found in homes or apartments built before 1978. Lead can be found in homes or apartments with interior wall paint that is chipping (Note: The paint was bought before 1978). Lead can be found on rugs and floors from soil or streets. Lead can be found in tap water from pipes or lead wells. Lead dust can be found on toys, furniture, and food. Lead dust falls on toys, furniture, or food if it is next to chipping paint. Lead can be found in imported medicines and spices, imported incense and candlesticks, and imported dishes and pottery.

Outdoor Sources of Lead and Playground Exposure

Lead can be found outside. Outside areas are a main cause of lead poisoning in children. Children are outside more than adults. This makes children more likely to be lead poisoned. Lead can be found outside because of chipping paint from old toys (Note: Toys made

before 1978), and playground toys that were painted red, orange, yellow, green, or brown and were bought before 1978.

Hobbies as a Source of Lead

A parent's hobby could cause lead poisoning in children. Both outdoor and indoor hobbies use things that have lead in them. Hobbies with things that have lead in them include fishing with lead fishing sinkers, hunting with lead bullets, and making pottery.

Workplace as a Source of Lead

A parent's workplace could be a source of lead. Take-home contamination occurs when lead dust is transferred from the workplace on employees' skin, clothing, shoes, and other personal items to their car and home. Parents who work with lead should wash their hands. These parents should remove their work clothes before touching children. A parent may work with lead if they:

- Remove old paint
- Tear down or rebuild houses, buildings, tanks, or bridges
- Work at a shooting range
- Join pipes
- Recycle or fix car radiators
- Melt, or grind lead, brass or bronze
- Make or paint ceramics
- Work with scrap metal
- Make stained glass windows

Materials Needed:

- Old Magazines
- Scissors
- Paper/Construction Paper
- Glue/Tape
- Marker

Activity:

ARE YOU BETTER THAN A LEAD PROFESSIONAL? Using old magazines, skim through the magazines and find 5-7 ways a person could come in contact with lead. Cut out the images and create a collage. Each group will discuss their collage with the larger group.

References

Friis, R. H. (n.d.). Essentials of Environmental Health (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Protect Your Family from Exposures to Lead. (2019, February 12). Retrieved March 21, 2019, from https://www.epa.gov/lead/protect-your-family-exposures-lead

The Art and Creative Materials Institute, Inc. (2019). Art Material Safety. LHMA- How does it affect you? Retrieved from www.acmiart.org.

Section IV. - Lead Testing

30 minutes

Learning Objectives:
- To identify unhealthy blood lead levels
- To explain the job of healthcare providers when treating lead poisoning among children

Learning Outcomes:
- Explain unhealthy blood lead levels
- Identify the ways that healthcare providers look at lead poisoning among children

Lead Testing

Blood tests are done to find out if a child has lead poisoning. Blood tests can be done at hospitals, clinics, or local health departments. Doctors should tell parents if a child has a blood lead level of 5 micrograms per deciliter (mg/dL) or more.

There are laws about lead testing. Lead testing laws make sure lead testing is done at check-ups for children between the ages of 1 and 6. The children have to live in homes built before 1978. All children receiving Medicaid must get a blood lead screening test. The tests are done at 12 months and 24 months of age. Any child 24 to 72 months old who has not been tested for lead must get tested. These laws make sure that these groups of children are tested without the request of their parents or guardians at regular check-ups.

Provider

Laws make sure that lead testing is done. But parents should still ask doctors to test their children for lead. This makes sure that the healthcare providers know about the lead testing laws. Childcare facility teachers also help decrease lead poisoning. Teachers can tell parents about lead testing laws. Then parents can know to ask healthcare providers for blood tests.

Materials Needed:
- Pencil or Pen
- (1) Crossword Puzzle Worksheet

Activity:

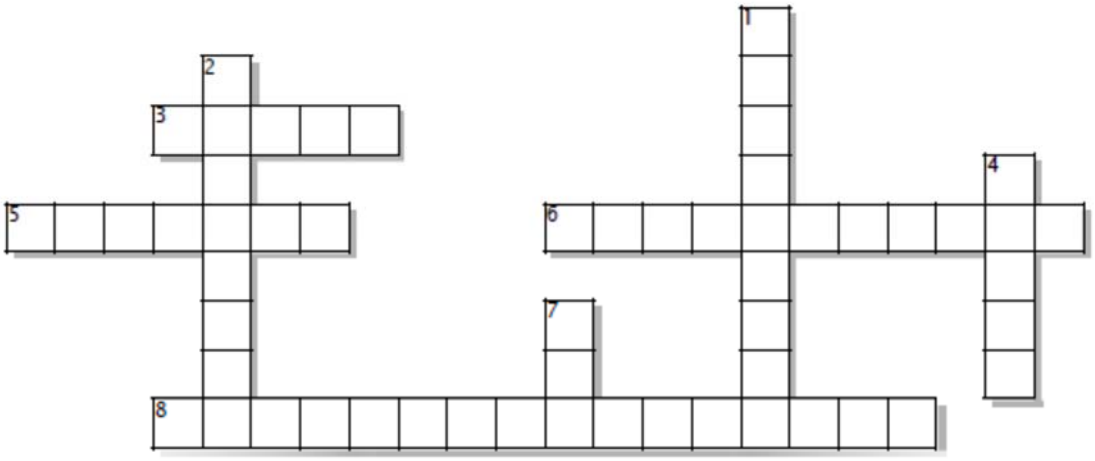
CROSSWORD PUZZLE: Each person will complete the crossword puzzle that is about lead testing. The answers will be talked about after each person finishes the crossword puzzle.

References

Detection of Lead Poisoning. (n.d.). Retrieved March 25, 2019, from https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/lead-exposure/Pages/Detection-of-Lead-Poisoning.aspx

Friis, R. H. (n.d.). Essentials of Environmental Health (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Lead Facts Crossword Puzzle



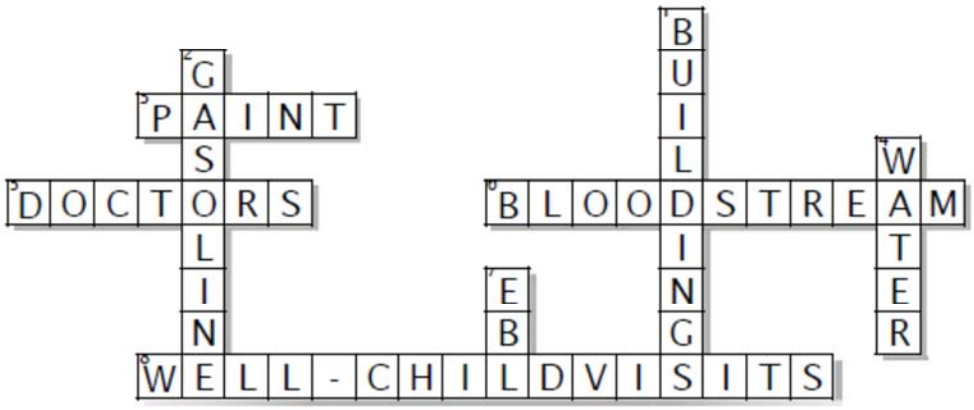
ACROSS

3 Stopped lead from being put in this product in 1978
5 Children are tested by them at well-child visits
6 When lead enters the body, it goes into the_____
8 Children, who are more likely to suffer from lead poisoning are tested at these when they are between the ages of 1-6

DOWN

1 Should be checked for lead if older than 1978
2 Stopped lead from being put in this product
4 Lead can be found in this liquid
7 Abbreviation for elevated blood level

WORD BANK: BLOODSTREAM, BUILDINGS, DOCTORS, EBL, GASOLINE, PAINT, WATER, WELL-CHILDVISITS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Section V. - Teaching Children about Lead Poisoning

30 minutes

Learning Objectives:

- To explain habits that will help decrease lead poisoning in children

Learning Outcomes:

- Identify ways that will help decrease lead poisoning in children

Teaching Children about Lead Poisoning

Adults can help decrease lead poisoning in children. One way is teaching children about lead poisoning. Teaching children about lead poisoning should use different teaching methods. Books, recipes, and videos can help teach children about lead poisoning. (Look at the appendix for coloring pages/reading book, recipes, and a link to a video.)

Ways to Decrease Lead Poisoning in Children

Children can learn ways to stop lead poisoning. They can learn to not eat soil. They can learn to wash their hands after playing outside. They can learn to wash their hands before they eat. They can learn to wash their hands before they drink. They can learn to not put toys in their mouth. They can learn not to touch chipping paint. They can learn to not eat food next to chipping paint.

Ways to Help Stop Lead Poisoning in Children

Children can also learn ways to stop lead poisoning. They can learn that eating certain foods can stop lead poisoning. They can learn to not wear shoes in their home. They can learn to wipe their feet on doormats at home and childcare facilities.

Materials Needed:

- Pens or Pencils
- Markers
- Flip Chart or Paper

Activity:

ACT IT OUT: Divide into groups and each group will make a 3-5 minute lesson for preschool children about the things children can do to decrease and stop lead poisoning.

References

Fighting Lead Poisoning with a Healthy Diet. (n.d.). Retrieved March 26, 2019, from https://www.epa.gov/sites/production/files/2014-02/documents/fight_lead_poisoning_with_a_healthy_diet.pdf

Section VI. - Lead Prevention, Part 1

30 minutes

Learning Objectives:
- To explain why you need to eat Vitamin C, iron, and calcium

Learning Outcomes:
- Understand the importance of eating Vitamin C, iron, and calcium

Lead and Nutrition

A healthy diet can help stop lead poisoning. Foods with iron can help stop lead poisoning. Foods with Vitamin C can help stop lead poisoning. Foods with calcium can help stop lead poisoning. Parents should make foods rich in Vitamin C, calcium, and iron.

Foods with Iron
- Red meats
- Fish
- Chicken
- Iron-fortified cereals
- Dried fruit (raisins, prunes)

Foods with Calcium
- Milk
- Yogurt
- Cheese
- Green Leafy Vegetables (spinach, kale, collard greens)

Foods with Vitamin C
- Oranges
- Orange juice
- Grapefruit
- Grapefruit juice
- Tomatoes
- Tomato juice
- Green peppers

Materials Needed:
- Markers, Pens, or Pencils
- (1) Menu Worksheet

Activity:

COOKING LEAD OUT: Divide into groups. Each group will make a menu for breakfast and lunch for 1 day. The menu should have foods high in Vitamin C, iron, and calcium. The menu should be made for children. Groups should create fun ways to serve the food to children.

References

Fighting Lead Poisoning with a Healthy Diet. (n.d.). Retrieved March 26, 2019, from https://www.epa.gov/sites/production/files/2014-02/documents/fight_lead_poisoning_with_a_healthy_diet.pdf

Menu Worksheet: Cooking Lead Out

Each group will make a menu for breakfast and lunch for 1 day. The menu should have foods high in Vitamin C, iron, and calcium. The menu should be made for children. Groups should create fun ways to serve the food to children.

Breakfast

Lunch

3 Easy & Delicious Recipes for Kids

Yummy-O!

Time to Make: 5-10 minutes

Ingredients

- 1 Orange

How to Make

Peel one orange. Put the orange slices in a large circle on the plate (should look like a large sun). Serve the sunny meal to children of all ages.

Smiling Parfait

Time to Make: 5-10 minutes

Ingredients

- 1 cup of Yogurt
- 4-5 Strawberries

How to Make

Put one spoon of yogurt on the left side of a plate. Put one spoon of yogurt on the right side of a plate. Cut the 4-5 strawberries in half. Put the sliced strawberries a few inches below the yogurt in the shape of a half moon. Serve the smiling dish to children of all ages. After the directions have been followed, the dish should look like a smiley face.

Breakfast Delight

Time to Make: 5-10 minutes

Ingredients

- 1 cup of Raisin Bran
- 1 cup of milk (Children who are 2 years old or older should drink skim milk, reduced fat, or fat free).
- 1 Banana

How to Make

Pour 1 cup of Raisin Bran into a bowl. Pour 1 cup of skim milk, reduced fat, or fat free milk into the same bowl. Slice one banana into small pieces. Add the sliced pieces of banana to the bowl. Serve this sweet and healthy breakfast treat to children of all ages.

Section VII. - Lead Prevention, Part 2

30 minutes

Learning Objectives:
- To identify ways to stop lead poisoning in the childcare facilities
- To identify ways to stop lead poisoning in the home

Learning Outcomes:
- Discuss ways to decrease lead poisoning in the classroom, in the home, and in the childcare facilities
- Carry out ways to decrease lead poisoning in classrooms, in childcare facilities, and in homes
- Explain what childcare facilities teachers and childcare facilities directors can do to stop lead poisoning

Ways to Stop Lead Poisoning in Childcare Facilities

There are ways to stop lead poisoning in childcare facilities. The childcare facility owner should not buy a building that was built before 1978. If it was built before 1978, it should be repaired by removing the lead. Lead abatement or lead reducing rules should be carried out.

The janitor should clean correctly. Childcare facilities should use HEPA vacuum filters for cleaning rugs. They should also clean floors with damp mops. They should clean window sills with damp cloths. The director should make sure that clean doormats are next to the doors of the childcare facilities. Everyone should wipe their feet on the childcare facilities' doormats.

Childcare facility owners and directors should make sure that all toys are lead free. Childcare facility owners and directors should make sure that no toys are older than 1978. Childcare facility owners and directors should make sure that all arts and craft materials have an AP seal.

Childcare facility owners and directors should make sure that lead cleaning water filters are used. Childcare facility teachers should use cold water when making baby formula. Childcare facility cooks should use cold water for cooking. Childcare facility cooks should store food in plastic or glass. Childcare facility cooks should cover food before serving and storing.

Ways Childcare Facility Staff can Stop Lead Poisoning

The childcare facility staff can help stop lead poisoning. The childcare facility staff can help teach parents about lead poisoning in children. The childcare facility staff can teach children about lead poisoning. Childcare facility teachers should run water before using. If the childcare facility has a lead service line, let the water run for 3-5 minutes. If the childcare facility does not have a lead service line, let the water run for 30-60 seconds. The more time water has been sitting in the pipes, the more lead it may contain. Childcare facility teachers should use cold water for drinking.

Ways to Stop Lead Poisoning in Homes

There are ways to stop lead poisoning in the home. Parents should not buy or rent a building that is older than 1978. If it was built before 1978, it should be repaired by removing the lead. Lead abatement or lead reducing rules should be carried out.

Parents should use HEPA vacuum filters for cleaning rugs. They should also clean floors with damp mops. They should clean window sills with damp cloths. Parents should make sure that clean doormats are next to the doors at their homes. Everyone should wipe their feet on the doormats. Parents should make sure that shoes are not worn in the home.

Parents should make sure that all toys are lead-free. Parents should make sure that no toys were made before 1978. Parents should make sure that all arts and craft materials have an AP seal.

Parents should make sure that lead cleaning water filters are used. Parents should run water before using. If the home has a lead service line, let the water run for 3-5 minutes. If the home does not have a lead service line, let the water run for 30-60 seconds. The more time water has been sitting in the pipes, the more lead it may contain.

Parents should use cold water for drinking and cooking. Parents should use cold water when making baby formula. Parents should store food in plastic or glass. Parents should cover food before storing. Parents should wash their hands if they use things that are made with lead. Parents should wash their clothes if they use things that are made with lead.

Materials Needed:

- Pens or Pencils
- Markers
- Flip Chart or Paper
- (1) Checklist Worksheet

Activity:

LEAD POISONING PREVENTION CHECKLIST: Each group will design a lead poisoning prevention checklist that can be used in your childcare facility. Compare and contrast each checklist amongst groups.

Reference

Friis, R. H. (n.d.). Essentials of Environmental Health (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Protect Your Family from Exposures to Lead. (2019, February 12). Retrieved March 21, 2019, from https://www.epa.gov/lead/protect-your-family-exposures-lead

Lead Prevention Checklist for _____

(Childcare Facility's Name)

Policy: Childcare facility staff should follow these steps each day.

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

Lead Poisoning Pre/Post Test

SECTION I: BACKGROUND OF LEAD POISONING

1. What is lead poisoning?

ANSWER: A
a. it is when lead or lead dust goes into the body and harms different parts of the body
b. it is when there is no lead in the body
c. it is when copper goes into the body and harms different parts of the body
d. none of the above

2. Where does lead or lead dust go when it goes into the body?

ANSWER: B
a. head
b. blood
c. feet
d. none of the above

3. What is the amount of lead in the blood that means a person has an elevated blood lead level?

ANSWER: A
a. 5 milligrams per deciliter (mg/dL) or higher
b. 0 milligrams per deciliter (mg/dL)
c. 3.5 milligrams per deciliter (mg/dL) or higher
d. none of the above

4. What group is more likely to be lead poisoned?

ANSWER: A
a. children
b. adults
c. elderly
d. none of the above

SECTION II: HISTORY OF LEAD

1. What is the way that a person can come in contact with lead?

ANSWER: D
a. different types of products
b. air
c. water
d. all of the above

2. What is the amount of lead that can be in tap water?

ANSWER: B
a. 30 parts per billion or above
b. 15 parts per billion or below
c. 20 parts per billion or below
d. none of the above

3. What did the U.S. stop lead from being put in?

ANSWER: A
a. paint and gasoline
b. gasoline and cosmetics
c. paint and food
d. none of the above

4. What country has tried to stop lead poisoning?

ANSWER: C
a. Japan
b. India
c. United States
d. All of the above

SECTION III: LEAD POISONING PREVENTION

1. What foods help stop lead poisoning?

ANSWER: D
a. vitamin C
b. calcium
c. iron
d. all of the above

2. Who can help stop lead poisoning?

ANSWER: D
a. childcare staff
b. parents
c. doctors
d. all of the above

3. Which is not a good way to stop lead poisoning in daycare centers?

ANSWER: C
a. using cold water for cooking, drinking, and making baby formula
b. using doormats to clean shoes
c. not running water 1 minute to 2 minutes
d. all of the above

4. Which is the best way to stop lead poisoning in the home?

ANSWER: B
a. not storing food correctly
b. using lead filtering water filters
c. not taking off shoes before entering a home
d. none of the above

SECTION IV: IDENTIFYING SOURCES OF LEAD

1. Which is **NOT** an indoor source of lead in a daycare center?

ANSWER: A
a. chipping paint that was made in 1999
b. arts and crafts without an "AP" seal
c. old toys that were made before 1978
d. all of the above

2. Which is an indoor source of lead in a home?

ANSWER: D
a. dishes and pottery made in the U.S.
b. medicines and spices made in the U.S.
c. interior paint that was made in 1999
d. none of the above

3. Which is an outside source of lead?

ANSWER: A
a. playground toys with chipping paint that was made before 1978
b. plastic playground toys
c. plastic benches
d. none of the above

4. Which activity puts a person in contact with lead?

ANSWER: D
a. removing old paint
b. working at a shooting range
c. working with soldering pipes
d. all of the above

SECTION V: TEACHING CHILDREN ABOUT LEAD POISONING

1. Which is **NOT** a way to decrease lead poisoning in children?

ANSWER: D
a. Teach children not to eat soil.
b. Teach children not to touch chipping paint.
c. Teach children to wash their hands before they eat or drink.
d. None of the above.

2. Which way can children prevent lead poisoning?

ANSWER: A
a. Not to wear shoes in the house.
b. Do not use doormats to wipe feet.
c. Eat foods rich in Vitamin A
d. All of the above

3. True or False? Children can be taught about lead poisoning using books and videos about lead.

ANSWER: A
a. True
b. False

4. True or False? Doormats should be used for children to wipe their feet at home and daycare.

ANSWER: A
a. True
b. False

SECTION VI: LEAD PREVENTION PART 1

1. Which is **NOT** a food rich in calcium?

ANSWER: D
a. Milk
b. Yogurt
c. Cheese
d. Carrots

2. Which food is rich in iron?

ANSWER: C
a. Milk
b. Butter
c. Chicken
d. None of the above

3. True or False? Oranges are rich in Vitamin C.

ANSWER: A
a. True
b. False

4. True or False? Spinach is NOT rich in calcium.

ANSWER: B
a. True
b. False

SECTION VII: LEAD PREVENTION PART II

1. How long should you run water for a lead service line?

ANSWER: D
a. 15-30 seconds
b. 30-45 seconds
c. 1-2 minutes
d. 3-5 minutes

2. What type of vacuum filter should be used for cleaning rugs?

ANSWER: A
a. HEPA filter
b. Microfilter
c. Porous filter
d. one of the above

3. True or False? Food should be covered before storing.

ANSWER: A
a. True
b. False

4. True or False? Children can play with toys made before 1978 under adult supervision.

ANSWER: B
a. True
b. False

Part II. Healthy Homes

Section I. - Healthy Homes

30 minutes

Learning Objectives:

- To define the meaning of healthy homes for childcare facilities
- To identify the seven rules for healthy homes
- To explain the need for healthy homes for childcare facilities

Learning Outcomes:

- Describe the meaning of healthy homes for childcare facilities
- Identify and apply the seven rules for healthy homes
- Explain the need for healthy homes for childcare facilities

What is Healthy Homes for Childcare Facilities?

Healthy Homes ensures that homes are safe and clean. Healthy Homes ensures that people can breathe, sleep, eat and live in a safe and clean home. Childcare facilities can be healthy. Healthy Homes for childcare facilities ensures that childcare facilities are clean and safe. Healthy Homes for childcare facilities ensures that children and childcare staff stay healthy in childcare facilities.

Know and follow the 7 rules.

Seven Rules for Healthy Homes

There are seven rules for Healthy Homes for childcare facilities. The rules make sure that childcare facilities are safe and clean places for learning. The seven rules are:

1. **Keep the Childcare Facility Dry.** Make sure the childcare facility stays dry because wetness can lead to dust mites, cockroaches, and mold.
2. **Keep the Childcare Facility Clean**. Make sure the childcare facility is cleaned with a damp mop. Make sure the childcare facility is cleaned by following directions on cleaning materials.
3. **Keep Air Flowing in the Childcare Facility**. Make sure that fresh air flows through the childcare facility. Fresh air stops asthma triggers.
4. **Keep the Childcare Facility Pest Free**: Make sure that food is stored in containers, and the childcare facility is clutter free. Make sure the childcare facility is cleaned.
5. **Keep the Childcare Facility Free of Hazards**: Make sure that directions are followed to keep the childcare facility free of hazards. Anywhere children can reach needs to be free of dangerous materials.
6. **Keep the Childcare Facility Safe**: Make sure the childcare facility is free of anything that could cause falls, burns, or poisonings. Do not keep unnamed products. Do not store chemicals incorrectly. Do not have loose rugs. Do not put hard or sharp materials in the children's play area. Make sure the childcare facility has smoke detectors. Make sure the childcare facility has carbon monoxide detectors.
7. **Keep the Childcare Facility Repaired**: Make sure the childcare facility has no problems with the building's paint. Make sure all repairs are done.

The Need for Healthy Homes for Childcare Facilities

Healthy Homes for childcare facilities is needed. It makes sure that everyone in a childcare facility can breathe, eat, work, and play in a healthy place. It makes sure that children, who spend most of their time in childcare facilities, can learn in a safe place. Healthy Homes makes sure that childcare facilities are a great place for children to play and to learn.

Materials Needed:

- Pens or Pencils
- Your 7 Rules for Healthy Homes worksheet (**Note:** In the curriculum)

Activity:

THE FISHER PRICE TABLE TALK (ice breaker): Each group will list 7 rules that they think are a part of the Seven Rules for Healthy Homes. Then each group will rank their list from top to bottom. One member from each group will talk about their group's list with the class.

References

Department of Health. (n.d.). Retrieved April 1, 2019, from https://www.health.ny.gov/environmental/indoors/healthy_homes/seven_principles.htm

Section II. - Air Quality

30 minutes

Learning Objectives:

- To identify sources of indoor and outdoor air pollution
- To recognize health effects of indoor and outdoor air pollution
- To identify control measures for indoor and outdoor air pollution

Learning Outcomes:

- Describe sources of indoor and outdoor air pollution
- Explain the health effects of indoor and outdoor air pollution
- Describe the control measures for indoor and outdoor air pollution

Breathing is needed for life. Children's lungs are still developing. People breathe indoors and outdoors. The place where people breathe can be safe or not safe for breathing. Indoor air must be kept free of hazards because children and adults eat, sleep, work, and learn indoors.

Sources of Indoor Air Pollution

There are many indoor sources of air pollution. The sources are mold and mildew, dust mites, chemicals, cockroaches, fragrances, pet dander, sweat, tobacco smoke, e-cigarette smoke, vaping, and urine. These sources can harm the health of adults and children.

Health Effects of Indoor Air Pollution

There are many sources of indoor air pollution. The sources of indoor air pollution can be common. Everyone needs to know how indoor air pollution can harm your health. Indoor air pollution can harm a child's school performance. Indoor air pollution can harm a child's ability to learn. Indoor air pollution can cause more missed days from school. Indoor air pollution can trigger asthma symptoms. Indoor air pollution can cause bronchitis. Indoor air pollution can decrease lung size. Indoor air pollution can harm the lungs. Indoor air pollution can cause chronic coughing. Work needs to be done to stop indoor air pollution.

Ways to Stop Indoor Air Pollution

There are ways to stop indoor air pollution in a childcare facility. The following are ways to stop indoor air pollution.

- Change air filters every 3 months.
- Do not allow mold to form.
- Do not allow mildew to form.
- Quickly clean spills or leaks.
- Hire an expert to clean big leaks.
- Throw away carpet that has been wet for one day or steam repeatedly.
- Use fans that go to the outdoors in kitchens and bathrooms.

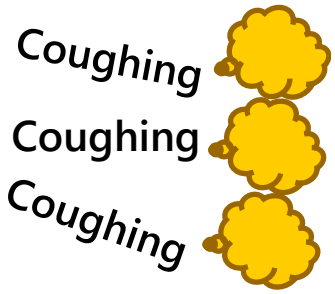
- Do not use air fresheners.
- Do not use candles.
- Do not use incense.
- Do not use products with fragrances.
- Use fragrance-free products not unscented products.
- Store paints and art supplies in places where there is air flowing.
- Store products in their container.
- Keep products out of the reach of children.
- Remove classroom pet or clean the area with a HEPA filtered vacuum.
- Have vents over the stove that vent to the outside if the childcare facility has a gas stove.
- Use carbon monoxide detectors.
- Do not allow smoking of e-cigarettes.
- Do not allow vaping.
- Do not allow the smoking of tobacco.

Sources of Outdoor Air Pollution

Indoor air pollution is not the only problem for the health of adults and children. Outdoor air pollution is also a problem for the health of adults and children. Outdoor air pollution can have many sources. The sources are cars, buses, trucks, trains, ships, wildfires, industry, smoking, and campfires.

Health Effects of Outdoor Air Pollution

Outdoor air pollution causes poor health. The health problems from outdoor air pollution can harm adults and children. Outdoor air pollution can stop a child from learning. Outdoor air pollution can cause a child to miss school. Outdoor air pollution can trigger asthma symptoms. Outdoor air pollution can cause bronchitis. Outdoor air pollution can decrease lung size. Outdoor air pollution can harm the lungs. Outdoor air pollution can cause chronic coughing. These health problems show the need to stop outdoor air pollution.



Ways to Stop Outdoor Air Pollution

There are ways to stop outdoor air pollution. Childcare facilities can make an anti-idling rule. An anti-idling rule is a rule to encourage drivers to turn off their cars when waiting to pick up riders at childcare facilities. Childcare facility owners should not buy buildings less than 500 feet from a highway. Childcare staff should know the city's air quality before allowing children to play outside. Air quality index tells how much pollution is in the air. These ways are the best ways to help stop health problems from outdoor air pollution.

Materials Needed:

- Markers
- Old Magazines
- Scissors
- Paper or Construction Paper
- Glue or Tape

Activity:

AIR POLLUTION COLLAGE: Create a collage that shows indoor and outdoor air pollution sources. When presenting your collage, explain how each source may harm a child's health.

Reference

Air Quality. (n.d.). Retrieved April 2, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

Section III. - Harmful Chemicals

45 minutes

Learning Objectives:

- To identify and describe harmful chemicals
- To identify health effects caused by harmful chemicals
- To recognize sources of harmful chemicals
- To identify tips to stop health effects from harmful chemicals

Learning Outcomes:

- Recognize and describe harmful chemicals
- Determine the sources of harmful chemicals
- List at least four tips that will stop health effects from harmful chemicals
- Perform safe ways to use harmful chemicals

Harmful Chemicals

What are harmful chemicals?

Harmful chemicals are compounds or substances that can cause death. Harmful chemicals are dangerous to the health of children and adults. Harmful chemicals can be found in a childcare facility. The most common harmful chemicals that impact children are:

- Mercury
- Arsenic
- Asbestos
- Radon
- Certain art supplies
- Certain cleaning products

Mercury

What is Mercury?

Mercury is a heavy metal. Mercury is released in the air, water, and soil. Sources that release mercury in the environment includes industrial activity. Mining and coal-burning power plants release mercury in the environment.

Mercury in rivers, lakes, or oceans can become a substance called methylmercury. Methylmercury is taken in by plants. It is also eaten by small fish in the water. This leads to more amounts of mercury in larger fish. People eat methylmercury when they eat some types of fish. Some examples of fish that contain mercury include king mackerel, tuna, shark, and swordfish.

Sources of Mercury

The sources of mercury are: eating fish and shellfish that contain mercury, breathing in mercury from broken glass thermometers or from broken fluorescent light bulbs.

Health Effects

Mercury can harm all parts of the body. Mercury can harm the brain. Mercury can harm the nervous system. Mercury can harm an unborn baby. Mercury can cause moodiness. Mercury can cause trouble with sleeping. Mercury can cause extreme shyness. Mercury can cause shaking. Mercury can cause coordination problems. Mercury can cause changes in vision. Mercury can cause changes in hearing. Mercury can cause problems with thinking. Mercury can cause problems with memory. Mercury can cause problems with attention skills. Mercury can cause problems with language skills. Mercury can cause problems with fine motor skills. Mercury can harm visual spatial skills. These health effects show just how harmful mercury can be.

Tips to Stop Mercury Poisoning

There are tips to stop mercury poisoning. Large, long-lived, and predatory fish are more likely to contain mercury. One should limit how much large, long-lived, and predatory fish he or she eats. There are four types of fish that should be avoided while pregnant or breastfeeding. These include tilefish from the Gulf of Mexico, swordfish, shark, and king mackerel. Use digital thermometers. Use digital thermostats. Do not use mercury lamps. Throw away products containing mercury at hazardous waste centers.

Arsenic

What is Arsenic?

Arsenic is a heavy metal. Arsenic can be found in soil, rocks, water, and fish. Arsenic can also be found on pressure treated wood. Arsenic cannot be tasted. Arsenic cannot be smelled. Arsenic does not have a color. People can breathe in arsenic. People can eat or drink arsenic.

Sources of Arsenic

There are two main ways children come into contact with arsenic. One way is from drinking tap water that has arsenic in it. Another way is from putting one's hands in his or her mouth after touching pressure treated wood. Pressure treated wood has a harmful chemical on it called chromated copper arsenate. Chromated copper arsenate is made with arsenic. Most wooden objects made before 2004 may contain chromated copper arsenate. These objects include wooden playground sets, wooden picnic tables, wooden benches, and wooden desks. These materials are common in childcare facilities. These materials could also harm children at childcare facilities.

Health Effects

There are many health effects from contact with arsenic. Arsenic could cause stomach problems. Arsenic could cause problems with the intestines. Arsenic could cause birth defects. Arsenic could cause problems with growth. Arsenic could cause skin cancer. Arsenic could cause lung cancer. Arsenic could cause problems with the ability to have a child. Arsenic could cause miscarriages. These effects can cause problems for both adults and children. But children are more vulnerable to these effects.

Tips to Stop Contact with Arsenic

There are tips to stop contact with arsenic. Children should wash their hands after playing outside. Test tap water for arsenic. Use drinking water filters. Use a sealant on wood that is made with arsenic. Cover wooden picnic tables with a vinyl tablecloth. Do not burn wood that is made with arsenic. Do not sand wood that is made with arsenic. Do not cut wood that is made with arsenic. Use soap and water to clean wood that is made with arsenic. Replace wood that is made with arsenic. Take wood that is made with arsenic to a waste center.

Asbestos

What is Asbestos?

Asbestos is a mineral fiber. It is very strong. It is resistant to heat, fire, and chemicals. This is why asbestos is used so often. It is used to make building materials, car parts, and fabrics. In 1989, the Environmental Protection Agency (EPA) banned all new uses of asbestos. Uses established before this date are still allowed.

Sources of Asbestos

Everyone is exposed to asbestos at some time during their life. Low levels of asbestos are present in the air, water, and soil. The most common way to come in contact with asbestos is by breathing. Any home or building built before 1980 may contain harmful asbestos. People breathe in damaged asbestos from building materials. The building materials can be found on roofs. The building materials can be found in pipes. The building materials can be found in siding. The building materials can be found in floor tiles. Asbestos has been found in some talc-containing crayons. U.S. manufacturers of these crayons agreed to ban talc from their products in 2000.

Health Effects

Health problems can happen from contact with asbestos. Children can become sick from asbestos more so than adults. Asbestos mainly affects the lungs. This happens because children have more contact with asbestos than adults.

Tips to Stop Contact with Asbestos

There are tips to stop contact with asbestos. It does not pose health risks unless it is damaged.

If asbestos is not damaged, leave it alone. Do not go into places with damaged asbestos. Do not touch damaged asbestos. Have experts check buildings for asbestos. You can contact your state or local health department for help. They can help you locate a company that is trained to remove or contain the fibers. Do not bother vermiculite insulation. You should assume the vermiculate contains asbestos. Vermiculite is a natural flaky mineral that expands like popcorn when heated. It is used as insulation for attics and walls. These tips will help stop contact with asbestos in childcare facilities.

Radon

What is Radon?
Radon is a radioactive gas. Radon is invisible. It can be released in rock, soil and water that can build up inside any home. Radon is made from the breaking of a uranium rock. Uranium rocks can be found in soil. Radon cannot be tasted. Radon cannot be smelled. The only way to know if your home has a radon problem is to test for it. Radon causes about 21,000 deaths per year.

Sources of Radon
Radon is found in soil and rock. But radon can move into buildings from cracks in the foundation of a building. When radon goes into a building, it can become trapped inside a building. Childcare facilities should be checked for radon.

Health Effects
Radon can cause health problems. Radon can cause lung cancer. According to Eco-Healthy Child Care, radon is the leading cause of lung cancer for people who do not smoke. Children are more vulnerable to the effects of radon. Children take in more air than adults do. Every home and building should be tested for radon. The Environmental Protection Agency reported that 1 in 5 schools has at least one classroom with a large amount of radon. These schools have above the 4 picoCuries per liter or pCi/L standard for radon.

Tips to Stop Contact with Radon
There are 2 tips to stop contact with radon. One tip is to buy a radon test kit to check for radon. Take action if the amount of radon is higher than 4 picoCuries per liter or pCi/L. The second tip is to close any cracks in the building. By following these tips, the childcare staff can make sure that the childcare facility is radon free.

Art Supplies

Children love to use art supplies. But some art supplies can contain harmful ingredients. It can cause health effects. Art supplies that can cause health effects are any arts and crafts without an “AP” seal. The “AP” seal is from the Art & Creative Materials Institute or ACMI. The “AP” seal means that the arts and crafts are not made with dangerous materials.

Exposure to Art Supplies
There are ways to be harmed by art supplies. Breathing in harmful materials in art supplies can cause lung problems. Eating art supplies with harmful materials can cause harm. Children may get art materials on their skin. Harmful materials in the art supplies can irritate skin. Children’s skin is more absorbent than an adult’s skin.

Health Effects
Health problems can happen from contact with harmful art supplies. Harmful art supplies can trigger asthma. Harmful art supplies can cause allergies. Harmful art supplies can

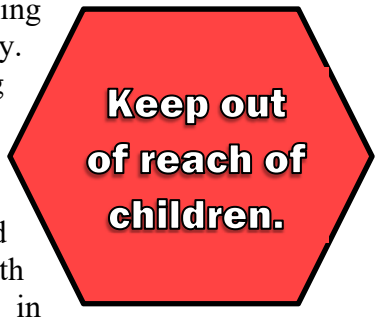
cause headaches. Harmful art supplies can cause nausea. If a room does not have air flowing through it, health problems from harmful art supplies can happen easily. Childcare staff should be careful when using art supplies. Childcare staff should supervise children when using art supplies.

Tips for Safer Arts and Craft Use

There are safety tips for using arts and crafts. Use arts and crafts with an "AP" seal. Read labels to make sure that they are free of harmful materials. Do not allow children to use markers because they put harmful materials in the air, and they can catch on fire. Do not allow the children to use spray paints because the paint can get in their eyes. Keep arts and crafts in their container. Make sure that the children wear an apron when they use arts and crafts. Supervision of children is key. Make sure that the children are watched if they are using starches and shaving cream. Make sure that the children are watched if they are using liquids. These tips will keep children safe when they use art supplies in childcare facilities.

Household Cleaning Products

Household cleaning products are used regularly. But household cleaning products can harm humans and the environment. Household cleaning products contain several harmful chemicals. If household cleaning products are not thrown away properly, they can put harmful chemicals in the air and in the soil. Household cleaning products can cause health problems when used incorrectly. Childcare staff must be careful when they use cleaning products in childcare facilities.



Exposure to Household Chemicals

There are ways to come in contact with household chemicals. An unborn child can come in contact with household chemicals in the womb. A person can come in contact with household chemicals by breathing. A person can come in contact with household chemicals by skin contact. A person can come in contact with household chemicals by eye contact. A person can come in contact with household chemicals by eating or drinking. These ways are how people become sick from contact with household chemicals.

Health Effects

Household cleaning products can cause health problems. These products can make indoor air unsafe to breathe. Household cleaning products can harm the respiratory tract. Household cleaning products can cause skin problems. Household cleaning products can cause eye problems. Household cleaning products can harm the endocrine system. Endocrine system is an organ system. It controls the conditions in the body by making and sending hormones throughout the body. It regulates how the body function. Children are vulnerable to these products because they are still growing. These health problems can happen in adults and in children.

Cleaning, Sanitizing, and Disinfecting

Keeping the childcare environment clean can ensure that children stay healthy. Dirty toys, bedding, linens, eating utensils, and surfaces can carry and spread germs. Regular cleaning, sanitizing, and disinfecting should be a part of the routine in a childcare setting.

Routine cleaning with soap or detergent and water help to remove dirt and germs. You should clean all surfaces in the childcare setting.

A sanitizer is a product that reduces germs on surfaces to levels considered to safe by public health regulations. A sanitizer may be used on food contact surfaces, toys, and pacifiers.

A disinfectant is a product that kills 100% of germs. A disinfectant may be used on counter tops, door and cabinet handles, and in the bathroom.

Make sure the product does the job you need it to do. Always look for the EPA registration number on the product label to see if it sanitizes or disinfects.

Choosing Safer Cleaning Products

There are safer cleaning products to use. Green seal is a safer cleaning product. ECOLOGO is also a safer cleaning product. The EPA has the Safer Choice label. This means that the product has been reviewed by the EPA. There are also safer ways to use cleaning products. A safe way to use cleaning products is to put the correct amount of water and bleach together. Before adding bleach to water, make sure to look at how much sodium hypochlorite is in the bleach. Use only an EPA-registered, unscented products. Do not use air fresheners or any aerosols. Do not leave left over bleach out. Do not leave left over bleach around children. Do not leave left over bleach in the heat. Never mix products unless the label indicates that it is safe to do so. Store products in a locked location that children cannot access. Call the Poison help line at (800) 222-1222 if an accidental exposure occurs. These tips will keep children and staff safe.

Materials Needed:

- Pictures of using harmful chemicals (**Note:** In the curriculum)

Activity:

SAFE OR HAZARD: Use pictures to show the use of chemicals. Ask the group to say if the pictures are safe or a hazard. Ask the group for ways to correct the hazard if possible.

References

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Art Supplies. (n.d.). Retrieved April 9, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

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Agency for Toxic Substances and Disease Registry (March 3, 2011). Endocrine (glands and hormones). Retrieved September 8, 2019, from https://www.atsdr.cdc.gov/substances/toxorganlisting.asp?sysid=4

Safe or Hazard

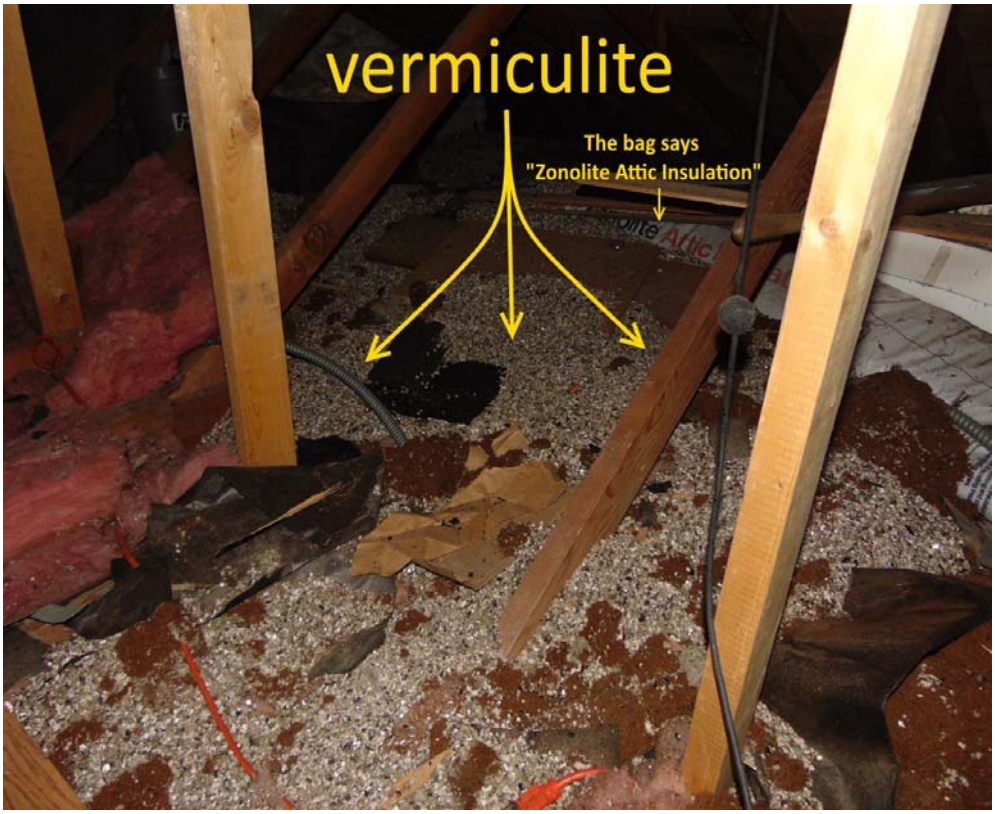
Cooked Shark

Hazard

Wood Playground Set
(Made Before 2004)

Hazard

Vermiculite Insulation

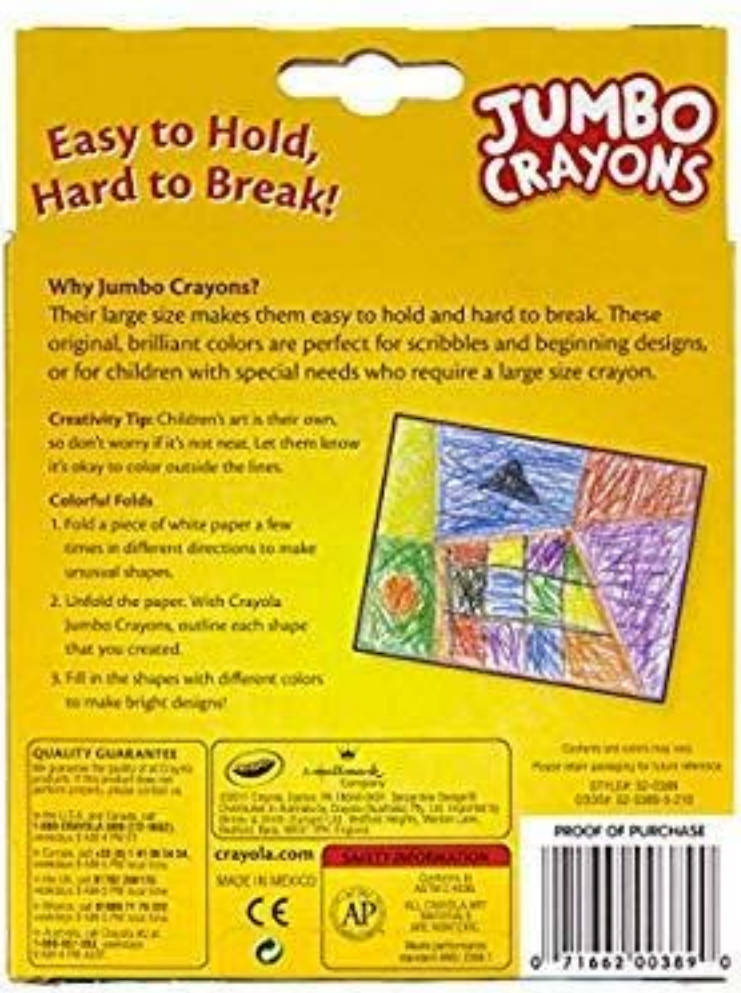


Hazard

A room in a childcare facility with 0 pCi/L of Radon

Safe

Jumbo Crayons with an "AP" Seal



Safe

Crayons without an “AP” Seal

Hazard

Cleaning Product by Green Seal

Safe

Using Air Fresheners in a Childcare Facility

Hazard

How well did you do?

Section IV. - Furniture and Carpet

30 minutes

Learning Objectives:

- To identify dangerous chemicals in furniture and carpet
- To identify health problems from dangerous chemicals in furniture and carpet
- To identify tips to stop contact with dangerous chemicals in furniture and carpet

Learning Outcomes:

- Recognize dangerous chemicals in furniture and carpet
- Pinpoint health problems from dangerous chemicals in furniture and carpet
- Perform tips for stopping contact with dangerous chemicals in furniture and carpet

Dangerous Chemicals in Furniture and Carpet

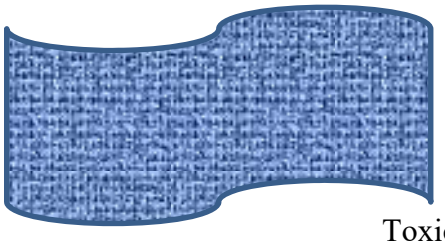
Furniture and carpet can be found in every childcare facility. Carpet and furniture can give comfort. But carpet and furniture can cause health problems. Carpet and furniture can trap pesticides, household cleaning products, and lead contaminated dust and dirt. This can be a problem for childcare staff and children.

Furniture

Furniture can contain two dangerous chemicals. These two chemicals are formaldehyde and flame retardants. Formaldehyde is a harmful chemical found in some furniture and fabrics. Formaldehyde adds permanent press qualities to fabrics such as curtains. Glues that are used in particle board furniture have formaldehyde in them. Plywood flooring has formaldehyde in it. Formaldehyde also acts as a preservative in paints and coating products. Furniture that contains formaldehyde can put harmful chemicals in the air. This is an example of off-gassing. Formaldehyde is often found in indoor air.

Flame retardants are chemicals that are added to materials to slow or prevent the start/growth of fire. They have been used in many consumer products since the 1970s. Some of the products include furniture foam and carpet padding. They are also in plastics, televisions, computers, and building materials. Research shows that flame retardants are harmful. One common flame retardant is polybrominated diphenyl ether or PBDEs. PBDEs can be found in indoor dust. They can persist in the environment. They can also be found in living things. They have been detected in human blood, breast milk, and umbilical cord blood.

Carpet



Carpet in public buildings is used to reduce noise. It is also used for comfort. But carpet can cause harm to children. Carpets may trap pollutants like dust mites and mold spores. Toxic gases in the air can stick to carpets. Carpets contain volatile organic compounds (VOCs). VOCs are a group

of very harmful chemicals. VOCs can easily become vapors or gases. VOCs can affect children's health. Some VOCs cause cancer.

Health Effects

Children are vulnerable to the harmful effects of chemicals. This is because they are still growing. Hand-to-mouth behavior and distance to the fluid increases their exposure.
Formaldehyde found in furniture can cause health problems. Formaldehyde can cause eye problems. Formaldehyde can cause skin problems. Formaldehyde can cause mucous membrane problems. Formaldehyde can cause the eyes to burn. Formaldehyde can cause the skin to burn. Formaldehyde can cause skin rashes. Formaldehyde can cause chest tightness. Formaldehyde has been linked to cancer.

Flame retardants found in furniture can cause health problems. A flame retardant can cause lung problems. A flame retardant can cause thyroid problems. A flame retardant can cause problems in the nervous system for infants and toddlers.

VOCs found in carpet can cause health problems. VOCs can cause lung problems. VOCs can cause asthma. Some VOCs are linked to cancer.

Tips to Stop Contact

There are ways to stop contact with dangerous chemicals in furniture and carpet. Make sure to wash hands. Keep air flowing through the room when cleaning. Use solid wood furniture. Do not use furniture made with foam. Use furniture stuffed with polyester. Use furniture stuffed with down (feathers). Use furniture stuffed with wool. Use furniture stuffed with cotton. Vacuum with a HEPA filter vacuum. Vacuum while children are not in the room. Put a door mat in front of the door. Use area rugs made with cotton. Use area rugs made with hemp. Use area rugs made with wool. Clean area rugs at least two times per year with fragrance-free cleaners.

There are ways to stop contact with VOCs. Replace wall to wall carpet with wood or tile. Use a HEPA filter vacuum to clean carpet.

Materials Needed:

- Pens or Pencils
- (1) Crossword puzzle worksheet

Activity:

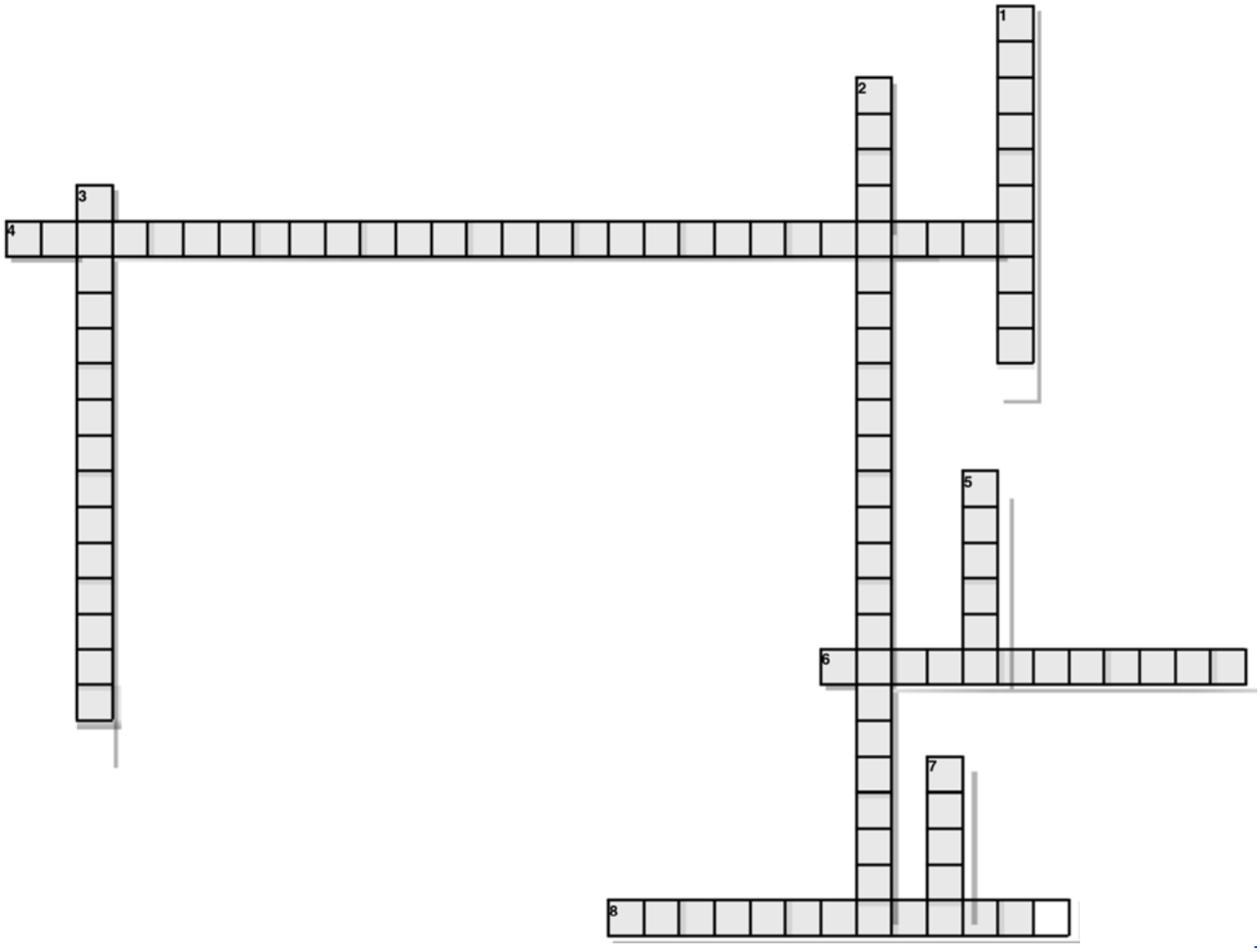
Healthy Homes: Furniture & Carpet Crossword Puzzle: Complete the crossword worksheet by filling in a word that fits each clue.

References

Furniture and Carpet. (n.d.). Retrieved April 2, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

Technical Overview of Volatile Organic Compounds. (2017, April 12). Retrieved April 4, 2019, from https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds

Healthy Homes: Furniture & Carpet Crossword Puzzle



ACROSS

4 A type of flame retardant that is found in furniture foam, carpet padding, back coating for curtains, plastics, computers, televisions, and building materials

6 A deadly chemical that is found in furniture

8 Toddlers and infants, who come in contact with polybrominated diphenyl ethers can suffer damage to this part of the body

DOWN

1 When furniture that is made with formaldehyde puts a deadly chemical in the air

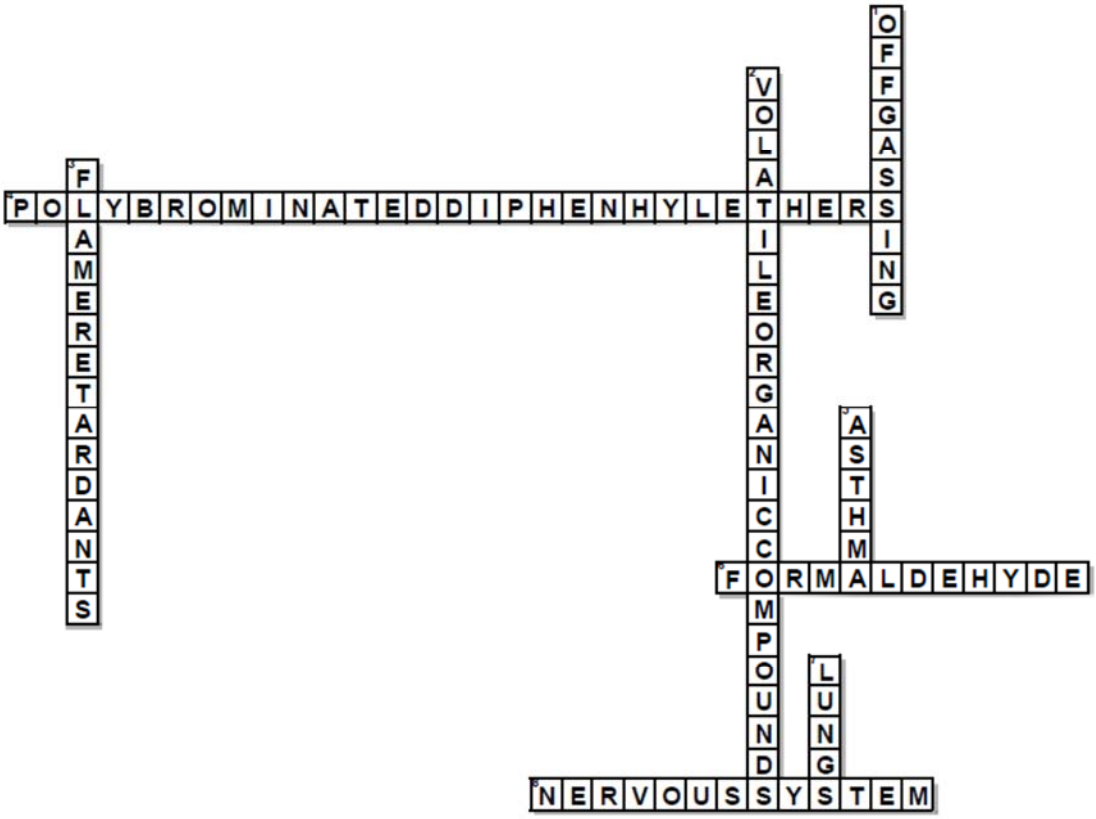
2 A deadly chemical found in carpet

3 A deadly chemical that is found in furniture

5 Volatile organic compounds can cause this disease

7 Flame retardants effects can harm this part of the body

WORD BANK: ASTHMA, FLAMERETARDANTS, FORMALDEHYDE, LUNGS, NERVOUSSYSTEM, OFFGASSING, POLYBROMINATEDDIPHENHYLETHERS, VOLATILEORGANICCOMPOUNDS


POLYBROMINATEDDIPHENHYLETHERS
FLAMERETARDANTS
VOLATILEORGANICCOMPOUNDS
OFFGASSING
ASTHM
FORMALDEHYDE
LUNG
NERVOUSSYSTEM

Section V. - Safety and Child Play

30 minutes

Learning Objectives:

- To identify harmful chemicals in plastics and plastic toys
- To identify health problems caused by harmful chemicals in plastics and plastic toys
- To identify tips for safer use of plastics
- To define noise pollution
- To identify the connection between noise pollution and the childcare environment
- To identify health problems caused by noise pollution
- To identify tips for stopping noise pollution

Learning Outcomes:

- Recognize harmful chemicals in plastics and plastic toys
- Identify health problems caused by harmful chemicals in plastics and plastic toys
- Perform tips for safer use of plastics
- Recognize noise pollution
- Understand the connection between noise pollution and the childcare environment
- Identify health problems caused by noise pollution
- Perform tips for stopping noise pollution

Plastics and Plastic Toys

Chemicals found in some plastics can harm a child's and an adult's health.

Plastics are common in childcare facilities. Plastics are used in bottles. Plastics are used in sippy cups. Plastics are used in teething rings. But plastics can harm children and adults. Children are more likely to be harmed by plastics because they use things made with plastic more. Plastics may contain phthalates, Bisphenol A, and polyvinyl chloride. Plastics may also contain polystyrene, and polycarbonates. All of these chemicals affect children's health.

Sources and Health Effects

Phthalates

Phthalates are used to soften plastics. Phthalates are used to bind fragrances in products. There are many health problems from phthalates. The health problems can harm different parts of the body. Phthalates can cause hormone problems. Phthalates can cause the following health effects:

- Growth problems

- Reproductive problems
- Trigger asthma
- Early births
- Problems with the testes in males
- Problems in the genitals
- Early puberty
- May cause cancer

Bisphenol A (BPA)

Bisphenol A (BPA) can be found in products such as water bottles. It is also a component in metal can coatings (canned goods). The Food and Drug Administration banned BPA from baby bottles and sippy cups nationwide in 2012. BPA can cause health problems. BPA can cause the following health effects:

- Behavioral problems (hyperactivity and extreme anger)
- Hormone abnormalities
- Trigger asthma
- Early puberty
- Cancer (prostate and breast cancer)
- Miscarriages
- Birth defects
- Problems with sperm

Polyvinyl chloride (PVC)

Polyvinyl chloride (PVC) is found in products like flexible plastic toys, bibs, rest/nap mats, and food packaging. PVC can cause health problems. PVC can cause the following health effects:

- Cancer
- Birth defects
- Reproductive problems
- Problems with sperm
- Problems with the testes
- Early puberty
- Liver problems

Polystyrene (PS)

Polystyrene (PS) is found in products like plastic toys, food trays, and food packaging. PS can cause health problems. PS can cause the following health effects:

- Harm to the brain
- Impaired learning
- Cancer

Polycarbonates

The most common types of polycarbonate contain BPA. But there are BPA-free polycarbonates. Polycarbonates are found in products like reusable bottles and food storage. Polycarbonates can cause health problems. Polycarbonates which may contain BPA can cause the following health effects:

- Behavioral problems (hyperactivity and extreme anger)
- Hormone abnormalities
- Trigger asthma
- Early puberty
- Cancer (prostate and breast cancer)
- Miscarriages
- Birth defects
- Problems with sperm

The Tips for Safer Use of Plastics

Here are tips to stop contact with the harmful chemicals found in plastics:

- Do not use plastics with Polyvinyl chloride.
- Do not use plastics with Polystyrene or PS.
- Do not use plastics with Polycarbonates.
- Buy glass bottles with a silicon sleeve.
- Never heat food or drinks in a plastic container.
- Never heat plastic baby bottles.
- Do not use plastic wrap with polyvinyl chloride.
- Eat fresh or frozen vegetables to decrease contact with BPA.
- Do not use teething toys that are made with phthalate or polyvinyl chloride.
- Throw away all old or scratched plastic food containers.

Noise Pollution

What is Noise Pollution?

Noise pollution is an unpleasant noise made by people or machines. Noise pollution is common. Noise pollution can happen in childcare facilities. Noise pollution can harm a child's ability to learn. Noise pollution can come from the outside and the inside.

Outside sources of noise pollution include the following:

- Road traffic
- Planes
- Garbage trucks
- Construction
- Lawn mowers
- Leaf blowers

Inside sources of noise pollution include the following:

- Loud music or television
- Heating and Air conditioning units
- Metal chairs rubbing on floors

Health Effects

There are health problems from noise pollution. Noise pollution can cause reading problems. Noise pollution can cause problems with attention. Noise pollution can cause problems with speech. Noise pollution can cause problems with language. Noise pollution cause problems with blood pressure. Noise pollution can cause stress. Noise pollution can cause the ringing in the ear.

Tips for Stopping Noise Pollution

There are tips for stopping noise pollution.

- Close windows and doors. Open windows when noise stops to allow flowing air inside.
- Use ceiling and wall materials that reduces noise.
- Do not play music during nap time.
- Do not play music as background noise.
- Talk to the local government about stopping noise pollution near the childcare facility.
- Do not play loud noise near quiet activities.
- Do not allow children to spend too much time in noisy activities.
- Give the children headphones for listening facilities.
- Childcare staff should check the volume of the headphones.
- Ask parents to have their child's hearing tested.

Materials Needed:

- Participants

Activity:

ACT IT OUT: Divide into groups and each group will act out a teacher telling a parent about the dangers of plastic and noise pollution. The teacher should tell the parent about the harmful chemicals in plastics. The teacher should tell the parent how to stop contact with harmful plastic. The teacher should tell the parent how to use plastic safely. The teacher should tell the parent tips to stop children from being harmed by plastics. The teacher should tell the parent how the childcare facility stops children from being harmed by noise pollution.

References

Plastics and Plastic Toys. (n.d.). Retrieved April 5, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

Noise Pollution. (n.d.). Retrieved April 11, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

Section VI. - Integrated Pest Management

30 minutes

Learning Objectives:

- To define pesticides
- To identify the health problems from contact with pesticides
- To discuss the role of pesticides in a childcare facility
- To define integrated pest management
- To identify tips for pesticide use in a childcare facility

Learning Outcomes:

- Recognize pesticides
- Identification of the health problems from contact with pesticides
- Determine the role of pesticides in a childcare facility
- Understand integrated pest management
- Perform tips for using pesticides in a childcare facility

What is a Pesticide?

Pest (rodents, bugs, weeds, mushrooms, or mold) can be a problem for any childcare facility. Weeds and mushrooms can be an outside problem. Rodents, insects, and molds can be an inside problem. Most childcare facilities deal with pest by using pesticides. Pesticides are substances designed to kill, control or prevent pests. Incorrect use of pesticides can cause illness or even death.

Health Effects

Children may be exposed to pesticides. Most often pesticides are sprayed. Sprayed pesticides can affect indoor air quality. Sprayed pesticides can settle on all surfaces. Children may touch these surfaces. This exposes the children. Pesticides can be inhaled, ingested, or get on the skin. These exposures to pesticides can harm children.

Health problems from pesticides can be both short and long term. Examples of short-term health problems are:

- Problems with breathing
- Chest tightness
- Vomiting
- Cramping
- Diarrhea
- Vision problems
- Excessive sweating
- Headaches
- Dizziness
- Problems focusing

Pesticides can also cause long term health problems. Examples of long-term health problems are:

- Asthma
- Cancer
- Reproductive issues
- Kidney damage
- Liver damage
- Birth defects
- Nerve damage
- Problems with the brain

Integrated Pest Management

There is a safe way to deal with pests. It is called Integrative Pest Management or IPM. IPM does not prohibit pesticide use. IPM uses safer pesticides first. IPM protects humans and the environment. Examples of IPM include:

- Clean up food and drink spills right away.
- Fix all leaks quickly and remove standing water.
- Keep trash in a closed container and take it out often.

Tips for Using Pesticides in Childcare Facilities

There are tips for safely using pesticides in childcare facilities.

- Use pesticides when children are not going to be in the area for 12 hours.
- Check the product for the length of time that children should not be in the area.
- Tell parents when pesticides will be used.
- Tell the parents what type of pesticide will be used.
- Hire a certified expert to spray pesticides.
- Do not spray pesticides where children play.
- Do not spray pesticides where children sleep.
- Read and follow the directions on the pesticides.
- Use less harmful products like boric acid.
- Use bait traps instead of spraying.
- Do not use bug bombs.
- Do not leave pesticides near children.
- Keep pesticides in their container.

Do not use pesticides if children will be present in less than 12 hours.

Materials Needed:

- Pens or Pencils
- (1) Pesticide Poisoning Prevention Checklist Worksheet

Activity:

Design a Pesticide Poisoning Prevention Checklist. Each person will make a pesticide poisoning prevention checklist that can be used every day at their childcare facility. Complete this by using the Pesticide Poisoning Prevention Checklist Worksheet provided.

References

Pesticide. (n.d.). Retrieved April 12, 2019, from https://cehn.org/our-work/eco-healthy-child-care/ehcc-factsheets/

Pesticide Poisoning Prevention Checklist for_____

(Childcare Facility's Name)

Policy: Childcare facility staff should follow these steps each day.

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

Healthy Homes Pre/Post Test

SECTION I: HEALTHY HOMES

1. What is Healthy Homes?

ANSWER: A

a. Homes that are safe, clean, and free of hazards, where a person is able to stay healthy while breathing, sleeping, eating, and living in a home
b. Homes that meet housing codes
c. Homes that are only free of hazards
d. None of the above

2. What is Healthy Homes for daycare centers?

ANSWER: B

a. An initiative that is making sure that daycare centers are only free of hazards
b. An initiative that is making sure that daycare centers are clean, free of hazards and are a place where children can stay healthy
c. An initiative that is making sure that daycare centers meet housing codes
d. None of the above

3. Which is one of the seven ways for a healthy home in daycare centers?

ANSWER: B

a. meeting building codes
b. keeping the daycare center clean
c. has sources of contaminants
d. None of the above

SECTION II: HAZARDOUS CHEMICALS

1. Which is **NOT** a deadly chemical?

ANSWER: D
a. mercury
b. arsenic
c. asbestos
d. None of the above

2. What is the name of the seal that should be found on arts and crafts to make sure that the materials are not deadly?

ANSWER: B
a. no seal is needed
b. “AP” seal
c. EPA seal
d. Eco-healthy seal

3. What are two ways to come into contact with arsenic in a daycare center?

ANSWER: A
a. water and putting your hands in your mouth after touching pressure treated wood
b. water and dishes
c. pottery and dishes
d. None of the above

SECTION III: SAFETY & CHILD PLAY

1. What product is the best to make sippy cups and bottles?

ANSWER: C
a. plastic
b. aluminum
c. glass
d. All of the above

2. Which is **NOT** a tip for safer use of plastic?

ANSWER: A
a. heat baby bottles
b. never heat or microwave food or drinks in any plastic container
c. eating fresh or frozen produce to reduce exposure to BPA
d. using poly-vinyl chloride free plastic wrap

3. What is noise pollution?

ANSWER: B
a. is any soft outside noise in a daycare center
b. is any loud noise that can be painful and harm the body
c. is only noise that happens during naptime
d. None of the above

SECTION IV: INTEGRATED PEST MANAGEMENT

1. What is a pesticide?

ANSWER: A
a. are any materials that are used to stop bugs, weeds, rodents, or mold.
b. are materials used to clean up a daycare center
c. are materials used to kill germs
d. None of the above

2. What is Integrated Pest Management or IPM?

ANSWER: A
a. is a safe way to deal with rodents, bugs, mushrooms or mold
b. is a dangerous way to deal with rodents, bugs, mushrooms, or mold
c. is a way to keep certain number of rodents, bugs, mushrooms, or mold in a daycare center
d. None of the above

3. What is the goal of Integrated Pest Management or IPM?

ANSWER: A
a. to use safer pesticides first
b. to use deadly pesticides first
c. to not use any pesticides
d. None of the above

Curriculum Evaluation

We would like to get your thoughts concerning this curriculum. Please tell us by completing the following survey.

Mark an X by your response in the table.

Performance Rating	**Strongly Agree**	**Agree**	**Not sure**	**Disagree**	**Strongly Disagree**
The material was presented in a clear and organized manner.					
The material was informative and easy to understand.					
The handouts were helpful and easy to understand.					
The learning activities were interactive and useful.					
I would recommend this curriculum to other educators.					

What did you like the best about this curriculum?

_____

_____

_____

_____

What did you like the least about this curriculum?

_____

_____

_____

_____

What suggestions do you have for improving the curriculum?

_____

_____

_____

_____

Please provide any other comments that you would like to make.

_____

_____

_____

_____

Thank you for your input!

Glossary

A

Air pollution is the presence of harmful chemicals in the air at levels that pose a health risk.

Ammonium carbonate is an unstable substance that is produced by treating this compound with ammonia. It is used in making baking powder.

Anti-idling laws is policies not allowing motor vehicles powered by gasoline or diesel to have the engine on while parked or stopped.

Approved Product (AP) Seal identifies art materials that are safe for children to use.

Arsenic a solid poisonous metal that is normally metallic steel-gray and brittle.

Asbestos is a natural material made up of tiny fibers that is used as thermal insulation; it is very dangerous to human health when inhaled.

B

Bisphenol A (BPA) is an industrial chemical used to make certain plastics and resins.

C

Calcium is an essential mineral needed for healthy bones and teeth.

Carbon monoxide is a colorless, highly poisonous gas. It is most dangerous in enclosed spaces such as garages or indoor rooms.

Carbonate is a salt of carbonic acid; it is an example of a volatile organic compound.

Carbonic acid is an acid formed in solution when carbon dioxide dissolves in water; it is an example of a volatile organic compound.

Chemical is a substance that has been prepared or made pure.

Chromated copper arsenate is a wood preservative containing compounds of chromium, copper, and arsenic.

E

Elevated Blood Lead Level (EBLL) is when a single blood lead test is at or above 5 µg/dL.

Endocrine system is an organ system. It controls the conditions in the body by making and sending hormones throughout the body. It allows the body to function properly.

F

Flame retardants are chemicals that are added or applied to materials to slow or prevent the start and growth of a fire.

Formaldehyde is a colorless, strong-smelling gas; it is used in making building materials and many household products.

H

Healthy homes is a concept that promotes safe, decent, and sanitary housing as a means for preventing disease and injury.

HEPA, (High Efficiency Particulate Air) is used to describe filters that are able to trap 99% of particles that are 0.3 microns (0.000012-inch) particles in the air.

I

Integrated Pest Management (IPM) is an environmentally sensitive approach to preventing or controlling pest.

Iron is an essential mineral needed for oxygenating the body.

L

Lead is a metal that is poisonous to humans; it is especially harmful to infants and children.

Lead paint is paint that contains at least 0.5% of lead.

Lead poisoning is when a person is harmed by exposure to lead through eating, drinking, touching, or breathing.

Lead test is used to determine the amount of lead in the blood at the time the sample was collected.

M

Mercury is a heavy, silver-colored metal that is liquid at ordinary temperatures.

Methylmercury is an organic form of mercury that is very toxic.

Mildew is a soft, usually white, green, or black area caused by a fungus that sometimes grows on things such as food or buildings especially if the conditions are warm and wet.

Mold is a fungus that can be found both indoors and outdoors. Molds grow best in warm, damp, and humid conditions.

N

Noise pollution is unwanted harmful or annoying noise (sound).

O

Off-gas when a substance gives off a chemical, especially a harmful one, in the form of a gas.

P

Pesticide is a chemical solution for destroying plant, fungal, or animal pests.

Phthalates are a group of chemicals used to make plastics more flexible and harder to break.

Pica is eating items that are not food such as dirt and paint chips.

Polybrominated diphenyl ethers (PBDEs) belong to a class of chemicals that are added to certain products to reduce the chances that the products will catch on fire.

Polycarbonate is a strong versatile plastic. It is used for molded products, films, and non-breakable windows.

Polystyrene is a clear plastic or stiff foam. It is used mostly as an insulator in refrigerators and air conditioners.

Polyvinyl chloride (PVC) is a synthetic resin made from the polymerization of vinyl chloride. It is used for a wide variety of products including pipes and flooring.

R

Radon is a radioactive gas that causes cancer.

Routes of exposure is how a substance enters the body. The ways are breathing, skin (or eye) absorption, eating/drinking, and injection.

T

Take-home contamination is carrying home a chemical in your car or on their clothes, shoes, skin and hair that was encountered outside of the home.

V

Vehicle idling is running a vehicle's engine while it is not moving.

Vermiculite is a natural flaky mineral that expands like popcorn when heated. It is used as insulation for attics and walls.

Vitamin C is an essential nutrient needed in small amounts to function and stay healthy.

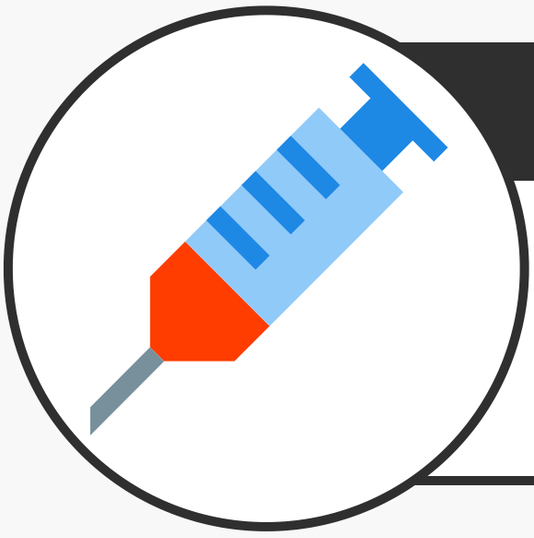
Volatile organic compounds (VOCs) are compounds that easily become vapors or gases.

Handouts

Lead Poisoning

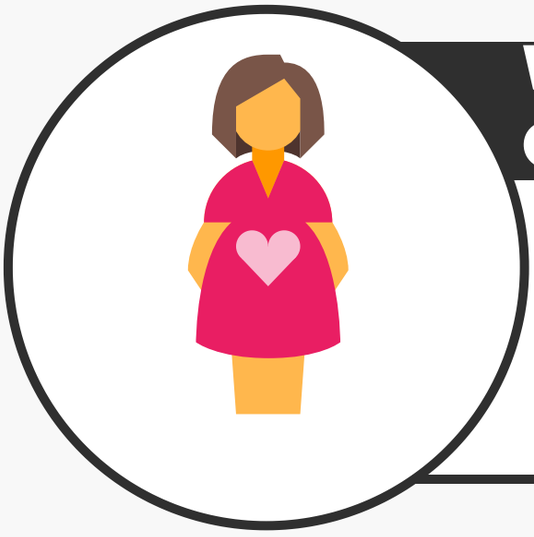
QUICK FACTS

Quick facts to explain and to help stop lead poisoning!



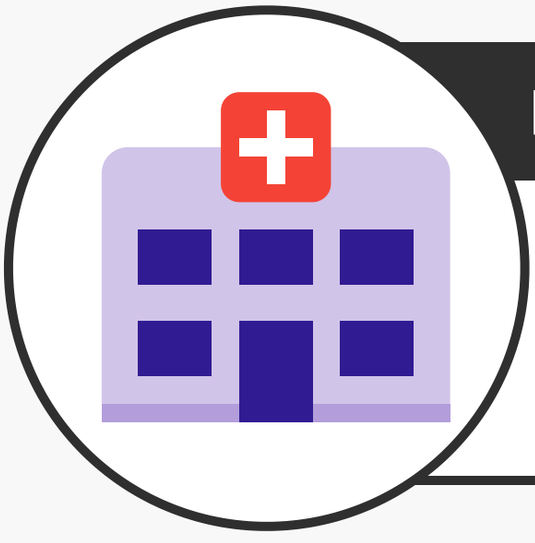
What is Lead Poisoning?

-Environmental health disease
-Caused by contact with lead or lead dust
-Goes into the blood



Ways to have Contact with Lead

- Eating
- Breathing
- In the womb



Health Effects

-Irreversible damage to the kidneys, brain, or reproductive system
-Problems with growth
-Problems with hearing
-Coma
-Vomiting
- Death

Source: www.ppcoaching.net

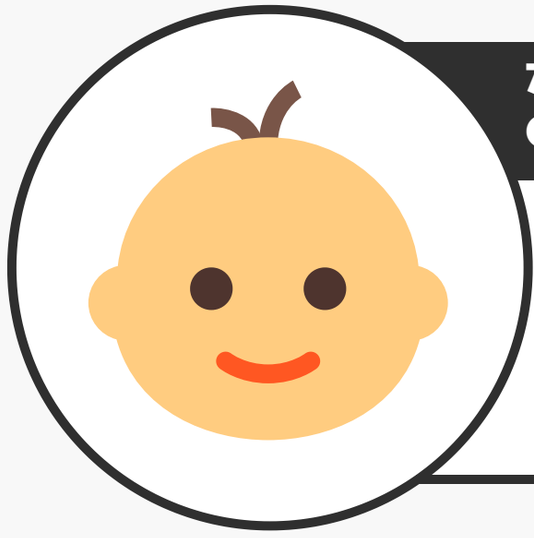
Healthy Homes for Daycare Centers

QUICK FACTS

Quick facts to explain healthy homes for daycare centers!

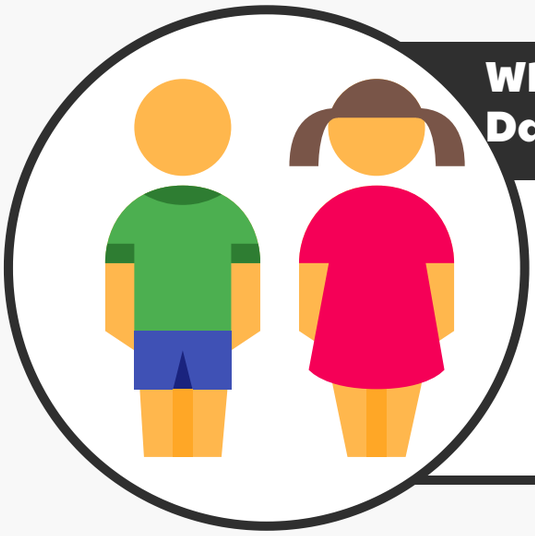
What is Healthy Homes for Daycare Centers?

-An Environmental health initiative
-Aims to make sure that daycare centers are clean, safe, and free of hazards
-Aims to make sure that children and staff can stay healthy



7 Ways for Healthy Homes for Childcare Facilities

- Keep the Center Dry
- Keep the Center Clean
- Keep Air Flowing in the Center
- Keep the Center Pest Free
- Keep the Center Free of Hazards
- Keep the Center Safe
- Keep the Center Repaired



Why is Healthy Homes needed in Daycare Centers?

-Makes sure that everyone within a daycare center is able to breathe, to eat, and to function in a healthy place
-Makes sure that children are able to learn in a safe place

Source: www.ppcoaching.net

What is Sanitizing?

It is the cleaning of food contact surfaces, toys that children may place in their mouth, and pacifiers

What is Disinfecting?

It is the cleaning of non-porous surfaces such as diaper changing tables, counter tops, doors, cabinet handles, toilets, and sinks

What can be used for Sanitizing and Disinfecting?

Green Seal Products, ECOLOGO Products, and the Appropriate mixture of bleach and water solutions

Everything You Need To Know

About Disinfecting and Sanitizing

How to use Bleach and Water for Sanitizing?

Use 1 tablespoon of bleach to 1 gallon of water. Allow it to stand for 2 minutes , then wipe or let it air dry

How to use Bleach and Water for Disinfecting?

Use 1/4 (minimum) to 3/4 (maximum) cup of bleach to 1 gallon of cool water or 1 table- spoon (minimum) to 3 table- spoons (maximum) of bleach to 1 quart of water. Allow it to stand for 2 minutes, then wipe or let it air dry

How to use Green Seal Products and ECOLOGO Products?

Simply pour the products on surfaces and scrub

Source

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