Recipes for Healthy Kids and a Healthy Environment

Kids Building a Safer and Healthier Community

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EPA Office of Children's Health Protection

Recipes for Healthy Kids and a Healthy Environment

Kids Building a Safer and Healthier Community

Topics and Structure

Lesson 1: **Environmental Health 101**

Lesson 2: **Pesky Pests and Household Hazards**

Lesson 3: **Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean**

Lesson 4: **Be Sun Smart**

Lesson 5: **Climate Change and You**

Lesson 6: **Keeping All of Our Waterways Clean**

Lesson 7: **Healthy Water Inside**

Lesson 8: **Sustainable Eating, Healthy Foods, and Community Gardens**

Lesson 9: **All Together Now—Air, Water, Food, and Shelter**

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Air

Water

Food

Shelter

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Lesson 1: Environmental Health 101

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Lesson 1: Environmental Health 101

Snapshot

This lesson introduces the broad concept of environmental health and why children may be particularly at risk from environmental health hazards by focusing on the differences between adults and children. These differences will be highlighted by examining the four things that all living beings need in order to survive (air, water, food, and shelter).

Preparation and Materials:

- Posters 1–3, Visual Cards 1–6, Take-Home Talk
- Flip chart and markers
- Black or white board
- Large sheets of paper for each child to make a poster
- Markers or crayons

Objectives—Students will be able to:

- define *environment* and *environmental health*;
- list the four things that all living beings need;
- understand why children are often more at risk from environmental health hazards; and
- understand that their actions can help to create a healthier environment for themselves and for everyone around them.

Vocabulary: environment, living beings, health, and impact

Procedure:

1. Introduction—The Earth and Our Club: A Comparison *(5 minutes)*
2. Define Vocabulary—Environment, Living Beings, Health, and Impact *(5 minutes)*
3. Stayin' Alive—Air, Water, Food, and Shelter *(10 minutes)*
4. The Big Four Search Activity *(10–15 minutes)*
   Optional Activity: The Big Four Poster Creation *(10–15 minutes)*
5. Close and Take-Home Talk *(10 minutes)*

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Lesson 1: Environmental Health 101

1. Introduction:
The Earth and Our Club: A Comparison *(5 minutes)*

Do Ask

*[Show **Poster #1** (Earth).]* Pass it around and ask what the class knows about the Earth.

Prompts: What is the Earth made of? Who uses it? How is it used? How do you take care of it? What happens if it's not taken care of?

Do Ask

*[Show **Poster #2** (Building).]* Pass it around and ask the class to think about the building that they are in now. What do they know about the building?

Prompts: What is it made it? Who uses it? How is it used? How do you take care of it? What happens if it's not taken care of?

Ask

The Earth and the building that the class is sitting in are alike. What do they have in common?

Prompts: People use them both. People use the resources of the Earth and the resources of the building we are in today. Both the Earth and this building can get dirty and need to be cleaned. They both need to be cared for (cleaned/not polluted) in very specific ways. There are lots of people in some areas and not a lot in others—some locations and activities are in higher demand than others.

Lesson 1:
Environmental Health 101

Poster #1

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Lesson 1:
Environmental Health 101

Poster #2

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2. Define Vocabulary: Environment, Living Beings, Health, and Impact *(5 minutes)*

Explain

Today we're going to talk about how our Earth, our city, our community spaces, our schools, and our homes are all connected and impact each other.

Ask

When you hear the word ***environment***, what comes to mind? What does the word environment make you think of?

Prompts: Do you think about basketballs or animals? Ice cream or water? Mountains or TVs?

Explain

When we hear the word ***environment***, we often think about nature, right? Things that are outdoors—plants, animals, wind, rain, water, sun, and different types of land—forests and desserts, mountains and jungles, rainforests and fields. Well, the environment is all of these things and a lot more—***environment*** means ***everything*** that affects the life, development, and survival of living things.

Ask

We hear the word pollution connected to the environment sometimes. What is pollution?

Explain

Pollution is when our air, water, or food has things in it that are not good for us. Pollution might be poisonous chemicals or other things that make us sick (such as when we drink from a river or stream). The water may look clean, but there could be dangerous chemicals in the water. When it rains and trash and debris pool together in the road it ends up going down the storm drain and flowing into the streams and lakes that we use for our drinking water. And this trash and debris can contaminate it. We call this ***rainwater runoff***. There's also runoff from farms contain pesticides, and runoff from homes and residential areas such as malls that use chemicals to treat lawns and gardens, or parasites and microbes from animals. When we breathe, drink, or eat something that is polluted or contaminated with something that is not healthy for us, scientists describe that as being exposed to an environmental hazard.

Ask

Now, can you name some living things? *[Encourage a lot of answers.]* All of these things that you named are living things and all of them are impacted by the environment around them.

3. Stayin' Alive:
Air, Water, Food, and Shelter *(10 minutes)*

Explain Do

If the environment is ***everything*** that affects a living thing and helps that living being survive, we need to figure out what we need in order to survive. *[Pass out **Visual Cards #1–6** to six students and ask them to represent that living thing—for each of the four necessary things, ask the student if it applies to the living thing on his or her card (e.g., What do frogs eat to stay alive? Do bees have shelters? Do whales need air?).]*

Do Ask

[Take a deep exaggerated breath.] What am I doing? Breathing! We need air to stay alive.

Ask

Who breathes more air, a child or an adult?

Explain

Children breathe more air then adults because they breathe more rapidly.

Ask

What did you do at lunch time? Eat and drink! We need food and water to stay alive.

Ask

Who eats and drinks more, adults or children?

Explain Do

Adults might eat more food, ***but*** children eat and drink more in relation to their body weight than adults. If a baby drinks a bottle of water and an adult drinks the same amount of water, the water takes up a much greater percentage of the baby's total weight than the adult's. *[Show **Poster #3** (Graphic of Baby and Adult).]*

Ask

That's a big difference isn't it? How else are the bodies of adults and children or babies different?

Prompts: Think about the changes that a kid goes through between ages 2 and 7.

(continued on other side)

Explain

A lot happens to a kid in the 5 years between ages 2 and 7! The toddler grows taller, learns tons of new words, goes from walking just a little to running and playing games. And those are just the things that we can see. Inside, his or her organs and bones are growing and changing; the toddler's brain changes as he or she continues to learn.

Ask

Now think about an adult who matures from ages 30 to 35. Does an adult grow during this 5-year period as much as a child grows from ages 2 to 7?

Explain

Children develop and their bodies change in ways that adults don't. In fact, your brain and body is developing at a fast rate up until you're in your twenties. Some changes you can see and others you cannot. And remember, the environment includes everything around a child as he or she grows. If there are harmful chemicals or pollution in the environment, they will impact a child's development.

Ask

When was the last time you saw an adult playing in a sandbox? Or in the mud? Who plays on the ground more—adults or kids?

Explain

Children, your age and younger and older, play outside and they live closer to the ground. They also pick stuff up from the ground all the time, which can increase their chances of getting sick from the environment. Now this doesn't mean that kids shouldn't play outside! It just means that we need to be aware of harmful things around us so that we know how to avoid them. And it means that we all need to understand the causes of pollution and how we can help to prevent them.

Ask

Could you survive and thrive if you lived outside all the time? In winter? In thunderstorms during the summer? We need shelter from these things in order to live. And we need to think about the shelters that we create because in our homes, schools, or other places that provide shelter, there can be environmental hazards that can harm us.

Explain

Living things, like you and me and cats and insects and fish and the President, need four key things to stay alive: air, water, food, and shelter.

Ask

Are there other things that help us stay alive? *[Respond to the students' answers. They will likely give some answers that fall into the categories of air, water, food, and shelter.]* Are they things that we need or things that we want?

Ask

So, we need air, water, food, and shelter to stay alive, right? But what happens if we have water, but it's dirty? Or if we have air, but it's polluted? Or if we have food, but it's not nutritious? Or if we have shelter, but it makes us unhealthy? Do we still live?

Explain

Humans can adapt a lot and we can survive in the short term in environments that aren't healthy for us in the long term. We will spend the next couple of months learning how we can make our environment healthier. And we'll be focusing on the four big things you determined that we need to live today: air, water, food, and shelter. Let's start with the one we're standing in now—shelter!

Lesson 1: Environmental Health 101

Visual Card #1 Frog

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Lesson 1: Environmental Health 101

Visual Card #2 People

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Lesson 1: Environmental Health 101

Visual Card #3 Bumble Bees

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Lesson 1: Environmental Health 101

Visual Card #4

Panda Bears

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Lesson 1: Environmental Health 101

Visual Card #5 Bald Eagle

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Lesson 1: Environmental Health 101

Visual Card #6 Orca Whale

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Lesson 1:
Environmental Health 101

Poster #3

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4. The Big Four Search Activity

(10–15 minutes)

Do

[Take the students on a search to answer the following questions: Where do we see the four things that we need to live right here in our building? Where do we see examples in our area?]

[Keep a running list of all of the items that the class identifies. Start in the space that you're in and tell the students to start big: bricks, linoleum tiles, glass windows, metal supports, etc. Then go smaller: paint (How many layers? How do you know?), plastic molding, glass bulbs, wires, cables, etc. Smaller still: Open some cabinets; go into other rooms. Remind the students to think about the toddler—what would he or she put in his or her mouth? Encourage the students to get on their hands and knees so that they can see the world as a toddler might. Where does the water come from? Does this building store any food? Where? And how? How does air come into the building and go out?]

Explain

All of these things that you identified are part of our environment—we are in contact with them every day. This shelter helps us survive and thrive, but we usually don't stop to think about it and the things inside of it that we use every day. Just like the air we breathe, the water we drink, and the food we eat, we need to stop and ask if the places where we live and play and learn are healthy for us and, if not, we need to ask how we can change that.

Optional Activity: The Big Four Poster Creation *(10–15 minutes)*

Explain

Now that we know the four things that all living beings need, let's spread the word! Each of you (or in pairs) will make a poster that explains the four things we need to stay alive. Think about including drawings of different examples of these four things.

Do

[Pass out large sheets of paper and markers or crayons.]

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5. Close and Take-Home Talk

(10 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today and I want to review it, but first let's talk about food!

Ask

If we want to make brownies, what things do we need?

Prompts: What ingredients do we need? Do we need to heat them? What would happen if we didn't include chocolate? Or if we didn't heat the ingredients?

Explain

All of the different ingredients come together to create delicious brownies. We can think about our environment in the same way—we need certain ingredients in order to live in a healthy way. Open your eyes. Can someone raise your their and tell me one of the four ingredients that we need to live?

Ask

Making sure that our environment is healthy—and has all of the ingredients that we need—is important to everyone, but it's especially important that the environment is healthy for babies and kids. Why?

Explain Do

Think about how big a baby is and how big an adult is. If a baby drinks a bottle of water and an adult drinks the same amount of water, the water takes up a much greater percentage of the baby's total weight than in the adult. *[Show **Poster #3** (Graphic of Baby and Adult).]* This is true for all of the things that we eat and the air that we breathe as well. And let's think about those babies; they are growing so fast and their bodies—all of their organs and muscles and their brains—are developing. If they don't get the healthy ingredients that they need, their growth and development can suffer.

(continued on other side)

5. Close and Take-Home Talk *(continued – page 2)*

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. What will you tell them? Will you talk about the four big things that we all need in order to live? What are they again? *[Wait for the students to name them.]* Conduct a search of your shelter, your home—what materials can you see by looking closely? Where did those materials come from? How did they get there?

*[Pass out **Take-Home Talk**.]* This Take-Home Talk Sheet has some things that you can share with your family, and some activities that you can do at home. See what you can accomplish and we'll talk about it the next time we meet. We'll be talking more about shelter next time!

Take-Home Talk

Lesson 1: Environmental Health 101

To Share:

- The environment is everything that affects a living thing and helps it survive.
- All living things need air, water, food, and shelter to survive.
- Kids and babies can be more heavily impacted by unhealthy environments because their bodies are growing and developing at a faster rate than that of adults.

To Do and Talk About:

- **Alive and Thrive Search!** Can you and your family think of 20 living beings in your neighborhood? Can you think of 100 living beings that you know?
- **So Many Shelters!** What kind of shelter has your family spent time in before? Apartment buildings? Houses? Trailers? Hotels? Motels? Tents? Cabins? Campers? Condos? What else? What are your favorite stories from these places?
- **Get the Straight Scoop!** We all need food to survive and luckily there are lots of different kinds of food and everyone likes something a little different. Interview people you know to find out what their favorite food is and the strangest thing that they have ever eaten.

  Person: _____ Favorite Food: _____ Strangest Food:_____

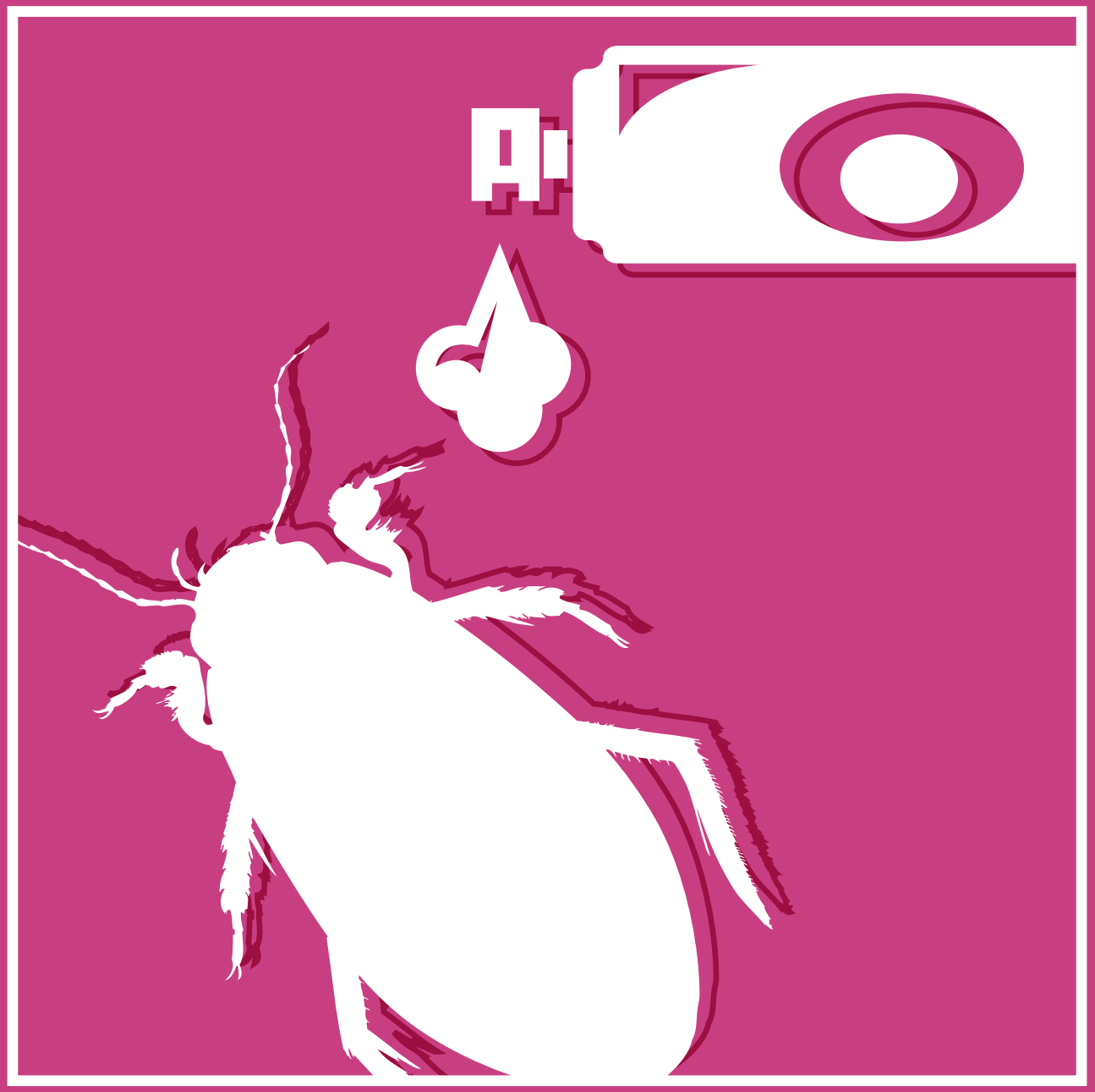
  Person: _____ Favorite Food: _____ Strangest Food:_____

  Person: _____ Favorite Food: _____ Strangest Food:_____

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 2: Pesky Pests and Household Hazards



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Lesson 2: Pesky Pests and Household Hazards

Snapshot

This lesson examines environmentally friendly ways to keep our homes and schools pest-free. We define pests, pesticides, household hazards, chemicals, and toxic, and explores strategies for keeping common household hazards out of reach.

Preparation and Materials:

- Posters 1–3, Visual Cards 1–5, Household Hazards Hunt Handout, Take-Home Talk
- Poison Control stickers *(call your local poison control center to receive these)*
- Flip chart and markers
- Black or white board
- Large sheets of paper for each child to make a poster
- Markers or crayons
- Select up to five students to read and speak in front of the class

Suggested Giveaways: Poison Control stickers or magnets

Objectives—Students will be able to:

- define *pests, pesticides, household hazards, hazardous,* and *toxic*;
- list the steps to take if you ingest or touch a household hazard; and
- name three household pests and explain how to safely get rid of them.

Vocabulary: pests, pesticides, household hazards, chemicals, toxic

Procedure:

1. Introduction *(8 minutes)*
2. Define Vocabulary—Pests, Pesticides, and Household Hazards *(5 minutes)*
3. Safely Getting Rid of Pests and Pest Detectives Activity *(15–25 minutes)*
   Optional Activity: Pest Free Poster Creation *(10–15 minutes) Note: If you do the Pest Free Poster Creation, you can end the lesson there and pick it back up in the next session.*
4. Keeping Household Hazards Out of Reach and Find the Household Hazards Activity *(5–15 minutes)*
   Optional Activity: Creating Household Hazards Warning Signs *(10 minutes)*
5. Close and Take-Home Talk *(5 minutes)*

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Lesson 2: Pesky Pests and Household Hazards

1. Introduction

(8 minutes)

Review

Review previous lesson: Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words that you learned from our last lesson? What can you do to positively impact the issue we learned about?

Do

*[Show **Poster #1** (photographs of mouse, housefly, raccoon, aphids, roach, rat, mold, and ant).]*

Ask

What are these things? What do they have in common? What else do they have in common? Which ones are most like each other?

Prompts: All are alive; all need air, water, food, and shelter; sometimes these living organisms are where we don't want them to be (e.g., in our homes!).

Ask

All of these are commonly called household pests. What is a pest?

Prompts: Are they alive? Do we like them? Why not? Why might they be a problem for us?

Explain

Pests are living things that can hurt us by making us sick, damage our homes or other property, or destroy plants or agricultural products. Pests are everywhere—in our schools, homes, and our cities, suburbs, and in the country. There are pests in the White House, in the Empire State Building, and in *[insert celebrity's name]'s* home.

Ask

Why do you think they want to get into our homes and schools?

Prompts: What do all living beings need to survive? If you've got water and food and shelter, pests may try to hang out with you.

(continued on other side)

1. Introduction *(continued – page 2)*

Explain

A pest is any living organism that annoys humans or causes damage to people, their health, or their property. In nature, there are no pests, just different types of relationships, such as predator and prey or parasite and host. A pest can be a plant, an animal, or a disease. Insects are just one kind of pest that people may encounter. The world has more insects than all other living things combined. It's estimated that there are 10 quintillion (10,000,000,000,000,000,000) insects alive at any one time! Now, not all of them are pests. In fact, less than 1 percent of all insects are considered to be pests.

Do

[Write 10 quintillion (10,000,000,000,000,000,000) on the board or flip chart and then ask the students for other numbers to compare it to so that the students can see how massive this number truly is. Try numbers such as 100, 1,000, 10,000, or 1,000,000.]

Do

*[Show **Poster #2** (Earth divided into insects, mammals, and other animals).]*

Ask

Have you heard the saying "Beauty is in the eye of the beholder?" What does it mean?

Prompts: Does everyone agree when something or someone is beautiful?

Explain

We all have different ideas about what is beautiful. Well, pests can also be beautiful in the eye of the beholder. What we think of as pests—roaches, mice, and raccoons—might not be pests to everyone or at all times or in all settings.

Ask

When is a pest a pest? If you're in a different environment, or you're a different animal, might these things be good to have around? When would one of these household pests not be considered a pest?

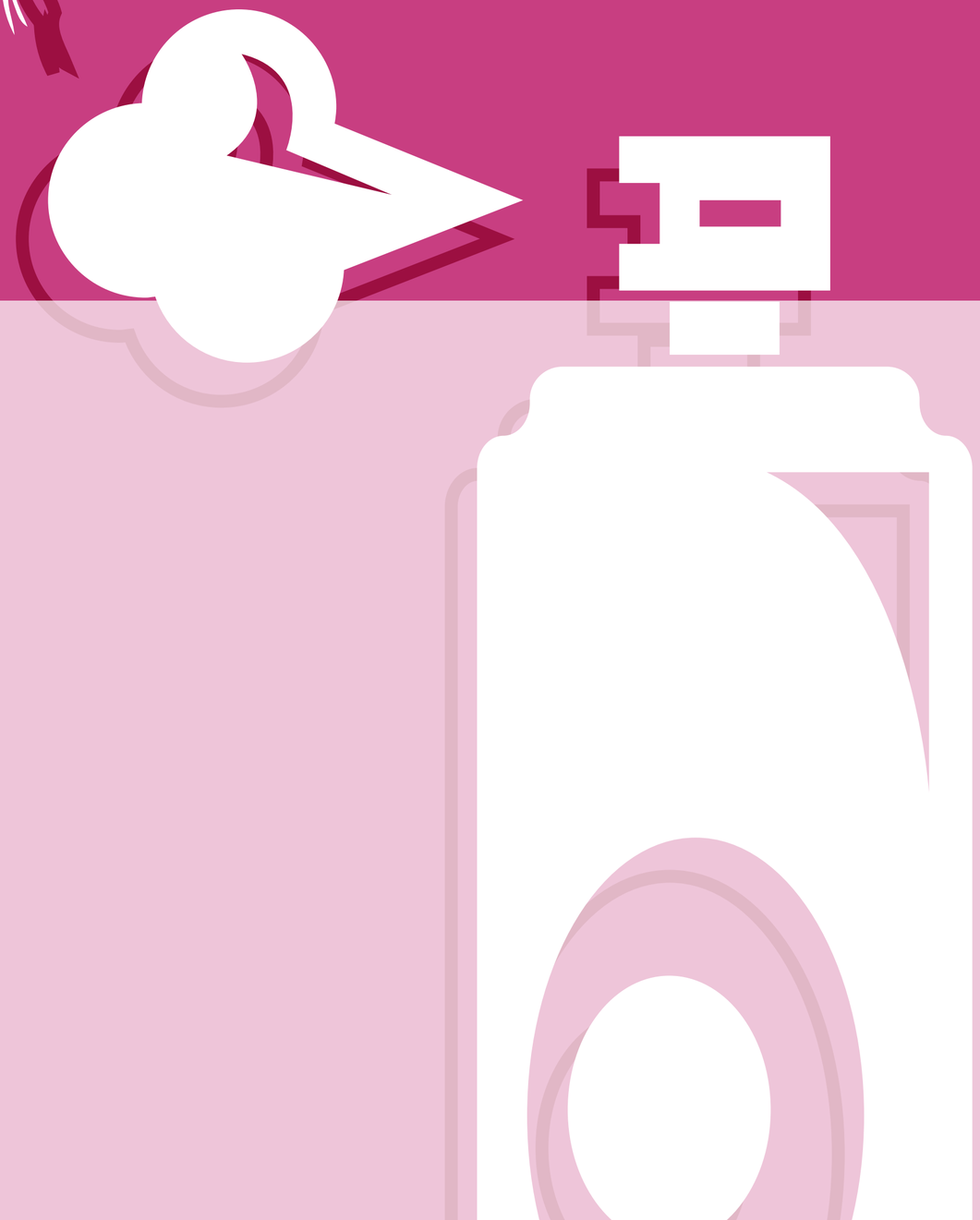
Prompt: What if you're an owl and you're hungry—would that mouse be a pest or lunch? What if you're in a forest with fallen trees—would that termite be a pest or just part of the life cycle?

Explain

So, while these may be pests to us, in another environment and in another situation, they are just part of the food chain or a life cycle, or may actually be beneficial. Now we're going to focus on how to keep our homes pest-free.

Lesson 2:
Pesky Pests and Household Hazards

Poster #1



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Lesson 2:
Pesky Pests and Household Hazards

Poster #2

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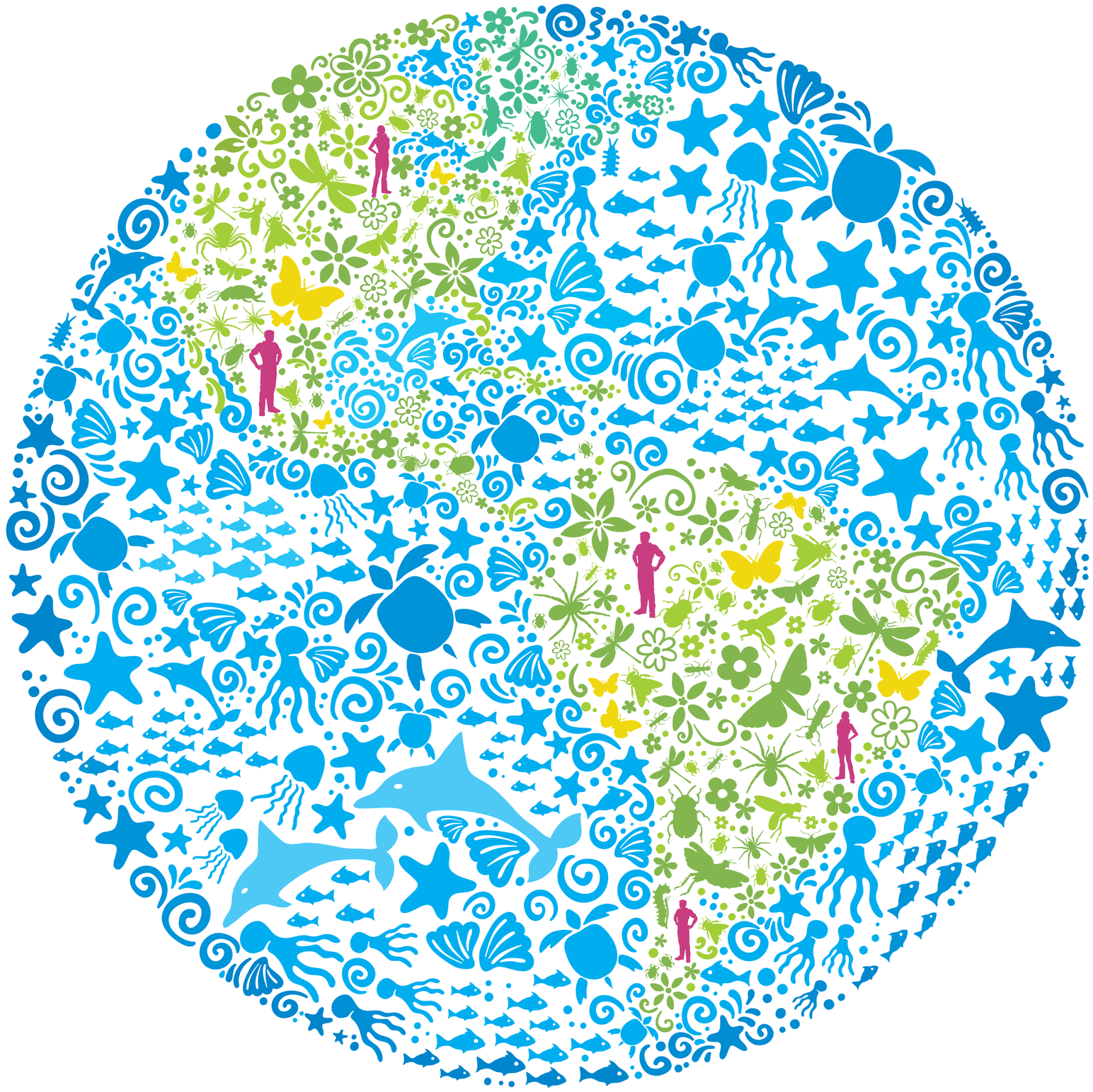
Number of humans compared to number of insects:



humans =
6,913,811,533

insects =
10,000,000,000,000,000,000

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2. Define Vocabulary: Pesticides, Household Hazards, Hazardous, and Toxic *(5 minutes)*

Ask

What are the best things that we can do to help keep our homes and schools pest-free?

Prompts: Keep these places clean, tidy, and in good repair.

Explain

Even when we keep our homes and schools clean and tidy, pests can still get in. For example, roaches and mice can come in through cracks and crevices, or even walk under the front door. Everyone has to deal with pests at some point in his or her life.

Ask

How can we prevent pests from coming in? What do we do when pests come in? How do we get rid of them?

Prompts: Insect spray, roach spray, mouse poison, exterminator, plug up holes where they are getting in, repair leaky pipes and faucets, keep things clean and clutter-free.

Explain

Some of the things that you mentioned that get rid of pests have chemicals in them. These products are called ***pesticides*** and they are used to kill or repel pests. More often, we can use a little bit of planning to prevent pests from getting in to begin with; then, we won't need to use pesticides at all!

Ask

Why might it be better to get rid of pests without the use of pesticides?

Prompts: Some chemicals may negatively impact human health; they often smell bad; they can be expensive; and they may be ineffective, especially if not used properly. These chemicals can also hurt the environment and cause harm or kill non-targeted plants or animals. There are easier ways to get rid of pests that we'll learn about in a moment.

(continued on other side)

2. Define Vocabulary *(continued – page 2)*

Explain

If a pesticide is strong enough to kill pests, do you think that it might be strong enough to hurt you, too? Some of these products are ***toxic*** and can be hazardous if we accidentally spill them; breathe them in; or get them on our fingers, in our eyes, or in our mouths. Things that are hazardous or toxic can hurt us as we develop and grow. Remember that hazardous chemicals and toxic products can especially impact children since kids are developing and growing at a much faster rate than adults.

Do

[Act these out.] While you might not be interested in tasting window cleaner, do any of you have little brothers or sisters, cousins, or neighbors who put everything in their mouths? Or do you know small children who spend a lot of time crawling on the floor or getting into drawers and cabinets? Have you ever used a chemical, such as an antibacterial cleaner or insect spray, and accidentally breathed some in? Did it make it hard to breath or make your eyes water? Could you "taste" it in the back of your throat?

Ask

A lot of these pesticides are hazardous and/or toxic. What does ***hazardous*** mean? What does ***toxic*** mean?

Explain

Hazardous means that the item is dangerous if used in the wrong way. ***Toxic*** means that something is poisonous or deadly if you're exposed to it at certain concentrations. So, let's talk about how we can prevent the pest problem rather than trying to stop an infestation by using a pesticide that might also hurt us.

3. Safely Getting Rid of Pests and Pest Detectives Activity *(15–25 minutes)*

Explain

In order to prevent a pest problem or to rid our homes or schools of pests, we need to use what we know about the pests and we need to think like the pest. We need to plot and plan.

Ask

Ask one student to volunteer to be a pest and another student to volunteer to be a pest detective. At the front of the room, give the detective ***Visual Card #1*** *(Detective Card)* and the pest ***Visual Card #2*** *(Mouse Pest Card)*. Tell the students to review their cards quickly. Tell them not to tell the class what the pest is. Tell the students that they will need to get into character and really think and act like a pest and a detective, respectively. Ask the student playing the pest what he/she would like his/her name to be. Ask the detective the same question.

Optional Activity: There are a total of four Pest Cards (Mouse, Cockroach, Ant, and Fly). You can decide to do just the Mouse or you can do several Pest Cards at the same time or one after the other.

Explain

Here's the situation. Detective *[insert name]* has been called in because we have a pest in our space. We've seen some signs of a pest, but we're not sure what kind of pest it is or how to get rid of it. The detective is going to help.

Ask

If you have a pest in your home, what's the first thing that you need to know? You have to know what you're dealing with, right? **Step 1: Properly identify the pest**.

Ask

Why do we need to know what kind of pest it is?

Prompts: Would we treat a roach and a termite infestation in the same way? A mouse and a raccoon infestation in the same way?

Ask

So, let's ask the detective, What have you observed about the pest? *[Detective uses* ***Visual Card #1*** *to answer.]*

(continued on other side)

Explain

So, the detective has used his/her powers of observation and interviewing people to get some answers.

Ask

What type of pest do we think this is?

Answer: A mouse. How do you know it is a mouse? Gnaw marks? Nibbled food? Feces? Mice sightings? Smell?

Explain

So, we know that we have a mouse because the detective has observed clues that lead us to a mouse, right? Since we have the mouse right here, let's interview *[him/her].*

Ask

Mouse, why are you in our space? *[Mouse uses **Visual Card #2** to answer.]*

Ask

What four things do all living beings need to survive? *[Air, water, food, and shelter.]* Which of these four needs is the mouse getting from our space? *[Air, water, food, and shelter.]*

Ask

What happens if you take away something that the mouse needs? Would our space still be an attractive place to be?

Prompts: The mouse would need to look elsewhere in order to meet its needs.

Explain

Step 2: Take away food and **Step 3: Take away water**.

Ask

How would we do that?

Prompts: Store food in hard plastic or glass containers with tight-fitting lids, or in the refrigerator; clean up crumbs and spills when they happen; don't walk around the house eating food, eat only in the kitchen; use a trash can with a tight-fitting lid and take it out as needed; tell your parents about dripping faucets and pipes that need to be repaired; keep surfaces clean and dry; put away pet food when the pet isn't eating.

Ask

Mouse, what would you do if we took away these things?

Ask

What if we took away one more thing? What is it? **Step 4: Take away their hiding places/shelter/entrance place**. How would we take away shelter?

Prompts: Fill in holes, cracks, and crevices (a mouse can fit through a hole the size of a pencil). Investigate how the mouse got into the building. Get rid of clutter such as piles of papers or clothing. Keep things tidy.

Explain

Finally, after taking all these steps we want to make sure they worked. **Step 5: Monitor the situation.** We need to watch to see if the pest returns. If the pest returns, we want to go back and make sure steps 1–4 were done correctly.

Do
Explain

*[Show **Poster #3** (Steps).]* By taking these steps:

1. **Identify the pest,**
2. **Remove food,**
3. **Remove water,**
4. **Take away shelter,** and
5. **Monitor the situation**

you're encouraging the pest to move on and find somewhere else to live. These steps might not always work, but it is important to get rid of those things that pests need to survive first. That way, you might not have to use pesticides that can hurt you and the environment.

Explain

We can use the same steps that we used to get rid of the mouse in our space to get rid of pests in our homes.

Optional Activity: Pest Free Poster Creation *(10–15 minutes)*

Explain

Optional Activity: Now that we know how to keep our spaces clean, we want to advertise to pests and to everyone else that this is a pest-free place. This will also help teach other people how to keep pests away. Each of you (or in pairs) will make a poster that announces this is a pest-free space. Remember to include the three ways we keep pests away on the poster.

Do

[Pass out large sheets of paper and markers or crayons.]

Visual Card #1 Detective

What have you observed about the pest?

- There are scratches on the floor and baseboards.
- There is a hole in the back of the room that is a couple of inches in size. (Mice can fit through a hole the size of a pencil!)
- There are little droppings.
- Several pieces of food have had small bites taken out of them recently.
- Someone in the building saw a mouse a few days ago.

Visual Card #2 Mouse

Why are you in our space?

- It's warm in the winter and cool in the summer in here. No rain, wind, or snow.
- I like snacks and there is lots of food around.
- After I have a snack, I like a drink of water and there's always fresh water here.

Mouse, what would you do if we took away these things?

- I'd look for another place that has these things.
- But I might still live in this space and get my food and water someplace else. It's cozy here!

Visual Card #3 Cockroach

Why are you in our space?

- There are always snacks around here and I really like to munch on people food.
- After a snack I like to take a sip of water and there's usually water to be found around here.
- I'm nice and small and there are lots of tiny cracks in the floors and walls where I can build nests and have lots of babies.

Cockroach, what would you do if we took away these things?

- I might look for another place that had these things.
- I'm pretty small though so people would need to be really careful about the food they left out if they wanted me to leave.

Visual Card #4 Fly

Why are you in our space?

- I like room to roam and this is a nice big space.
- Plus there's food left in trashcans and on the floor that I can eat.
- It can get really cold or really hot outside; in here it's a nice constant temperature.

Fly, what would you do if we took away these things?

- Well if the food was gone I'd have to look for another way to eat.
- I'd probably head out in search of another spot.

Visual Card #5 Ant

Why are you in our space?

- I have a very large family that I live with so we need a place with little cracks we can squeeze through. We are teeny tiny but there are a lot of us.
- There is plentiful food. We don't have large stomachs, so a little goes a long way with us.
- There's also water to drink whenever we want it.

Ant, what would you do if we took away these things?

- My family and I might look for another place that had these things.
- But we also might stick around and look for food farther away.

Lesson 2:
Pesky Pests and Household Hazards

Poster #3

EPA
U.S. Environmental Protection Agency
Office of Children's Health Protection
EPA-100-K-13-002
www.epa.gov
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Printed on 100% recycled/recyclable paper with a minimum 50% post-consumer waste using vegetable-based inks.

Steps to Get Rid of Pests

#1 Identify Pest

#2 Take Away Food

#3 Take Away Water

#4 Take Away Shelter

#5 Monitor the Situation

EPA

4. Keeping Household Hazards Out of Reach and Find the Household Hazards Activity

(5–15 minutes)

Explain

Some situations may require the use of pesticides even after we've gone through all of the preventative and nontoxic steps.

Ask

When do we use these pesticides and chemical cleaners? What can we do to make sure that they are used safely? Should children use them?

Prompts: Young children shouldn't use these products. Use products that are the least toxic and the most specific for the situation. Parents should read the label and use accordingly. Keep these products locked up, up high, and out of reach of children.

Do

Break the class up into five groups and give each group a copy of the **Household Hazards Hunt Handout**. Ask each group to find the household hazards in each picture. For each hazard that they identify, they should also determine a way to make it safer.

Explain

It's important to keep these household hazards out of reach so that children (ourselves included) don't accidentally touch them, breathe them in, or drink them.

Ask

If you accidentally touch or drink a pesticide or a household chemical, what should you do?

Prompts: Tell an adult and call the poison control center at 1-800-222-1222, or call 911.

Ask

Who knows what the Poison Control Center does?

Prompts: There are Poison Control Centers all over the country and you can call them 24 hours a day.

Explain

If you accidentally swallow an adult's medicine or your little brother or sister accidentally drinks some of the cleaners we saw in our Household Hazards Hunt, you can call a Poison Control Center and they will be able to tell you if you should go to the hospital or not.

(continued on other side)

Optional Activity: Creating Household Hazards Warning Signs *(10 minutes)*

Explain

We want to be sure we keep what we learned in mind when we're at home, so we're going to create flyers to bring home that remind us to keep household hazards out of reach of kids and who to call if someone accidentally uses a household hazard product incorrectly.

Do

[Pass out large sheets of paper and markers or crayons.]

Ask

What are some good reminders about what we just learned?

Prompts: Kids shouldn't touch cleaners. If a cleaner spills, let an adult know; keep cleaners and other household hazards out of reach.

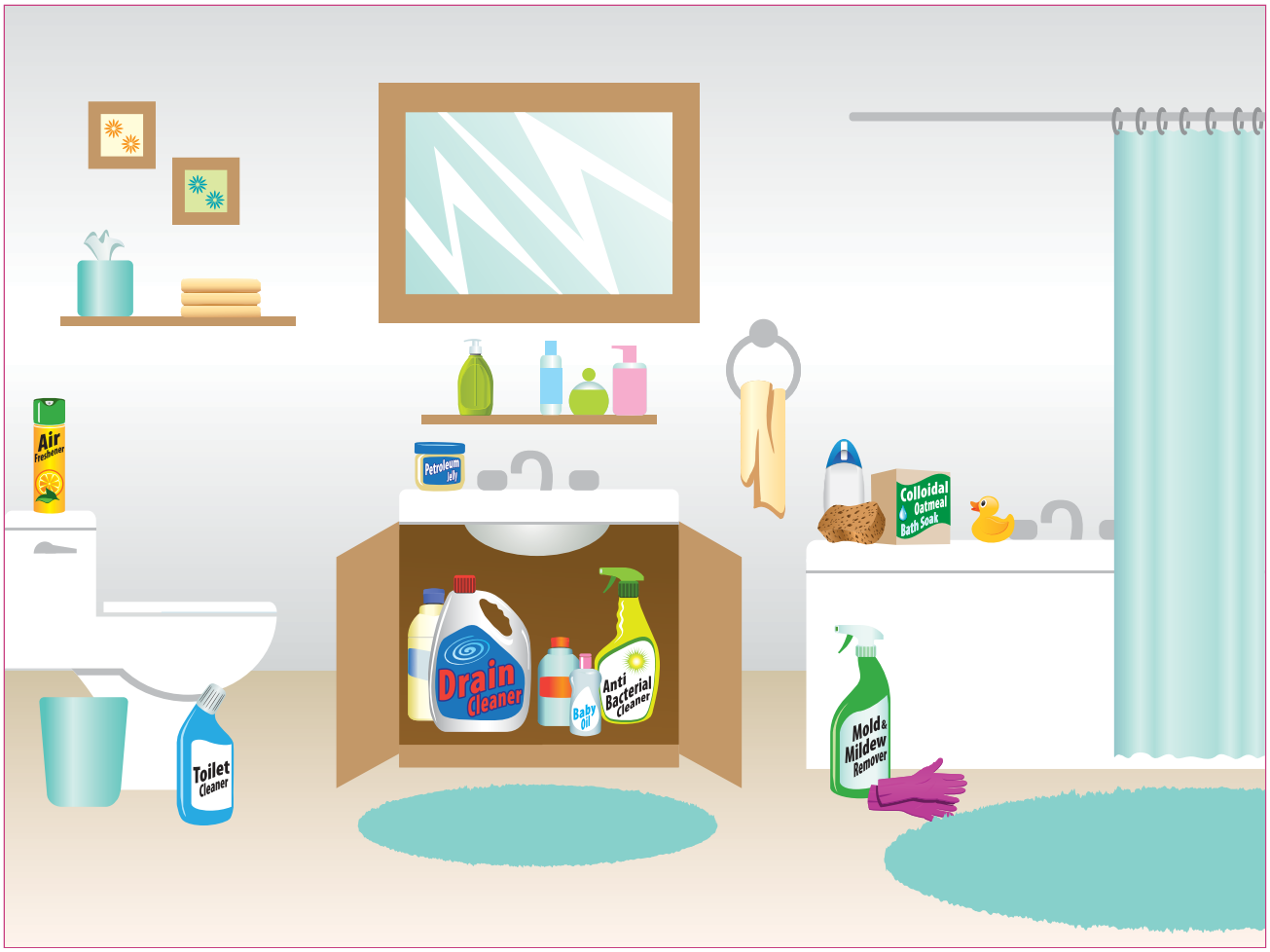
Do

[Pass out Poison Control stickers.]

Household Hazards Hunt

Can you identify which items are household hazards in the image below?

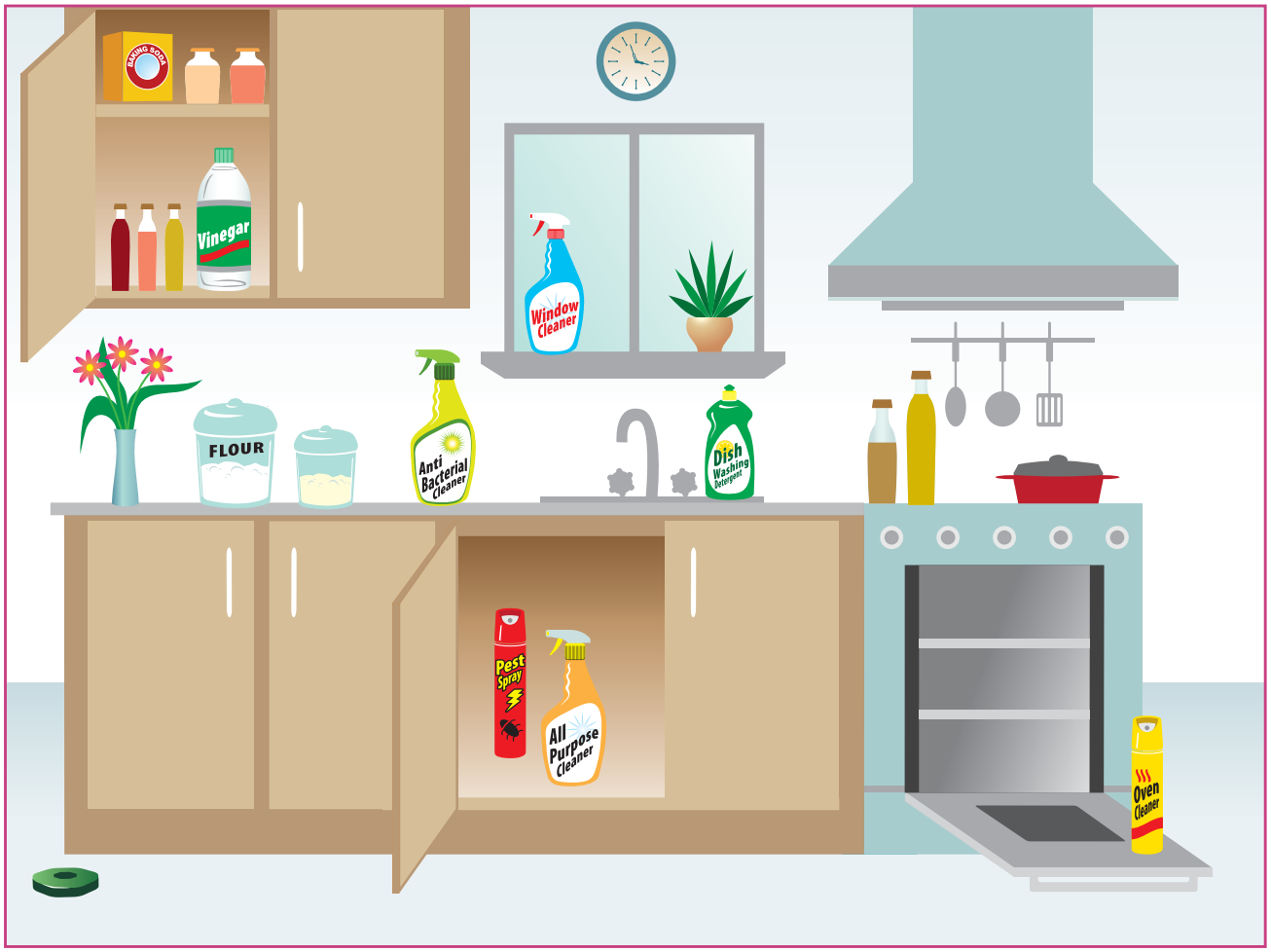
Hint: There are 8 things in the bathroom. But only 5 are household products that contain pesticides or toxic substances.



(continued on other side)

Can you identify which items are household hazards in the image below?

Hint: There are 11 things in the kitchen. But only 7 are household products that contain pesticides or toxic substances.



Can you identify which items are household hazards in the image below?

Hint: There are 8 things in the laundry room. But only 5 are household products that contain pesticides or toxic substances.

(continued on other side)

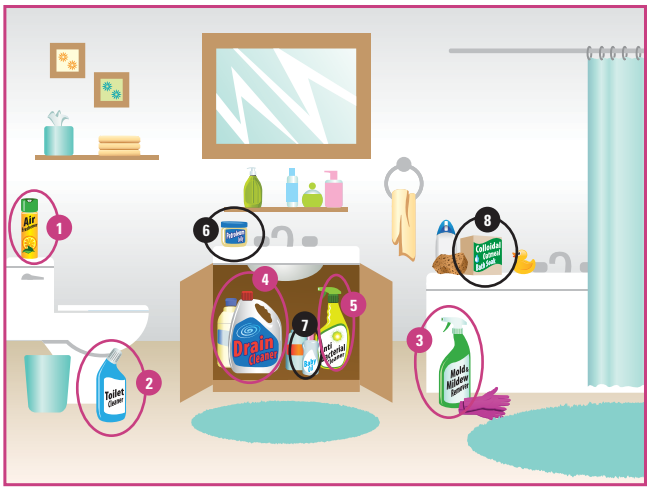
Household Hazards Hunt *(continued – page 4)*

Can you identify which items are household hazards in the image below?

Hint: There are 10 things in the garage. But only 6 are household products that contain pesticides or toxic substances.

Household Hazards Hunt Answers

Bathroom



1 Air Fresheners

What is it?
These products are used to freshen the air in various places throughout the home, including kitchens, bathrooms, bedrooms, and living rooms. Air fresheners are usually stored in the kitchen, bathroom, or laundry room.

What's in it?
There are four basic ingredients in air fresheners: formaldehyde, petroleum distillates, p-dichlorobenzene, and aerosol propellants.

What health and safety precautions do you need to think about when using air fresheners?
Air fresheners are usually highly flammable and also are strong irritants to the eyes, skin, and throat. Additionally, solid fresheners usually cause death if eaten by people or pets.

Please take precautions when using these products. You also need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Don't use them near open flames like candles or gas stoves. Use only in a well-ventilated area. Baking soda, which is nontoxic, can also be used to freshen the air in your home.

2 Toilet Cleaners

What is it?
Toilet cleaners clean and disinfect toilets and kill germs. You probably wouldn't think that these cleaners have pesticides in them, but they do. The pesticide is the disinfectant. This type of pesticide is known as an antimicrobial pesticide.

If cleaning the bathroom is one of your chores around the house, you may be using toilet cleaners to do the job. If so, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Also, be sure that your parents/guardians know what household products you are using. They can make sure that you use them safely.

What's in it?
The pesticide chemical usually found in toilet cleaners is bleach, which contains sodium hypochlorite.

What health and safety things do you need to think about when using toilet cleaners?
Toilet cleaners also have other chemicals in them, too, like hydrochloric acid. Never mix a toilet cleaner with any other household or cleaning products. Doing so can result in poisonous gases being released and can cause very serious breathing problems. Always be sure when cleaning a bathroom that the room has plenty of ventilation. Leave the door open and use the exhaust fan, if you have one.

Most disinfectant cleaners are very irritating to your eyes and skin and will burn your throat. It's a good idea to wear latex dishwashing gloves to help protect your skin from splashes when using toilet cleaners. If you splash some on your skin, wash it off immediately. Because toilet cleaners can be harmful, it is important to protect yourself from exposure to them.

3 Mold and Mildew Removers

What is it?
Have you seen black spots on your shower curtain? Have you seen black, brown, or pinkish slimy stuff growing between bathroom tiles, the corner area where your tub meets the walls, or under your bathtub mat? These spots and slimes are molds and mildew. Molds and mildew are kinds of funguses. What's a fungus? A fungus is a plant that has no leaves, flowers, roots,

(continued on other side)

or chlorophyll. (Chlorophyll is a chemical that allows plants to make their own food. It makes plants green.) A mushroom is an example of a fungus.

Mildew is also the name of the discoloration that is caused by a fungus. Maybe you have heard of "mildew stains." Molds and mildew like to grow in damp, dark places with little air circulation, like in bathrooms and basements.

Household products that contain mold and mildew removers usually come as a liquid in a spray container. If you are old enough to do cleaning chores around the house, you've probably used a cleaner with a mold and mildew remover to do the job. If so, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Also, be sure that your parents/guardians know what household products you are using. They can make sure that you use them safely.

What's in it?
The pesticide chemicals found in mold and mildew removers are chlorine and alkyl ammonium chlorides. These pesticides are known as fungicides.

What health and safety things do you need to think about with mold and mildew removers?
The chemicals in mold and mildew removers can be very caustic. That is, these cleaners can be corrosive to objects and harmful to humans. It's a good idea to wear latex dishwashing gloves to help protect your skin when using these products. If you get some on your skin, wash it off immediately.

Cleaners with mold and mildew removers may also cause breathing problems and, if swallowed, they will burn your throat. Because mold and mildew removers can be harmful, it is important to protect yourself from exposure to them.

4 Drain Cleaners

What is it?
These types of cleaners are used to unclog drains in sinks or in the bathroom. These cleaners are usually stored in the kitchen or bathroom cabinets, or in the basement.

What's in it?
The main ingredients that cause the drain to become unclogged are lye and sulfuric acid.

What health and safety precautions do you need to think about with drain cleaners?
Lye and sulfuric acid have dangerous fumes. They can cause skin burns and, in some cases, blindness if they come in contact with your eyes. They can cause death if they are swallowed. Because of the toxicity of these products, only an adult should use them. Remind your parents/guardians to always "Read the Label First" so that they know how to properly use these products and for safety information. They should always use protective gloves and wear goggles when using these products. Also, make sure that when these cleaners are used, there is good air circulation in the room.

5 Antibacterial Cleaner

What is it?
Cleaners are used to remove dirt. Antibacterial cleaners remove dirt and kill bacteria. Bacteria are organisms that are too small to be seen with just your eyes. Some bacteria cause diseases or make you sick; others do not do so.

Antibacterial cleaners come in a spray can, pump bottle, or other container. They are commonly used in the kitchen to clean things that come in contact with food, like cutting boards and counter tops. Keeping these areas clean will help prevent harmful bacteria from contaminating your food. It is especially important to clean areas that come in contact with raw meat. Raw meat can also carry bacteria. Use an antibacterial kitchen cleaner or wash the area with hot soapy water.

If helping to clean the kitchen is one of your chores around the house, you may be using antibacterial cleaners to do the job. If so, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Also, be sure that your parents/guardians know what household products you are using. They can make sure that you use them safely.

What's in it?
Antibacterial cleaners usually contain water, a fragrance, a surfactant, and a pesticide. The surfactant breaks up the dirt, the pesticide kills the bacteria, the fragrance makes it smell good, and the water holds the cleaner together. In antibacterial cleaners, the pesticides are commonly quaternary ammonium or phenolic chemicals. They are known as antimicrobial pesticides.

What health and safety things do you need to think about with antibacterial cleaners?
Antibacterial cleaners are very irritating to your eyes and skin and will burn your throat. It's a good idea to wear latex dishwashing gloves to help protect your skin when using these cleaners. If you get some on your skin, wash it off immediately; if you get some in your eyes, flush your eyes with cool water. Because antibacterial cleaners can be harmful, it is important to protect yourself from exposure to them.

Household Hazards Hunt Answers *(continued – page 3)*

6 Petroleum Jelly

This is just an ordinary jar of petroleum jelly. Nothing toxic here.

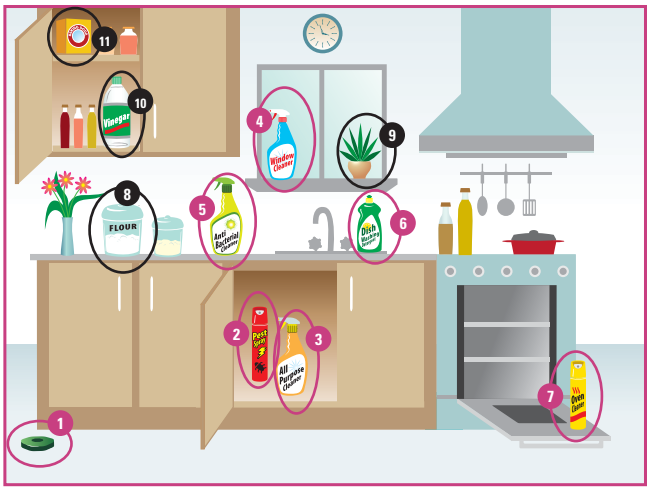
7 Baby Oil

Nope! You won't find any pesticides or toxic chemicals in baby oil.

8 Colloidal Oatmeal Bath Soak

Colloidal oatmeal is used for soaking in your bathtub. No problem with pesticides or toxic ingredients here. People add colloidal oatmeal to bath water to soothe dry or irritated skin. If you have had a bad case of poison ivy, hives, or chicken pox, your Mom might have added some to your bathwater to make your skin feel better.

Kitchen



1 Baits for Ant, Cockroaches and Crickets

What is it?
Insect baits are used to kill ants, cockroaches, and crickets inside your home. Baits work by enticing the insect to eat a food that contains an insecticide. An insecticide is a pesticide that kills insects.

For insect baits to work, the areas where food is stored, prepared, or eaten need to be kept clean. If there are other foods around that the insect likes better, or finds first, it will probably not eat the bait at all.

So do baits kill just one insect at a time? No. Baits work by tricking the insect into eating something poisonous and spreading the poison to others. How do they spread the poison? Both ants and cockroaches leave a scent trail for others to follow to find the bait. Also, ants may carry some of the bait back to their colony to share with the other ants. In a short time, the insecticide kills the insects that have eaten the bait. But how fast a bait works depends on several things. It depends on the kind of pesticide in the bait, whether the insect likes the taste of the bait, and whether there is other food around for the insect to eat instead of the bait.

You may have seen insect bait on countertops, in cabinets, hidden behind stoves or refrigerators, or on the floor near cracks or crevices where insects go in and out. They are usually square or round, with a flat top, and are about half an inch high. They may also be sort of dome shaped, like an igloo. The containers are about 2 inches across in size and may be plastic or metal. The bait inside the container is usually a solid or a gel. Some bait isn't in a container at all. They can be tablets or gels that are put out for insects, like cockroaches, to eat. Your parents/guardians can decide the best location for insect bait so that it will work well. Remind them to always "Read the Label First" so that they know how to properly use these products and for safety information.

What's in it?
The insecticides commonly found in insect baits include abarmectin, propoxur, trichlorfon, sulfluramid, chlorpyrifos, and boric acid.

What health and safety things do you need to think about with insect baits?
Because the majority of insect baits are enclosed in containers, it is not likely that you will be exposed to the pesticides. But if you find them, leave them alone. Do not move them, open them, or put them in your mouth. Keep your pets away from them, too. Let your parents/guardians know that you found them. If you should touch one, wash your hands with plenty of soap and water to be sure that none of the pesticides that insects might have carried out of the container got on your skin. And remember to never put anything in your mouth unless you know for sure what it is and that it is safe to do so.

(continued on other side)

Household Hazards Hunt Answers *(continued – page 4)*

2 All-Purpose Cleaner

What is it?
All-purpose cleaners can be used for many different kinds of cleanup jobs around the house. All-purpose cleaners are used to clean windows, floors, and kitchen and other appliances in your house. All-purpose cleaners are usually kept in the kitchen, but they can also be found in other parts of the house, such as the bathroom, basement, or garage.

What's in it?
All-purpose cleaners may use many different kinds of ingredients, such as detergents, grease-cutting agents, solvents, and disinfectants.

All-purpose cleaners can contain hazardous chemicals such as ammonia, ethylene glycol monobutyl acetate, sodium hypochlorite, and trisodium phosphate.

If you "Read the Label First," it should tell you if any of these chemicals are found in the all-purpose cleaners used in your home.

What health and safety precautions do you have to think about when using all-purpose cleaners?
Depending upon the ingredients used, all-purpose cleaners can irritate the skin, eyes, nose, and throat. They can be highly poisonous if swallowed. Some of these chemicals have a sweet smell, which attracts animals and can poison them, too.

When using all purpose cleaners, follow these safety steps:

1. Wear rubber gloves to protect your skin.

2. Be sure that there is good air circulation in the room. Open several windows or keep a fan running.

3. NEVER mix two cleaners of different types together, especially if one contains ammonia and the other contains chlorine. This can produce a gas called chloramine and the breathing of its fumes could be fatal.

3 Insect Sprays

What is it?
Insect sprays are used to get rid of ants, bees, flies, roaches, spiders, wasps, and many other insects, even lice. Insect sprays are pesticides known as insecticides. There are many different kinds of insecticides. The kind to use depends on the type of insect and where you want to use it. Read the product label to find out about the insecticide. Not all insecticides can be used in your house. Some can only be used outside. Some can be used on your dog, cat, or parakeet – even on your pet goat, if you have one. Others can only be used on items such as bedding, rugs, lawns, or plants.

Insecticides used around your home usually come in the form of liquids, sprays, or powders. Sometimes they are mixed with other products that are used around your house. Sometimes they are mixed with other pesticides. For example, a fertilizer for your grass may have an insecticide in it. It could even have both an insecticide and an herbicide (weed killer) in it.

What's in it?
Examples of pesticide chemicals that are commonly found in insecticides are permethrin, diazinon, propoxur, and chlorpyrifos.

What health and safety things do you need to think about with insecticides?
When you use an insecticide, especially indoors, make sure that it doesn't get on food or things that come in contact with food, like dish towels, dishes, silverware, or countertops. Insecticides can come in a spray can, bottle, or other container. Some insecticides that you buy from the store have to be mixed with water first before they can be used. Be sure that you and your parents/guardians always "Read the Label First" so that you know how to properly use these products and for safety information.

Insecticides can hurt your eyes. They can make you really sick if you breathe their fumes, get some in your mouth, or on your skin and you don't wash it off right away. They can also be fatal. How you are affected depends on your exposure.

4 Window or Glass Cleaners

What is it?
These cleaners are used to clean windows throughout the house, glass tables, mirrors, and the screens of TVs and computers. These cleaners are usually kept in the kitchen, bathroom, or basement.

What's in it?
The basic ingredients in window and glass cleaners are ammonia and isopropanol.

What health and safety precautions do you have to think about when using window/glass cleaners?
These products are irritating to the eyes, skin, nose, and throat. If swallowed, they may cause drowsiness, unconsciousness, or death. If you need to use these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Always wear protective gloves when using these products and use them in a well-ventilated area.

Household Hazards Hunt Answers *(continued – page 5)*

5 Antibacterial Cleaner

What is it?
Cleaners are used to remove dirt. Antibacterial cleaners remove dirt and kill bacteria. Bacteria are organisms that are too small to be seen with just your eyes. Some bacteria cause diseases or make you sick; others do not do so.

Antibacterial cleaners come in a spray can, pump bottle, or other container. They are commonly used in the kitchen to clean things that come in contact with food, like cutting boards and counter tops. Keeping these areas clean will help prevent harmful bacteria from contaminating your food. It is especially important to clean areas that come in contact with raw meat. Raw meat can also carry bacteria. Use an antibacterial kitchen cleaner or wash the area with hot soapy water.

If helping to clean the kitchen is one of your chores around the house, you may be using antibacterial cleaners to do the job. If so, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Also, be sure that your parents/guardians know what household products you are using. They can make sure that you use them safely.

What's in it?
Antibacterial cleaners usually contain water, a fragrance, a surfactant, and a pesticide. The surfactant breaks up the dirt, the pesticide kills the bacteria, the fragrance makes it smell good, and the water holds the cleaner together. In antibacterial cleaners, the pesticides are commonly quaternary ammonium or phenolic chemicals. They are known as antimicrobial pesticides.

What health and safety things do you need to think about with antibacterial cleaners?
Antibacterial cleaners are very irritating to your eyes and skin and will burn your throat. It's a good idea to wear latex dishwashing gloves to help protect your skin when using these cleaners. If you get some on your skin, wash it off immediately; if you get some in your eyes, flush your eyes with cool water. Because antibacterial cleaners can be harmful, it is important to protect yourself from exposure to them.

6 Dishwashing Detergent

What is it?
These products are used to wash dishes primarily in the kitchen. These detergents are divided into two categories: automatic dishwashing detergents and hand dishwashing detergents. These cleaners are usually kept in the kitchen.

What's in it?
Both of these contain cleaning agents with cationic, anionic, or non-ionic in their names. The main ingredient usually used in these detergents is phosphate.

What health and safety precautions do you need to think about when using dishwashing detergent?
Automatic dishwashing detergents have been known to produce skin irritations or burns. They are poisonous if swallowed. Hand dishwashing detergents are milder than automatic dishwashing detergents. If swallowed, they may cause irritation to the mouth and throat, and nausea, but not death. They are generally safe for people and the environment. If you need to use these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Keep them away from small children to minimize the risk of accidental poisoning.

7 Oven Cleaners

What is it?
Oven cleaners are used to help break up the baked-on food stuck to the inside of the oven. Oven cleaners are usually kept in the kitchen.

What's in it?
The basic ingredient in oven cleaners is lye (either sodium hydroxide or potassium hydroxide).

What health and safety precautions do you have to think about when using oven cleaners?
Lye is extremely corrosive and can burn your skin and eyes. It is usually fatal if swallowed.

Because of the toxicity of these products, only an adult should use them. Remind your parents/guardians to always "Read the Label First" so that they know how to properly use these products and for safety information. They should always wear an apron, gloves, and safety goggles, and they should not breathe the fumes. Make sure that there is plenty of fresh air and ventilation when using these products.

Nontoxic oven cleaners without lye are available.

8 Flour Canister

This canister contains flour. It looks like white powder and is used for baking. Although flour is nontoxic, there are several other products that look a bit like flour, such as laundry detergent or talcum powder. If you are unsure, check with an adult.

(continued on other side)

Household Hazards Hunt Answers *(continued – page 6)*

9 House Plant

No toxic pesticides in these houseplants. But the leaves or sap from some plants can be poisonous to animals and humans. Poisonous plants don't always cause death, but they can make you very sick or cause you to have a severe reaction to them.

Here are a few examples of poisonous houseplants:
Mums: The leaves and stalks are poisonous.
Common English Ivy: The leaves are poisonous.
Dumbcane, Giant Dumbcane, and Spotted Dumbcane: All parts are poisonous.

If these plants are in your house, make sure that your parents/guardians know that parts or all of the plant are poisonous. Keep them away from places where kids or pets could get into them.

10 Vinegar

Vinegar is commonly used in certain foods, like salad dressings and vinaigrettes, pickles, and even candy. But did you know that vinegar can also be used for cleaning?

Vinegar has been used for several generations and perhaps your grandparents or great-grandparents may have used it to clean items from windows to pots and pans. Today, vinegar is sometimes used instead of household cleaning products because it is nontoxic.

11 Baking Soda

Some people use baking soda for baking cakes and pastries. Some people use baking soda for cleaning and others use it to absorb or eliminate mild odors. Perhaps you will find an open box of baking soda being used in your refrigerator to eliminate odors because it is nontoxic and it doesn't contaminate your food. Baking soda is also an ingredient in some products like toothpaste and deodorant.

Laundry Room

1 Insect Sprays

What is it?
Insect sprays are used to get rid of ants, bees, flies, roaches, spiders, wasps, and many other insects, even lice. Insect sprays are pesticides known as insecticides. There are many different kinds of insecticides. The kind to use depends on the type of insect and where you want to use it. Read the product label to find out about the insecticide. Not all insecticides can be used in your house. Some can only be used outside. Some can be used on your dog, cat, or parakeet – even on your pet goat, if you have one. Others can only be used on items such as bedding, rugs, lawns, or plants.

Insecticides used around your home usually come in the form of liquids, sprays, or powders. Sometimes they are mixed with other products that are used around your house. Sometimes they are mixed with other pesticides. For example, a fertilizer for your grass may have an insecticide in it. It could even have both an insecticide and an herbicide (weed killer) in it.

What's in it?
Examples of pesticide chemicals commonly found in insecticides are permethrin, diazinon, propoxur, and chlorpyrifos.

What health and safety things do you need to think about with insecticides?
When you use an insecticide, especially indoors, make sure that it doesn't get on food or things that come in contact with food, like dish towels, dishes, silverware, or countertops. Insecticides can come in a spray can, bottle, or other container. Some insecticides that you buy from the store have to be mixed with water first before they can be used. Be sure that you and your parents/guardians always "Read the Label First" so that you know how to properly use these products and for safety information.

Insecticides can hurt your eyes. They can make you really sick if you breathe their fumes, get some in your mouth, or on your skin and you don't wash it off right away. They can also be fatal. How you are affected depends on your exposure.

Household Hazards Hunt Answers *(continued – page 7)*

2 All-Purpose Cleaner

What is it?
All-purpose cleaners can be used for many different kinds of cleanup jobs around the house. All-purpose cleaners are used to clean windows, floors, and kitchen and other appliances in your house. All-purpose cleaners are usually kept in the kitchen, but they can also be found in other parts of the house, such as the bathroom, basement, or garage.

What's in it?
All-purpose cleaners may use many different kinds of ingredients, such as detergents, grease-cutting agents, solvents, and disinfectants.

All-purpose cleaners can contain hazardous chemicals such as ammonia, ethylene glycol monobutyl acetate, sodium hypochlorite, and trisodium phosphate.

If you "Read the Label First," it should tell you if any of these chemicals are found in the all-purpose cleaners used in your home.

What health and safety precautions do you have to think about when using all-purpose cleaners?
Depending upon the ingredients used, all-purpose cleaners can irritate the skin, eyes, nose, and throat. They can be highly poisonous if swallowed. Some of these chemicals have a sweet smell, which attracts animals and can poison them, too.

When using all purpose cleaners, follow these safety steps:

1. Wear rubber gloves to protect your skin.
2. Be sure that there is good air circulation in the room. Open several windows or keep a fan running.
3. NEVER mix two cleaners of different types together, especially if one contains ammonia and the other contains chlorine. This can produce a gas called chloramine and the breathing of its fumes could be fatal.

3 Laundry Detergents

What is it?
Laundry detergents are used to clean stains and loosen dirt from the household laundry. Laundry detergents are usually found in the laundry room or the kitchen.

What's in it?
Laundry detergents contain cleaning agents with cationic, anionic, or non-ionic in their names. Laundry detergents also contain enzymes that are used to loosen stains and ground-in dirt.

What health and safety precautions do you need to think about when using laundry detergents?
These products may irritate skin or make people more sensitive to other chemicals. They might also cause asthma; however, this is usually when used in extremely large quantities. If you need to use these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. Detergents are responsible for many household poisonings by accidental swallowing. Keep these boxes and bottles out of reach of small children and only use as directed.

4 Chlorine Bleach

What is it?
Did you know that a pesticide is added to your washing machine to help keep your white clothes white? This pesticide is also found in many household cleaning products that contain a disinfectant to kill germs. And it is found in household products used to clean mold and mildew from your shower or tub. Can you guess what this pesticide is? Chlorine Bleach!

You wouldn't think that ordinary chlorine bleach is a pesticide – but it is. Because it kills bacteria and viruses, it is called a disinfectant or an antimicrobial pesticide. And because it kills fungi and molds, it is also known as a fungicide.

If you are responsible for doing laundry or other types of cleaning as some of your chores around the house, you may be using liquid chlorine bleach to do the job. If so, you need to be sure to always "Read the Label First" so that you know how to properly use this product and for safety information. Also, be sure that your parents/guardians know what household products you are using. They can make sure that you use them safely.

What's in it?
Standard household bleach contains the chemical sodium hypochlorite.

What health and safety things do you need to think about with chlorine bleach?
Liquid bleach in a bottle is a 5.25% sodium hypochlorite solution. This means that 5.25% of the liquid is the chemical sodium hypochlorite and the rest is mostly water. The number 5.25% tells you the strength of the concentration of the chemical. Look at the labels of other household cleaning products that contain bleach. Some contain sodium hypochlorite or chlorine bleach in concentrations of 0.7%, 1.8%, or 2.4%.

(continued on other side)

Household Hazards Hunt Answers *(continued – page 8)*

Never mix chlorine bleach with any other household or cleaning products. Doing so can result in different types of harmful acids being formed. Poisonous gases can also be released that will cause very serious breathing problems or death.

Always be careful when using chlorine bleach. Because it comes in 1-gallon jugs, the container can be a little hard to handle. Spills and splashes can happen. Not only will the bleach damage your clothing, but it is irritating to your skin and can cause serious damage to your eyes, even blindness. As with any chemical, it is important to protect yourself from exposure.

5 Wood Stains and Finishes

What is it?
Stains and finishes are used to change the color of wood. A stain is a pigment that is dissolved in a solvent.

What's in it?
The solvent can be water or volatile organic chemicals, such as mineral spirits (naphtha). Read the label to find out about the ingredients and safety precautions.

What health and safety precautions do you need to think about with stains/finishes?
Many of these products contain chemicals that can irritate your skin, eyes, nose, and throat when they are being used because of the vapors that are given off. Before using these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. If at all possible, use the stain or finish outside. If that is not practical, open the windows and doors fully and put a box fan in the window to direct the air and fumes outdoors. Keep the fan on while painting and for about 48 hours afterwards. Keep small children away from the room where the stain or finish is being applied and away from the open cans of stain or finish. Do not use stain or finish indoors that is labeled "for exterior use only." If the room you are painting does not have a window, consider using a water-based product.

6 Milk Jug

This is an empty milk jug. So what's it doing in the laundry room? It could be that someone was going to use it to store something other than milk in it. Never use food containers to mix or store pesticides or any other household cleaning products. Not even if you write over the label and store them for later use or disposal. Why? Because kids or others can mistake it for something to eat or drink. Little kids can't read, so writing over the label won't help to tell them that a food container does not contain food. Unfortunately, many household poisoning accidents are caused by people not safely using or storing chemicals.

If you see a food container somewhere other than the kitchen or pantry, ask you parents/guardians what's in it. Ask them why it is there. Tell your parents/guardians to always store pesticides and other household products in their original containers. That way the label, with its list of ingredients and directions for use, is always with the household product.

7 Package of Cheesecloth

Most people use cheesecloth like a rag in order to apply stains and finishes. By itself, cheesecloth does not contain anything toxic. However, if you find a piece of cheesecloth that has already been used for stains or finishes, ask an adult to properly throw it away.

8 Case of Soda Pop

This is just a case of soda pop or, depending on where you live in the United States, just soda or pop or soft drinks.

Garage

1 "Spot-ons"

What is it?
Fleas and ticks are pretty annoying to dogs and cats. These insects bite your pets and can carry diseases. They bite people, too! If your dog or cat is in and out of the house a lot, they may be giving fleas and ticks a free ride into your home. What can you use to keep these pests off of your pets? Spot-ons.

A spot-on is an insecticide product that is named for the way in which it is applied. It's applied to a small area, or spot, on your dog or cat. It comes in liquid form. The pesticide in the spot-on works by spreading out over your pet to kill and repel fleas and ticks.

Your parents/guardians should be the ones to apply a spot-on product on your pet. Remind them to always "Read the Label First" so that they know how to properly use these products and for safety information.

What's in it?
Examples of the pesticides found in spot-ons are chemicals called imidacloprid, fipronil, pyrethrins, permethrin, and methoprene.

What health and safety things do you need to think about with "Spot-ons?
If a spot-on is used on your dog or cat, be sure not to pet them for at least 24 hours. If you forget and do pet them, or you get any of the spot-on on your hands or skin, wash it off immediately with lots of soap and water. Whether or not you get sick from pesticides depends on your exposure to them. It is important to protect yourself from exposure to these chemicals.

2 Wet-Cell Batteries

What are they?
Wet-cell batteries are used in cars, trucks, tractors, and other motor vehicles to provide the spark to start the vehicle. They are usually about twice the size of a shoe box.

What's in them?
Wet-cell batteries contain lead and a solution of sulfuric acid.

What health and safety precautions do you need to think about with wet-cell batteries?
Most wet-cell batteries today are sealed so that you cannot be exposed to the sulfuric acid and the lead. However, when activated, the electrolyte solution in the battery produces explosive gases that are easily ignited. Manufacturers of batteries that contain sulfuric acid must use labels that warn consumers about the dangers from battery acid and accumulated gases. Sulfuric acid is extremely caustic, which means that it burns. The fumes are strongly irritating and contact can cause burning and charring of the skin; it can cause blindness if you get it in your eyes. Lead is poisonous in all forms and accumulates in our bodies and in the environment.

It is important never to break the seal of wet-cell batteries. If you do so accidentally, do not attempt to clean it up yourself, get an adult right away. If an adult is not available, you can call the fire department. Keep other children and pets away from the area until the battery's acid is cleaned up. Wash your hands after you have any contact with wet-cell batteries.

3 Latex Paint

What is it?
Latex paint can be used indoors or outdoors on walls, wood, and ceilings. The label on the can will say where the paint should be used. It is also called water-based paint.

What's in it?
The main solvent used in latex paint is water. The other ingredients are pigments and fillers. The term "latex" refers to the resin that is contained in the paint. Paints that are used outdoors may have larger amounts of biocides in them.

What health and safety precautions do you need to think about with latex paint?
Indoor water-soluble latex paints may be of low toxicity unless ingested in large quantities. Some interior latex paint can emit formaldehyde when it is drying. Latex paints that give off high levels of formaldehyde when drying can give you a headache and can irritate your eyes, nose, and throat.

(continued on other side)

Household Hazards Hunt Answers *(continued – page 10)*

Before using these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. In the room that is being painted, open the windows and doors fully. Put a box fan in the window to direct the air and fumes outdoors. Keep the fan on while painting and for about 48 hours afterwards. Keep small children away from the room where the painting is being done and away from the open cans of paint. Do not use paint indoors that is labeled "for exterior use only."

4 Oil-Based Paints

What is it?
This type of paint is most often used to paint the outside of the house because it dries very hard and withstands harsh weather conditions for a long time. Sometimes people may use oil-based paint indoors in areas that have a lot of moisture such as in kitchens and bathrooms.

What's in it?
The solids in the oil-based paint are kept suspended by a number of chemicals that are organic solvents. The solvents commonly used in oil-based paints include mineral spirits (naphtha), toluene, xylene, and other petroleum distillate solvents. Oil-based paints are sometimes called alkyd paints. Alkyd refers to the resin type that is used in the paint.

What health and safety precautions do you need to think about with oil based paint?
Oil-based paint contains organic solvents that can be irritating to eyes and skin, and can cause cracking of the skin. Inhaling paint fumes can result in headaches, nausea, and dizziness, and can make you very tired if you breathe in the fumes for too long without good air circulation. Most of these symptoms will go away if you remove yourself from the area being painted and get some fresh air. Let an adult know if you continue not to feel well. If you are exposed to the chemicals in these types of products often, you may experience other long-term problems such as kidney, liver, or blood effects. Breathing in paint fumes from cans of spray paint on purpose is a very bad idea. It can lead to irreversible brain damage and death even after the first time.

Before using these products, you need to be sure to always "Read the Label First" so that you know how to properly use these products and for safety information. In the room that is being painted, open the windows and doors fully. Put a box fan in the window to direct the air and fumes outdoors. Keep the fan on while painting and for about 48 hours afterwards. Keep small children away from the room where the painting is being done and away from the open cans of paint. Do not use paint indoors that is labeled "for exterior use only." If the room you are painting does not have a window, consider using a latex paint.

5 Motor Oil

What is it?
Motor oil is used in the engines of vehicles, such as cars, trucks, and tractors to make sure that the pistons don't rub against the metal in the engine block.

What's in it?
Motor oil is made up of many unique chemicals that come mainly from crude oil, the same source from which we get gasoline. Used oil or waste motor oil may be contaminated with magnesium, copper, zinc, and other heavy metals that are picked up from the engine.

What health and safety precautions do you need to think about with motor oil?
Motor oil can contain some chemicals that are suspected to cause cancer (that is, carcinogens). If disposed of improperly (for example, if you pour it in the storm sewer or down the drain), used motor oil poses a very serious threat to the environment because it is toxic to fish and birds. When poured into water, one quart of motor oil can form an oil slick almost 9,680 square yards. That is more than two football fields! Always take used motor oil to the recycling center; never pour it on the ground, in the storm sewer, or down the drain.

Household Hazards Hunt Answers *(continued – page 11)*

6 Antifreeze

What is it?
Antifreeze is a bright yellow or green liquid that has a slightly sweet smell. It is used in the radiators of cars, trucks, and other motor vehicles. Antifreeze works to keep the vehicle from overheating in the summer or freezing in the winter. When it's added to the water in a radiator, it changes the water's boiling and freezing points. How much it changes these points depends on the ratio or concentration of antifreeze to water.

What's in it?
The main hazardous ingredient of antifreeze is ethylene glycol.

What health and safety precautions do you need to think about with antifreeze?
Ethylene glycol is very poisonous when swallowed. It will cause severe damage to your heart, kidneys, and brain. It can cause death.

Antifreeze can be spilled on the ground or leak from the radiators of cars and trucks. Because of its sweet smell, animals may be attracted to it. Antifreeze is very poisonous, so licking or drinking the fluid can kill an animal. If you see a bright green or yellow liquid on the ground in the garage or on a driveway, parking lot, or street, keep your dog and other pets away from the puddle and let an adult know about it.

When cleaning up antifreeze, all adults need to wear protective gloves because ethylene glycol can cause damage to internal organs through skin absorption. Inhalation of the fumes can also cause dizziness.

There is a new type of antifreeze available that contains propylene glycol. Propylene glycol is much less toxic than ethylene glycol. An animal would have to consume a lot more of this type of antifreeze (a quantity that is unlikely to be available) to get sick or to die. The bottle's label should tell you what type of antifreeze it is.

Some people who have vacation homes that they close up for the winter will pour antifreeze into the toilets so that the water doesn't freeze. In this case, these people should always use the less toxic antifreeze (the one with propylene glycol in it) because pets can drink out of the toilets and can be poisoned.

7 Toolbox

Besides your Dad's tools, toolboxes sometimes contain products that are used to fix things around the house. These products could contain toxic chemicals. You should be careful with anything that you find in there. When in doubt, ask an adult.

8 Paint Roller and Pan

There may be some leftover paint on the roller and/or the pan and this may be toxic. Check with an adult before handling a used paint roller and pan (especially if there is paint on it, no matter how old or dry the paint is). Make sure that you wear protective gloves and wash your hands thoroughly after you handle paint.

9 Flashlight

Normally, flashlights are safe and nontoxic to use. However, be careful when handling the batteries and bulb in a flash light. Better yet, let an adult take care of these things.

10 Bucket

This is an empty bucket. No pesticides or toxic chemicals in here.

5. Close and Take-Home Talk

(5 minutes)

Do / Explain

Close your eyes and take a nice deep breath. We've covered a lot today. We talked about pests. Raise your hand if you know what a **pest** is. *[Call on a student to give the definition.]* We talked about **pesticides**—chemicals and cleaners that kill or repel pests—and learned that some can be **hazardous** and/or **toxic**. We also talked about how we can make our homes and our space a less inviting place for pests to live.

Ask

You can open your eyes now. What is the first thing that the detective did when we thought that we had a pest?

Answer: 1. Identify the pest. You have to know what kind of pest it is first.

Ask

Our mouse told us that this space was a nice place to live because it had what it needed to live. What three things was it looking for?

Answer: Food, water, and shelter.

Explain

When we are using our plot and plan method to get rid of pests instead of using pesticides, we want to make the environment undesirable for pests. So, we take away their food and water and shelter. Finally, we talked about how to stay safe from household hazards by locking them up and putting them up high where they are out of reach.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. What do we need to do to make our homes pest-free? Look for clues about which pests may be in your home. What can you do to safely eliminate them? Discuss this with your family.

Do / Explain

*[Pass out **Take-Home Talk**.]* This Take-Home Talk Sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 2: Pesky Pests and Household Hazards

To Share:

- Pests are living things that can hurt us by making us sick, damage our homes or other property, or destroy plants or agricultural products. A pest can be a plant, an animal, or a disease.
- Pests are everywhere—in our schools, homes, and clubs, and our cities, suburbs, and in the country. There are pests in the White House, the Taj Mahal, and Buckingham Palace. They are everywhere!
- Insects are just one kind of pest that people may encounter. The world has more insects than all other living things combined. It's estimated that there are 10 quintillion (10,000,000,000,000,000,000) insects!
- Instead of using chemicals that can be toxic in order to get rid of pests, we can remove the things that they need to survive. Take these steps:

  1. Identify the pest.
  2. Take away food.
  3. Take away water.
  4. Take away shelter.
  5. Monitor the situation

To Do and Talk About:

- **Household Hazard Hunt!** With the adults in your family, walk around your home and locate all of the pesticides and chemical cleaners that you use. Are they being kept in a safe place, out of reach? Do you know what each of them is used for? Are there some chemicals that you don't really use or need?
- **Become a Pest!** Imagine that you're an ant. Get down low to the ground. What would an ant see? Where could they go that you can't go? Where is the best place in your neighborhood to live if you're an ant? What would be amazing about being an ant? What would be not so great about being an ant?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Snapshot

This lesson looks at our homes and the steps to take to keep the air healthy and avoid chemical exposure. We explore the makeup of the air that we breathe, how to keep it clean, and how to reduce asthma triggers in our homes. We also explore what lead is and where it might be found in our homes.

Preparation and Materials:

- Posters 1–3, Asthma Triggers Hunt Handout, Take-Home Talk
- Stirring (coffee) straws – enough for each child to have several
- Flip chart and markers
- Black or white board
- Large sheets of paper or the coloring page for each child to make a poster
- Markers or crayons

Note: This lesson includes an activity that is not suitable for children with asthma or other breathing issues. In order to prepare for the activity, do the following:

- Review your list of students with asthma.
- Make sure that each of them has a quick-relief bronchodilator inhaler.
- Discuss with your organization's health care professional the appropriateness of this exercise for any students with health conditions. ***Students with asthma should not participate in this activity.***
- Consider co-teaching the exercise with your organization's health care professional.

Objectives—Students will be able to:

- define *asthma, breathing, secondhand smoke,* and other triggers;
- list three asthma triggers and how to avoid them;
- list three things that they can do to keep the air in their homes healthy;
- explain how lead can impact children negatively; and
- list steps to avoid exposure to lead in our homes.

Vocabulary: asthma, secondhand smoke, asthma triggers, lead

Procedure:

1. Introduction *(10 minutes)*
2. Asthma and Breathing Difficulties Activity *(10 minutes)*
3. Stopping Triggers at Home and at School *(15–20 minutes)*
   Optional Activity: Creating Smoke-free Signs *(10–15 minutes)*
4. Lead *(10 minutes)*
   Optional Activity: Asthma and Lead Exposure Patrol *(10–15 minutes)*
5. Close and Take-Home Talk *(10 minutes)*

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Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

1. Introduction

(10 minutes)

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words you learned from our last lesson? What can you do to positively impact the issue that we learned about?

Do
Ask

[Take an exaggerated deep breath.] Take a deep breath. What did we just do?

Prompts: As the air entered our lungs, what did it accomplish? Why do we need to breathe?

Explain
Ask

When we take air in, the oxygen in the air passes throughout our body through our blood and allows us to live. Remember that air is one of the four things that we need to stay alive. What are the other three? *[Food, water, and shelter.]*

Ask

Is the air that we breathe 100 percent oxygen?

Prompts: When we breathe out, do we breathe oxygen out?

Explain
Do

The air that we breathe in is only about 20 percent oxygen. *[Show **Poster #1** (illustration of the makeup of air).]* Most of the rest of our air is nitrogen, which is another invisible, odorless gas, like oxygen.

(continued on other side)

1. Introduction *(continued – page 2)*

Ask

What else is in our air?

Prompts: When you see trucks on the road that send out black smoke, does that become part of our air? What comes out of a car's tailpipe? What about after it rains on a hot day and you see steam rising off of the sidewalk? What about when you spray something from an aerosol can and it creates a fine mist? What about when there are huge fires—is that smoke part of our air? What about smokers who send smoke out into our air? Do you think some of the things entering our air can harm us?

Explain

All of these things create changes in our air and those changes can impact us significantly. Today, we're going to talk about the air in our homes and our schools and how we can make sure that it's as healthy as it can be.

Ask

Can we see all of these things in the air?

Prompts: Can you see car exhaust? Or smoke? Can you see aerosol mist? You can sometimes see it for a second, but it lingers in the air and becomes invisible to us.

Ask

How can we tell that these things are there?

Explain

One of the ways that we can tell that these things are in the air is that they irritate our lungs—we cough, our throats feel scratchy, and some people can even have a hard time breathing. But sometimes we don't know that these irritants and pollutants are in the air.

Lesson 3:
Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Poster #1

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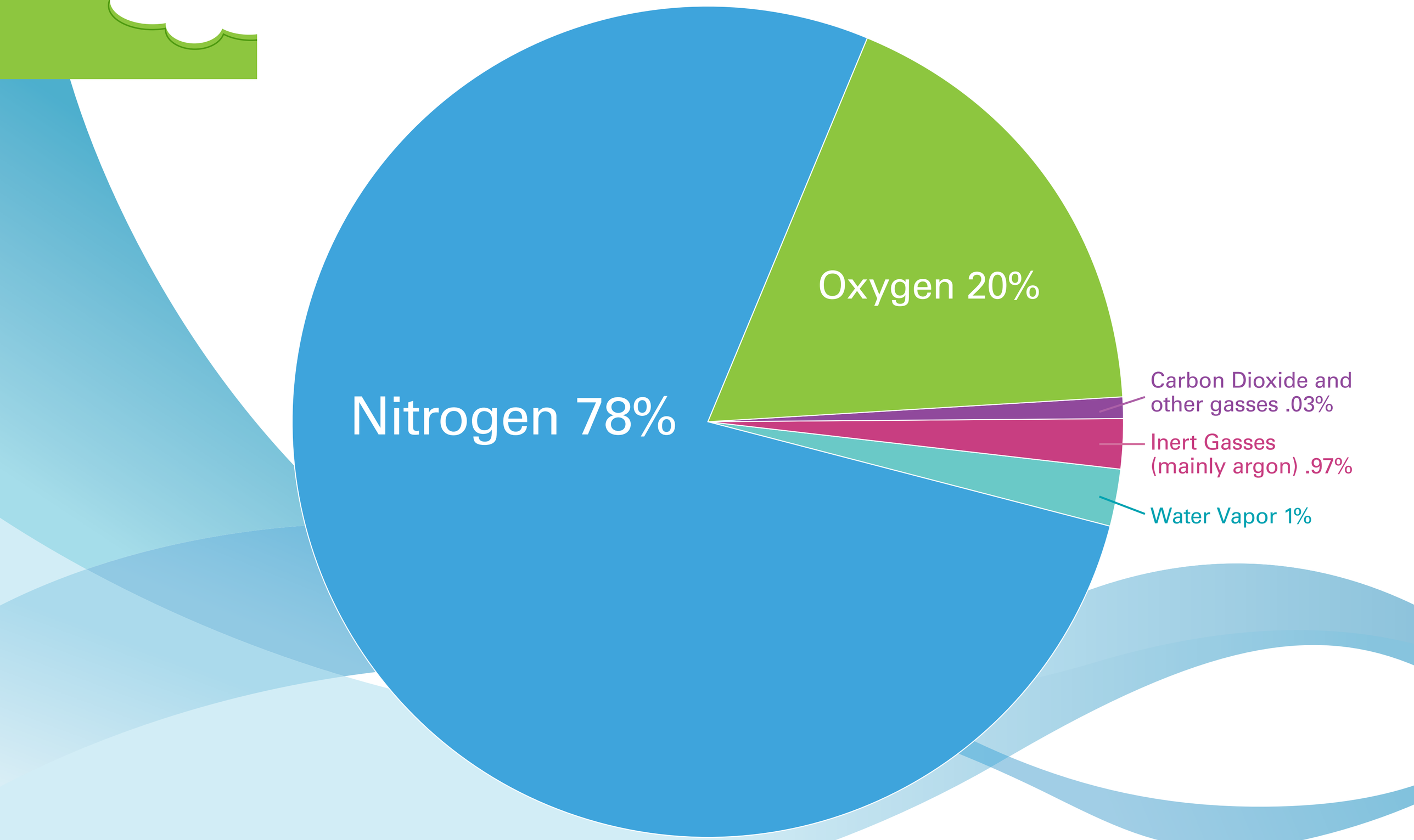
Composition of Air



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2. Asthma and Breathing Difficulties Activity

(10 minutes)

Explain
Ask

More than 25 million people in the United States have asthma, including 1 out of every 10 school-aged children. Do any of you know someone with asthma? A lot of people have breathing difficulties and problems other than asthma.

Ask
Explain

Most of us know someone with asthma. Raise your hand if you have or know someone who has asthma. Asthma is a serious, sometimes life-threatening, respiratory disease. Although there is no cure for asthma yet, asthma can be controlled through medical treatment and management of environmental triggers. What's an environmental ***trigger***?

Prompts: If you trigger something, what do you do? An environmental trigger is something our body takes in that can cause a response, like coughing or having trouble breathing.

Explain
Do

*[Show **Poster #2** (illustration of the lungs of an asthmatic and non-asthmatic).]* This image shows the inside of our lungs. When a person has asthma, the muscles in the pathways that send air into his or her lungs become inflamed and it can be difficult for him or her to breathe.

Limiting exposure to the things in our environment that trigger asthma and other breathing difficulties, there are medicines that can be used to help control the symptoms of asthma and make breathing easier.

Explain
Do

We're going to do a quick exercise so that we can get a sense of what an asthma attack might feel like. This is important: ***IF YOU HAVE ASTHMA, YOU SHOULD NOT PARTICIPATE IN THIS ACTIVITY.*** We are going to do a burst of exercise and then try to breathe through restricted "lungs." *[Pass out a stirring straw to each child. Have everyone stand up and run in place or do jumping jacks for a full minute. It's important to do this for a minute in order for heart rates to rise. At the 1-minute mark, tell students to place the stirring straws in their mouths and pinch their noses closed. They should try to breathe only through the stirring straw. Comment on the breathing difficulties that you see in the group.]*

(continued on other side)

Ask

How did you feel? *[Respond to the answers.]*

Ask

So, who knows what causes asthma?

Explain
Ask

We don't actually know what causes asthma, but we do know what can trigger an asthma attack. There are certain things in the air that we breathe that can trigger an asthma attack.

Explain
Ask

While you can't control what's in the air everywhere, you can control much of what is in the air in your home and school. What do you think might trigger someone's asthma?

Prompts: What might make breathing difficult for someone with asthma or even without? What about smoke?

Explain
Do

*[Show **Poster #3** (list of asthma triggers).]* Dust and dust mites, pollen, mold, mildew, cold air, exercise, pet dander, secondhand smoke, and cockroaches are the most well-known triggers.

Ask

How can we avoid some of these triggers?

Explain

Dust mites are teeny tiny little insects that are nearly impossible to see. We can use protective covers for pillows and mattresses to reduce our exposure to dust mites while we sleep. We spend one-third of their lives sleeping! And stay indoors when the pollen count is really high in the spring. Remember how we learned about limiting pests in Lesson 2? Well some of the most common pests, like cockroaches, can also be an asthma trigger. Here's the thing, it's hard to avoid all of these things. It gets cold in most places for at least part of the year. And most places have pollen.

Ask

Of these triggers, which things can you avoid most easily?

Prompts: Can you avoid pets? What is pet dander? When pets shed their fur, they also shed skins cells called dander, which can irritate our lungs when we breathe it in. Can you avoid secondhand smoke? Can we create a home that is free of mold and cockroaches?

Teacher Note: The issue of secondhand smoke may be a sensitive one for students who have a family member who smokes. As you are leading this discussion be aware that this issue may cause some tension and refer to your organization's policy and practices for addressing sensitive issues.

Ask

What is secondhand smoke?

Prompts: Have any of you ever experienced secondhand smoke?

Explain

Secondhand smoke is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar, and the smoke exhaled by smokers. Exposure to secondhand smoke is sometimes called involuntary or passive smoking because if you're breathing secondhand smoke it's like you're smoking. Secondhand smoke contains more than 4,000 substances, several of which are known to cause cancer in humans and animals.

Ask

What can you do if you're around secondhand smoke?

Prompts: Ask the smoker to go outside; leave the home.

Explain

We have just learned how to reduce or eliminate pests in our homes, and we'll learn how to control moisture and avoid excess mold in our homes in the coming weeks. We can avoid secondhand smoke by encouraging anyone we know who smokes to stop. If someone in your family smokes and isn't interested in quitting, he or she should smoke outside, away from children. No one should ever smoke in the car. Even the smoke odor that lingers in the upholstery in our cars or homes and on our clothes can damage our health. Let's look at some ways that we can avoid some of these triggers in our homes and schools.

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Poster #2

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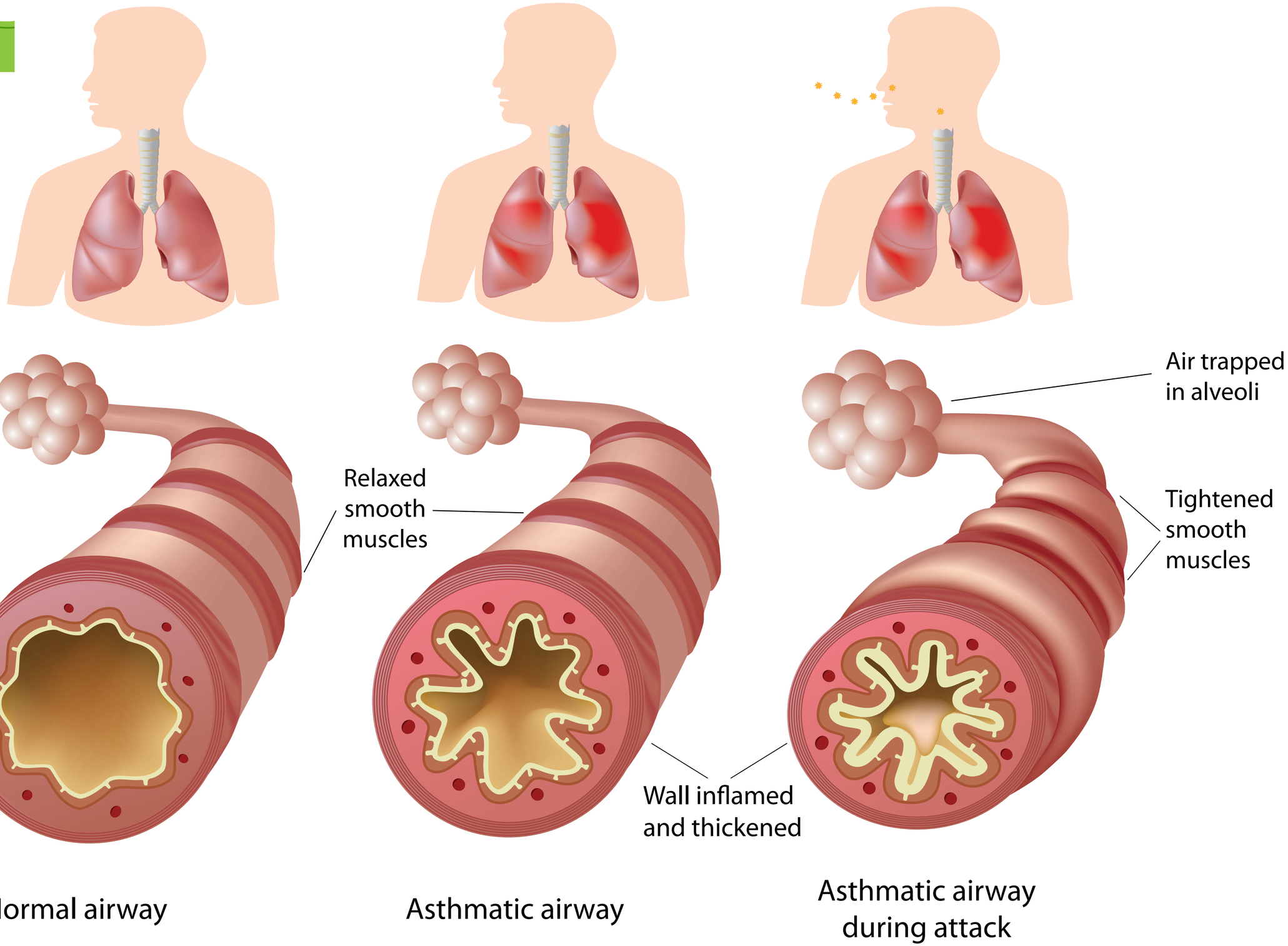
The Pathology of Asthma



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Lesson 3:
Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Poster #3

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Asthma Triggers

Dust Mites

Pollen

Mold

Cold Air

Cockroaches

Pet Dander

Secondhand Smoke

Exercise

EPA

3. Stopping Triggers at Home and at School

(15–20 minutes)

Do

*[Break the class up into five groups and give each group a copy of the **Asthma Triggers Hunt Handout**. Ask each group to find the triggers in the picture. For each trigger that they identify, they should also determine a way to make the air cleaner. Bring the class back together and review the Handout. The answers can be found at the end of this Lesson.]*

Prompts: How do we keep pollen out? What about secondhand smoke?

Optional Activity: Creating Smoke-free Signs *(10–15 minutes)*

Explain

Coloring or creating Smoke-free signs for use in the teaching space or at home. Now that we know how important it is to keep our spaces smoke free, we want to share that knowledge. Each of you (or in pairs) will make a poster that announces this is a smoke-free space.

Do

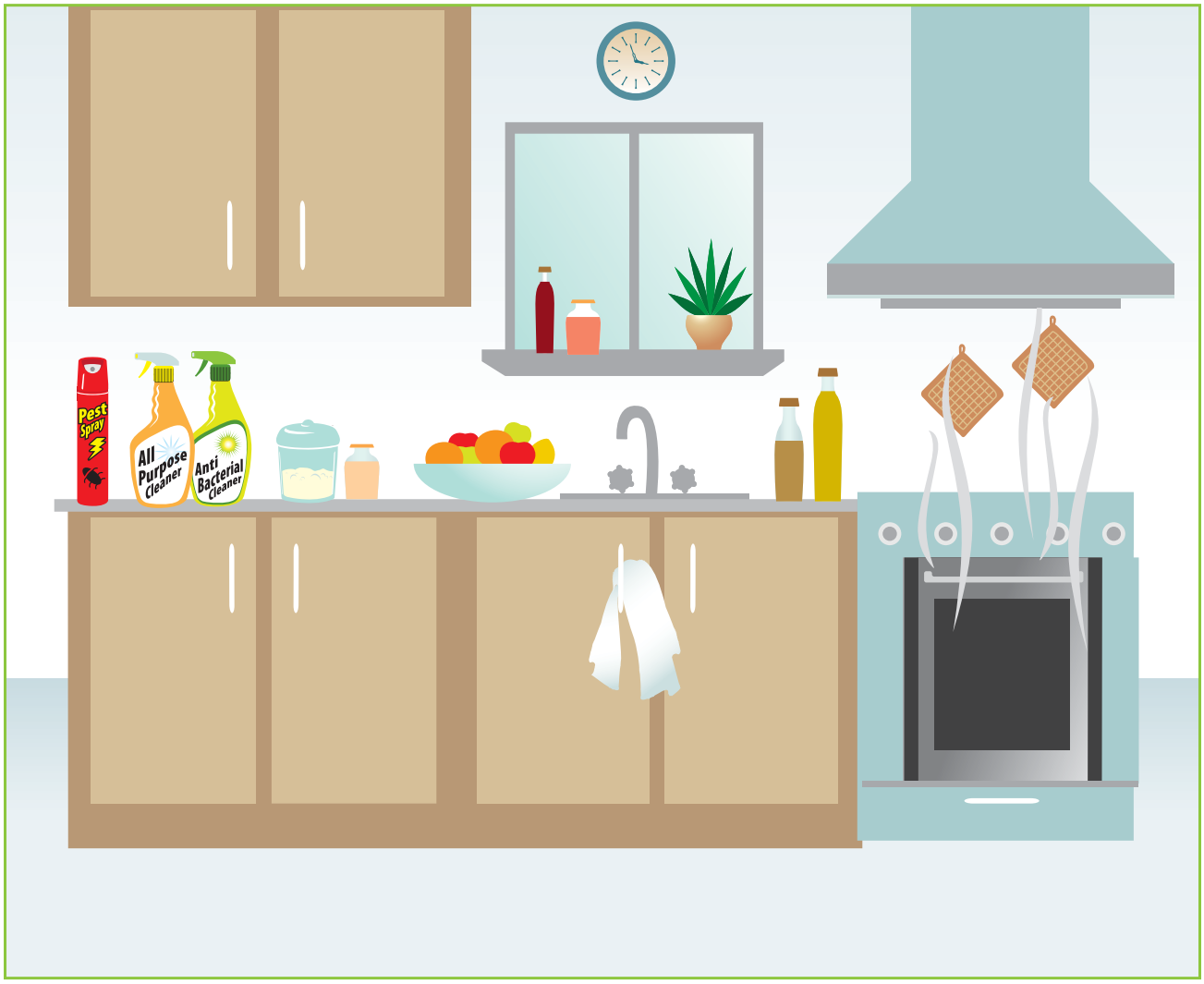
Pass out large sheets of paper or the coloring page and markers or crayons.

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Asthma Triggers Hunt

Can you identify the asthma triggers in the image below?

Hint: There are 3 asthma triggers in the kitchen.



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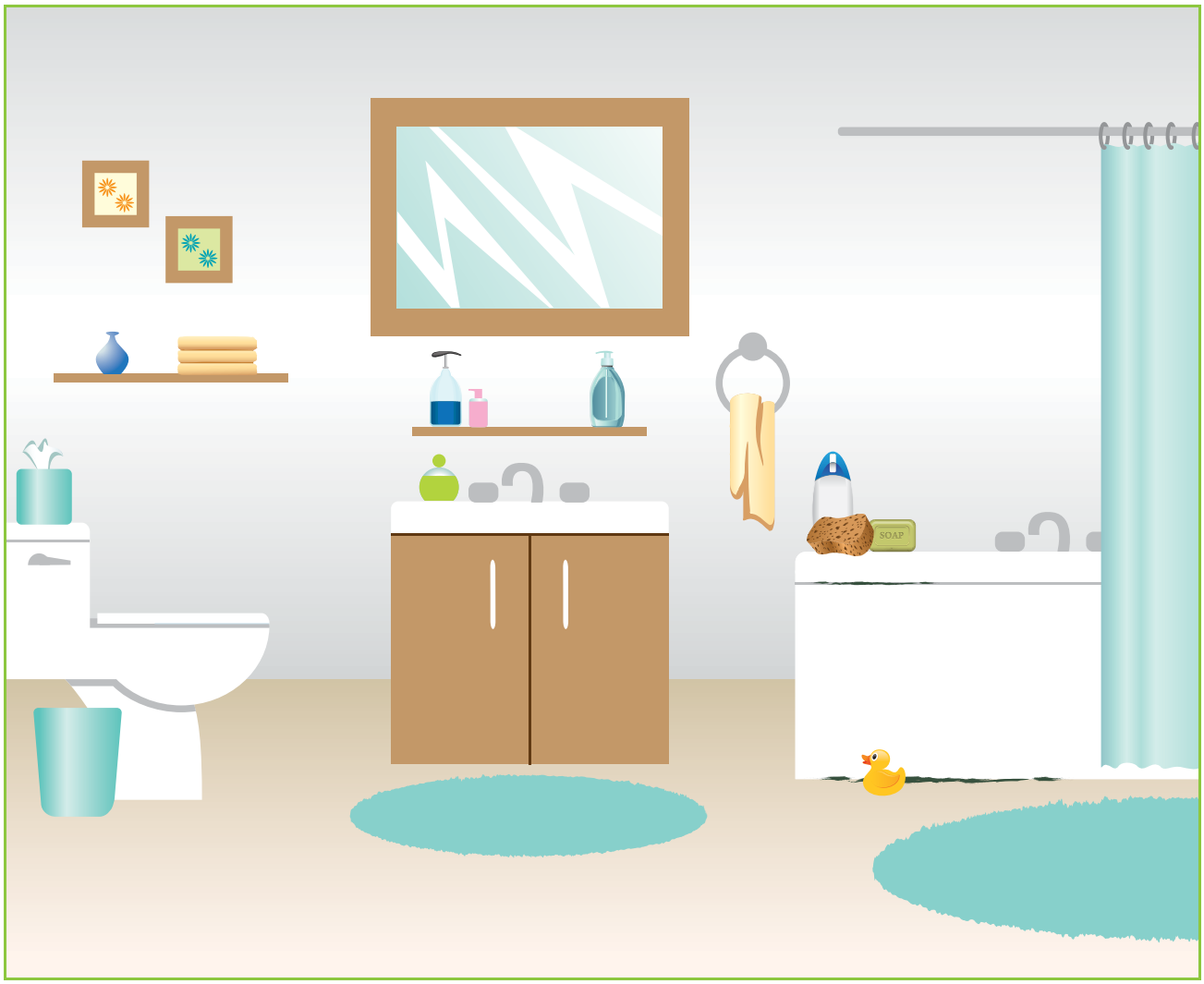
Can you identify the asthma trigger in the image below?

Hint: There is 1 asthma trigger in the bathroom.



Can you identify the asthma triggers in the image below?

Hint: There are 3 asthma triggers in the living room.

(continued on other side)

Asthma Triggers Hunt *(continued – page 4)*

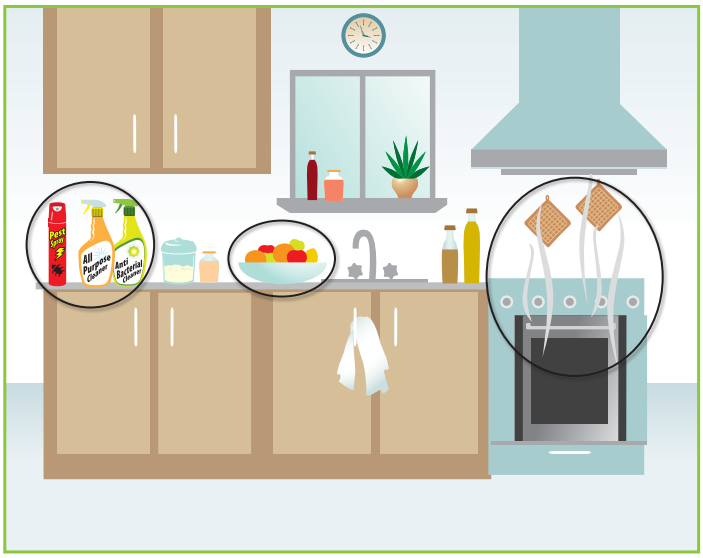
Can you identify the asthma triggers in the image below?

Hint: There are 2 asthma triggers in the bedroom.

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Asthma Triggers Hunt Answers

Kitchen

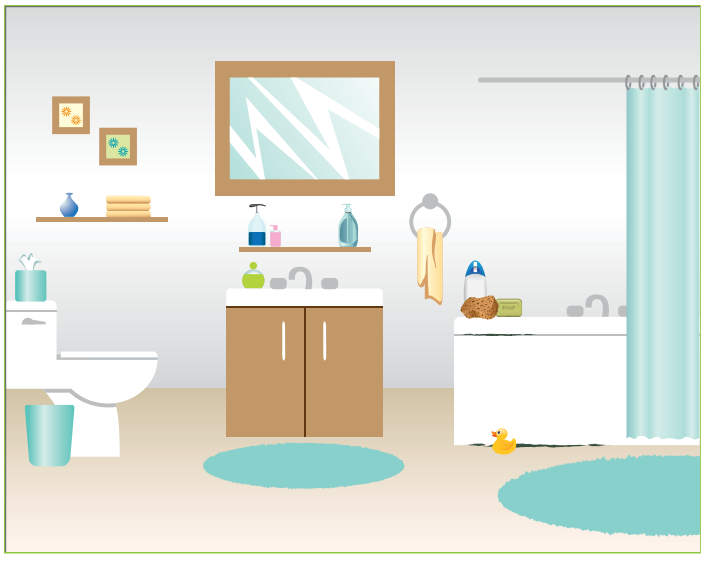


Cleaners used to clean the kitchen and pesticides used to keep pests away from produce can irritate your lungs and cause breathing difficulties.

- **Some things you can do:** Keep the kitchen clean and free of food crumbs. If you are using cleaners or pesticides, be sure to ventilate the room. Buy produce that is organic and pesticide free.

Stoves that use gas create a risk for carbon monoxide poisoning.

- **Some things you can do:** Adults should ensure that stoves vent to the outside and that all appliances are used properly.



Bathroom

Bathrooms are a common source of mold and mildew that can cause asthma or allergy attacks.

- **Some things you can do:** Install and use a bathroom fan to control moisture and help stop mold growth.

(continued on other side)

Living Room

Pets can trigger asthma and allergy attacks because of the dander in their fur.

- **Some things you can do:** Keep pets out of sleeping areas and off furniture, vacuum carpets, and clean upholstered furniture often.

Secondhand smoke can trigger asthma attacks and other breathing illnesses.

- **Some things you can do:** Encourage smokers to quit; adults shouldn't smoke inside.

Fireplaces and leaking chimneys are sources of carbon monoxide poisoning.

- **Some things you can do:** Rooms with fireplaces should be well ventilated and adults should be sure to open the flue damper and properly seal the chimney.

Bedroom

Dust mites are found in pillows, blankets and other bedding, stuffed animals, carpets, and furniture and can trigger an asthma attack.

- **Some things you can do:** Wash your bedding once a week in hot water, keep stuffed animals off of your bed, use an allergen-free mattress cover, keep the humidity in your house low (between 30% and 50%), vacuum once a week, and wipe down hard surfaces with a damp cloth.

SMOKE FREE SPACE

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

4. Lead *(10 minutes)*

Teacher Note: There is a belief that lead is only an issue in "old homes." In reality, there are many sources of lead in our daily lives. Yes, lead can be found in the paint and pipes of older homes, but it can also be found in schools, dirt and soil, water and toys, to name a few places that children may come into contact with lead every day. While this topic might not at first glance seem to relate to your organization's population, everyone can be impacted by lead.

Explain

We can easily see and take action to prevent some things that are dangerous in our homes. We can easily see secondhand smoke and we know that we need to keep chemicals, such as cleaning products, locked up and out of reach of small children. But there are some things that can harm us that we can't see.

Ask

What is lead? Where have you heard about it? What is it used for?

Explain

Lead is a metal that has many uses and is in a lot of places that we might not realize—like paint in older homes and soil in cities. But lead can be dangerous for humans if it's in our air, water, or food. It's especially dangerous for babies and children under age 6. We are not talking about the lead in your pencil. Pencils are safe for kids and adults to use.

Ask

Why do you think that might be?

Prompts: Remember that we talked about how children can be more easily affected than adults by the environment because they are still growing and developing.

Explain

When babies, toddlers, and kids are exposed to lead, it can have some serious effects on their brain development and lead to learning problems.

Explain

In our shelters—our homes and schools—we might find lead in two main places. First, in paint. Lead used to be an ingredient in household paint. About 30 years ago, the laws changed so that lead isn't in the paints that we buy today. But if you're in a building that was built before 1978, it probably has some lead paint in it and the lead from paint can get into the air.

(continued on other side)

Ask

Let's think about paint for a second. When you paint a room, what happens to the old paint? Do you take the old paint off?

Explain

Because we put a new coat of paint over the old one, many homes built before 1978 still have some paint with lead in it. As paint chips or flakes off the wall, the dust from lead paint is released and can get into the air and onto the floors and other surfaces nearby, like window sills and toys. One of the most common ways that lead dust gets into the air is from windows sliding open and shut. Lots of very small particles of lead are released that we can't see. So, what do you think happens when sandpaper is used on surfaces with lead paint? Will there be dust? What do you think is contained in the dust and how will humans be exposed? Babies and toddlers, who love to put their hands and things in their mouths, might also eat the paint chips. And sometimes lead dust even gets on our food, pillows, and other things that affect us.

Ask

What about outside the home? Lead paint was used on porches, railings, and on houses and buildings, and it can chip off and fall on the ground near homes and schools where children play in the dirt. How can we make sure that we keep our homes safe from lead?

Explain

Here are some easy ways that we can stay safe from lead at home:

1. Find out how old your home is, and if it is older than 1978, tell your parents that there is a good chance that there is lead paint in your home.
2. Make sure that any paint that is chipping or wearing and paint dust are cleaned up right away—look around window sills and baseboards inside, and around the house outside. Parents and guardians should always be in charge of cleaning up any paint or lead dust.
3. Change air filters regularly so that you don't breathe in lead.
4. When old homes are being renovated or workers come in to repair walls in homes, there is a danger of lead paint chips and dust being scattered. Be sure to stay away from areas where construction is being done.
5. Wash hands, bottles, pacifiers, and toys often.
6. Eat foods rich in calcium, iron, and vitamin C. These foods help the body absorb less lead.

Ask Can you think of anywhere else that we might find lead in our homes?

Prompts: What are the four things that we need to live? *[Air, water, food, and shelter.]*

Explain Lead can also be in the water that comes from our taps, especially in older buildings, because pipes used to be made out of lead. There are simple ways to test for lead in tap water, and states and counties run quality control checks for lead in the water.

Ask Are there any other ways that we can protect ourselves from lead?

Explain We can eat foods that are rich in calcium, iron, and vitamin C. These foods help the body absorb less lead.

Ask What are some calcium-rich foods?

Explain Milk, yogurt, cheese, and spinach.

Ask What are some iron-rich foods?

Explain Lean red meat, chicken, fish, raisins, beans, eggs, spinach, broccoli, and kale.

Ask How about some foods that are rich in vitamin C?

Explain Oranges, orange juice, and grapefruit.

(continued on other side)

Optional Activity: Asthma and Lead Exposure Patrol *(10–15 minutes)*

Ask

We know that pollutants like secondhand smoke and car exhaust can harm our lungs. And we know that older buildings have a greater chance of having issues with lead. Where do we find these things more often—in cities or suburbs, or in the country?

Explain

Because cities house more people in a smaller space, pollution and pests and older homes with lead can be more commonly found in cities than in the country. This means that if you live in a city, you need to be especially aware of these pollutants and take extra precautions. There are wonderful things about living in a city, but pollutants are something you need to be vigilant about in a city environment.

Do

Take the students on a search to answer the question: How can we make the air we breathe healthier? Start in the space you're in and tell the students to look around.

Prompts: How do we keep cold air out? How do we keep pollen out? Do you see layers of paint? Is there a lot of dust in the building? How do we identify if there are pests like cockroaches here? Ask the students where lead might be an issue in the building.

Prompts (if the facility is older than 1978): Do you see any chipping or peeling paint, especially around the windows or doors? Is there any repair work going on in the building?

5. Close and Take-Home Talk

(10 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We talked about what is in our air and how our lungs work. Go ahead and open your eyes. We learned what asthma is—who can raise your hand and tell me what asthma is?

Explain Ask

We also learned the key triggers for asthma and how to avoid them. Who can name a trigger and how to avoid it? *[Go through as many triggers as the class can remember and supply the ones that they miss.]* We learned about the dangers of lead. Who can name an effect of lead poisoning that may happen to children? Lead exposure can lead to health problems and learning disabilities.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things we learned today. What will you tell them? Will you talk about how our air is only 20 percent oxygen? Will you explain the triggers for asthma and how to keep the air in our homes nice and clean? Look around your home and see if there are any triggers and work with your family to clean them up. Ask your parents if your house was built before 1978 and tell them about the possible risks from lead paint. Look for any peeling paint in your home, especially if you have young brothers or sisters. Talk to your parents about the importance of cleaning those areas to avoid spreading harmful lead dust.

Explain Do

*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

To Share:

- When we take air in, the oxygen in the air passes throughout our bodies through our blood.
- The air we breathe in is only about 20 percent oxygen. Most of the rest of our air is nitrogen, which is another invisible, odorless gas, like oxygen.
- Lead is a metal that has many uses and is in a lot of places that we might not realize—like paint in older homes and soil in cities. But lead can be dangerous for humans if it's in our air, water, or food. It's especially dangerous for babies and children under age 6.

To Do and Talk About:

- **Get the Straight Scoop!** More than 25 million people in the United States have asthma, including 1 out of every 10 school-aged children. Many more people have breathing difficulties and problems other than asthma. Does anyone in your family or someone you know have asthma? Interview them about what they do to stay healthy. Do they have special precautions that they take? Do they take medicine? Have they had to change their lifestyle at all?
- **Asthma Triggers Tracking!** Even if you don't have asthma, it's important to keep the air in your home healthy and clean. There are a few things that you and your family can look for and can do to breathe a little easier. Below is a list of the most well-known asthma triggers and some steps to take to avoid them. Once you've talked about these triggers and investigated ways your family can address them, check it off!
  - ❑ Dust and Dust Mites – Keep your space clean and consider covering mattresses and pillows with airtight bedding. Wash sheets and bedding regularly.
  - ❑ Pollen – On days when the pollen count is very high, stay indoors and close the windows.

(continued on other side)

- ❑ Mold and Mildew – Clean up mold and mildew in bathrooms and keep it away by running the fan in the bathroom during and after showers.
- ❑ Pet Dander – Many folks are allergic to pets and find it difficult to breathe around them. If you have pets, brush them outside instead of inside.
- ❑ Secondhand Smoke – Smoking and secondhand smoke are bad for everyone. If someone in your family smokes, encourage them to stop.

- **Lead Paint Patrol!** Find out if your home was built before 1978. If it was, be extra careful with flaking paint. Get an adult's help to clean up dust and paint chips right away.

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 4: Be Sun Smart

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Lesson 4: Be Sun Smart

Snapshot

Moving outside, this lesson explores how we both need the sun and need to protect ourselves from its rays.

Preparation and Materials:

- Posters 1–3, Take-Home Talk
- Flip chart and markers
- Black or white board
- Large sheets of paper for each child to make a poster
- Markers or crayons
- Print a dozen different maps of heat, UV, and humidity from different locations on the same day from online weather sites

Note: If it's sunny out, think about teaching some or all of this lesson outside, but be sure to practice the sun smarts you will be teaching about!

Suggested Giveaways: UV bracelets that change color when the UV rays are at high levels, sunscreen, sun visors or hats that can be decorated, anything to protect from the sun.

Objectives—Students will be able to:

- define *sunscreen*, *sunburn*, *vitamin D*, and *ultraviolet (UV) light*;
- explain what the sun is;
- list three things which the sun provides that we need; and
- list three ways that they can protect themselves from too much sun.

Vocabulary: sunscreen, sunburn, vitamin D, and ultraviolet (UV) light

Procedure:

1. Introduction *(8 minutes)*
   Optional Activity: Sun Sing Off *(10–20 minutes)*
2. Defining Terms and Sun Smarts *(20 minutes)*
   Optional Activity: Heat and UV Around the Country *(10–15 minutes)*
   Optional Activity: Group Work on Animal Sunscreen *(10–15 minutes)*
   Optional Activity: Sun Smarts Posters *(10–15 minutes)*
3. Close and Take-Home Talk *(8 minutes)*

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Lesson 4: Be Sun Smart

1. Introduction and the Earth's Orbit

(8 minutes)

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words you learned from our last lesson? What can you do to positively impact the issue that we learned about?

Do Ask

*[Show **Poster #1** (four photos—extreme close-up images of the sun or sun flares).]* What does this look like? What do you see? Who knows what this is? *[Take some time with the photos. This may be the first time that some of the kids have seen images of the sun this close.]*

Explain

This is our sun. Have you ever seen a picture of the sun like this? We usually see the sun drawn as a big yellow ball. These photos were taken by NASA.

Ask

What is the sun? The sun is the star at the center of our Solar System. The sun is 109 times larger than the Earth and primarily consists of hydrogen and helium (gases).

Explain

Think of the sun as a humongous power plant that is throwing off heat energy. We feel the heat energy of the sun when we walk outside, and it's hot out even though it is 93 million miles away from the Earth because most of the space between the Earth and the sun is empty, which allows the sun's energy to reach us easily.

(continued on other side)

1. Introduction and the Earth's Orbit *(continued – page 2)*

Ask

How hot does the temperature get in *[insert your city name]* at its hottest?

Prompts: In August, what is the temperature? When you are baking a cake or making chicken, what temperature is the oven usually at? 350 or 400 degrees Fahrenheit, right? Well, we're able to experience the sun's energy from 93 million miles away because the core of the sun is more than 28 million degrees!

Explain

Today, we will talk about an environmental health issue that involves the sun: sun safety. But before we talk about climate and how we need to protect ourselves from the sun, let's think about the sun a little more.

Optional Activity: Sun Sing Off *(10–20 minutes)*

Do

Divide the group into smaller groups of 3–4 students and explain that you will have a Sing Off between groups. Each song or rap has to have one of the following words in it: Sun, Sunshine, Rays, Star, Light or Heat.

Lesson 4:
Be Sun Smart

Poster #1

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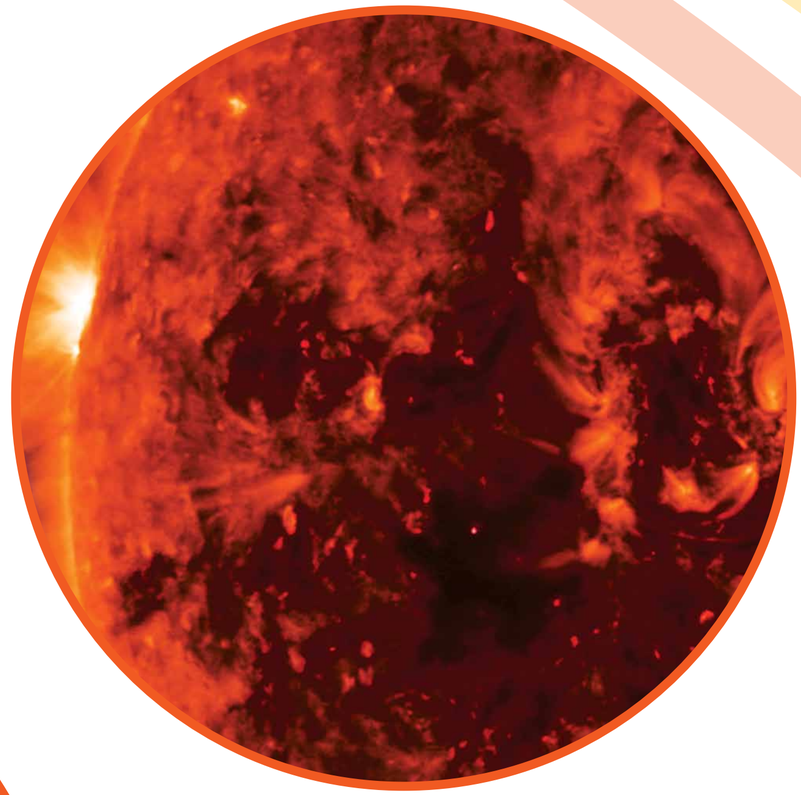

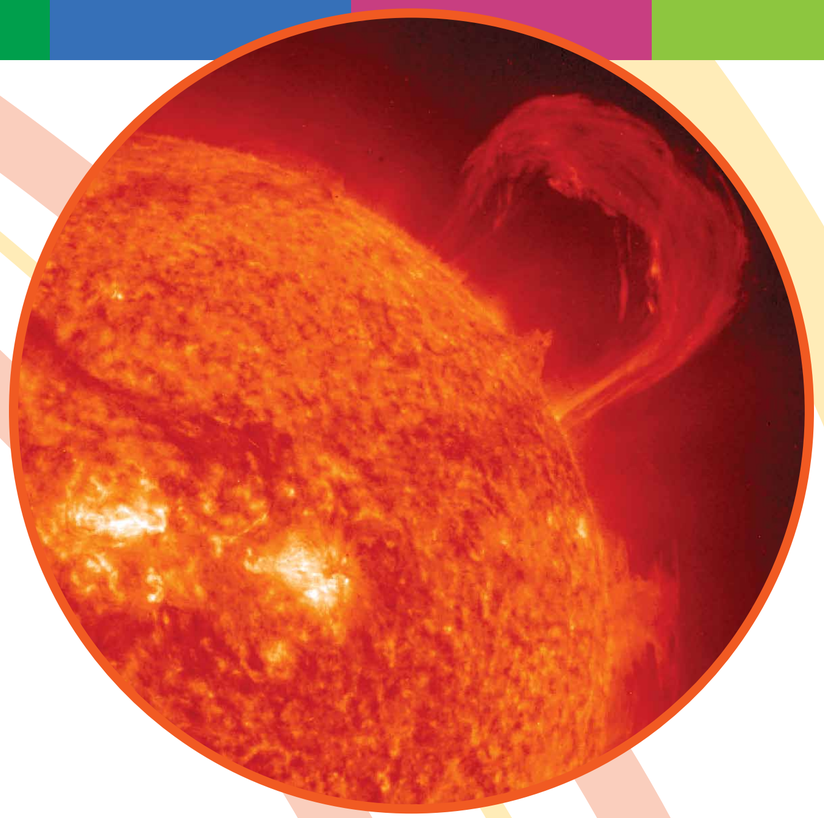

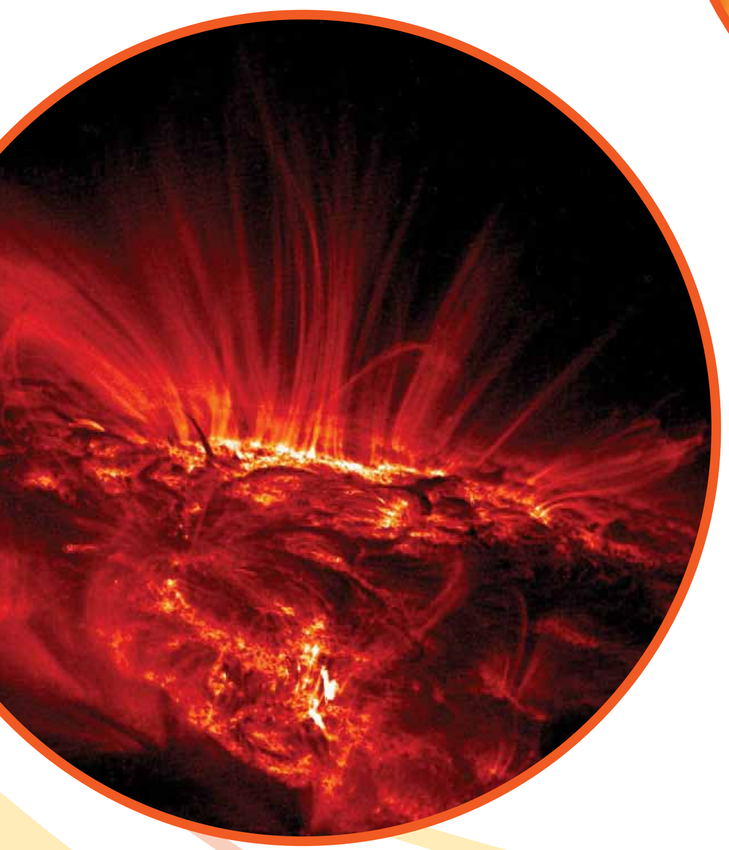

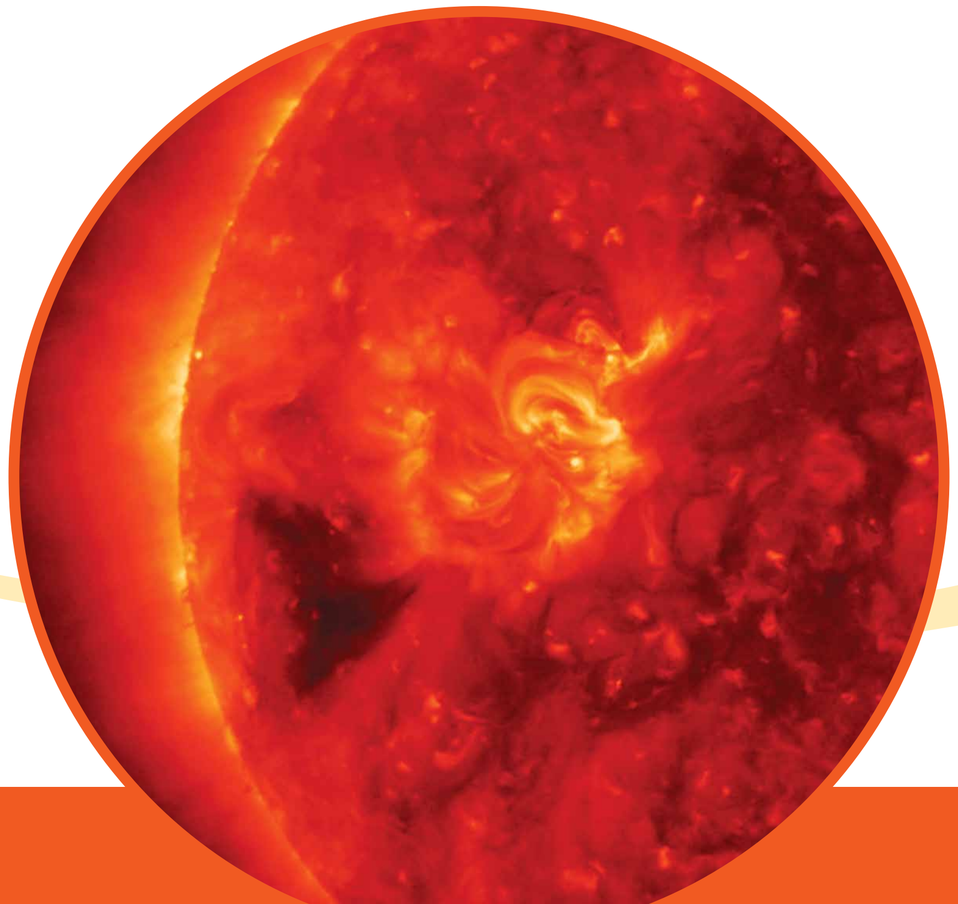

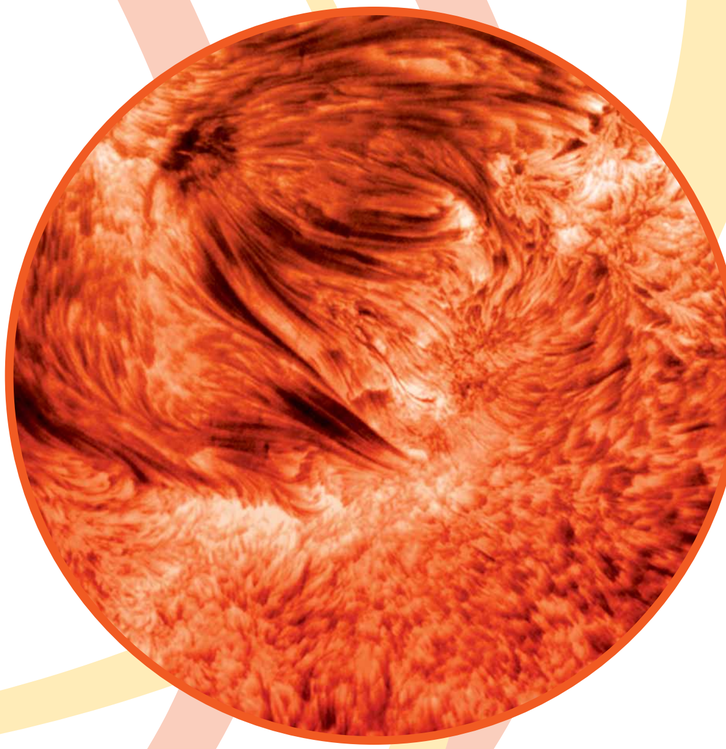

Photographs courtesy of NASA (www.nasa.gov)

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2. Defining Terms and Sun Smarts

(20 minutes)

Ask

Why do we need the sun? What does it provide us?

Prompts: Would we have plants without the sun? Food? Would we be able to live if the weather got extremely cold or extremely hot?

Explain

The Earth and all of its animals and plants work together as a system to sustain all of the trillions of living things. It's a careful balance and if one thing changes, it's going to have a ripple effect across the entire system.

Ask

What are some words that you think of when you think about the sun? Or being out in the sun?

Prompts: Light, sweat, heat, hot, warm, happy, sunscreen, sunglasses, sunburn.

Explain Ask

The sun is essential for life on Earth. Just as plants need the sun to grow, humans and other animals need it as well. What else do we get from the sun?

Prompts: Do sunny days make you happier? In the middle of winter, don't you long for summer? What would you eat if the sun didn't help plants and animals to grow?

Explain

The sun helps our bodies make vitamin D, which helps us to have strong bones and teeth. But certain foods and vitamins are excellent, safer sources of vitamin D.

Explain

The sun also helps to regulate our sleeping rhythms. We have evolved over millions of years along with the sun.

(continued on other side)

2. Defining Terms and Sun Smarts *(continued – page 2)*

Ask

So, the sun provides us with a lot of things. But if we're not careful, it can also cause a lot of damage. What are some of the harmful things that the sun can do?

Prompts: Have any of you ever had a sunburn? Or have you seen plants that got too much sun and not enough water?

Teacher Note: The issue of sunburns and the need for sunscreen may be a sensitive one for students whose families either don't use sunscreen or believe that sunscreen is only necessary for light-skinned people. As you are leading this discussion, be aware that this issue may cause some tension and refer to your organization's policy and practices for addressing sensitive issues.

Explain

And sunburn is exactly what it sounds like—some of the energy of the sun is in the form of ultraviolet rays that can burn our skin cells, and the skin gets red and feels warm. Did you know that you can get a sunburn on a cloudy day? Up to 80 percent of the sun's ultraviolet rays can get through on a cloudy day. Remember that even if you don't burn, any change to your natural skin color is a sign of damage to your skin. Sunburns can lead to skin cancer.

Explain

While we need the sun, we also need to protect ourselves from its strong ultraviolet radiation. We need to protect our body's largest organ, our skin.

Ask

What are ultraviolet or UV rays?

Explain

Remember when we said that the sun was like a giant power plant throwing off energy? Well, some of the energy is in the form of light and some is heat, and it's also sending energy down in the form of ultraviolet rays that are invisible—the same way that heat is invisible. We can't ***see*** heat and we can't ***see*** ultraviolet rays.

Explain
Ask

Have you ever heard of the UV Index? What is it? The UV Index assigns a number to the next day's UV—or ultraviolet ray—levels and highlights the level of exposure for people who plan to be outdoors. Just like the air quality code you hear about on TV, you should pay attention to the UV levels and plan your activities to protect yourself from getting too much sun by using shade and covering up with sunglasses, a hat, and protective clothing, and using sunscreen. The higher the number on the scale of 1 to 11+, the more careful you need to be.

Optional Activity: Heat and UV Around the Country *(10–20 minutes)*

Do

Share heat and UV Maps from around the country with the class. Print a dozen different maps of heat, UV, and humidity for the same day from online weather sites to allow students to see the range of temperatures around the country or the world. Have students call out the location (which you can find on a map) and the numbers and record them on the board.

Explain

Different parts of the country or world experience temperature and UV differently, but everyone experiences UV.

Explain

Since we can't separate the potential bad effects of the UV rays (wrinkles, eye damage, sunburn, skin cancer, and immune system suppression) from the good, like vitamin D, experts recommend that you eat foods with vitamin D and take vitamin D supplements rather than seeking the sun for vitamin D.

Ask

What are some foods that are high in vitamin D?

Answer: Salmon, tuna fish, fortified milk and orange juice, eggs, and lots of cereals and yogurts have added vitamin D.

Explain Ask

But doesn't the sun feel good sometimes? Don't you want to go out and feel it on your face? You certainly can; but remember to wear sunscreen, sunglasses, and protective clothing, like hats and shirts with sleeves, long pants or long shorts with high socks, to prevent damage to your skin and eyes.

Ask

Children are particularly at risk from the sun. Why might this be?

Explain

Children's skin is more sensitive and is growing more rapidly than that of adults (the cells are multiplying at a much faster rate). And children often spend a lot more time outside in the sun than adults do.

(continued on other side)

Explain

Childhood sunburns increase the risk for skin cancer later in life and can also increase the risk for skin cancer as early as the late teen years and early to mid-20s. A significant amount of sun exposure occurs before age 18. Protecting the skin and eyes during the first 18 years of life can reduce the risk of some types of skin cancer by up to 78 percent. Similarly, wearing sunglasses helps to prevent problems with your eyes later in life.

Ask

How can we protect ourselves from the sun?

Explain
Do

*[Show **Poster #2** (photos of turtle, muddy pig, camel's face, meerkat, and lions in the shade).]* There are some simple steps that you can take and some animals can show us how. Check out these animals—they are all either using a strategy or their bodies have evolved to help protect them from the sun's powerful rays.

Optional Activity: Group Work on Animal Sunscreen *(10–15 minutes)*

Do

Divide the class into groups to determine how each animal is protecting itself from the sun.

Ask

[Review each animal.] What do you think each one is doing to be sun smart?

Prompts: Which animal looks like it's wearing sunglasses? Has any animal here layered something on to protect itself? Which one has "clothes" on?

Explain

- The **turtle** wears a shell like a shirt—its skin can't be burnt if it's not exposed to the sun. You can wear clothing to protect your skin from the sun.
- The **pig** covers itself in mud as a sunscreen. You should wear sunscreen of at least SPF 15 whenever you are outside.
- The bumps over the **camel's** eyes act like a hat. You should wear a hat to protect your face, neck, and head from the sun.
- The black rings around the **meerkat's** eyes act as sunglasses. You should wear sunglasses if you're going to be outside for long periods.
- These **lions** are using the shadow rule—when your shadow is shorter than you are, seek shade!

Ask

Do all people need to protect themselves from too much sun? Do dark-skinned people need to do things like wearing hats, sunglasses, and sunscreen?

Prompts: Have you ever heard that African Americans or Native Americans or Hispanic Americans don't need to protect themselves because their skin is darker?

Explain

ALL people need to be sun smart and wear hats and sunglasses, seek shade, and wear sunscreen! Ultraviolet rays can damage everyone's skin and eyes.

Optional Activity: Sun Smarts Posters *(10–15 minutes)*

Explain

Coloring or creating Sun Smarts signs for use in the teaching space or at home. Now that we know how important it is to be sun smart, we want to share that knowledge. Each of you (or in pairs) will make a poster that explains one way to be sun smart. Think back to all the things we discussed.

Do

Pass out large sheets of paper or the coloring page and markers or crayons.

Lesson 4:
Be Sun Smart

Poster #2

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3. Close and Take-Home Talk

(8 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We talked about the sun and why we need it.

Explain

Remember how we talked about needing certain ingredients to make our environments healthy a little while back? The sun is a key ingredient in our environment, but we need to be sun smart. We looked at some animals that were practicing sun smarts. There are five things that we can do to be sun smart—who can name one? *[Go through all five: Wear clothing to protect your skin from the sun; wear sunscreen of at least SPF 15 when you are outside; wear a hat to protect your face, next and head from the sun; wear sunglasses outside; and when your shadow is shorter than you are, seek shade.]* You can open your eyes now.

Explain Do

For the next few weeks, we're going to chart the UV Index each day. We're going to chart the temperature and the UV Index and take a few notes on the weather. Let's see if we notice anything about ultraviolet rays. *[Show **Poster #3** (Charting the UV Index).]*

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. Talk with your family about why is it important to protect your skin and eyes while outside and discuss the steps that you can all take to be sun smart.

Explain Do

*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Lesson 4:
Be Sun Smart

Poster #3

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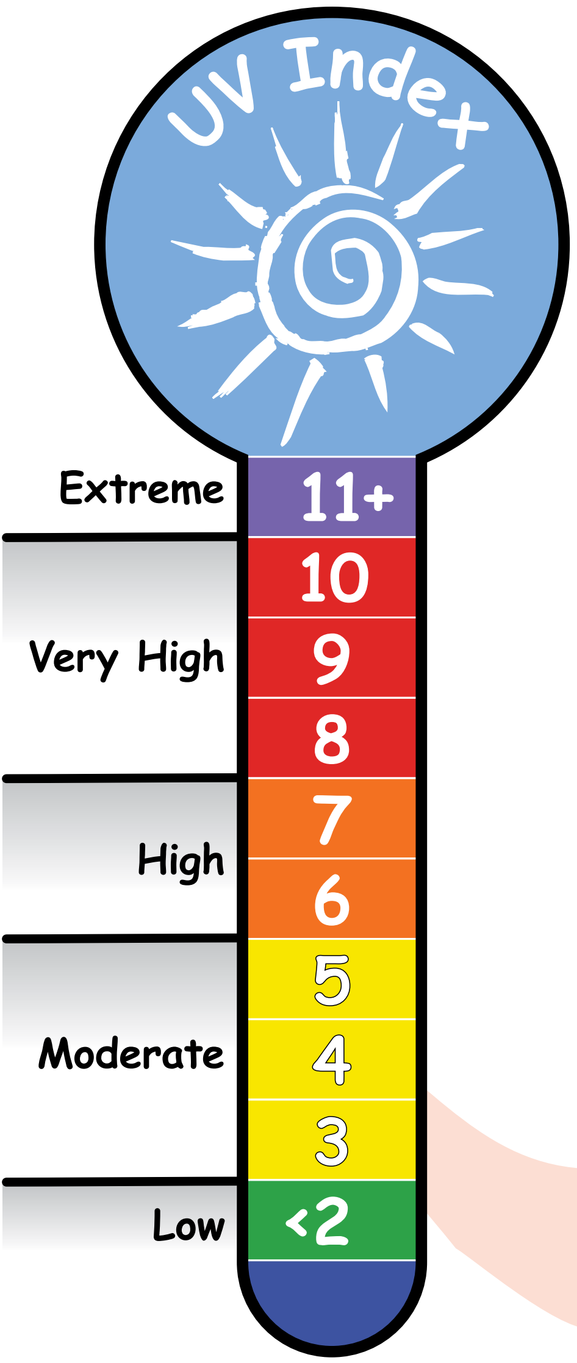
Charting the UV Index

Date	Temperature	UV Index	Notes



Take-Home Talk
Lesson 4: Be Sun Smart

To Share:

- The sun is the star at the center of our Solar System. The sun is 109 times larger than the Earth and primarily consists of hydrogen and helium (gases).
- We feel the heat energy of the sun when we walk outside, and it's hot out even though the sun is 93 million miles away from the Earth because the core of the sun is more than 28 million degrees!
- The sun is essential for life on Earth. Just as plants need the sun to grow, humans and other animals need it as well. We have evolved over millions of years along with the sun.
- While we need the sun, we also ALL need to protect ourselves from its strong ultraviolet radiation, which can cause sunburns and, sometimes, cancer.
- People of all complexions need to practice sun smarts. The sun's ultra violet rays can damage us all.

To Do:

- **Sun Smarts Spotting!** We saw that a lot of animals use natural sun smarts to protect themselves:

Turtles wear their shells like a shirt—its skin can't be burnt if it's not exposed to the sun. You can wear clothing to protect your skin from the sun.

Pigs cover themselves in mud as a sunscreen. You should wear sunscreen of at least SPF 15 whenever you are outside.

The bumps over the **camel's** eyes act like a hat. You should wear a hat to protect your face, neck, and head from the sun.

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The black rings around the **meerkat's** eyes act as sunglasses. You should wear sunglasses if you're going to be outside for long periods.

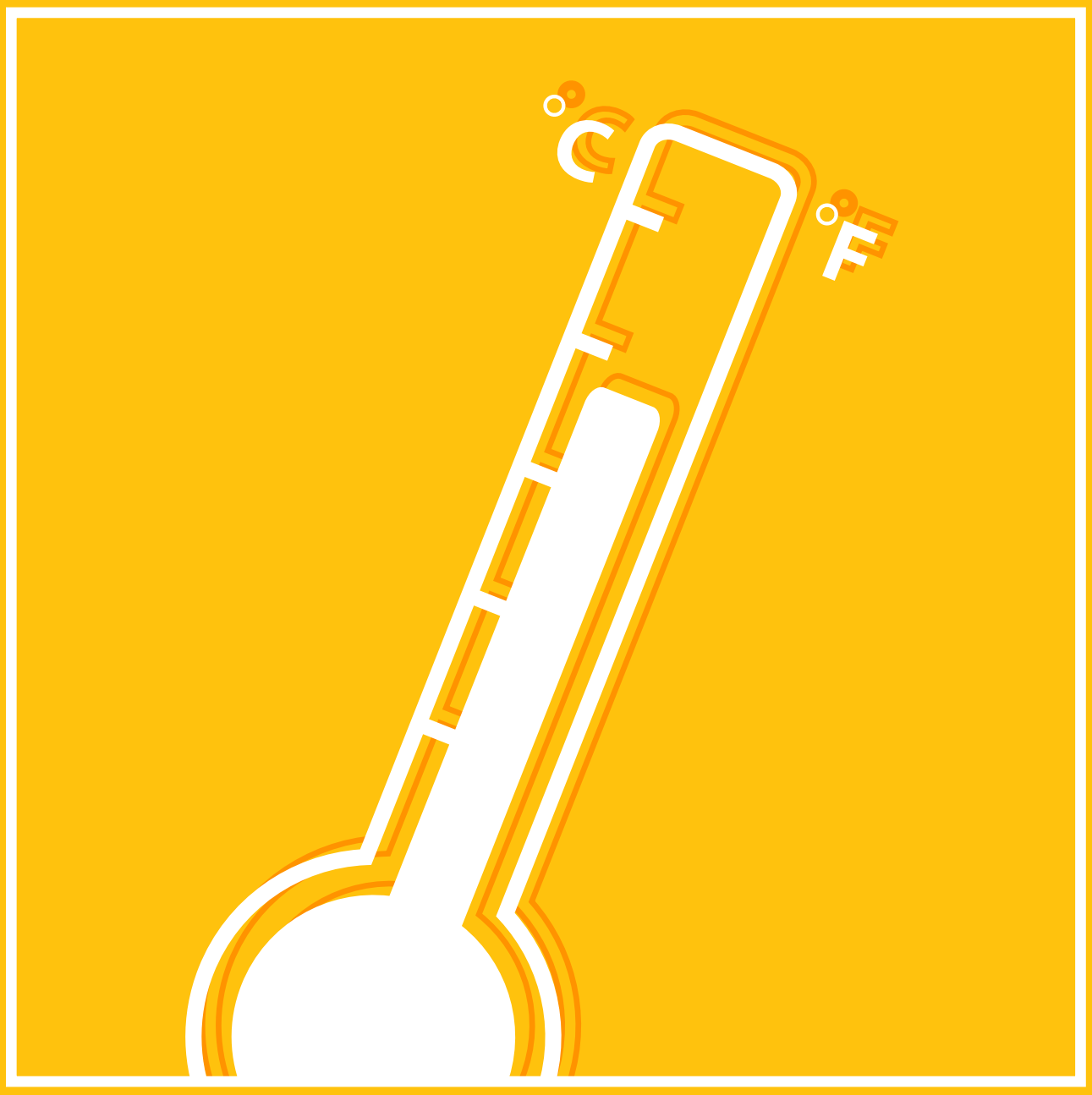
Lions use the shadow rule—when your shadow is shorter than you are, seek shade!

Where do you see these same kinds of ideas being used by people every day in your community? Where is there extra shade? Who wears sunglasses? How many different kinds of hats are out there? Is anyone using an umbrella for shade?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 5: Climate Change and You



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Lesson 5: Climate Change and You

Snapshot

This lesson explores climate change. Students learn what causes climate change and how we can participate in reducing the harmful effects of climate change.

Preparation and Materials:

- Posters 1–5, Take-Home Talk
- Flip chart and markers
- Black or white board
- Select six students for this activity: five to act as the sun, one to act as the Earth. You will need a relatively large space for this activity.
- Two dozen removable circular stickers to represent gases
- Read Walrus Case Study located under Additional Resources and print enough copies for the class

Objectives—Students will be able to:

- explain what the sun is;
- explain the rotation and revolution of the earth around the sun;
- explain what our atmosphere is and what it does; and
- explain how climate change impacts them and the simple steps that they can take to help reduce greenhouse gases.

Vocabulary: climate change, greenhouse gases, and atmosphere

Procedure:

1. Introduction and the Earth's Orbit Activity *(18 minutes)*
   Optional Activity: Planting Seeds or Seedlings *(15–25 minutes)*
2. Defining Terms and Greenhouse Effect *(18 minutes)*
   Optional Activity: Walrus Case Study *(20–25 minutes)*
3. Close and Take-Home Talk *(8 minutes)*

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1. Introduction and the Earth's Orbit Activity *(18 minutes)*

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words that you learned from our last lesson? What can you do to positively impact the issue we learned about?

Do
Ask

*[Show **Poster #1** (four photos—extreme closeup images of the sun or sun flares).]*
We looked at these when we talked about sun smarts—who can tell me what this is?

Explain

This is our sun. Someone remind the class what the sun is and some cool facts about it.

Prompts: The sun is the star at the center of our Solar System. The sun is 109 times larger than the Earth and primarily consists of hydrogen and helium (gases).

Explain

We want to think of the sun as a humongous power plant that is throwing off heat energy. We can experience the sun's energy because the core of the sun is more than 28 million degrees. Today, we will talk about another environmental health issue that involves the sun: climate change. Before we talk about climate change and how we need to protect ourselves from the sun, let's think about our Solar System a little more.

Explain
Do

*[Ask for six volunteers: five to represent the sun, one to represent the Earth. Show **Poster #2** (image of the planets and their orbits).]*The sun is the center and the anchor of our Solar System and, like the other seven planets in our system, the Earth moves, or orbits, around it along a pathway. It takes a full year for the Earth to travel this pathway one time. Let's see if we can demonstrate this.

(continued on other side)

1. Introduction and the Earth's Orbit Activity *(continued – page 2)*

Explain

Tell the class that the five students representing the sun will link arms and act as the sun. The student representing the Earth will revolve around the sun using the orbit image as a guide. Ask the student representing the Earth to start revolving around the sun students.

Do
Ask

[Let the student revolve around the sun one time.] If the Earth went around the sun this way, wouldn't *[insert child's name]*'s arm always be getting the sun's rays and wouldn't *[his or her]* other arm always be in the dark?

Prompts: What about night and day? If the rays are streaming toward the Earth, can they curve around the Earth?

Explain
Do

While the Earth is moving along this pathway, it's also spinning, or rotating, extremely fast. And as it spins, the sun hits different parts of it, giving us night and day. It takes 24 hours for the Earth to spin around completely. *[Tell the Earth student to continue on the pathway, but to now spin/rotate while doing it.]*

Ask

[Let the student revolve around the sun once while rotating for night and day.] What about the seasons? If the Earth is revolving and rotating, we should have the same weather all the time, right?

Prompts: Do we have the same weather all the time here? Does any part of the world have the same weather all of the time?

Explain
Do

Well, the Earth doesn't stay straight up and down, it tilts throughout the year, and as it tilts, some parts of the Earth get more sun. During which season does the Earth get more sun? *[Summer.]* Less sun? *[Winter.] [Tell the Earth student to continue on the pathway while spinning and tilting.]*

Ask

How many times would the earth need to rotate/spin for each one revolution around the sun?

Explain

365 times! A rotation is 1 day, which gives us night and day, and a revolution is 1 year, which gives us the seasons.

Explain

The heat energy we get from the sun as we orbit and rotate and tilt is part of a delicate balance.

Optional Activity: Planting Seeds or Seedlings *(15–25 minutes)*

Explain

We just learned about how important the sun is to life here on earth and how our planet is constantly changing in relation to the sun. Now let's see the sun in action. We are going to decorate these planters and then plant *[insert what you will be planting]* in them. We will set the plants in the sun and watch them grow and respond to the sun. We'll be able to see the plants actually seek out the sun by how they move.

Do

Pass out planters and decoration supplies, including crayons, markers, paint, stickers, glue, etc.

Ask

As students are decorating the planters, lead a loose discussion on growing things.

Prompts: How many of you keep plants at home? Have you ever grown anything to eat? How big/tall do you think these plants will get? Why will we be able to see them move toward the sun?

Do

Help students put potting soil and seedlings or seeds in their pots and place them in a sunny window.

Lesson 5:
Climate Change and You

Poster #1

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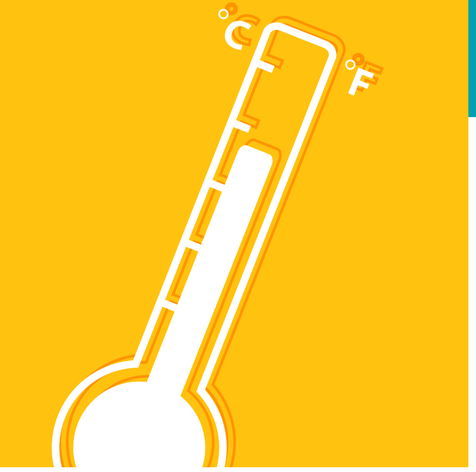

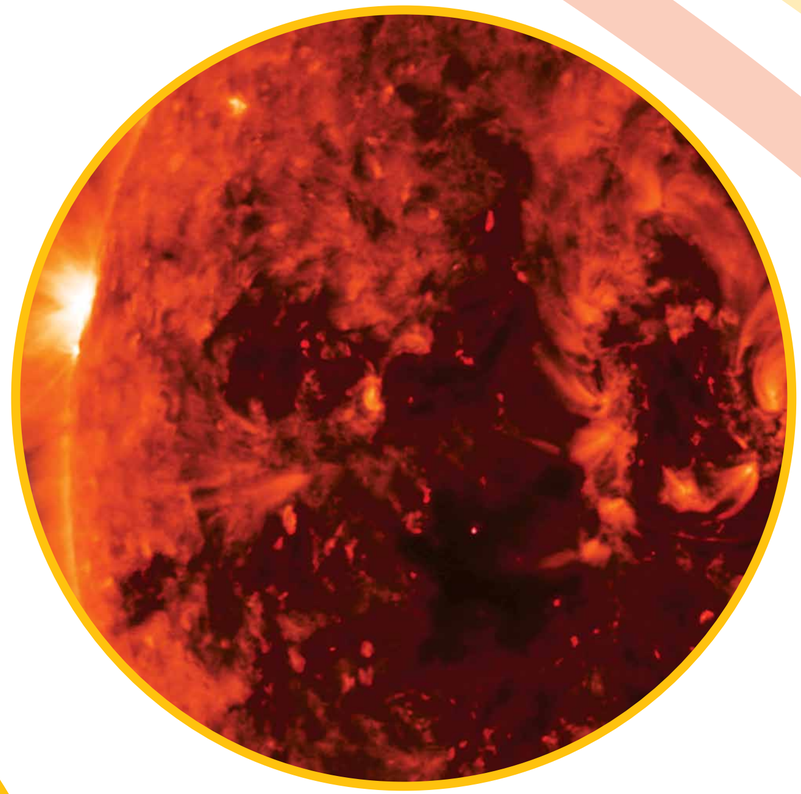

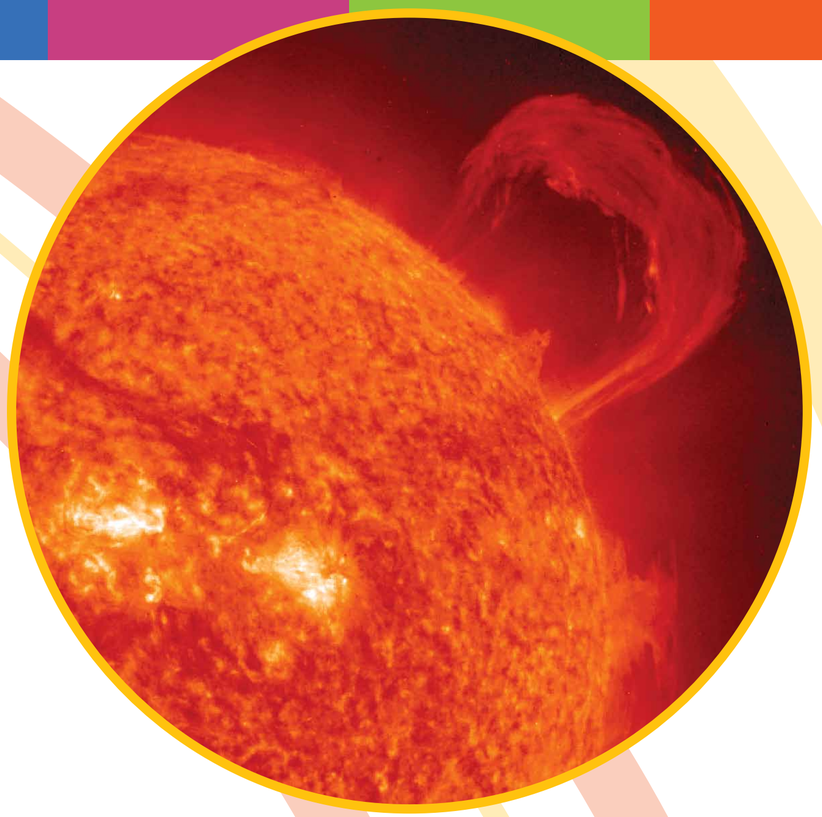

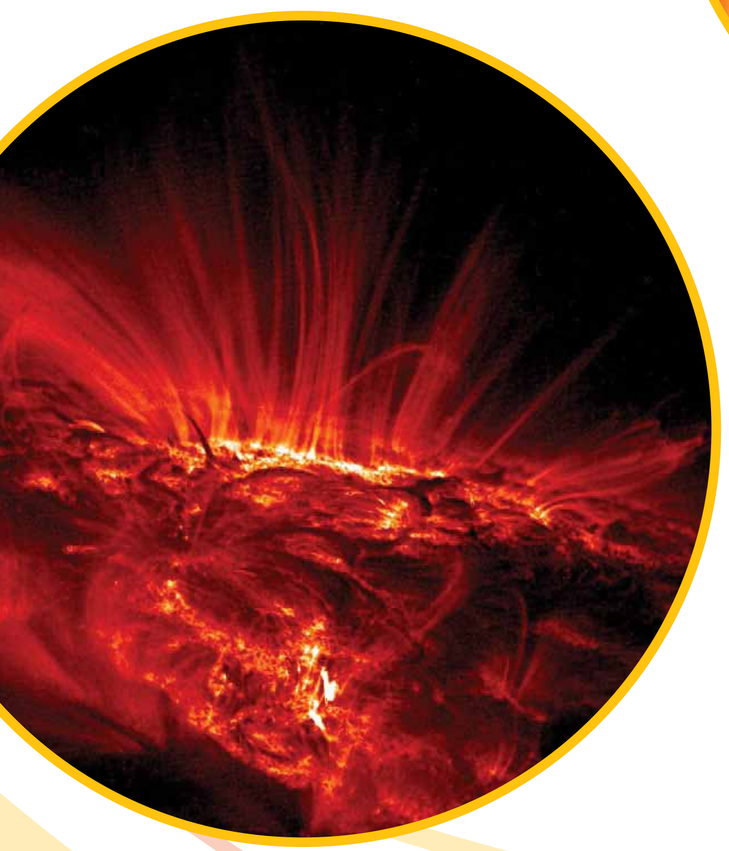

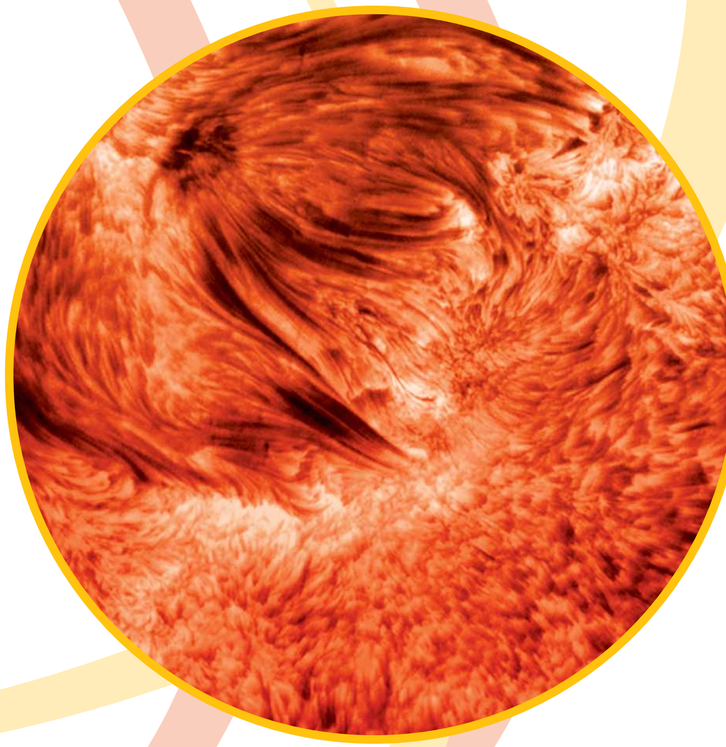

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Lesson 5:
Climate Change and You

Poster #2

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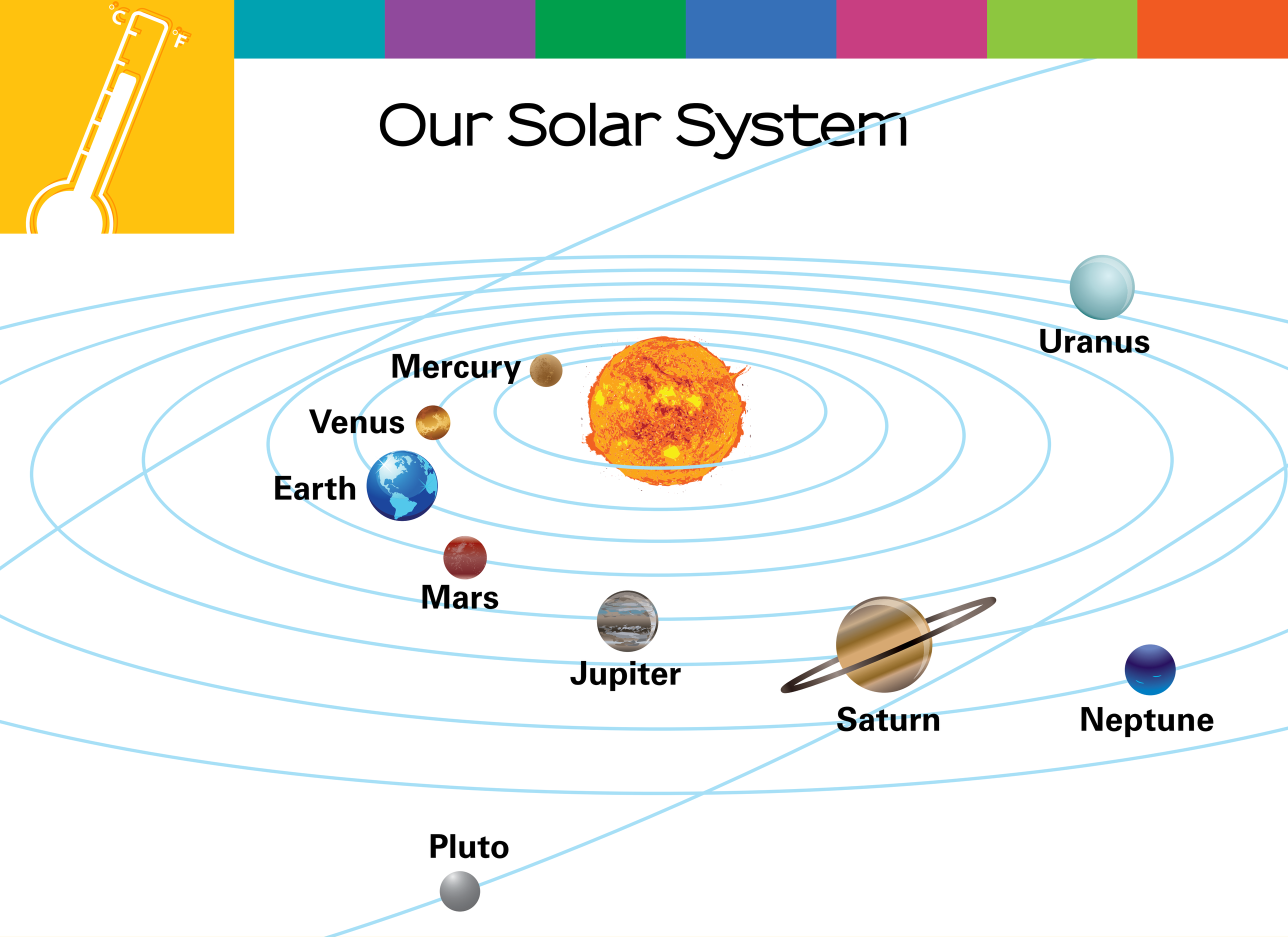
Our Solar System



2. Defining Terms

(18 minutes)

Ask

Why do we need the sun? What does it provide us?

Prompts: Would we have plants without the sun? Food? Would we be able to live if the weather got extremely cold or extremely hot?

Explain

The Earth and all of its animals and plants work together as a system to sustain all of the trillions of living things. It's a careful balance and if one thing changes, it's going to have a ripple effect across the entire system. The warming of the Earth's overall temperature is one big ripple!

Ask

Have you heard of the Greenhouse Effect? What does this mean?

Prompts: Have you ever seen a greenhouse before? What do they do? Or think about what happens to a car on a hot summer day. When you get inside, what is it like? Often it's hotter inside the car then outside, right?

Explain Do

*[Show **Poster #3** (photos of a greenhouses).]* Most greenhouses look like small glass houses and are used to grow plants, especially in the winter. Greenhouses trap heat from the sun. The glass panels of the greenhouse let in light energy but keep heat energy from escaping. This causes the greenhouse to heat up, much like the inside of a car parked in sunlight, and keeps the plants warm enough to live in the winter. The Earth is kind of like a giant greenhouse.

Explain Do

*[Show **Poster #4** (The Greenhouse Effect #1 – overview).]* The sun sends heat and light energy our way and it enters our atmosphere. The Earth and crops and people absorb the energy. The heat is also absorbed by our atmosphere.

Ask

What does ***atmosphere*** mean?

Prompts: Can you see it? Can you taste it? Can you hear it?

(continued on other side)

2. Defining Terms *(continued – page 2)*

Explain

The atmosphere is the air that we breathe, the molecules bouncing off each other. It's all around us and it helps protect us from the sun. This giant sun powerhouse sends so much energy our way that it would be extremely dangerous if it came directly to the Earth's surface. The gases that make up the atmosphere act like the glass on a greenhouse and let most of the light and the heat in, but filter out some of it so that it's safer for us. These gases also help to keep the Earth warm when one part of the Earth is rotating away from the sun—at night. Our atmosphere is a mix of gases that do different things. If we change the mixture of gases, how could our planet change?

Explain
Do

*[Show **Poster #5** (The Greenhouse Effect #2 – detail of the rays hitting the atmosphere and use removable stickers to represent gases).]* Since it's difficult to see the atmosphere we're going to use these stickers to represent different gases in the atmosphere that are all around us. *[Place the removable stickers on the Greenhouse Effect #2 Poster and tell students what gases they represent.]* Explain that the gases help keep the heat around us like a blanket.

Explain

These gases also help to keep the Earth warm when one part of the Earth is rotating away from the sun at night. Our atmosphere is a mix of gases that do different things.

Ask

If we change the mixture of gases, how could our planet change?

Prompts: Different gases do different things. What if we had a lot of gases in the atmosphere that made it really, really hot or blocked the sun's good effects? If the temperature rises, what might happen to plants? To snow? To ice? To fish in the ocean?

Explain

Remember, we said that this system of ours is a balance. Well, what happens if we have more and more of these greenhouse gases in our atmosphere?

Prompts: Would it get hotter or colder? More greenhouse gases in our atmosphere means that more heat stays close to the Earth and the temperature rises. The temperature of the Earth has risen 1 degree Fahrenheit over the last 100 years, and it's projected to get hotter.

Explain
Ask

So, when people talk about the Greenhouse Effect, they mean the rise in temperature that the Earth is experiencing because gases in the atmosphere trap the energy—the heat—from the sun. What is good about this? What is bad about it? Have you heard people talking about this issue?

2. Defining Terms *(continued – page 3)*

Ask

Why do we have more greenhouse gases than we used to?

Prompts: What do we use more of today that we didn't use 100 or 200 years ago?

Explain

Greenhouse gases are released when we burn gas and oil and coal to power our cars, factories, planes, and trains, and provide power/energy to the places where we live and go to school and work.

Ask

What happens if the Earth gets warmer? What or who would be affected?

Prompts: Would ice stick around if it got hotter? Would ocean temperatures rise? What about our seasons, would they be impacted?

Explain

If the temperature continues to rise, it can have a huge ripple effect. One of the big things that would be impacted would be weather. A hotter Earth would mean more rain and more severe weather like hurricanes, snowstorms, and even droughts. This would happen because melting ice would make more water in the oceans and they would rise. The hotter air would create more precipitation that would collect in the clouds and cause more rain in some areas. And what happens if the oceans rise? Have you seen a beach? Think about all the people who live by the water—what would happen to their homes? Everyone and everything would have their environment changed drastically.

Explain
Ask

What would be the impact on children? Remember that we talked about how children and adults interact with their environments differently. Well, climate change also affects children and adults differently. As the Earth gets warmer, and we create more greenhouse gases, air pollution increases from these greenhouse gases and ground-level ozone—that's another name for smog—increases. Young children's lungs, and your lungs, too, are still developing, so exposure to this pollution can have long-term effects. We get ground-level ozone when vehicle exhaust, fumes from factories, pollution from power plants, and other chemicals in the air mix with high temperatures.

Ask

During the summer, when it gets really hot, have you ever heard the newscaster say that it's a Code Orange day or a Code Red day? That's a measure of how healthy the air is to breathe. On days when air pollution is high, it is good to stay inside and not do a lot of exercise outside.

(continued on other side)

Optional Activity: Walrus Case Study *(20–25 minutes)*

Do

Read the case study included in this lesson to the students and lead a discussion about the impact of climate change on the walrus.

Prompts: A moment ago, I said that climate change had a ripple impact. Let's think about these walruses and this idea of a ripple impact. Have any of you ever thrown a stone into some water? What happens? One action, you throwing a stone, causes all these ripples, all these other actions, that are connected. What happens if there are fewer walruses?

Explain
Ask

So, what can we do to make sure that our system stays in balance? *[Make a list of all of the suggestions. Be sure to prompt students to think of local examples of saving energy.]*

Prompts: What are some ways that we can reduce the amount of greenhouse gases that we generate daily and help to reduce ground-level ozone?

- Turn off lights at home and at school.
- Walk, carpool, or take public transportation to get where you need to go.
- Buy things that are locally made or grown and don't have to travel very far to get to you.
- Turn off and unplug your appliances—like computers, TVs, cell phones, and MP3 players—when you're not using them.
- And recycle, recycle, recycle! All of our trash in landfills mingles and releases greenhouse gases as well. The less you put in, the better.
- Take a short shower instead of a bath—a 10-minute shower uses less water, and thus less energy, than a bath.
- Tell your friends and family about saving energy. Encourage them to use ENERGY STAR® products, like CFL (compact fluorescent lightbulbs), and other products that save energy.

Lesson 5:
Climate Change and You

Poster #3

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Greenhouses

Lesson 5:
Climate Change and You

Poster #4

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The Greenhouse Effect

Heat and light energy

Some heat is absorbed by the atmosphere

Atmosphere

Earth's Surface

Most heat and energy are absorbed by the Earth, crops, and people.

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Lesson 5:
Climate Change and You

Poster #5

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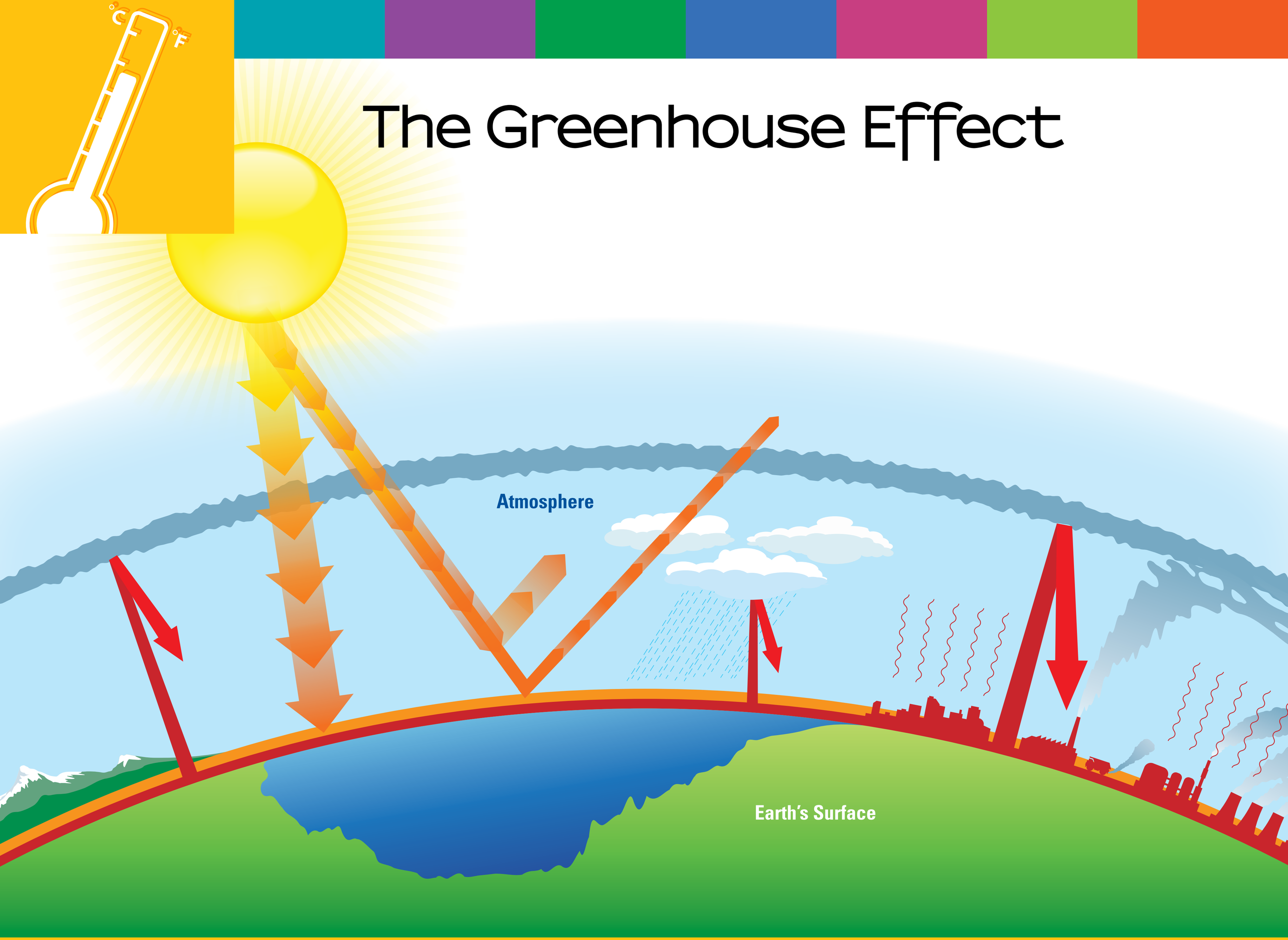
The Greenhouse Effect



3. Close and Take-Home Talk

(8 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We talked about the sun and why we need it. We had a demonstration of the orbit, rotation, and tilt of the Earth. We talked about ***greenhouse gases***. Raise your hand if you can tell the class what greenhouse gases do and how they are created. *[Call on a student.]* We talked about what might happen if the Earth continues to warm. And we talked about some simple things that you can do to reduce the amount of greenhouse gases. Who can name a few of these things? *[Call on a student.]* You can open your eyes now.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things we learned today. Look for ways that you can use less energy in your home and talk with your family about how you can all help generate less greenhouse gases. Can you and your family commit to making some simple changes to help reduce greenhouse gases?

Explain Do

*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 5: Climate Change and You

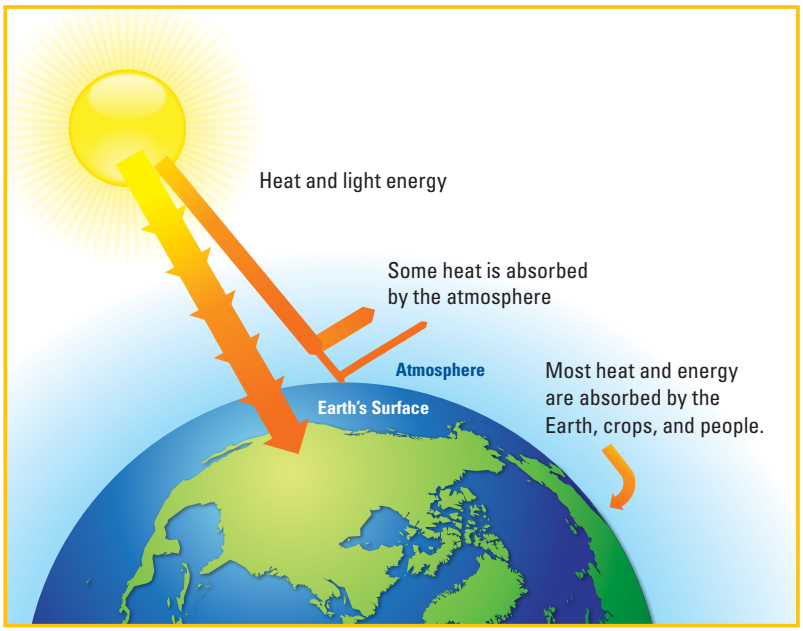
To Share:

- The sun is the center and the anchor of our solar system and, like the other seven planets in our system, the Earth moves, or orbits, around it along a pathway. The earth needs to rotate/spin 365 times for each one revolution around the sun! A rotation is 1 day, which gives us night and day, and a revolution is 1 year, which gives us the seasons.

- This giant sun powerhouse sends so much energy our way that it would be extremely dangerous if it came directly to the Earth's surface. The gases that make up the atmosphere act like the glass on a greenhouse and let most of the light and the heat in, but filter out some of it so that it's safer for us.

- These gases also help keep the Earth warm when one part of the Earth is rotating away from the sun—at night.

- Our atmosphere is a mix of gases that do different things. If we change the mixture of gases, our planet will change. Greenhouse gases are released when we burn gas, oil, and coal to power our cars, factories, planes, and trains, and provide power/energy to the places where we live and go to school and work.



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To Do:

- **Energy Everywhere!** We use energy so often throughout the day that we rarely think about it. Ask your family to track all of the times throughout the day that they use energy—have each member of your family keep a running log. By learning when we use energy, we can see where we can easily save energy.

  Just a few daily activities that use energy: Turning on lights, watching TV, using a computer, listening to music, taking a shower/bath (energy to heat the water), driving somewhere, cooking, and using anything with batteries.

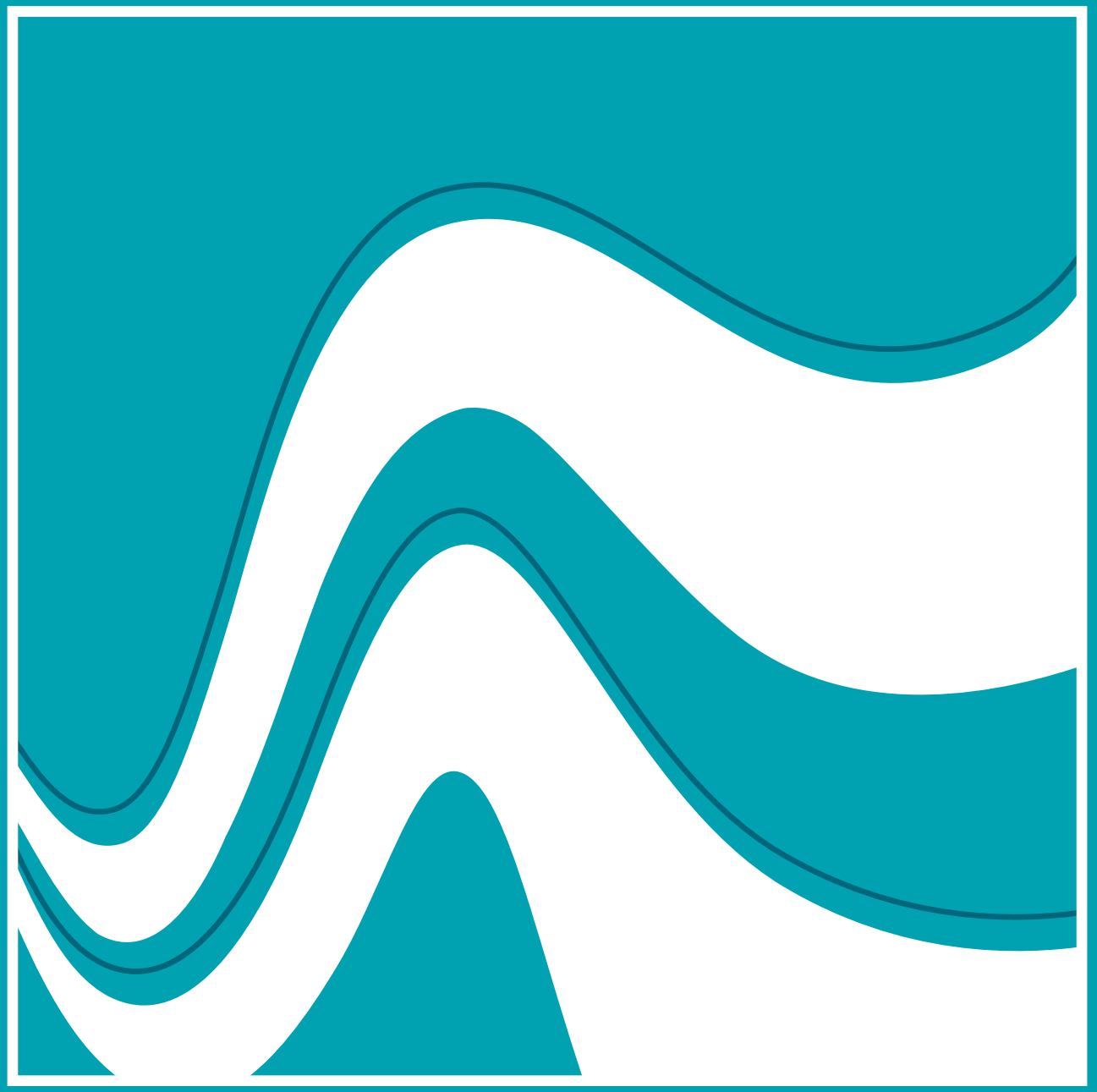
- Who in your family had the most activities that used energy? Who had the least?

- What are some simply ways in which you can all cut back on your energy usage?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 6: Keeping All of Our Waterways Clean



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Lesson 6: Keeping All of Our Waterways Clean

Snapshot

Looking outside, this lesson explores waterways (streams, rainwater runoff, drainage pollution) with a focus on urban waterways. Students learn about the water cycle and how to keep pollution out of waterways. Mercury in fish is also addressed.

Preparation and Materials:

- Poster 1, Take-Home Talk
- Flip chart and markers
- Black or white board
- You will take your students on a walk to see the nearest road with a storm drain. Storm drains are used to allow excess water from paved roads to drain away. They take many shapes and sizes. If you do not have a storm drain close by, you will walk along a road or path that often has some trash scattered. You will focus on all of the items—trash, leaves, pet waste, etc.—that you see on your walk. Be sure to follow your organization's guidelines on traveling with children and be cautious around roads.
- Large sheets of paper for each child to make a poster
- Markers or crayons

Objectives—Students will be able to:

- define *rainwater runoff, drainage pollution, freshwater, saltwater*, and *potable*;
- identify three different types of waterways;
- explain three ways to stop drainage pollution; and
- explain how keeping our waterways clean benefits the entire community.

Vocabulary: rainwater runoff, drainage pollution, freshwater, saltwater, aquifer, precipitation, evaporation, water cycle

Procedure:

1. Introduction *(8 minutes)*
2. Water Cycle *(10 minutes)*
   Optional Online Interactive: EPA Interactive Water Cycle *(5 minutes)*
3. Drainage and Storm Drain/Community Walk *(15–20 minutes)*
4. Reducing Pollution in Our Water *(5 minutes)*
   Optional Activity: Coloring or Creating No Littering Signs *(10 minutes)*
   Optional Activity: Community Clean-Up Planning *(10 minutes)*
5. Close and Take-Home Talk *(5 minutes)*

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Lesson 6: Keeping All of Our Waterways Clean

1. Introduction

(8 minutes)

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words that you learned from our last lesson? What can you do to positively impact the issue we learned about?

Do Ask

Close your eyes. I want you to travel back in time, slowly, to the start of your day. See everything you've done up until now in reverse. Think about all the things that you came into contact with—all the people you talked to, the things you've eaten and drunk, the stuff you've read, all of the things you've done. Reverse through the door to this room, reverse through coming into the building, slowly reverse through getting here, reverse through breakfast, slowly reverse through getting dressed, and reverse all the way back to being asleep. You are lying down and you're asleep. Now, let's play back your day with this question in mind: Which of the things in your day required water?

Ask

Go ahead and open your eyes. Who can tell me the first thing in his or her day that required water?

Prompts: Did any of you go to the bathroom when you got up? Brush your teeth? Have something to drink? What was the next thing? The vast majority of your activities require water—from the food you eat (plants need water to grow, animals that become meat need water) to exercising (your bodies need water), from the building you are in (buildings that are made of concrete require water to be mixed with the cement during construction) to electricity (which is used for lights, stoplights, walk signs, MP3 players, TVs, radios, and cable) that comes from hydropower, etc. *[Relate the actions to water as much as possible.]*

2. Water Cycle

(10 minutes)

Ask

About 70 percent of the Earth is covered with water. That's a lot of water! Where is most of that water?

Prompt: If we look at a map, there's a lot of what color? *[Blue.]* Blue represents the oceans.

Explain

But did you know that less than 1 percent of all the water on Earth can be used by people? The rest is saltwater (the kind you find in the ocean) or is permanently frozen and we can't drink it, wash with it, or use it to water plants. As our population grows, more and more people are using up this limited resource. Therefore, it is important that we understand where our water comes from and how to use our water wisely and not waste it.

Ask

So, where do we find the 1 percent of water that we can use? Where do we find freshwater? *[In lakes, streams, rivers, and rain.]*

Explain Ask

Let's take a look at the life cycle of a drop of freshwater—the kind we can drink—when it starts as a raindrop. Rain is also called ***precipitation***, something I'm sure you've heard the weather reporter say. Well, precipitation happens when there's too much water in the air and it can't hold onto it anymore. It will rain, sleet, snow, or hail. How can there be water in the air?

Prompts: Have you ever gone outside and noticed that the air felt heavy or wet? We call that humidity—this is a good example of water in the air. When the water in the air and the clouds gets to be too heavy, it rains.

Do Ask

*[Show **Poster #1** (life cycle of water).]* So, the rain or snow or hail comes down and fills up our lakes, streams, and oceans. Where else does the precipitation go?

Prompts: Does the rain just fill up the streets? Does it stay on top of the soccer fields? It soaks into the Earth and drains through our sewer systems.

(continued on other side)

Optional Online Interactive: EPA Interactive Water Cycle *(5 minutes)*

Do

Share the EPA Interactive Water Cycle – Interactive Tool at www.epa.gov/safewater/kids/flash/flash_watercycle.html

Explain

The water that soaks into the ground is stored there until it is needed. The water stored way underground is called an aquifer/ground water. Many people pump water directly from the aquifer through a well and use it for their drinking water.

Explain Ask

So, water falls and gets soaked up by the ground or added to lakes. What happens next?

Explain

Remember those humid days, the days when the air feels muggy? Do those days happen in the summer or the winter? In the summer. As the sun's rays heat up the lakes and streams and oceans and the ground where the water is stored, vapor is formed.

Ask

Think about when you're cooking and you boil a pot of water—as the temperature of the water increases, what happens?

Prompts: How do you know it's hot? The water starts to boil and steam comes off of it. This steam is vapor. And the vapor goes into the air. This is called ***evaporation***.

Explain

The sun is heating up all this water and the vapor is traveling upward because it's hot. When it cools and moves higher up, it turns into a liquid again and gathers in clouds.

Ask

What happens next?

Prompts: This is a cycle: We started with rain—so we have to end up there again.

Explain

The clouds send down precipitation and the cycle starts all over again.

Lesson 6:
Keeping All of Our Waterways Clean

Poster #1

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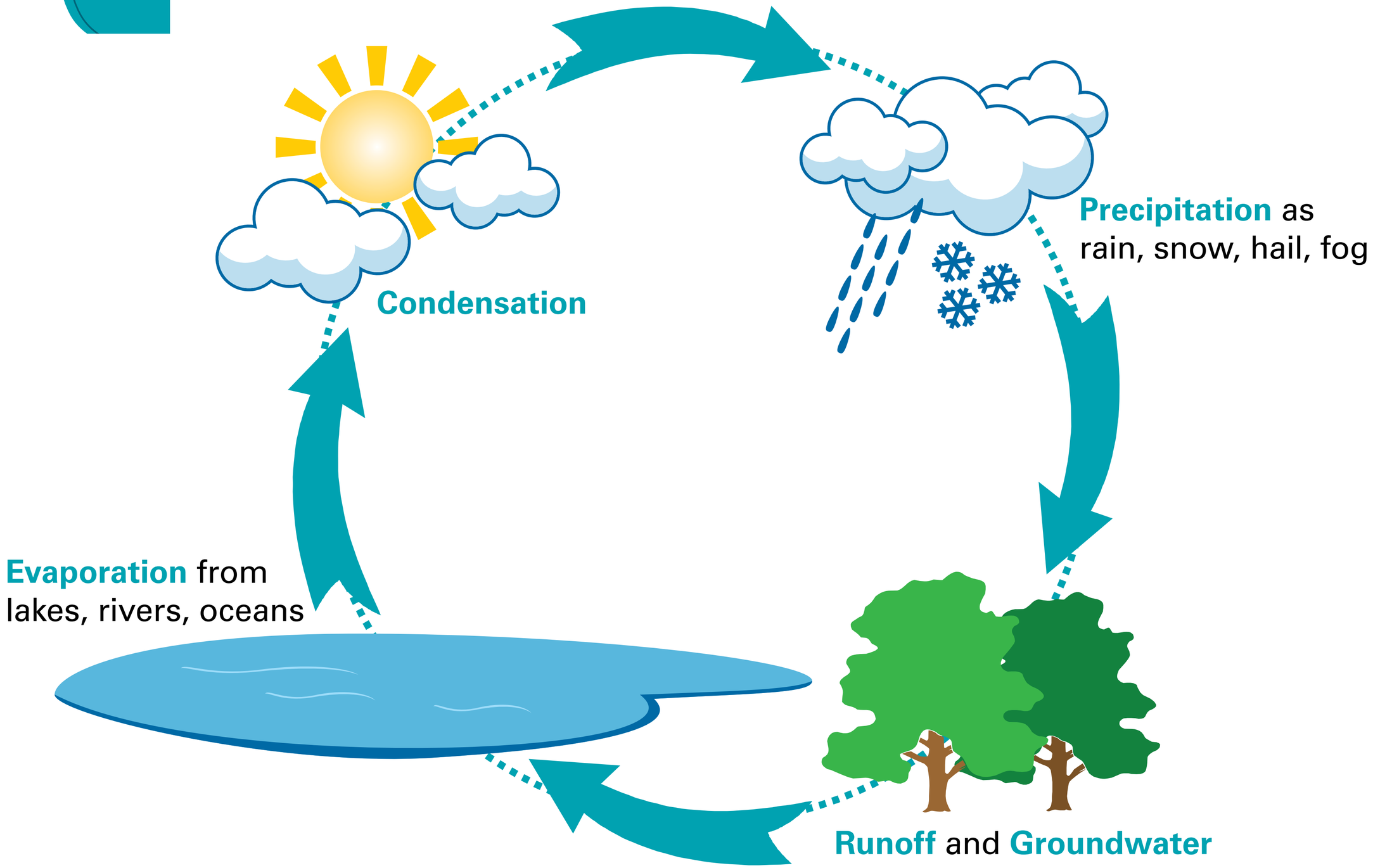
Water Cycle


Condensation
Precipitation as
rain, snow, hail, fog
Evaporation from
lakes, rivers, oceans
Runoff and Groundwater

3. Drainage and Storm Drain/Community Walk

(15–20 minutes)

Ask

In a city, where does the rain go when it comes down? Does it soak into the Earth? What is covering a lot of cities? *[Roads, asphalt, and concrete.]*

Explain Ask

Water can't soak into the roads and sidewalks, so it pools on the concrete or it runs along the surface. After a really hard rainfall, what do you see? In the roads?

Prompt: Have you seen a storm drain before?

Review

Storm drains are openings on the sides of roads that allow water to drain. The water goes down the drain and into a pipe system, which brings that water to a body of water close by. Storm drains will often have painted on them "*[insert name of body of water]* drainage." All of the rainwater rushes down these storm drains. After a big storm, it sometimes looks like a river flowing to the drain.

Ask

What is in the river flowing to the drain?

Prompts: What have you seen? What is in the road that could get swept into the drain?

Explain Do

All of the things that pool together when it rains and go down the storm drain end up flowing into the streams and lakes that we use for our drinking water. And they can contaminate it. We call this ***rainwater runoff***. We're going to take a walk down to the closest storm drain and take a look at everything we spot along the way that might end up in the *[insert name of closest body of water (could be a dam, river, etc.)]*. As we're walking, call out the items that might be swept into the storm drain as you see them.

Explain

Not all communities have a lot of storm drains. But the same way that trash gets swept into storm drains it gets swept other places as well by rain and wind. Trash and oil from cars and household chemicals will often make it into the water system through storm drains or streams.

Teacher Note: Be sure to take a pen and paper with you to note everything that the children see. Depending on how busy the area by the storm drain is, you can finish the lesson outside or resume it when you return to the classroom.

(continued on other side)

3. Drainage and Storm Drain/Community Walk *(continued – page 2)*

Do Ask

Review the list of items noted. Ask what else is often in the street that the students didn't see today. Be sure that they note the following: cans, bottles, paper trash, cigarette butts, food trash, oil from cars, and pet waste. Remind students that people sometimes dump chemicals like paint or oil on the road and those things can be added to the rainwater runoff as well.

Explain Ask

Imagine a bathtub full of all these things that you just saw on the street—would you want to get into the bathtub to wash? Or would you want to drink that water? While much of the water we drink goes through a treatment process to make it safe for us, let's think about the rivers and lakes and bays that these storm drains feed into. How would all this garbage impact the life in that lake?

Prompts: How would this impact fish and plants? The animals that drink that water? What animals would be impacted? Might we end up eating fish from that lake?

Explain Ask

One of the big concerns with water pollution is mercury. What is mercury? Mercury is a toxic metal that is found naturally in coal and is released when coal is burned by power plants. When it's released, it falls to the ground and enters our waterways. When mercury mixes with water, it becomes very toxic and can end up in the fish that we eat. If we ingest mercury, in can harm us by impacting our brain development and functioning. Pregnant women have to be especially careful about mercury because it can impact the baby they are carrying.

Ask

So, should we avoid fish altogether? No! Fish is a great part of a healthy diet. So, what do we do?

Explain

If you are buying fish, be aware of which fish your local health department recommends that you avoid in your area. If you are catching your own fish, check to make sure that the waters you are fishing in are clean—again, your local health department will know. When you cook the fish you caught, remove the skin, head, tail, and organs before cooking. Mercury can be concentrated in these areas. Avoid frying fish or eating fried fish—frying locks in the pollutants.

Ask

We've talked about everything being connected and about balance. How does polluted water impact our health?

Prompts: If the water is polluted, will it take more work at a water treatment plant to clean it? We'll talk about the water treatment process in our next lesson. Will it take more energy to do this? Where will we get this energy—will we need to burn more fossil fuels and thus create more greenhouse gases? Will this impact air quality and climate change? All of these elements are interconnected. How will it impact you?

4. Reducing Pollution in Our Water

(5 minutes)

Ask

How do we keep these things out of our waterways? What can we do?

Explain

Put garbage where it belongs. Never pour chemicals or pesticides on the ground. Pick up after our pets. Pick up litter. Don't throw things down the storm drain. Recycle used car oil at landfills or garages. Educate people about how litter can hurt our waterways.

Optional Activity: Coloring or Creating No Littering Signs *(10 minutes)*

Explain

Color or create No Littering signs for use in the teaching space or at home. Now that we know how important it is to keep our roadways and parks clean, we want to share that knowledge. Each of you (or in pairs) will make a poster that lets others know how important it is to clean up after pets or put trash where it belongs.

Do

Pass out large sheets of paper and markers or crayons.

(continued on other side)

Optional Activity: Community Clean-Up Planning *(10 minutes)*

Explain

We just saw all the trash and pet waste and leaves on our walk and that was a relatively small area we covered. Now that we know how harmful these items can be to our waterways, I think we should do something about it.

Ask

What can we do?

Prompts: Not litter, tell others not to litter, pick up trash.

Explain

What if we organized a community clean-up day of [insert local park or road that needs to be cleaned up]? How would we do it?

Prompts: Who would we want to involve? How would we tell folks about it? When should we do it?

Do

Guide the students through the process of planning a clean-up day for the near future.

5. Close and Take-Home Talk

(5 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We talked about the water cycle. Raise your hand if you can tell the class about the four steps of the water cycle—where do we start? *[Call on a student. Go through all four steps: precipitation, runoff and groundwater, evaporation, and condensation]*

Explain Ask

We also discussed storm drains and went on a trip to see what gets into our waterways through the storm drains. What are some ways that we can stop the pollution of our waterways? You can open your eyes now.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. Look around your neighborhood to see if there is trash by the storm drains. Be sure not to litter, and pick up trash and put it in the garbage when you see it. Challenge your family to think of ways that you can all help to protect the waterways around us.

Explain Do

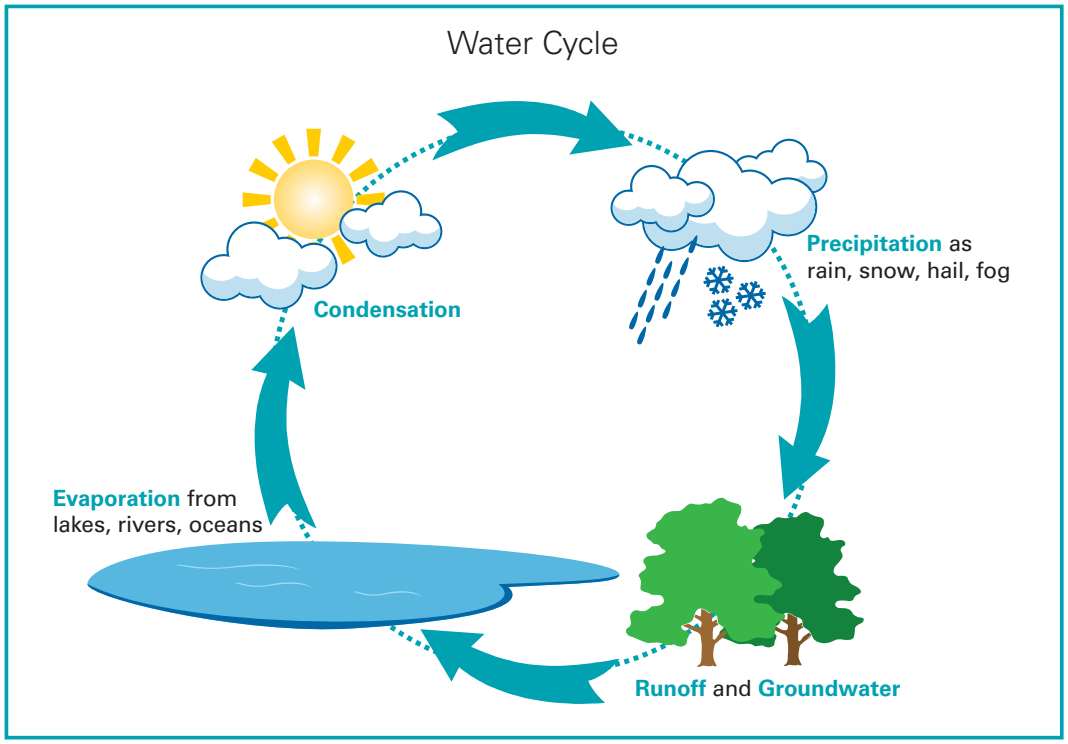
*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 6: Keeping All of Our Waterways Clean

To Share:

- About 70 percent of the Earth is covered with water! Most of that water is in the oceans.
- But less than 1 percent of all of the water on Earth can be used by people. The rest is saltwater (the kind you find in the ocean) or is permanently frozen and we can't drink it, wash with it, or use it to water plants.
- As our population grows, more and more people are using up this limited resource. Therefore, it is important that we understand where our water comes from and how to use our water wisely and not waste it.



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To Do:

- **Rescuing Rainwater Runoff!** You learned that all of the trash that we see on the streets and in our neighborhoods can too easily end up in our lakes and our streams, hurting fish and plants and animals. You and your family can do your part to stop this pollution! As a family, walk around your neighborhood and pick up trash. Be sure to wear protective gloves and go with an adult.

  Where did you find the most trash? What was the trash—food waste? Bottles? Cans? Paper?

- **Getting the Word Out!** How can you let others know that they shouldn't litter? Would a letter to your local newspaper be helpful? What about posting signs in your community? How can you spread the word?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 7: Healthy Water Inside

EPA

Lesson 7: Healthy Water Inside

Snapshot

This lesson examines water in our homes with a focus on how our tap water is treated and how to conserve water. Avoiding mold and mildew is also addressed.

Preparation and Materials:

- Posters 1–4, Visual Card 1, Take-Home Talk
- 6 magnifying glasses
- 6 clear plastic cups
- Flip chart and markers
- Black or white board
- Pond, puddle, or aquarium water—some water in which the students will be able to see things (dirt, sticks, etc.) with and without the magnifying glasses. **Teacher Note:** this activity isn't effective with tap water or bottled water. The students need to see unfiltered water from outside—a puddle or a bucket filled with water and left outside for a week or so will work if you don't have access to a stream, pond, or lake.
- 6 Report-Out sheets
- 6 pencils

Suggested Giveaways: Stickers to remind students to turn off the water, a water canteen

Objectives—Students will be able to:

- define *mold*, *mildew*, and *fluoride*;
- list three ways to stop mold and mildew from growing;
- explain how water is treated; and
- explain some ways to conserve water at home.

Vocabulary: mold, mildew, fluoride, and potable

Procedure:

1. Introduction *(5 minutes)*
2. Water Detective Activity *(15 minutes)*
3. Water Travels *(10 minutes)*
4. Conserving Water *(5 minutes)*
5. Avoiding Mold and Mildew *(5 minutes)*
6. Close and Take-Home Talk *(5 minutes)*

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Lesson 7: Healthy Water Inside

1. Introduction

(5 minutes)

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What did you learn that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words that you learned from our last lesson? What can you do to positively impact the issue we learned about?

Ask

We've talked about how we need water to live. But how important is it really? If you had to guess, what percentage of our bodies do you think is water?

Do
Ask

*[Hold up **Poster #1** (illustration—outlines of people with the different percentages filled in with water).]* Are we 33 percent, 60 percent, or 95 percent water? *(Taken from http://ga.water.usgs.gov/edu/propertyyou.html.)*

Explain
Do

Are you ready for this? We are more than 60 percent water! 60 percent! Close your eyes for a moment and let's think about the water in our bodies being slowly sucked out of our skin and bones and our organs, out of all of our cells. What would be left? We're at least 60 percent water, so we'd be less than half of our size! We need water.

Ask

So, where do we get this water that we need?

Prompts: Faucets/taps, bottled water, the ocean, lakes.

Explain

Today we're going to concentrate on the water in our homes that comes to us through pipes to our sinks and showers. This water takes a long journey to get to you and some unusual things happen before you use it.

Lesson 7:
Healthy Water Inside

Poster #1

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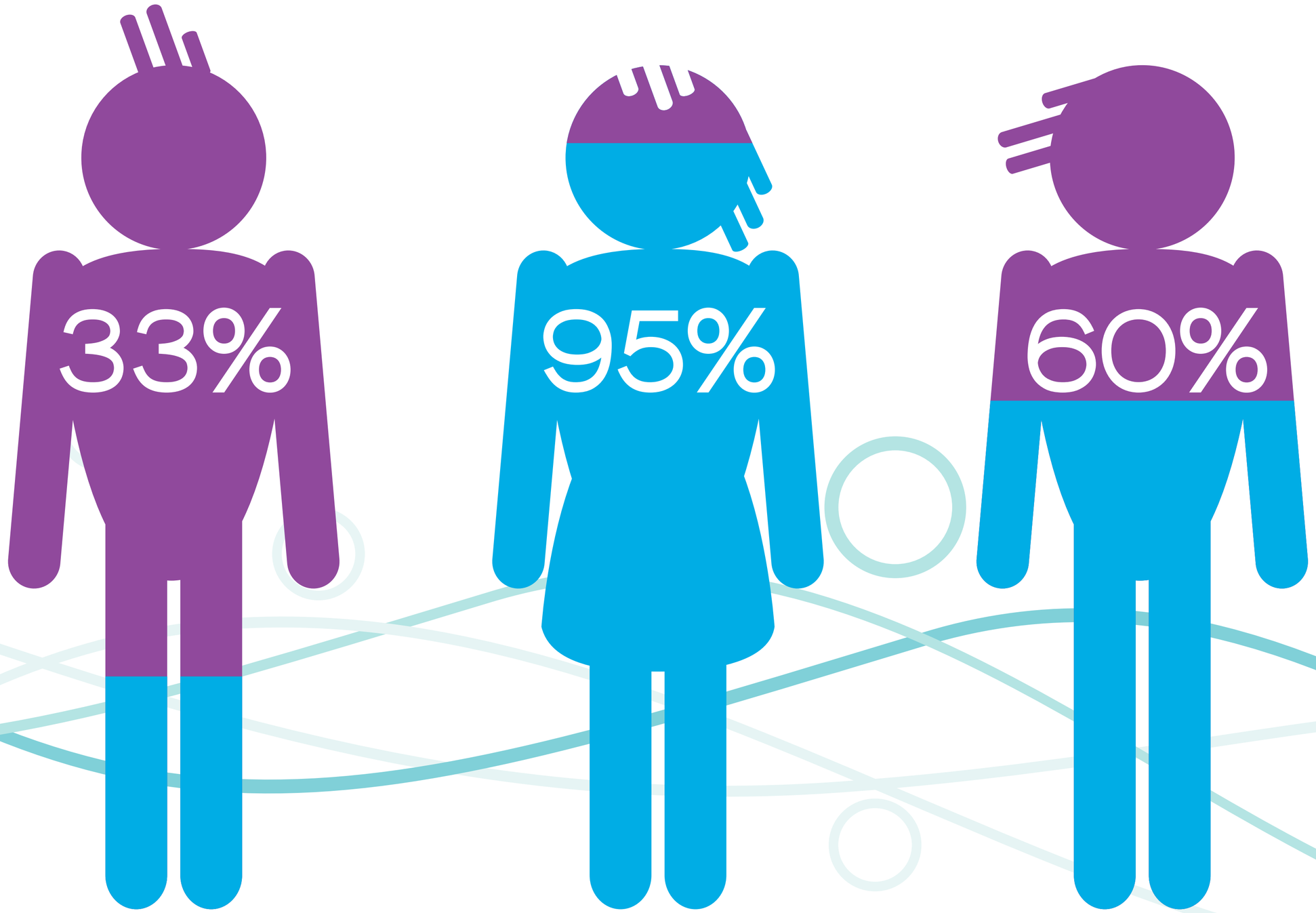
What percentage of our bodies is water?



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2. Water Detective Activity

(15 minutes)

Ask

Let's think about the trip that a drop of water takes. Let's say it starts in a lake 200 hundred miles away from where we are now. How do you think it gets to us?

Prompts: Do we drink it right from the lake? What might be in the water if we drank it right from a lake? Dirt? Fish? Parasites? Insects? Is it driven to us in trucks?

Ask

If we were to drink water directly from a lake, what might happen?

Prompts: Would we get sick? Would we all have to live close to lakes?

Explain Do

The freshwater—from lakes and streams and rivers—needs to be filtered before we can drink it in order to remove dirt, bacteria, small fish, and other things that could harm us. Even when water from these sources looks clear and clean, there are things that we can't see that could harm us. *[Show **Poster #2** (photos of water treatment plants).]*

Explain Do

We're going to take a closer look at what might be in the water in a lake or stream or that might go down our storm drains. *[Divide the class into six groups and give two cups of water and a magnifying glass to each group. Cup 1 should be the unfiltered water from the outside and Cup 2 can be bottled or tap water. Assign one person in each group to record the group's observations. Depending on each group's size and dynamics, you may need to give each child a set amount of time to use the magnifying glass.]*

Explain Ask

What does a magnifying glass do? It allows you to see things in more detail. You will be looking at your water sample to see what you can find with both your eyes and with the magnifying glass.

Explain Do

*[Hand out **Visual Card #1** (questions for observation).]*The group recorders will write down the answers to the questions on the card. You have 10 minutes.

(continued on other side)

2. Water Detective Activity *(continued – page 2)*

Do

Circulate among the groups asking prompting questions, such as Where do you think that came from? Would you want to drink that? If you saw something with the magnifying glass that you didn't see with your eyes, what do you think you could see with a microscope? After the allotted time, bring the groups together.

Ask

Would the group reporters please read their findings to everyone?

Explain

Respond to the groups' findings. Most groups will see more with the magnifying glass. Use some of the same prompting questions again, such as Where do you think the things in the water came from? Would you want to drink that? If you saw something with the magnifying glass that you didn't see with your eyes, what do you think you could see with a microscope?

Explain

So, now that we know what might be in the lake that our water comes from, let's see the trip our water takes.

Lesson 7:
Healthy Water Inside

Poster #2

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Water Treatment Plants

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Visual Card #1

Observe with your eyes

1. What color is the water?
2. Is there anything floating in the water?
3. Is there anything moving in the water?

Observe with the magnifying glass

1. What color is the water?
2. Is there anything floating in the water?
3. Is there anything moving in the water?

3. Water Travels

(10 minutes)

Explain

Our little drop of water starts in the lake and goes through four steps before it's ready for us to drink.

Ask

After it goes through all of these steps, we call the water potable—have you heard this word before? What does it mean?

Prompts: We wouldn't call water from a lake ***potable***. Potable means that it is safe for humans to drink.

Explain Do

*[Show **Poster #3** (illustration of the water treatment cycle).]*The water comes from the pond into the water treatment plant and goes through four main steps.

Explain

First, the water goes through a step to remove dirt and particles that we can see; next, it is filtered to remove even smaller particles that we can't see; finally, it's disinfected to remove any bacteria or viruses or microbes. In most cities, a small amount of fluoride is added to the water to help strengthen our teeth. Sometimes, a small amount of a chemical called chlorine is added to drinking water to keep it free of bacteria, viruses, and microbes. *(Taken from http://water.epa.gov/learn/kids/drinkingwater/watertreatmentplant_index.cfm.)*

Explain

The water is now ready for us to drink!

Ask

Does all of the water that is used in homes go through the water treatment process?

Prompts: What if you're very far away from a water treatment plant?

Explain

Some people get water from private wells. Well water is a great source of water for many families in our country.

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3. Water Travels *(continued – page 2)*

Teacher Note: If your group does not have exposure to or use well water, you can skip the following:

Ask

If you get water from a well, what are some ways to make sure that the water is safe to drink and that it stays safe?

Prompts: Would you know by looking at it?

Explain

Well water should be tested at least every year. The well should be covered securely. Don't use or mix cleaners or chemicals by the well.

Lesson 7:
Healthy Water Inside

Poster #3

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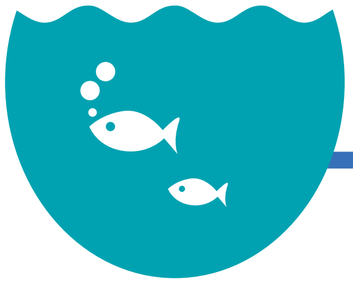
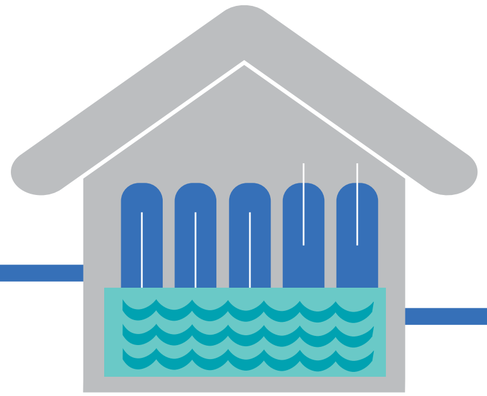
Water Treatment Cycle

Lake or Reservoir



Coagulation

This process removes dirt and other particles suspended in the water; chemicals are added to attract particles, which then become heavy enough to sink.

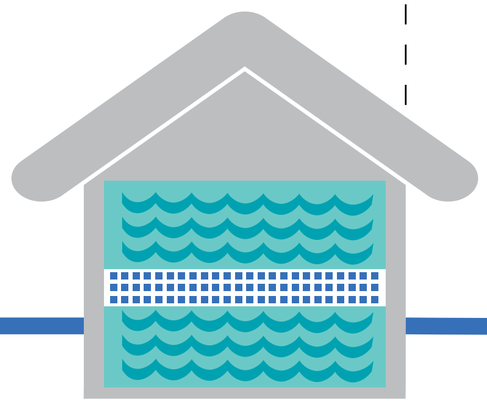


Sedimentation

Heavy particles settle to the bottom; the clear water moves on to disinfection.

Filtration

Water passes through filters made of layers of sand, gravel or charcoal that remove even smaller particles.

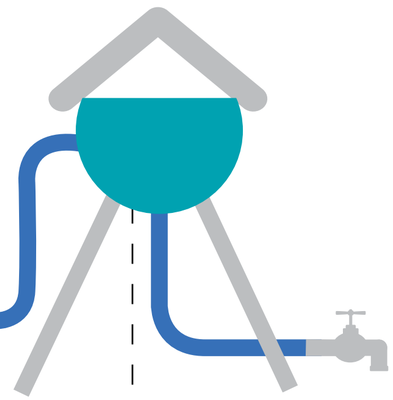


Disinfection

Chlorine and other disinfectants are added to kill microorganisms

Storage

Disinfection occurs in a closed tank or reservoir before water flows to user.



4. Conserving Water

(5 minutes)

Do Ask

Do you know how much water a family of four uses every day in the United States? *[Show **Poster #4** (family of four with three options: 50, 100, or 400 gallons of water).]*

Prompts: Think about what you use water for every day. Do you shower with it? Cook with it? Wash your clothes? Do you think that this family uses 50 gallons? 100 gallons? Or 400 gallons? Answer: 400 gallons!

Ask

Let's think about where we use that water. What did you use water for today? Showering? Cooking? Washing clothes? Washing dishes? Drinking? Watering plants?

Ask

How many gallons of water do you think a 10-minute shower uses?

Answer: 16–20 gallons.

Explain Ask

So cutting your showering time down by a minute can save a lot of water. Here's a challenge—time how long you normally take a shower. Now, can you cut your shower down by a minute? By two? By three? Think of all the water you will save! Turn off the water while you soap up and turn it on to wash off.

Explain

Running your dishwasher takes about 10 gallons of water, so make sure it's full when you run it.

Ask

We learned that the water we use to cook and clean and drink goes through a long process to ensure that it's safe for us. What are some ways that we can make sure that we're not wasting this precious resource?

Prompts: How can we conserve/save water in our daily routines?

(continued on other side)

4. Conserving Water *(continued – page 2)*

Explain

Don't let the water run when you're brushing your teeth. Take showers instead of baths. If your sink leaks, let an adult know—a slow drip that runs all the time can add up to a lot of wasted water!

Ask

Guess how much water a leaky faucet can waste? A leaky faucet that drips at a rate of one drip per second can waste more than 3,000 gallons per year.

Lesson 7:
Healthy Water Inside

Poster #4

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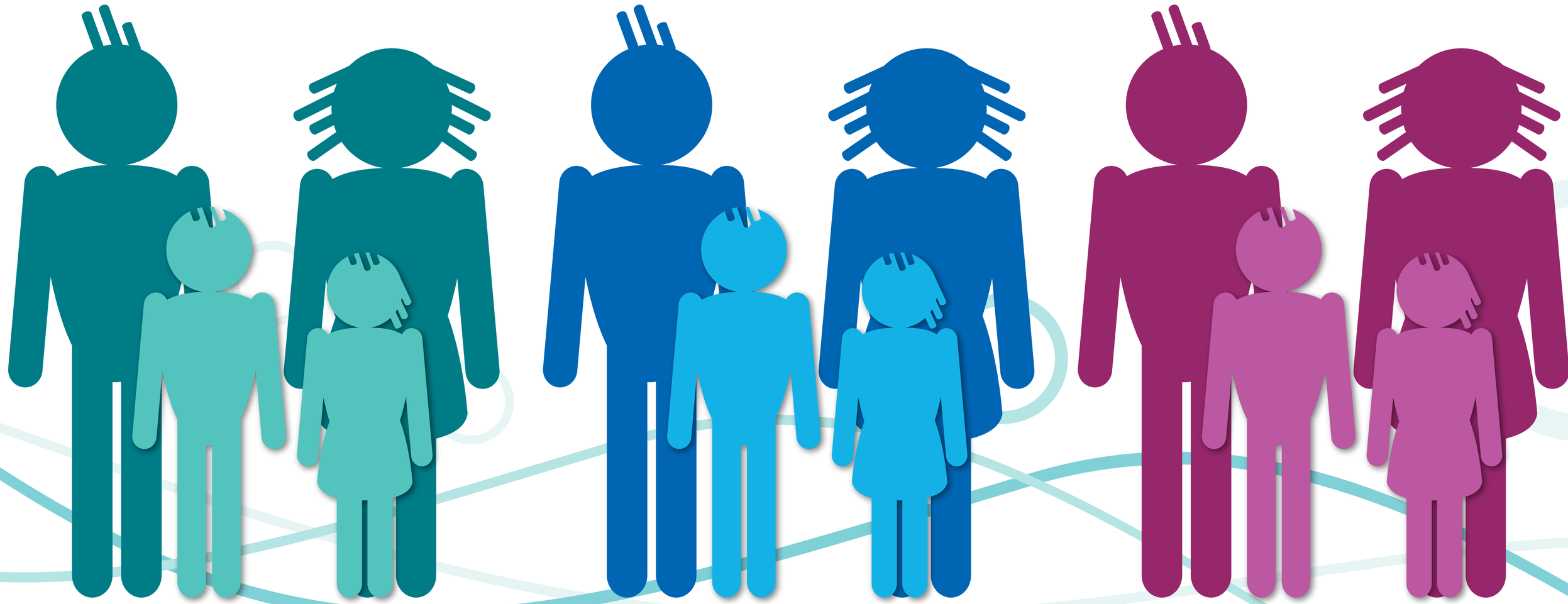
How much water does the average family of four use every day?



50 Gallons

100 Gallons

400 Gallons

EPA

5. Avoiding Mold and Mildew

(5 minutes)

Explain Ask

The other thing that leaks and excessive water can do in our homes is cause mold and mildew to grow. What is mold? What is mildew?

Explain

Mold and mildew are both types of fungus that grow in areas that are damp or have a lot of moisture. Both grow on surfaces and they usually look like dark brown, green, or black spots. Mold and mildew love showers and bathrooms because showers stay wet after you get out of them.

Ask

Where else do you think mold or mildew might grow?

Prompts: Where else in our homes is often wet or damp? What areas of our house get warm?

Explain

Kitchens, bathrooms, laundry areas, basements, and attics. The best way to get rid of mold is to remove the source of moisture.

Ask

Why do we want to keep our homes mold- and mildew-free? What can mold do to us?

Explain

Mold and mildew are irritants—they can cause allergies and asthma and can make it difficult for some people to breathe. And remember, since children's lungs are still developing, kids are especially at risk of being affected by mold and mildew.

Ask

So, how do we avoid mold and mildew?

Explain

Keep areas that are often wet, dry—wipe down the shower after using it; be sure to move clothes from the washer to the dryer quickly; get a dehumidifier for basements and attics, increase your ventilation source (e.g., open a window in high-moisture areas).

6. Close and Take-Home Talk

(5 minutes)

Explain
Do

Close your eyes and take a nice deep breath. We've covered a lot today. We examined some water more closely and observed things that we can't see with our eyes alone. We talked about how a drop of water goes from a stream all the way to our faucets. We talked about mold and mildew in our homes—who can tell us what mold is? *[Call on a student.]* How do we stop mold from growing in our homes?

Explain
Ask

We also talked about how we need to take care to conserve water in our homes—it takes so much to get water clean and safe and to us, we need to be sure to use only what we need. What are some ways that we can conserve water? You can open your eyes now.

Take-Home
Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. Look around your house to make sure that there aren't any leaks or drips and work with an adult to fix any that you find. Think about taking super-fast showers instead of baths to conserve water. Go on a mold hunt. Challenge your family to think of ways to use less water!

Explain
Do

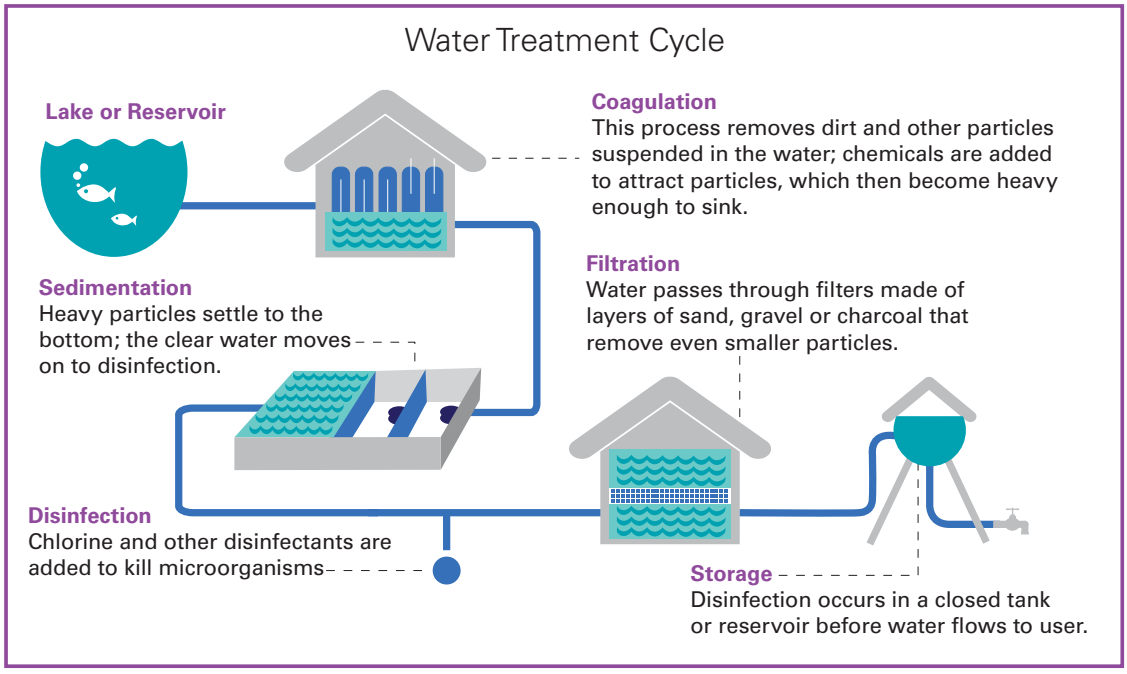
*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 7: Healthy Water Inside

To Share:

- Humans are more than 60 percent water! 60 percent! We need water to live.
- Freshwater—from lakes and streams and rivers—needs to be filtered before we can drink it to remove dirt, bacteria, small fish, and other things that could harm us. Even when water from these sources looks clear and clean, there are things that we can't see that could harm us.
- In the United States, a family of four uses 400 gallons of water a day!
- Mold and mildew can form easily in areas of your home where water is used often—in bathrooms, kitchens, and laundry rooms. Be sure to wipe away moisture and clean mildew.



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To Do:

- **Water Everywhere!** We use water so often throughout the day that we rarely think about it. Ask your family to track all of the times throughout the day that they use water—have each member of your family keep a running log. By learning when we use water, we can see where we can easily save water.

  Just a few daily activities that use water: Taking a shower or bath, using the toilet, cooking, washing your hands, drinking anything.

- Who in your family had the most activities that used water? Who had the least?

- What are some simply ways in which you can all cut back on your water usage?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

EPA

Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

Snapshot

This lesson brings together ideas from the previous seven lessons and explains the concept of sustainable food through discussion of how food travels and the importance of community gardens, and how they are linked to healthy eating.

Preparation and Materials:

- Posters 1–3, Take-Home Talk
- Flip chart and markers
- Black or white board

Note: This lesson should be taught toward the end of the program in order to have the most impact.

- If you or your students are interested in learning more about how to form a community garden, please visit the EPA Brownfield's site: www.epa.gov/brownfields/urbanag/steps.htm.

Suggested Giveaway: List of foods that are grown locally, list of local farmers markets, maybe even bring in some local fruits (see EPA Healthy Kids Website for a list from your area of foods that are grown locally)

Objectives—Students will be able to:

- define *sustainable, local, community garden,* and *nutrition*;
- explain how air, water, food (soil), shelter, and sun impact gardens and food; and
- discuss the connection between climate change and food, and clean waterways and food.

Vocabulary: sustainable, local, community garden, nutrition

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Procedure:

1. Introduction—Defining Nutrition *(5 minutes)*

   Optional Activity: Have You Ever Eaten …? *(5 minutes)*

2. Food Travels and Climate Connections *(15 minutes)*

Community Gardens and Surveying Walk *(20–30 minutes)*

Optional Activity: Researching Locally Grown Foods *(30 minutes)*
Teacher Note: How this activity is structured will depend on the resources available to you—computers with Internet access, local library, etc.

Optional Activity: Invite a Local Farmer to Speak *(20–30 minutes)*
Teacher Note: If a farmer comes to speak to the kids, this should likely be a separate session that could pair well with researching local foods.

Optional Activity: Visit a Community Garden or Meet with a Community Gardener *(30 minutes)*

3. Close and Take-Home Talk *(5 minutes)*

Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

1. Introduction

Defining Nutrition *(5 minutes)*

Teacher Note: The issue of healthy eating may be a sensitive one for students whose diets are not that nutritious through no fault of their own. Their family may not provide, or have the means to provide, a balanced and nutritious diet. As you are leading this discussion, be aware that this issue may cause some tension and refer to your organization's policy and practices for addressing sensitive issues.

Review

Ask several students to share something that they remember from the previous lesson.

Prompts: What have you learned that you didn't know before? What did we talk about that you already knew? What surprised you from our last lesson? What are some of the new words that you learned from our last lesson? What can you do to positively impact the issue we learned about?

Ask

We know that all living things need four things in order to stay alive—what are these things? *[Air, water, food, and shelter.]*

Explain

Today, we're going to talk about food—how we get our food, what we need to eat to ensure that we stay healthy, and how to eat food that helps both the Earth and everyone on it to stay healthy.

Ask

First things first: I know that you have all learned about how important it is to eat a balanced, nutritious diet full of healthy foods. What are healthy foods? And what makes up a balanced diet?

Prompts: How many food groups are there? Can you eat only one thing and have a balanced diet?

(continued on other side)

Explain
Ask

In order to have a nutritious diet—one that gives us the energy, vitamins, and minerals that we need—it needs to be varied and include healthy foods. Where does this food come from?

Prompts: Do you grow it? Do we grow food here? Who grows food? Who raises cattle? Traditionally, the food and animals that we eat have been raised on farms and farther out from the city and the suburbs. Let's look at this a little more closely.

Optional Activity: Have You Ever Eaten …? *(5 minutes)*

Explain

Let's think of fruits and vegetables that we all love—the really yummy ones we like to eat—and let's see who here has tried them before. I'll start—raise your hand if you've ever eaten [insert fruit or vegetable]. Select a student who has eaten that food to ask about the next fruit or vegetable.

Foods to prompt:

Apples	Oranges
Bananas	Kiwi
Papaya	Grapefruit
Mango	Pineapple
Broccoli	Spinach
Cauliflower	Brussels Sprouts
Kale	Lettuce
Zucchini	Squash
Tomatoes	Potatoes
Sweet Potatoes	Butternut Squash
Collard Greens	

2. Food Travels and Climate Connections

(15 minutes)

Explain Do

We're talking about food, but I'm going to ask you to look at your clothes. Everyone pair up with someone else.

Ask

Where do our clothes come from?

Prompts: Stores, companies, other states, other countries.

Explain Do

Our clothes come from lots of different places, all over the world, and we sometimes don't realize that when we buy them down the street from where we live. So, let's find out where our clothes came from. Most shirts have a tag in the back of the collar that tells us where the shirt was made. *[Show **Poster #1** (Clothing label).]* If it's not in the back of the collar, it might be on the side. Working with your partner, find the tag and have the other person read where your shirt is from.

Do

*[Show **Poster #2** (map of the world).]* Go around the room and have each pair of students tell the class where their shirts were made. Write the names of the countries on the board. Be sure to tell the class where your shirt was made. As the locations are called out, show the students on the map.

Ask

We are wearing clothes from all over the world. *[List some of the places where the shirts were made.]* Our shirts should have passports! How did these clothes get from all of these places to us?

Prompts: Planes, trains, boats, trucks.

Explain

Well, the same way that our clothes come from all over the world, so does our food. When we go into grocery stores, we see food that was grown and processed all over the world and shipped to us.

(continued on other side)

2. Food Travels and Climate Connections *(continued – page 2)*

Ask

What might be good about having food from all over the world?

Prompts: *[Alter these prompts depending on what grows indigenously or is widely known to be farmed or raised in your location.]* Are oranges grown here? What about grapes? Pineapples? Bananas? Do salmon live in the waters by us? What about cattle—are there a lot of these around?

Explain Ask

Remember how we talked about the rotation and revolution of the sun and how it causes different seasons in different parts of the world? When it's summer here it's not summer everywhere and when it's winter here it's not winter all over the world. So, when it's cold here and we can't grow as many crops, it is warm in other places and they can grow there. Different parts of the world have different growing seasons— the part of the year during which rainfall and temperature allow plants to grow best.

Explain

One of the good things about having food grown in different parts of the country and the world is that we get to eat new and interesting things. It also means that if a region needs food, we can get it to them. Someone in another region might also be able to grow the food better than we can here because of the climate in his or her area.

Ask

What might be bad about having food brought in by planes and boats and trains from all over the country and all over the world?

Explain

Moving the food (and the shirts) around the world uses a lot of resources. We get used to eating things that don't naturally grow in our region and we want them.

Explain Ask

In the last few years, there's been a large movement to help our environment by eating ***locally***. What does it mean to eat locally?

Prompts: What can we grow locally? What grows well in our climate? Eating locally loosely means to eat the food that grows well close to you and animals that are raised in the surrounding area.

Ask

Why would eating locally help the environment?

Explain

If I buy an apple that was grown 2 miles away instead of on another continent, think about all of the gas, time, and energy that can be saved in getting it to me.

Explain Ask

Do you remember that we talked about how greenhouse gases are released when we use oil or coal? We would have to use a lot of oil or coal to get that apple from Europe or Africa to here. Can someone remind us what greenhouse gases are and why we want to generate less of them?

Prompts: Remember, they are released when we burn fossil fuels; they trap the sun's heat in our atmosphere and are making the overall temperature of the planet rise.

Explain Ask

If the overall temperature of the planet rises, do you think that it will be easier or harder to grow crops? Eating food that is grown or raised nearby helps to reduce the amount of greenhouse gases.

Ask

If we were going to focus on eating locally, what crops and animals do you think would grow well in our area? *[Answers will vary depending on the area.]* What crops wouldn't grow well here?

Explain Ask

There's also a push to eat more ***sustainably***. What does it mean to eat sustainably?

Prompts: If you can sustain something, you can keep it going. Eating sustainably means eating food that is healthy for consumers and animals, and that does not harm the environment or workers and farmers during the process of growing/raising it. It also means treating animals humanely and supporting farm communities. *(Taken from www.sustainabletable.org.)*

Ask

Does this mean that some crops aren't good for the environment?

Prompts: What types of crops might not be good for the environment?

Explain

Sustainable farming means growing crops and raising animals that don't deplete the Earth too much. Some crops pull a lot of nutrients from the soil, so they take more resources to grow.

Ask

Is being healthy just about what we eat?

Prompts: What if we eat healthy food but just lie around watching TV all the time?

Explain

Being healthy also means moving our bodies and that's exactly what we're about to do!

Lesson 8:
Sustainable Eating, Healthy Foods, and Community Gardens

Poster #1

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MADE IN
CHINA

Lesson 8:
Sustainable Eating, Healthy Foods, and Community Gardens

Poster #2

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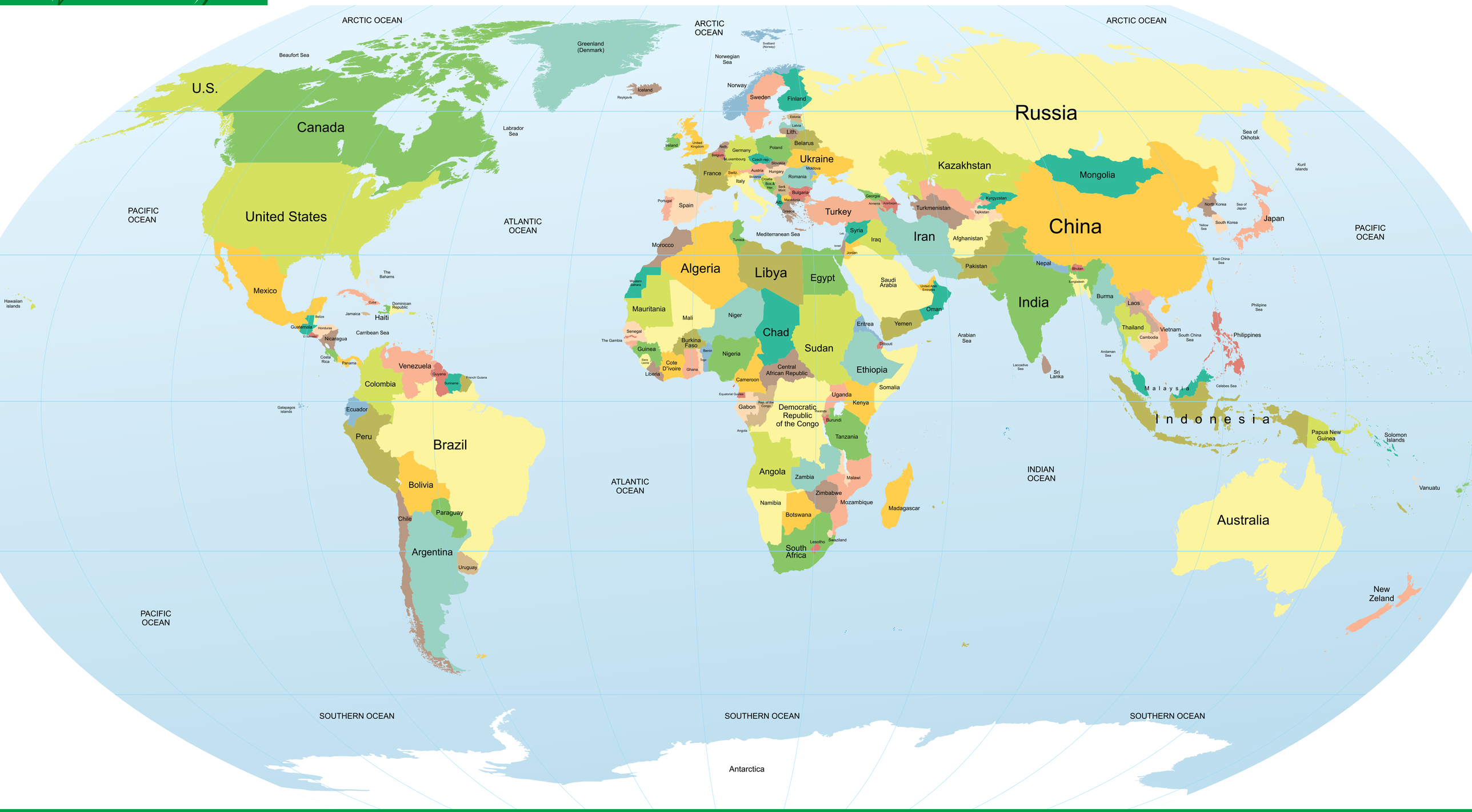
Map of the World



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3. Community Gardens and Surveying Walk

(20–30 minutes)

Ask

Let's concentrate on growing food for a moment. What do crops need to grow?

Prompts: Do you remember the four things that living beings need?: Air, water, food, and shelter. Do plants need special air? Special water? What kinds of food do plants eat? Plants get their nutrients from the Earth. Do plants need shelter? Not in a traditional sense, like a house, but lots of crops are grown in greenhouses or otherwise protected from the weather.

Ask

A few minutes ago, we talked about how our food traditionally is raised by farmers in our area, around the country, and around the world. Can only farmers grow food?

Prompts: Have you ever grown anything? Have you grown a houseplant?

Do Ask

One way that people are eating sustainably is by growing their own food in cities through community gardens. Have any of you ever seen a community garden? What is a community garden? *[Show **Poster #3** (photos of community gardens).]* What do you think a community garden includes?

Explain

Community gardens are set up in lots of different ways, but what they share in common is that people come together to grow food, herbs, flowers, and other plants on plots of land that they collectively take care of. They can also be in the middle of cities—in fact, there are community gardens in some very surprising places.

Explain Ask

We are going to take a walk around our neighborhood and try to locate some spots that would be good for a community garden. What do you think we are looking for?

Prompts: How much space do we need? Do we want a spot that is entirely shaded?

Do

Take the group on a walk to locate potential community garden spots or take a walk to a nearby community garden.

(continued on other side)

Optional Activity: Researching Locally Grown Foods *(30 minutes)*

Explain

So now that we understand how much energy we save by eating locally grown foods, we need to discover what foods are grown around us.

Ask

Any ideas what foods farmers grow in our community and in our state? Have any of you seen signs in the grocery store that say "locally grown"? Or have you ever been to a farmers' market? What foods were the signs talking about? What foods don't we grow or raise here?

Prompts: Do we grow pineapples or bananas here? Do we raise chickens here? Do we grow apples?

Do

Let's use the computers/library to find out.

Teacher Note: See the EPA Healthy Kids Website for a list of web resources on locally grown foods by region.

Optional Activity: Invite a Local Farmer to Speak *(20–30 minutes)*

Teacher Note: Having an actual farmer come to the class, or conversely visiting a local farm or farmers market, makes this lesson far more tangible and real for the students. Local farmers markets can be a good resource for locating a farmer who will talk to the students or whom the students can visit.

Do

Prior to the visit, review what the students have learned and talk about questions the students might want to ask the farmer, such as:

- How long have you been a farmer?
- Why did you become a farmer?
- What do you grow or raise?
- What's the coolest part about your job? What's the hardest part?
- How does the weather impact you?
- What do you think about climate change?

Optional Activity: Visit a Community Garden or Meet with a Community Gardener *(30 minutes)*

Do

Find out if there is a community garden in your neighborhood. If there is, ask if one of the gardeners would be willing to take the kids on a tour or come to the organization to talk to the group.

Lesson 8:
Sustainable Eating, Healthy Foods, and Community Gardens

Poster #3

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Community Gardens

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4. Close and Take-Home Talk

(5 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We have talked about what it means to eat locally and sustainably. Can someone please raise their hand and tell us what eating locally means? Can someone tell us what eating sustainably means?

Explain

We discovered some of the places that our clothes—and our food—travels from in order to get to us and we made the connection between climate change and food that comes from faraway places. Finally, we talked about community gardens as a way to eat locally.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the things that we learned today. What will you tell them? I want you to look around your kitchen and read the labels on your food to find out where it came from. If it traveled from far away to get to your table, talk with your family about how you might be able to get the same food from a place that's closer. Investigate farmers markets nearby and ask your family what they think about eating more local foods.

Explain Do

*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. See what you can accomplish on the sheet and we'll talk about it the next time we meet.

Take-Home Talk

Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

To Share:

- In order to have a nutritious diet—one that gives us the energy, vitamins, and minerals that we need—it needs to be varied and include healthy foods like fruits and vegetables.
- When we go into grocery stores, we see food that was grown and processed all over the world and shipped to us. This means that we get to eat many new and interesting foods. But moving food (and other items) around the world uses a lot of resources. And we get used to eating things that don't naturally grow in our region and we want them.
- Eating ***locally*** and ***sustainably*** is becoming very popular.
- Eating ***locally*** means eating food that grows well nearby and animals that are raised in the surrounding area, so less energy is used to transport it to you.
- If you can sustain something, you can keep it going. Eating ***sustainably*** means eating food that is healthy for consumers and animals, and that does not harm the environment or workers and farmers during the process of growing/raising it. It also means treating animals humanely and supporting farm communities.

(continued on other side)

To Do:

- **Well Traveled to Your Table!** The next time that you go to the grocery store, investigate where the food comes from. The backs of boxes and jars will tell you where the food comes from ("made in" or "product of") and fruits and vegetables should have signs that tell you where they were grown.

- Look in the produce aisle—what item has taken the longest trip to get to your store? Which canned food is from the farthest away? What box of cereal took the longest journey?

To Take Back:

- What was the coolest thing that you learned from talking about this topic with your family and friends?

Lesson 9: All Together Now—Air, Water, Food, and Shelter

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Lesson 9: All Together Now—Air, Water, Food, and Shelter

Snapshot

In this final lesson, the students will review the key concepts from the program and pledge, both as a class and individually, to take action to create a healthier environment for themselves and their community.

Preparation and Materials:

- Group Pledge Poster 1, Individual Pledge Handout sheet, Take-Home Talk
- Flip chart and markers
- Black or white board
- Paper for group reporting
- Crayons or markers for decorating pledge sheets

Note: This lesson divides students into groups based on the number of total lessons you've done from the entire curriculum; for some, that may be seven groups, for others, it will be fewer.

Note: Please consider sharing your students' pledges/ideas/songs/raps on the EPA Recipes for Healthy Kids and a Healthy Environment Website at **www.epa.gov/children/curriculum**

Suggested Giveaways: Several organizations piloting this program found great success holding a graduation ceremony at the end of Lesson 9 and having the students present the individual and group pledges to their families or other groups of students.

Objectives—Students will be able to:

- connect the previous lessons to their daily lives;
- commit to taking action as individuals to improve their environment in a tangible way; and
- commit as a group to taking collective action to improve their environment in a tangible way.

Vocabulary: *environment, climate change, pests, greenhouse gases, drainage pollution, sustainable, local, pledge*

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Procedure:

1. Introduction and Pledges *(5 minutes)*
2. Investigate in Groups *(20 minutes)*
3. Present Options to Class *(10 minutes)*
4. Vote on Class Pledge *(5 minutes)*
5. Create Individual Pledges and Class Pledge Poster *(10–15 minutes)*
   Optional Activity: Pledge Song or Rap Creation *(15–20 minutes)*
6. Close and Take-Home Talk *(5 minutes)*

Some Activity Possibilities:

- Brainstorming and presenting action ideas
- Working with a community garden longer term
- Walking through the building to look for leaks, lights left on, potential pest sites, etc.
- Walking through the community to pick up trash

Lesson 9: All Together Now—Air, Water, Food, and Shelter

1. Introduction and Pledges

(5 minutes)

Explain
Ask

We've spent the last *[insert the amount of time spent on these lessons]* working together to learn how we can create a safer environment for you and those around you. What have we learned about?

Prompts: What four things do all living being need? What did we learn about water? What about sustainable living? What did we learn about pests? What about chemical cleaners? How about sun smarts and greenhouse gases?

Explain

One of the big ideas that we've talked about is how interconnected the earth truly is—what happens to our water impacts plants, animals, and us! How we get our energy impacts the atmosphere, which impacts the water and plants and animals and us. The world we all share operates on a delicate balance and if we change only one thing, it impacts many others.

Ask

What is one thing that we can do that will impact the environment positively?

Prompts: What if we pick up trash rather than letting it run into streams and rivers? How about turning off lights when we are not using them? What about walking instead of driving somewhere?

Explain

It's one thing to talk about doing these things; it's another thing to actually do them! We are going to determine which of these things we can do collectively, as a whole group, and which we can do individually. And then we are going to pledge to take specific steps to make our world a safer and healthier place. We're going to make this pledge as a group and see if we can get others to join us.

Ask

What's a pledge?

Prompts: At school when you say the Pledge of Allegiance, what are you doing? A pledge is a promise to do or not do something.

2. Investigate in Groups

(20 minutes)

Do

[Break up the students into groups based on the number of lessons from this curriculum that you completed. Ideally, the groups will be 3–5 students, but the groups can be larger.]

Explain

[Tell the students that each group will review some information from one of the weeks and brainstorm some ideas about what the class might do as a whole and what people could do individually.] We want to think about big actions that we can take and little actions that we can take. Your group should select one person to read the Review Card out loud, one person to record the suggestions, and one person to report on the ideas. The person who reports will need to be persuasive and compelling—they might even want to act out the actions that they are proposing. *[Give each group a sheet of paper.]* The class will vote on which idea is the best one. It will be the one that we will all pledge to do. *[Consider telling students that they cannot vote for their own group—they must vote for another group.]*

Do

Briefly review each of the seven lessons:

- Lesson 2: Pesky Pests and Household Hazards
- Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean
- Lesson 4: Be Sun Smart!
- Lesson 5: Climate Change and You!
- Lesson 6: Keeping All of Our Waterways Clean
- Lesson 7: Healthy Water Inside
- Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

(continued on other side)

2. Investigate in Groups *(continued – page 2)*

Explain
Do

Give each group one lesson Review Card and ask them to determine what actions the class could take as a whole and what actions individuals could take to make the community safer and healthier for everyone. Each group must recommend only one group activity, but they may recommend up to three individual activities.

Do

Write on the board or flip chart:

- One action that the entire group can take to make the environment healthier
- Three actions that individuals can take to make the environment healthier

Do

Give the class 8–10 minutes to come up with their suggestions. Circulate around the room and help students with their ideas. While students are working on this, write the seven (or how ever many groups developed) group names on the board or flip chart for the tally.

3. Present Options to Class

(10 minutes)

Explain
Ask

You want to persuade the rest of us to go along with your idea for how we can collectively and individually take action. So, you need to be confident and convincing when you present your ideas. Present them with some flourish; stand tall and speak loudly. Explain why your ideas are the best. Which brave person is going to go first?

Do

As students present their ideas, ask them prompting questions such as the following: Is this hard to do? Can everyone do this? Do you need any special tools or knowledge to do this? Can you do this every day or is this a once in a little while action?

4. Vote on Class Pledge

(5 minutes)

Do

After all of the groups have given their presentations, summarize each group's proposed action. Ask students to vote only once for the action that the whole group will take. Tally the votes and declare a winner or do a combination of all the actions.

Note: You can also decide to have more than one pledge.

5. Create Individual Pledges and Class Pledge Poster *(10–15 minutes)*

Explain / Do

*[Give each student an **Individual Pledge Handout** sheet.]* We just heard some wonderful ideas for individual actions that we could each take to make the community a little safer and healthier.

Ask

Which of these actions are you going to pledge to do today? Why did you pick this one?

Do

Give the students time to fill out their Individual Pledge sheets. Consider displaying the pledge sheets around the room or somewhere else in the building.

Do

While the students are completing their individual pledge sheets, write the class pledge on ***Poster #1*** *(class pledge)*. As the students finish their individual sheets, invite them to sign the pledge poster.

Optional Activity: Pledge Song or Rap Creation *(15–20 minutes)*

Explain

Now that the class has decided on a group pledge, let's find a way to spread the word about what we're going to do. While in your groups, I want you to work together to create a song or a rap that explains the action we are taking as a group and why it's so important.

Do

Have each group present their song or rap.

Individual Pledge

Name: _____

The world we share is interconnected and we all have to take action to make sure that the environment is safe, clean, and healthy for everyone. In order to create a healthier community, I pledge to:

_____

_____

_____

_____

_____

_____

Lesson 9: All Together Now—
Air, Water, Food, and Shelter

Poster #1

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Recipes for Healthy Kids and a Healthy Environment

Kids Building a Safer and Healthier Community

Group Pledge

The world we share is interconnected and we all have to take action to make sure that the environment is safe, clean, and healthy for everyone. If we join together, our actions will have a greater and more lasting impact. In order to create a healthier community, we pledge to:

Signatures:

7. Close and Take-Home Talk

(5 minutes)

Explain Do

Close your eyes and take a nice deep breath. We've covered a lot today. We reviewed all that we have learned in the last several weeks about creating a healthy environment. We thought about and brainstormed actions that we could take to make our community safer and healthier. We created individual and group pledges to do our part to ensure that the world we share stays in balance for generations to come.

Explain

The difficult part now is keeping the pledges that we've made. We're going to hang this poster up and keep the pledge sheets that you made around us so that we can be reminded of the everyday actions that we have promised to take.

Take-Home Talk

The coolest part about learning something new is sharing the knowledge. Tonight, when you get home, I want you to talk with your family about the pledge that we created today. What will you tell them? Which of the topics that we've learned about was most interesting to you? What actions can your family take together? What actions would be easiest for you to do at home? What do you already do? Do you recycle? Do you conserve water by taking quick showers? Does your family keep chemical cleaners out of reach? Do you all wear sunscreen and practice sun smarts? What are you already doing that you can do more of?

Explain Do

*[Pass out **Take-Home Talk**.]* This Take-Home Talk sheet has some things that you can share with your family and some activities that you can do at home. It also has a family pledge. What can your family promise to do together to help make our world a little safer and healthier?

Explain

We've spent the last few weeks learning about ways we can take small steps to create a safer and healthier community and world for ourselves and others. Thank you for pledging to keep doing your part!

Take Home Talk

Lesson 9: All Together Now—Air, Water, Food, and Shelter

To Share:

- All living things need four things to stay alive and thrive: air, water, food, and shelter.
- Our world is interconnected—what happens to our water impacts plants, animals, and us! How we get our energy impacts the atmosphere, which impacts the water and plants and animals and us. The world we all share operates on a delicate balance and if we change only one thing, it impacts many others.
- We can all take small, simple actions to positively impact the environment and our health.

To Do:

- **We Pledge To…** Think about all that we've shared with our families about environmental health, and talk with our families about some simple actions that we can pledge, or promise, to take altogether.
- Think about big actions that we can take and little actions that we can take.
- Ask for ideas from everyone and then vote on the one or two ideas that will be best for your family. You can all sign the pledge on the next page.

(continued on other side)

Family Pledge

Names: _____

_____

The world we share is interconnected and we all have to take action to make sure that the environment is safe, clean, and healthy for everyone. If we join together, our actions will have a greater and more lasting impact. In order to create a healthier community, we pledge to:

_____

_____

_____

_____

_____

_____

Review

EPA

Review

Lesson 2: Pesky Pests and Household Hazards

Remember...

- Pests are living things that can hurt us by making us sick, damage our homes or other property, or destroy plants or agricultural products. A pest can be a plant, an animal, or a disease.
- Pests are everywhere—in our schools, and homes, and our cities, suburbs, and in the country. There are pests in the White House, the Taj Mahal, and Buckingham Palace. They are everywhere!
- Insects are just one kind of pest that people may encounter. The world has more insects than all other living things combined. It's estimated that there are 10 quintillion (10,000,000,000,000,000,000) insects!
- Insect pests like to come indoors because we have all the things inside that they need—air, water, food, and shelter
- Instead of using chemicals that can be toxic in order to get rid of pests, we can remove the things that they need to survive. Take these steps:
  1. Identify the pest.
  2. Take away food.
  3. Take away water.
  4. Take away shelter.
  5. Monitor the situation.
- Pesticides and cleaners can be dangerous or deadly if used the wrong way. It's important to keep these items locked up and out of reach.

(continued on other side)

Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that addresses the environmental health issue of pests.
- What can we all do to ensure that pests don't come into our schools, homes, and community spaces?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

- Group: _____

  _____

  _____

  _____

  _____

  _____

  _____

  _____

- Individual: _____

  _____

  _____

  _____

  _____

  _____

  _____

  _____

Review

Lesson 3: Breathing Easy: Keeping the Inside of Our Homes Healthy and Clean

Remember...

- When we take air in, the oxygen in the air passes throughout our bodies through our blood.
- The air we breathe in is only about 20 percent oxygen. Most of the rest of our air is nitrogen, which is another invisible, odorless gas, like oxygen.
- Lead is a metal that has many uses and is in a lot of places that we might not realize—like paint in older homes and soil in cities. But lead can be dangerous for humans if it's in our air, water, or food. It's especially dangerous for babies and children under age 6.
- Find out if your home was built before 1978. If it was, be extra careful with flaking paint. Get an adult's help to clean up dust and paint chips right away.
- More than 25 million people in the United States have asthma, including 1 out of every 10 school-aged children. Many more people have breathing difficulties and problems other than asthma.
- Even if you don't have asthma, it's important to keep the air in your home healthy and clean. There are a few things that you and your family can look for and can do to breathe a little easier. Below is a list of the most well-known asthma triggers and some steps to take to avoid them:
  - Dust And Dust Mites – Keep Your Space Clean And Consider Covering Mattresses And Pillows With Airtight Bedding. Wash Your Sheets And Bedding Regularly.
  - Pollen – On Days When The Pollen Count Is Very High, Stay Indoors And Close The Windows.
  - Mold And Mildew – Clean Up Mold And Mildew In Bathrooms And Keep It Away By Running The Fan In The Bathroom During And After Showers. Wipe Down The Shower And Bath After Using It.
  - Pet Dander – Many folks are allergic to pets and find it difficult to breathe around them. If you have pets, brush them outside instead of inside.
  - Secondhand Smoke – Smoking and secondhand smoke are bad for everyone. If someone in your family smokes, encourage them to stop, or at least ask them to smoke outside, away from children and other family members.

(continued on other side)

Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that addresses the environmental health issue of indoor air quality.
- What can we all do to ensure that the air in our schools, homes, and community spaces is healthy?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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Review

Lesson 4: Be Sun Smart

Remember...

- The sun is the star at the center of our Solar System. The sun is 109 times larger than the Earth and primarily consists of hydrogen and helium (gases).
- We feel the heat energy of the sun when we walk outside, and it's hot out even though the sun is 93 million miles away from the Earth because the core of the sun is more than 28 million degrees Fahrenheit!
- The sun is essential for life on Earth. Just as plants need the sun to grow, humans and other animals need it as well. We have evolved over millions of years along with the sun.
- While we need the sun, we also ALL need to protect ourselves from its strong ultraviolet radiation, which can cause sunburns and, sometimes, cancer.
- People of all complexions need to practice sun smarts. The sun's ultra violet rays can damage us all.
- We saw that a lot of animals use natural sun smarts to protect themselves:

Turtles wear their shells like a shirt—its skin can't be burnt if it's not exposed to the sun. You can wear clothing to protect your skin from the sun.

Pigs cover themselves in mud as a sunscreen. You should wear sunscreen of at least SPF 15 whenever you are outside.

The bumps over the **camel's** eyes act like a hat. You should wear a hat to protect your face, neck, and head from the sun.

The black rings around the **meerkat's** eyes act as sunglasses. You should wear sunglasses if you're going to be outside for long periods.

Lions use the shadow rule—when your shadow is shorter than you are, seek shade!

(continued on other side)

Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that will help us practice sun smarts.
- What can we all do to ensure that we use sun smarts when we are at our schools, homes, and community spaces?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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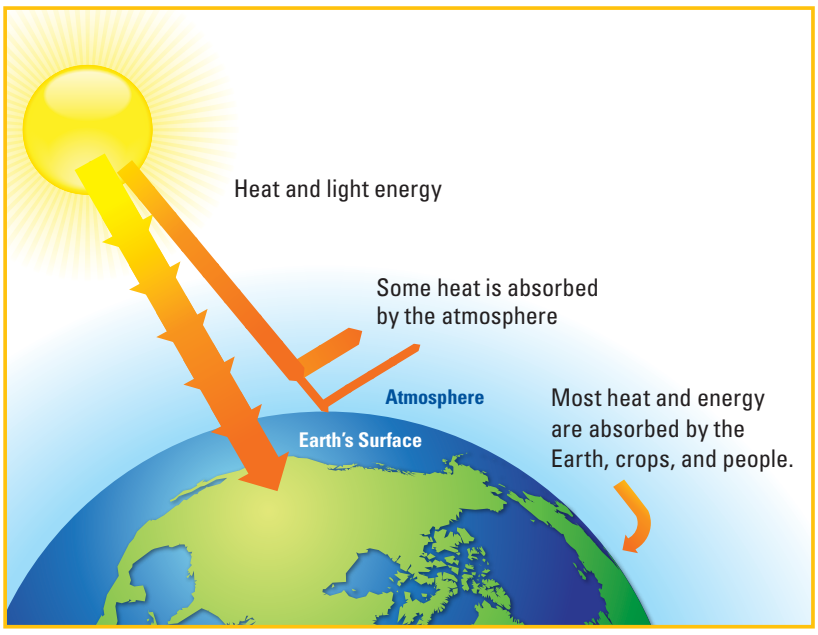
Review

Lesson 5: Climate Change and You

Remember...

- The sun is the center and the anchor of our Solar System and, like the other seven planets in our system, the Earth moves, or orbits, around it along a pathway. The earth needs to rotate/spin 365 times for each one revolution around the sun! A rotation is 1 day, which gives us night and day, and a revolution is 1 year, which gives us the seasons.

- This giant sun powerhouse sends so much energy our way that it would be extremely dangerous if it came directly to the Earth's surface. The gases that make up the atmosphere act like the glass on a greenhouse and let most of the light and the heat in, but filter out some of it, so that it's safer for us.



- These gases also help keep the Earth warm when one part of the Earth is rotating away from the sun—at night.

- Our atmosphere is a mix of gases that do different things. If we change the mixture of gases, our planet will change. Greenhouse gases are released when we burn gas and oil and coal to power our cars, factories, planes, and trains, and provide power/energy to the places where we live and go to school and work.

- We use energy so often throughout the day that we rarely think about it. We use energy by turning on lights, watching TV, using a computer, listening to music, taking a shower/bath (energy to heat the water), driving somewhere, cooking, and using anything with batteries.

(continued on other side)

Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that will help us conserve energy.
- What can we all do to ensure that we are using less energy in our schools, homes, and community spaces?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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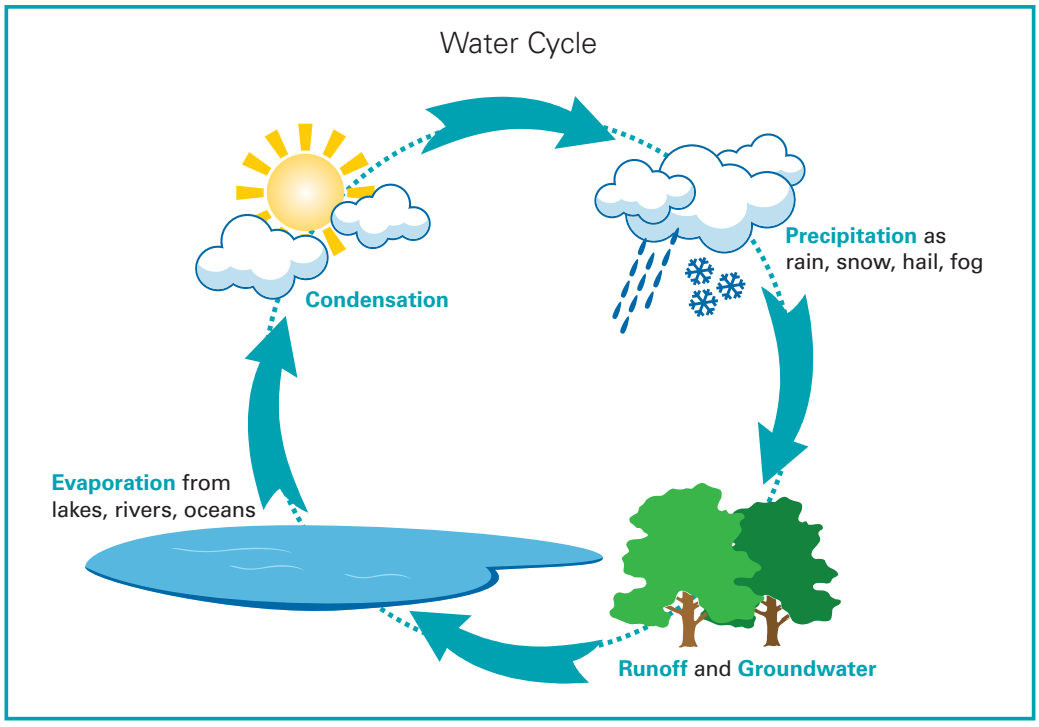
Review

Lesson 6: Keeping All of Our Waterways Clean

Remember...

- About 70 percent of the Earth is covered with water! Most of that water is in the oceans.
- But less than 1 percent of all the water on Earth can be used by people. The rest is saltwater (the kind you find in the ocean) or is permanently frozen and we can't drink it, wash with it, or use it to water plants.
- As our population grows, more and more people are using up this limited resource. Therefore, it is important that we understand where our water comes from and how to use our water wisely and not waste it.
- You learned that all of the trash that we see on the streets and in our neighborhoods can too easily end up in our lakes and our streams, hurting fish and plants and animals.



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Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that will help us keep our waterways cleaner.
- What can you do to let others know that they should not litter?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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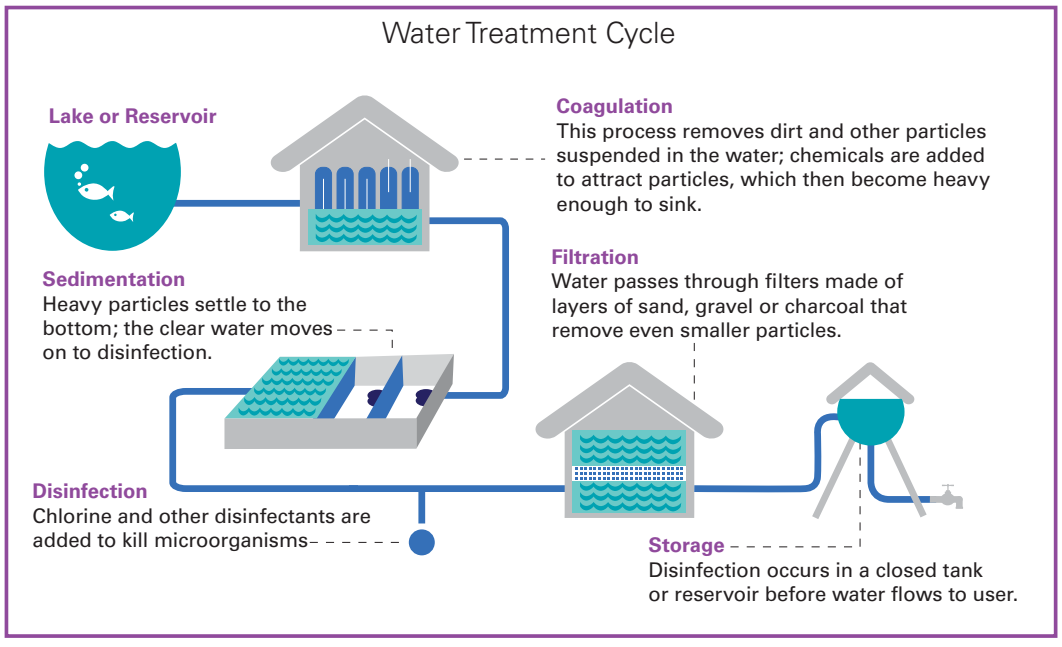
Review

Lesson 7: Healthy Water Inside

Remember...

- Humans are more than 60 percent water! 60 percent! We need water to live.
- Freshwater—from lakes and streams and rivers—needs to be filtered before we can drink it to remove dirt, bacteria, small fish, and other things that could harm us. Even when water from these sources looks clear and clean, there are things that we can't see that could harm us.
- In the United States, a family of four uses 400 gallons of water a day!
- Mold and mildew can form easily in areas of your home where water is used often—in bathrooms, kitchens, and laundry rooms. Be sure to wipe away moisture and clean mildew.
- We use water so often throughout the day that we rarely think about it. Just a few daily activities that use water: Taking a shower or bath, using the toilet, cooking, washing your hands, drinking anything.



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Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that will help us conserve water.
- What can we all do to ensure that we are using less water in our schools, homes, and community spaces?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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Review

Lesson 8: Sustainable Eating, Healthy Foods, and Community Gardens

Remember...

- In order to have a nutritious diet—one that gives us the energy, vitamins, and minerals that we need—it needs to be varied and include healthy foods like fruits and vegetables.

- When we go into grocery stores, we see food that was grown and processed all over the world and shipped to us. This means that we get to eat many new and interesting things. But moving food (and other items) around the world uses a lot of resources. And we get used to eating things that don't naturally grow in our region and we want them.

- Eating ***locally*** and ***sustainably*** is becoming very popular.

- Eating ***locally*** means eating food that grows well nearby and animals that are raised in the surrounding area, so less energy is used to transport it to you.

- If you can sustain something, you can keep it going. Eating ***sustainably*** means eating food that is healthy for consumers and animals, and that does not harm the environment or workers and farmers during the process of growing/raising it. It also means treating animals humanely and supporting farm communities.

(continued on other side)

Brainstorming...

- A group pledge is something that the whole group can do—it is a daily or weekly action that will help us be more locally and sustainably focused.
- What can you do to eat locally and sustainably?
  - What will we do?
  - When will we do this?
  - Where will we take this action?
  - Why will we take this action?
- What are some things that we could each do individually?

Pledge Proposals...

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