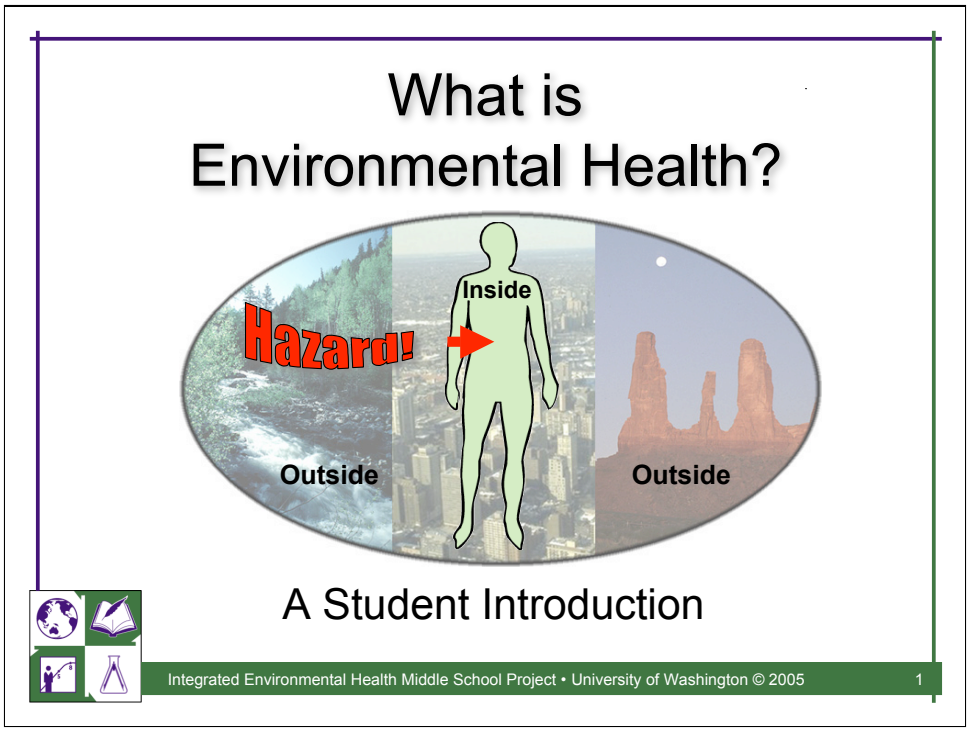
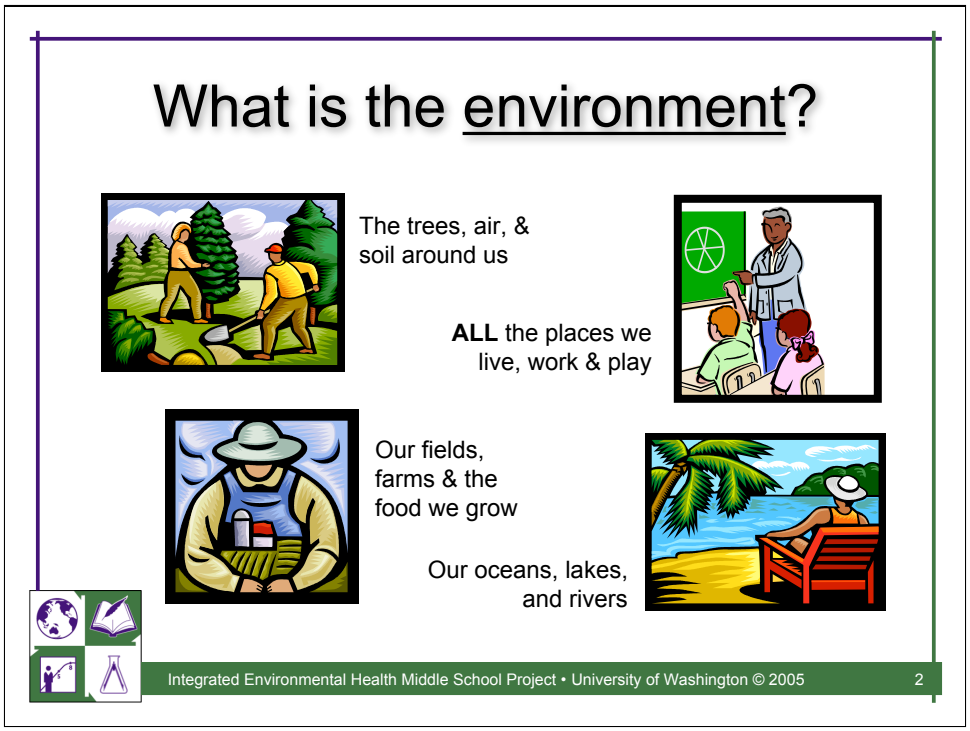


Procedure: This classroom PowerPoint presentation is intended to be used in conjunction with the student handout entitled, “Student Introduction: What is Environmental Health?” You may choose to have your students follow along with the reading as they view the presentation, or assign the reading as follow-up homework.

Each slide corresponds to a section of the reading. These notes pages include ideas for how to present each slide (**Procedure**), as well the section of the student reading that relates to the slide (**Relevant Text from Student Reading**).



Procedure: Ask students to call out words they associate with the term "environment." When they have had a chance to come up with most of the places listed on the slide (and maybe more!), **CLICK 4 TIMES** to make the graphics and text appear. Make sure to emphasize that the "environment" isn't only pristine nature, but cities, towns, workplaces, schools - anywhere humans spend time.

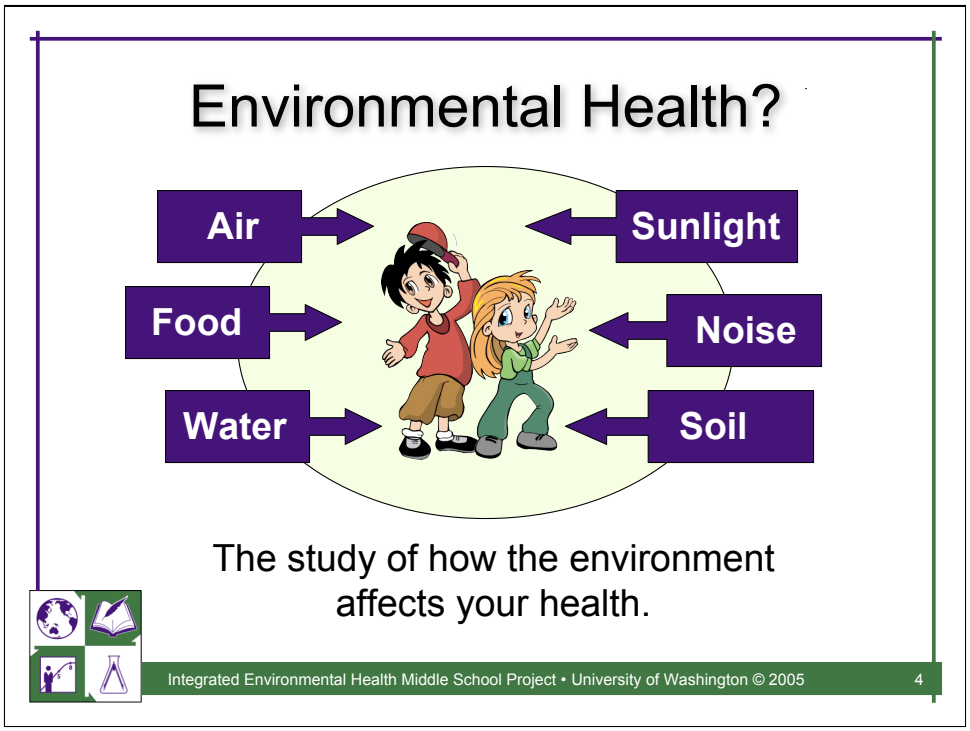
Relevant Text from Student Reading:

"Your health depends on the environment around you. **Environmental health** is the study of how the environment affects human health. It differs from the study of how humans affect the environment, because it focuses on people's health. An environmental scientist might study how water pollution is hurting fish. An environmental health scientist would study what happens to the health of people when they catch and eat those fish. Environmental health is not just about the health of the environment – it always comes back to you and whether the environment you are part of is helping you stay healthy, or making you sick."

Procedure: Ask students to call out words they associate with the term "health." When they have had a chance to come up with the concepts listed on the slide (and maybe more!), **CLICK 3 TIMES** to make the graphics and text appear.

Relevant Text from Student Reading:

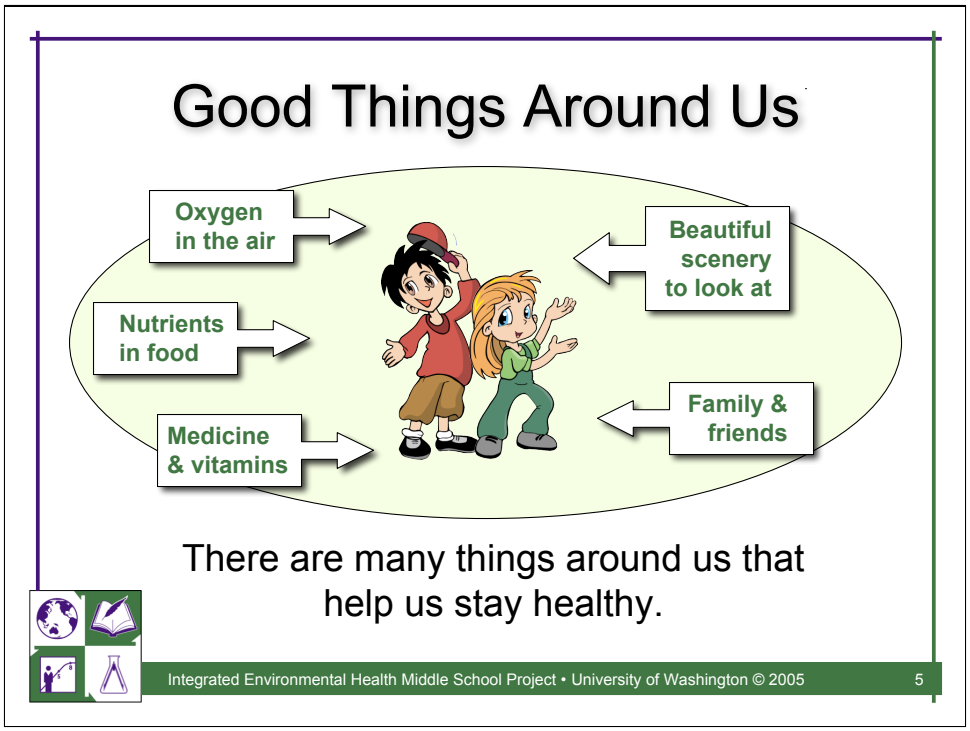
"Your health depends on the environment around you. **Environmental health** is the study of how the environment affects human health. It differs from the study of how humans affect the environment, because it focuses on people's health. An environmental scientist might study how water pollution is hurting fish. An environmental health scientist would study what happens to the health of people when they catch and eat those fish. Environmental health is not just about the health of the environment – it always comes back to you and whether the environment you are part of is helping you stay healthy, or making you sick."



Procedure: Ask students to call out some things in the environment that could affect human health, then **CLICK TWICE** to make the boxed words appear. Next, have the class brainstorm a definition for environmental health (EH), then **CLICK AGAIN** to make the correct definition appear. Stress that EH is the **intersection** or **interaction** between the environment and human health.

Relevant Text from Student Reading:

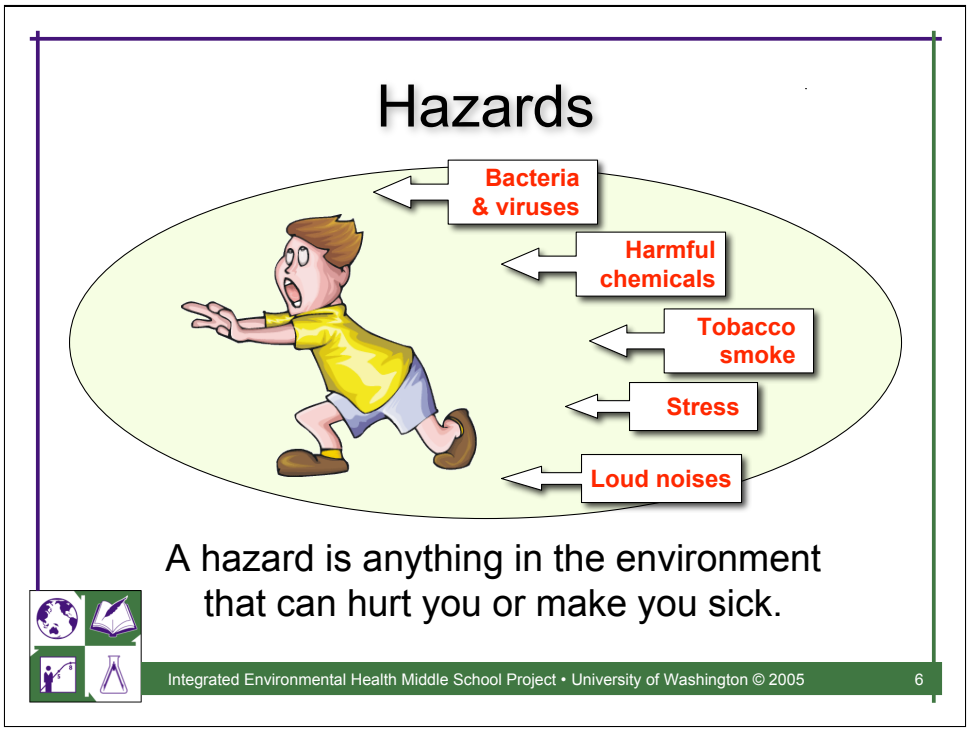
"Every day, you come in contact with things in your environment that can help you or hurt you. Some of these things are important for keeping you healthy, such as oxygen or medicines. However, some of these things may be harmful to your health, such as tobacco smoke or snake venom. Things in the environment that are harmful are called **hazards** and include things like **chemicals,** disease-causing bacteria, loud noises and even stress. Hazards can be natural or human-made."



Procedure: Ask students to call out things around us that help keep us healthy, then **CLICK TWICE** to make the boxed words appear. This is a good place to stress that our environment is what supports us in every way and keeps us healthy and strong.

Relevant Text from Student Reading:

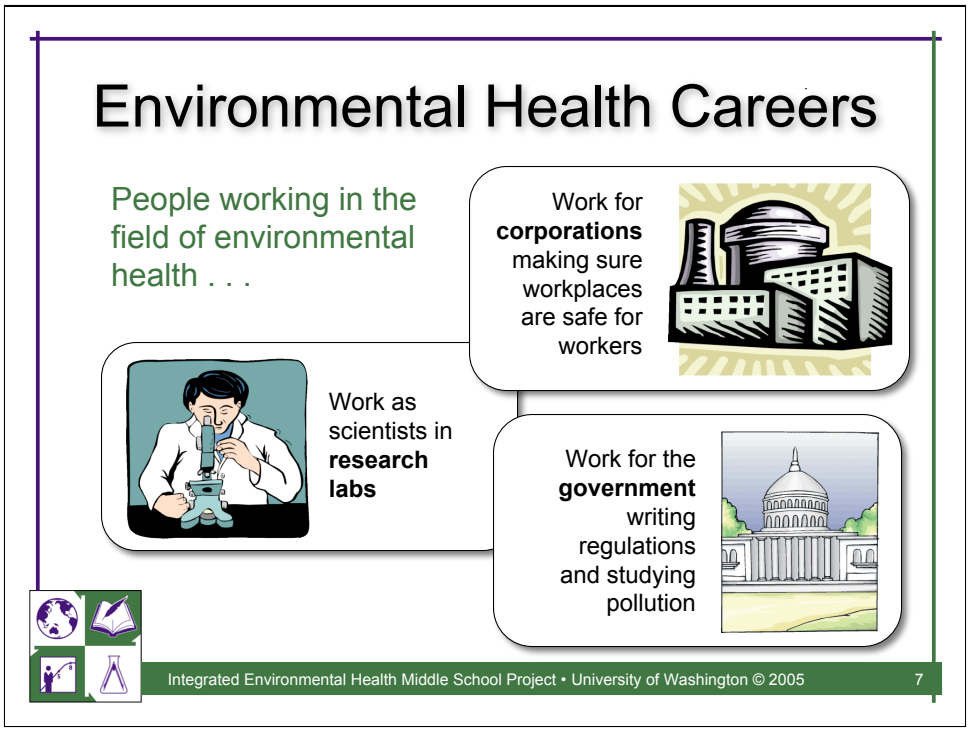
"Every day, you come in contact with things in your environment that can help you or hurt you. Some of these things are important for keeping you healthy, such as oxygen or medicines. However, some of these things may be harmful to your health, such as tobacco smoke or snake venom. Things in the environment that are harmful are called **hazards** and include things like **chemicals,** disease-causing bacteria, loud noises and even stress. Hazards can be natural or human-made."



Procedure: Ask students to call out things around us that have the potential to hurt us or make us sick, then **CLICK ONCE** to make the boxed words appear. This is a good time to discuss what things we have control over, and what things we do not - i.e. smoking is a personal choice, but being exposed to air pollution is not.

Relevant Text from Student Reading:

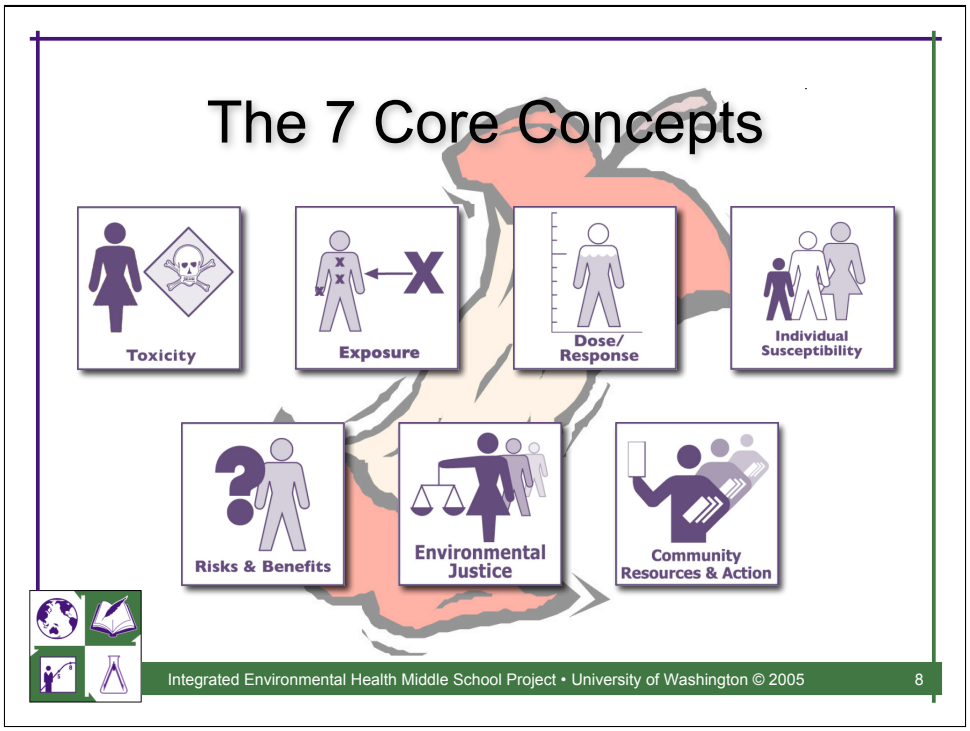
"Every day, you come in contact with things in your environment that can help you or hurt you. Some of these things are important for keeping you healthy, such as oxygen or medicines. However, some of these things may be harmful to your health, such as tobacco smoke or snake venom. Things in the environment that are harmful are called **hazards** and include things like **chemicals,** disease-causing bacteria, loud noises and even stress. Hazards can be natural or human-made."



Procedure: Have students call out the kinds of jobs that people working in the field of EH might do. **CLICK 3 TIMES** to have the boxes appear. This is a good opportunity to discuss the kinds of subjects that it would be important to study if one wanted to go into an EH related career (science, math, history, language arts, foreign languages, etc.).

Relevant Text from Student Reading:

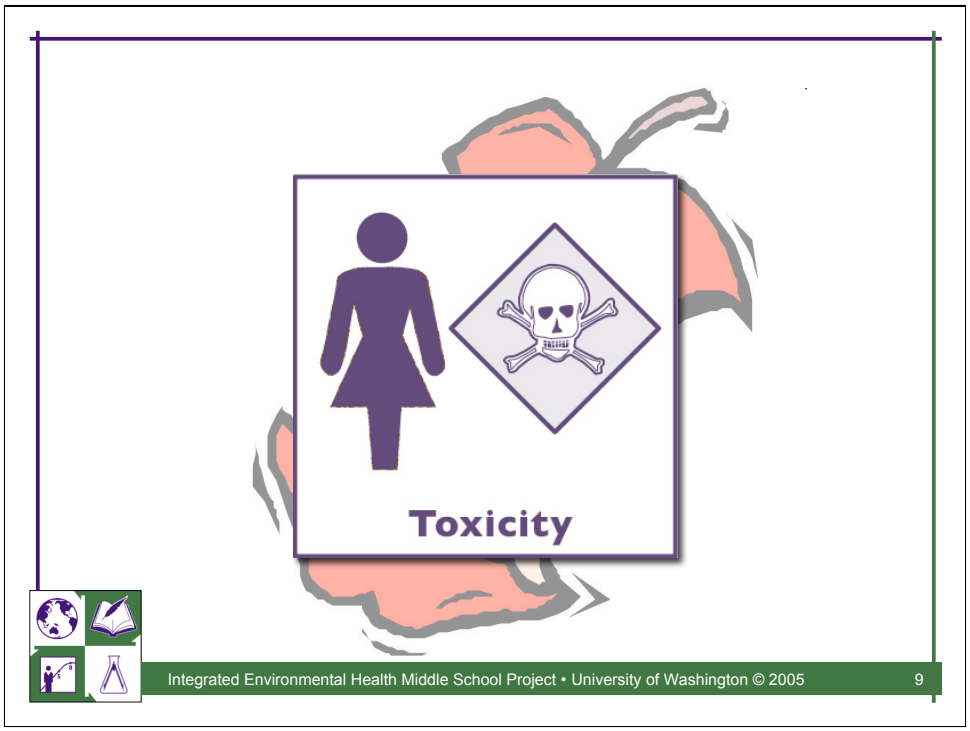
"People working in the fields of environmental health do many different jobs. They work to identify environmental hazards, and prevent people from being harmed by them. Some are scientists working in laboratories. Some work for the government writing regulations and studying pollution. Some work for corporations to help make sure that workplaces are safe and that the environment is kept as clean as possible. Most of these jobs require a solid understanding of science and math, knowledge about history and the law, and good communication skills."



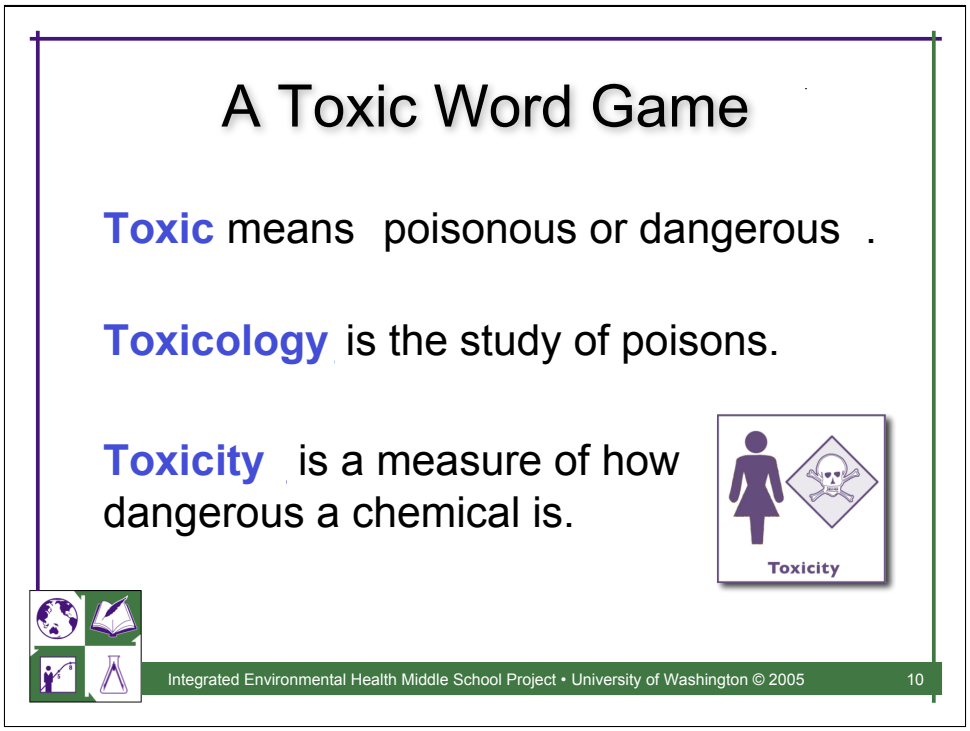
Procedure: This slide introduces the seven core concepts of EH. **CLICK ONCE** to make the first four icons appear, then **CLICK AGAIN** to make the remaining three appear. The remainder of the presentation will go through each of these concepts in more detail.

Relevant Text from Student Reading:

"To understand the field of environmental health, you need to understand seven core concepts: **Toxicity, Exposure, Dose/Response, Individual Susceptibility**, **Risks & Benefits, Environmental Justice, and Community Resources & Action**."



Procedure: Transition slide to introduce next section.



Procedure: This slide allows you to play a simple fill-in-the-blank game with your students. Have students come up with a definition for the word "toxic," then **CLICK ONCE** to make the definition appear. **CLICK AGAIN** to make the next fill-in-the-blank appear. Have students guess what suffix they would add to the word "toxic" to make a word that means "the study of poisons." **CLICK AGAIN** to make the correct ending appear. **CLICK AGAIN** to make the final fill-in-the-blank appear. Have students guess, then **CLICK A FINAL TIME** to make the complete the word "toxicity."

Relevant Text from Student Reading:

"Most people working in environmental health-related jobs have taken classes in the science of **toxicology**. Toxicology is the study of how environmental hazards, such as natural and human-made chemicals, can enter our bodies and make us sick.

When scientists study different chemicals in the environment to see if they might be dangerous to humans, they are trying to understand the **toxicity** of those chemicals."

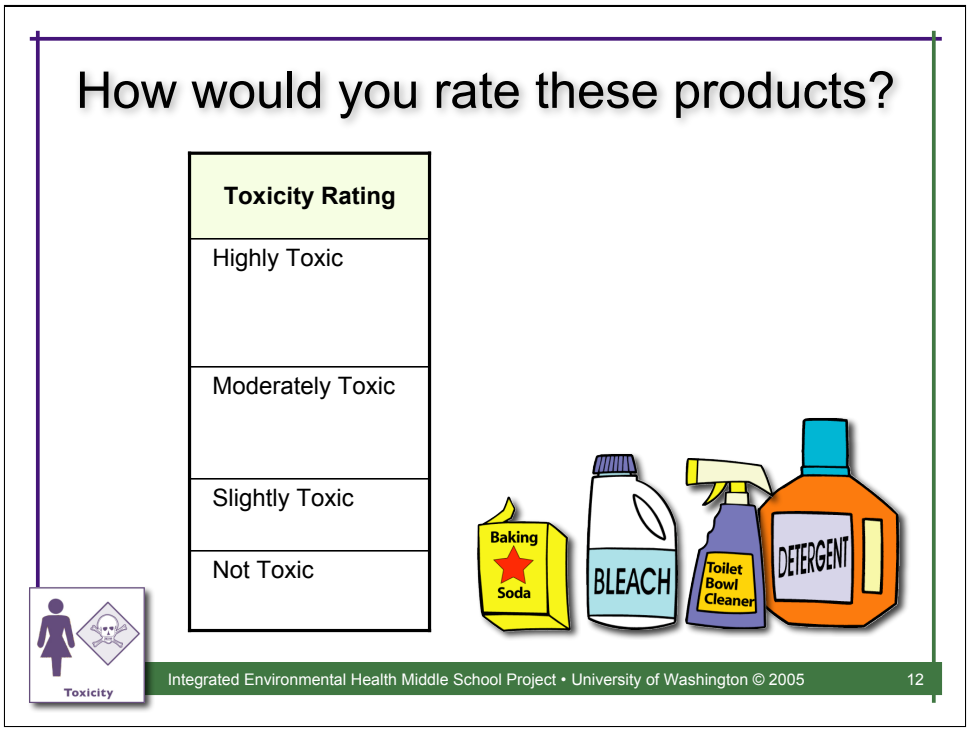
A Toxicity Scale

Toxicity Rating	Signal Words on Package	Symbol on Package
Highly Toxic	**DANGER** or **POISON**	
Moderately Toxic	**WARNING**	
Slightly Toxic	**CAUTION**	
Not Toxic	none	

Procedure: Ask your students if they have seen these any of these symbols or words before, and if so, on what types of products. If you have any cleaners or chemicals in your classroom, examine them as a class to see if there is any type of toxicity rating indicated on the packaging. Stress to students that there are many different scales used to rate how dangerous or hazardous a substance may be. The one shown above is only meant as an example of one such scale to introduce the concept of toxicity.

Relevant Text from Student Reading:

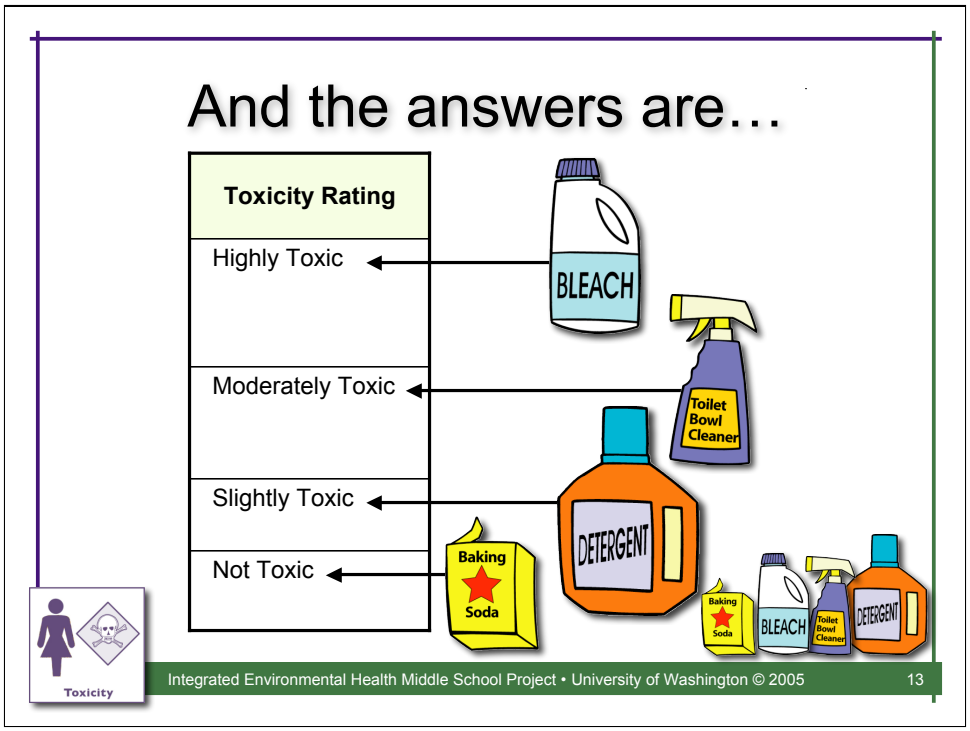
"Toxicity is a measure of how dangerous a chemical is. The greater a chemical's toxicity, the less it takes to make a person sick or even kill them. The Environmental Protection Agency, for example, uses the following scale to rate the toxicity of products commonly used in the home (see above)."



Procedure: While this slide is being viewed, have students assign a toxicity rating to each of the four common household products pictured. This can be done silently as an individual challenge, in small groups, or as a whole class. When students have had a chance to guess, move to the next slide.

Relevant Text from Student Reading:

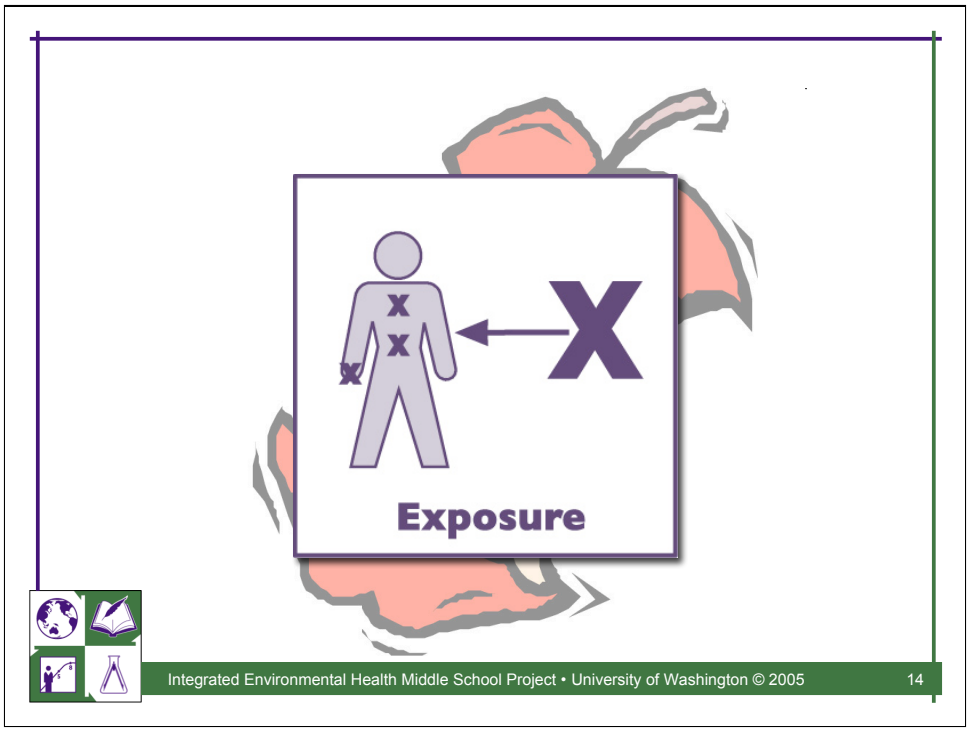
"A bottle of bleach, for example, will have the word DANGER on the label, because it is highly toxic if ingested (toxicity rating = 1). Borax powdered cleaner, however, is rated as slightly toxic (toxicity rating = 3) and will have the word CAUTION on the label. This is just one example of a system used to measure the toxicity of hazards."



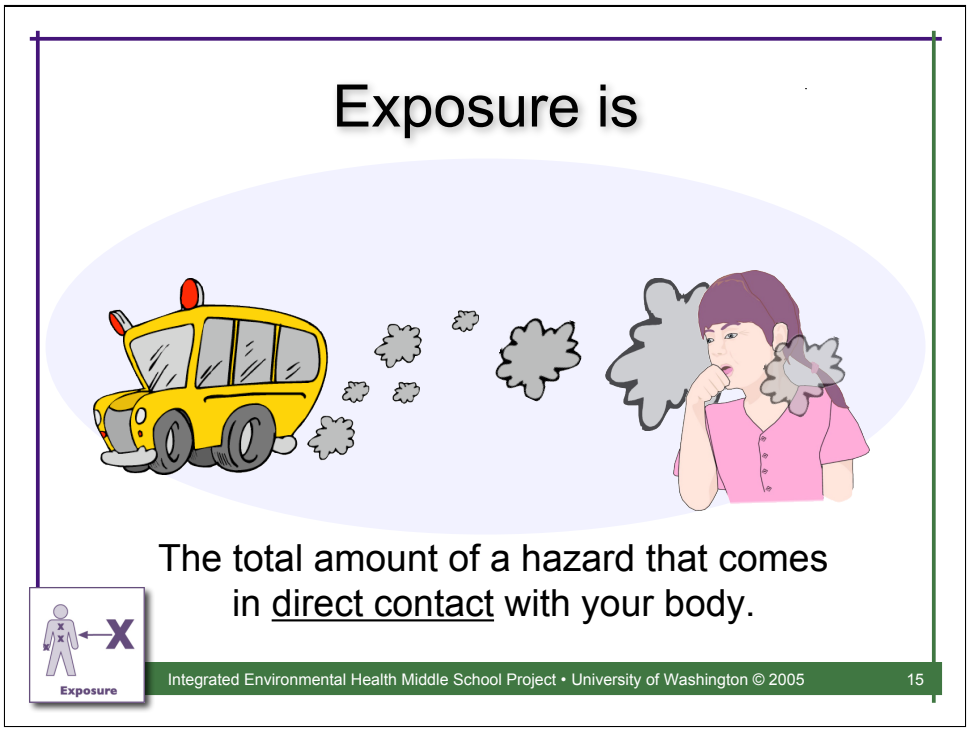
Procedure: Use this slide to see how accurate your students' guesses were. For each product, **CLICK ONCE** to make the product disappear from the lower right corner, then **CLICK AGAIN** to have it show up next to its relative toxicity rating. You will need to **CLICK A TOTAL OF 8 TIMES** to have all the products rated.

Relevant Text from Student Reading:

"A bottle of bleach, for example, will have the word DANGER on the label, because it is highly toxic if ingested (toxicity rating = 1). Borax powdered cleaner, however, is rated as slightly toxic (toxicity rating = 3) and will have the word CAUTION on the label. This is just one example of a system used to measure the toxicity of hazards."



Procedure: Transition slide to introduce next section.

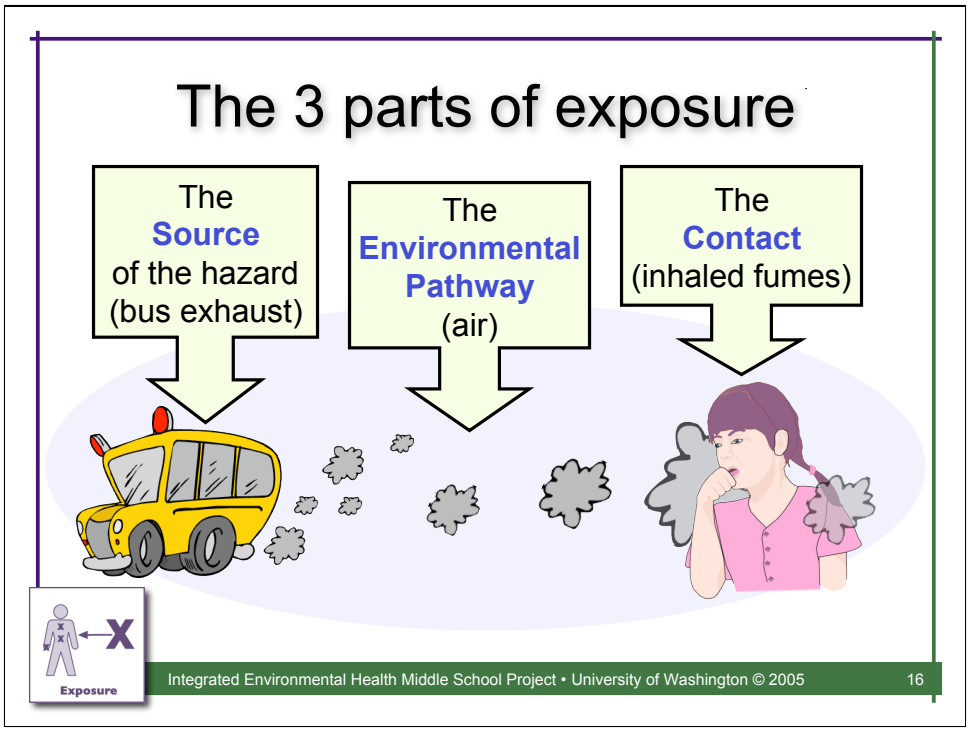


Procedure: This slide introduces the term exposure and provides students with a definition.

Relevant Text from Student Reading:

"We all know what it means to be "exposed" to something like a cold or a flu. Everyday our bodies are exposed to all sorts of environmental hazards, such as bacteria, viruses, and the sun's ultra-violet (UV) rays. Some of these hazards exist naturally and some of them are the result of human activities. There are many possible **sources** of hazards, such as cars, industry, even volcanic eruptions. In order for us to be exposed, however, the hazard has to get from the source to us. To do this, it travels along an **environmental pathway.** Pathways include the air we breathe, the water we drink, the food we eat, and even the soil we work in, play in, and use to grow much of our food.

Environmental health scientists use the term **exposure** to describe the total amount of a hazard that comes in direct contact with your body."

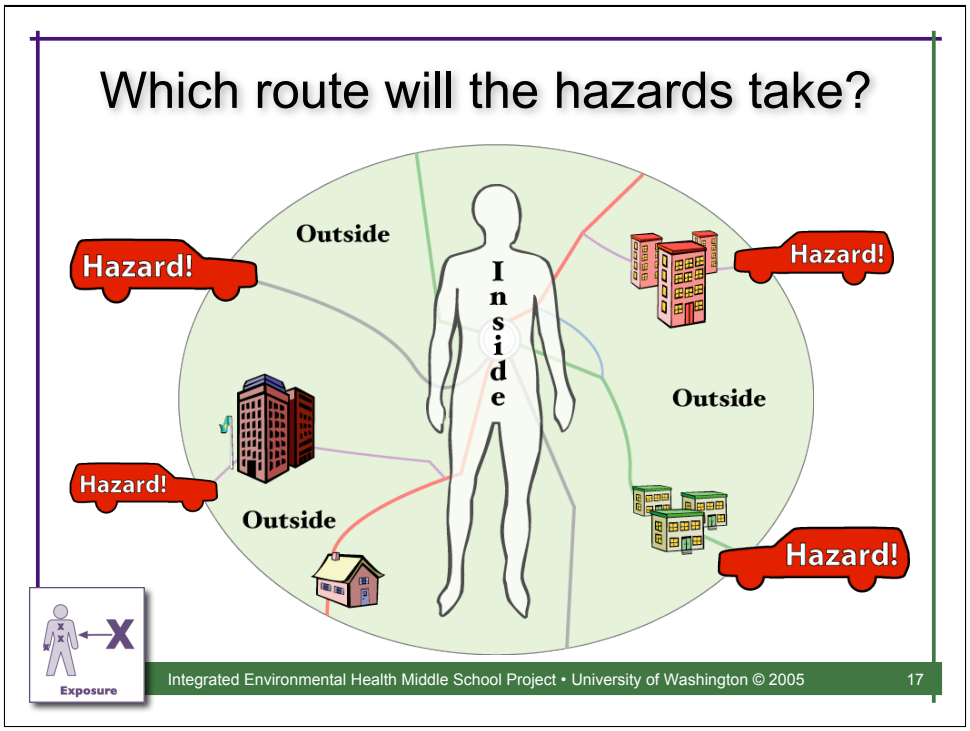


Procedure: This slide introduces the three parts of exposure using the example of bus exhaust. **CLICK 3 TIMES** to make the 3 text boxes appear. After discussing the components pictured in the slide, ask students to pair up and think of other examples of environmental hazards, then trace their exposure paths using the same three part model. Examples might include lead in drinking water (lead > water > ingestion), UV rays from the sun (sun > air > dermal absorption), and mold in buildings (mold > air > inhalation).

Relevant Text from Student Reading:

"We all know what it means to be "exposed" to something like a cold or a flu. Everyday our bodies are exposed to all sorts of environmental hazards, such as bacteria, viruses, and the sun's ultra-violet (UV) rays. Some of these hazards exist naturally and some of them are the result of human activities. There are many possible **sources** of hazards, such as cars, industry, even volcanic eruptions. In order for us to be exposed, however, the hazard has to get from the source to us. To do this, it travels along an **environmental pathway.** Pathways include the air we breathe, the water we drink, the food we eat, and even the soil we work in, play in, and use to grow much of our food.

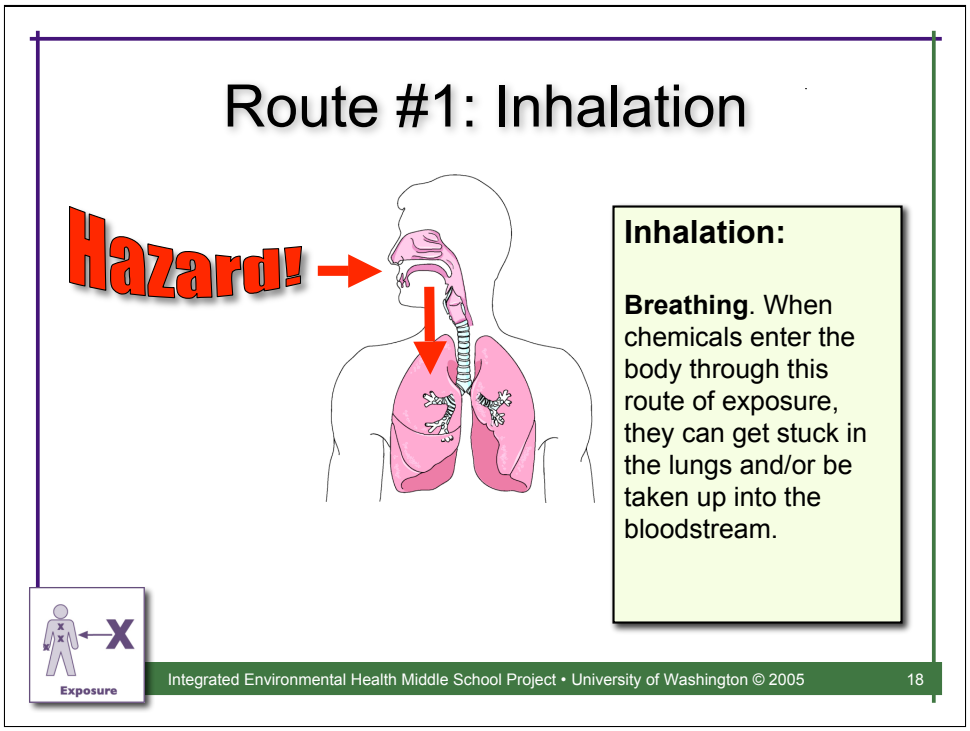
Environmental health scientists use the term **exposure** to describe the total amount of a hazard that comes in direct contact with your body."



Procedure: Use this slide to get students to brainstorm ideas about how things get from outside the body to inside the body. The graphic shows a city map with all roads leading to "inside." **CLICK ONCE** to make the cars and prompt question appear. What routes might a hazardous substance follow to gain entry to our bloodstream, where it can be efficiently distributed to other parts of the body? Stress that, in general, our bodies are amazingly effective at keeping hazards out and allowing nutrients in. EH is largely about discovering places where this delicate system breaks down and working to help protect our bodies from those hazards that are able to bypass our normal defenses.

Relevant Text from Student Reading:

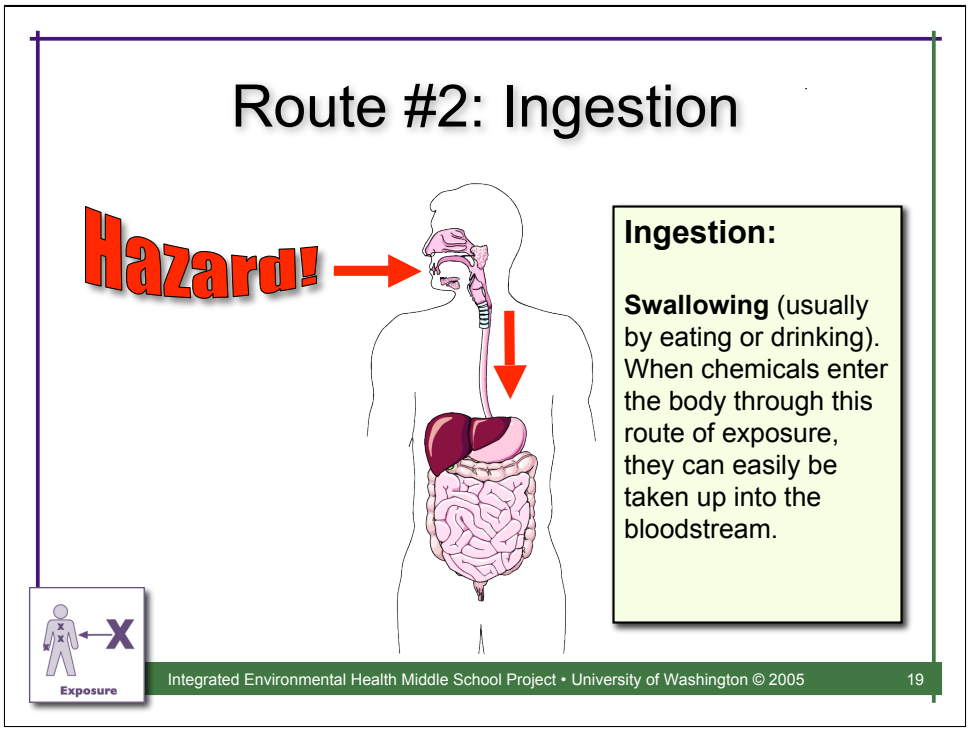
"Once you have come into contact with a hazard, it can get into your body through different routes. You can breathe it in (**inhalation**). You can eat or drink it (**ingestion**). You can get it directly on your skin or in your eyes (**dermal absorption**). You can also get it directly into your body through an injection. Inhalation, ingestion, and dermal absorption are the three main **routes of exposure**. Things that help us stay healthy, like vitamins, nutrients, and medicines, enter the body through these routes of exposure, but hazards can use these same routes to enter the body and make us sick."



Procedure: This slide defines inhalation. **CLICK ONCE** to start the animation (only one click is necessary - it will take a few seconds). Have students call out different substances (healthy and hazardous) that can enter the body through this route of exposure. For science teachers, this slide can also be a good prompt for reviewing the relevant anatomical structures or biological processes.

Relevant Text from Student Reading:

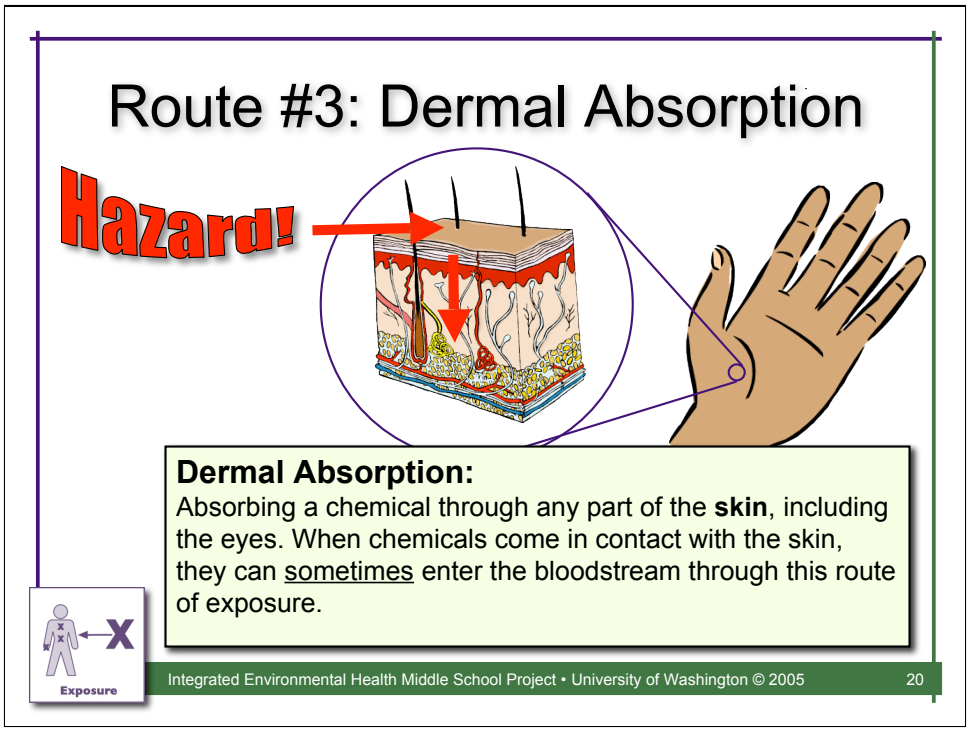
"Once you have come into contact with a hazard, it can get into your body through different routes. You can breathe it in (**inhalation**). You can eat or drink it (**ingestion**). You can get it directly on your skin or in your eyes (**dermal absorption**). You can also get it directly into your body through an injection. Inhalation, ingestion, and dermal absorption are the three main **routes of exposure**. Things that help us stay healthy, like vitamins, nutrients, and medicines, enter the body through these routes of exposure, but hazards can use these same routes to enter the body and make us sick."



Procedure: This slide defines ingestion. **CLICK ONCE** to start the animation (only one click is necessary - it will take a few seconds). Have students call out different substances (healthy and hazardous) that can enter the body through this route of exposure. For science teachers, this slide can also be a good prompt for reviewing the relevant anatomical structures or biological processes.

Relevant Text from Student Reading:

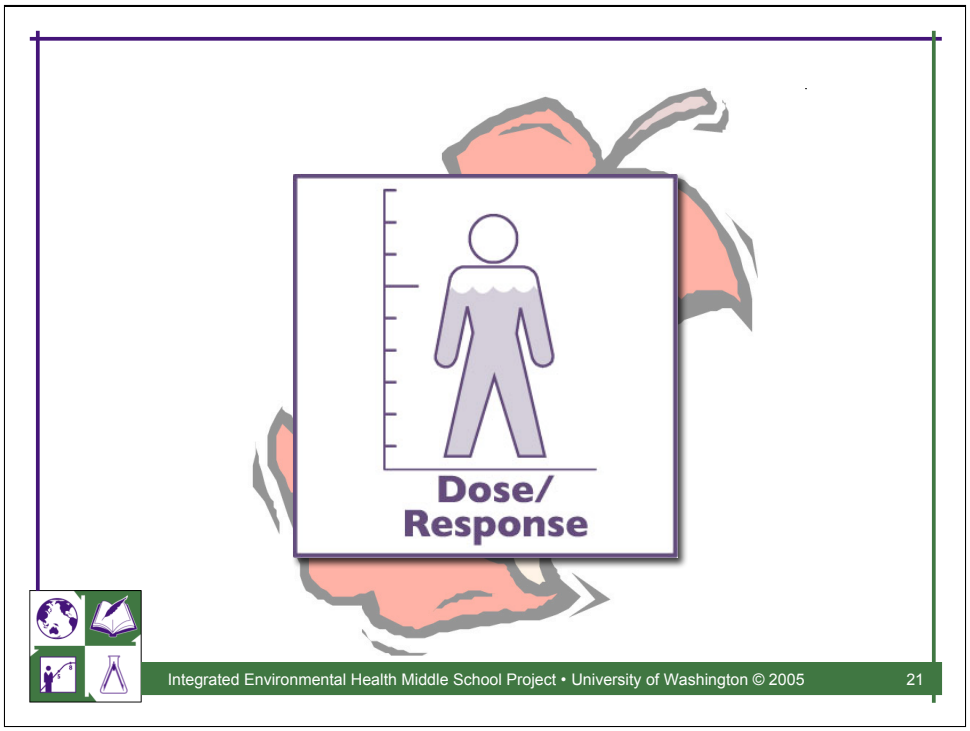
"Once you have come into contact with a hazard, it can get into your body through different routes. You can breathe it in (**inhalation**). You can eat or drink it (**ingestion**). You can get it directly on your skin or in your eyes (**dermal absorption**). You can also get it directly into your body through an injection. Inhalation, ingestion, and dermal absorption are the three main **routes of exposure**. Things that help us stay healthy, like vitamins, nutrients, and medicines, enter the body through these routes of exposure, but hazards can use these same routes to enter the body and make us sick."



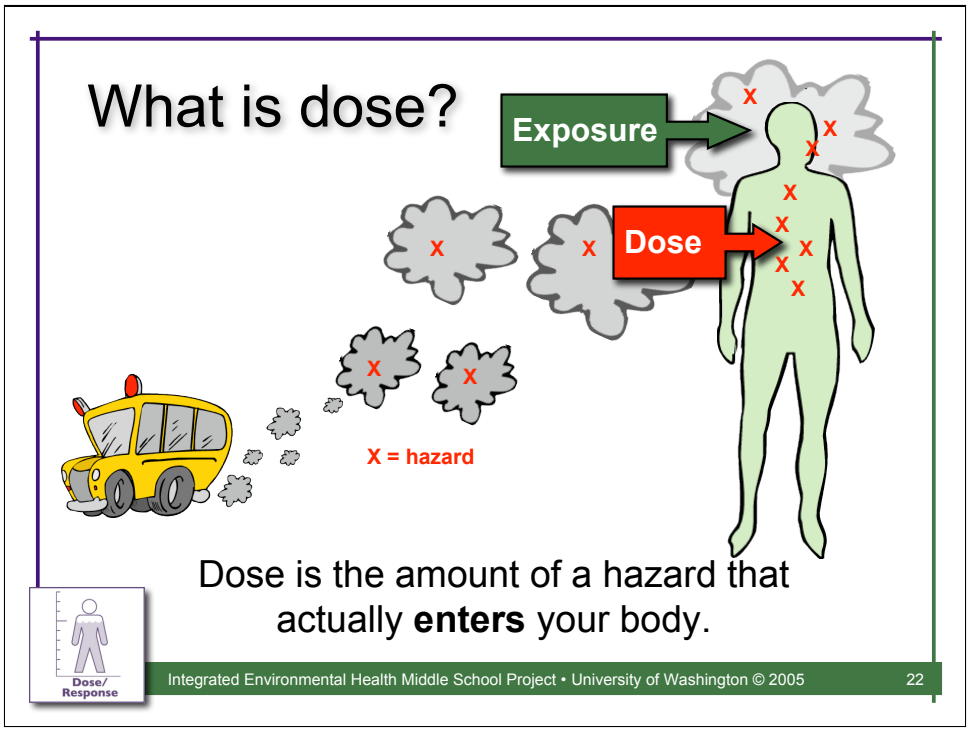
Procedure: This slide defines dermal absorption. **CLICK ONCE** to start the animation (only one click is necessary - it will take a few seconds). Have students call out different substances (healthy and hazardous) that can enter the body through this route of exposure. For science teachers, this slide can also be a good prompt for reviewing the relevant anatomical structures or biological processes.

Relevant Text from Student Reading:

"Once you have come into contact with a hazard, it can get into your body through different routes. You can breathe it in (**inhalation**). You can eat or drink it (**ingestion**). You can get it directly on your skin or in your eyes (**dermal absorption**). You can also get it directly into your body through an injection. Inhalation, ingestion, and dermal absorption are the three main **routes of exposure**. Things that help us stay healthy, like vitamins, nutrients, and medicines, enter the body through these routes of exposure, but hazards can use these same routes to enter the body and make us sick."



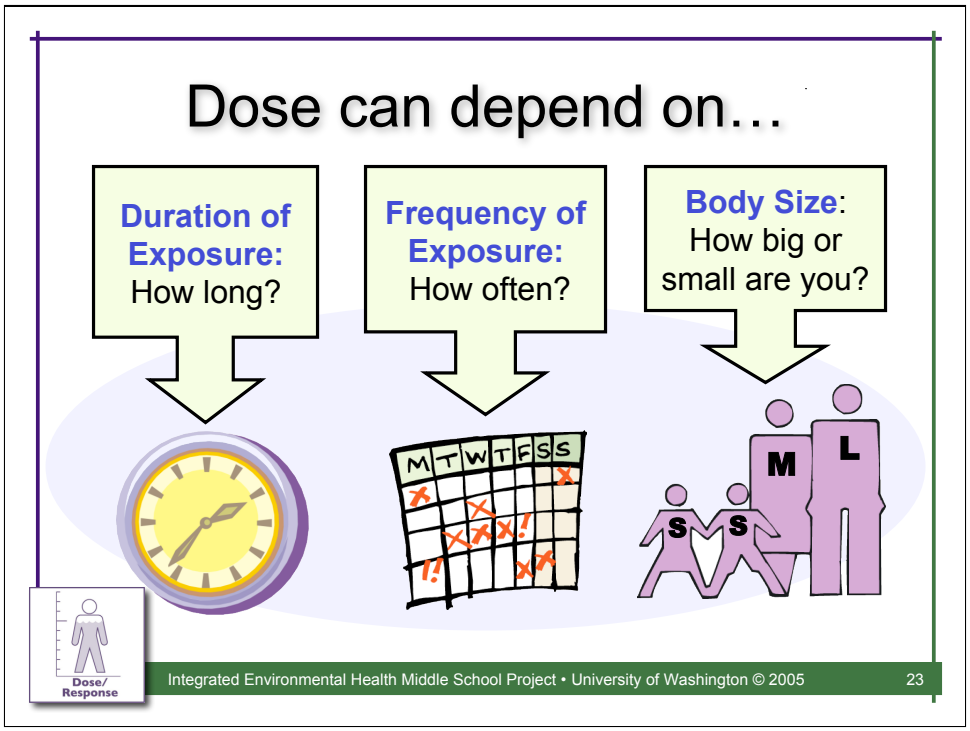
Procedure: Transition slide to introduce next section.



Procedure: Ask students to suggest a definition for "dose." When you have elicited some suggestions, **CLICK ONCE** to start the animation (you only need to click once - it will run automatically). The animation shows how a particular hazard (x), moves through the air and results in an exposure to an individual. Once the hazard has entered the body through inhalation, the individual has received a "dose" of that hazard. **CLICK AGAIN** to reveal the correct definition of "dose." In the example, the hazard (x) might be particulate matter (pm).

Relevant Text from Student Reading:

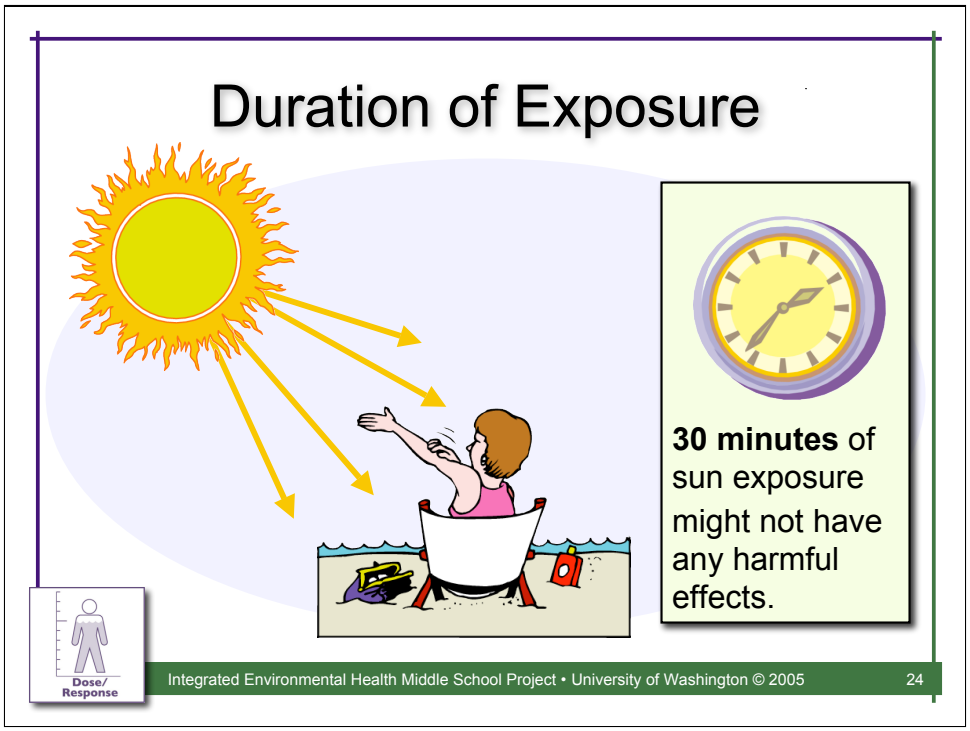
"Imagine that someone has been exposed to a hazardous chemical through one of the three possible routes of exposure. They have now received a **dose** of that chemical. Dose is the amount of the hazard that actually enters your body."



Procedure: This slide introduces students to the three factors that influence how large a dose an individual receives of a hazard. **CLICK ONCE** to make the "duration of exposure" box appear. **CLICK AGAIN** to make the "frequency of exposure" box appear. **CLICK AGAIN** to make the "body size" box appear.

Relevant Text from Student Reading:

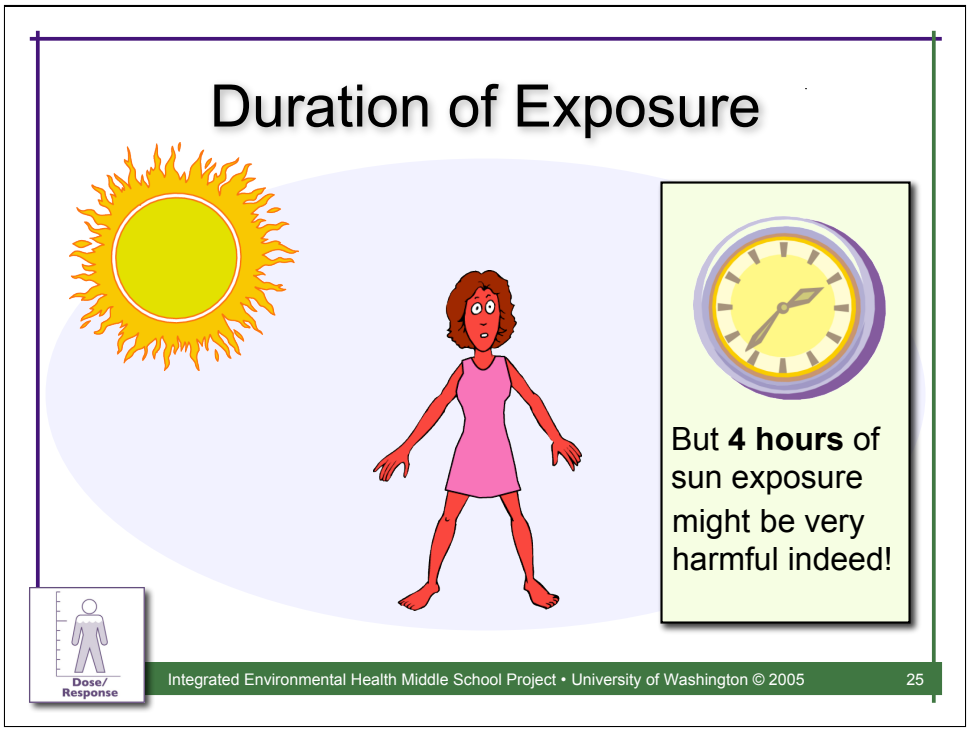
"Imagine that someone has been exposed to a hazardous chemical through one of the three possible routes of exposure. They have now received a **dose** of that chemical. Dose is the amount of the hazard that actually enters your body. The amount someone gets into their body (their dose) depends on many factors, including how long you are exposed, how often you are exposed, and how big or small you are. For instance, if someone is exposed over a long period of time to a hazard, their dose will be larger. For example, 4 hours spent under the bright summer sun would give you a much larger dose of UV rays than 30 minutes spent under the sun. This is called the **duration of exposure**. The **frequency of exposure** can also influence the dose. If someone works in a factory and is exposed to a chemical every day at work, their dose might be larger than someone who is only exposed once."



Procedure: **CLICK ONCE** to make the sun's rays and the text box under the clock appear.

Relevant Text from Student Reading:

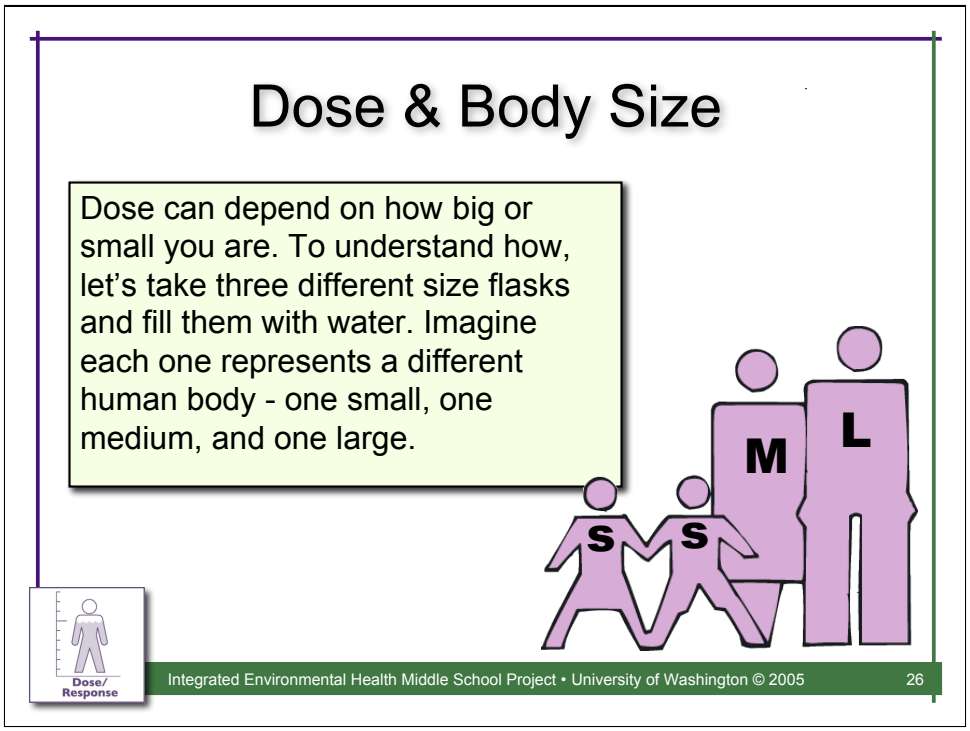
"Imagine that someone has been exposed to a hazardous chemical through one of the three possible routes of exposure. They have now received a **dose** of that chemical. Dose is the amount of the hazard that actually enters your body. The amount someone gets into their body (their dose) depends on many factors, including how long you are exposed, how often you are exposed, and how big or small you are. For instance, if someone is exposed over a long period of time to a hazard, their dose will be larger. For example, 4 hours spent under the bright summer sun would give you a much larger dose of UV rays than 30 minutes spent under the sun. This is called the **duration of exposure**. The **frequency of exposure** can also influence the dose. If someone works in a factory and is exposed to a chemical every day at work, their dose might be larger than someone who is only exposed once."



Procedure: **CLICK ONCE** to make the sunburned woman and the text box under the sun appear. Ask students to share their personal opinions about tanning or personal experiences with sunburns. Discuss the route of exposure of this particular hazard (dermal absorption) and what kinds of protection are available. Do your students use them on a regular basis?

Relevant Text from Student Reading:

"Imagine that someone has been exposed to a hazardous chemical through one of the three possible routes of exposure. They have now received a **dose** of that chemical. Dose is the amount of the hazard that actually enters your body. The amount someone gets into their body (their dose) depends on many factors, including how long you are exposed, how often you are exposed, and how big or small you are. For instance, if someone is exposed over a long period of time to a hazard, their dose will be larger. For example, 4 hours spent under the bright summer sun would give you a much larger dose of UV rays than 30 minutes spent under the sun. This is called the **duration of exposure**. The **frequency of exposure** can also influence the dose. If someone works in a factory and is exposed to a chemical every day at work, their dose might be larger than someone who is only exposed once."

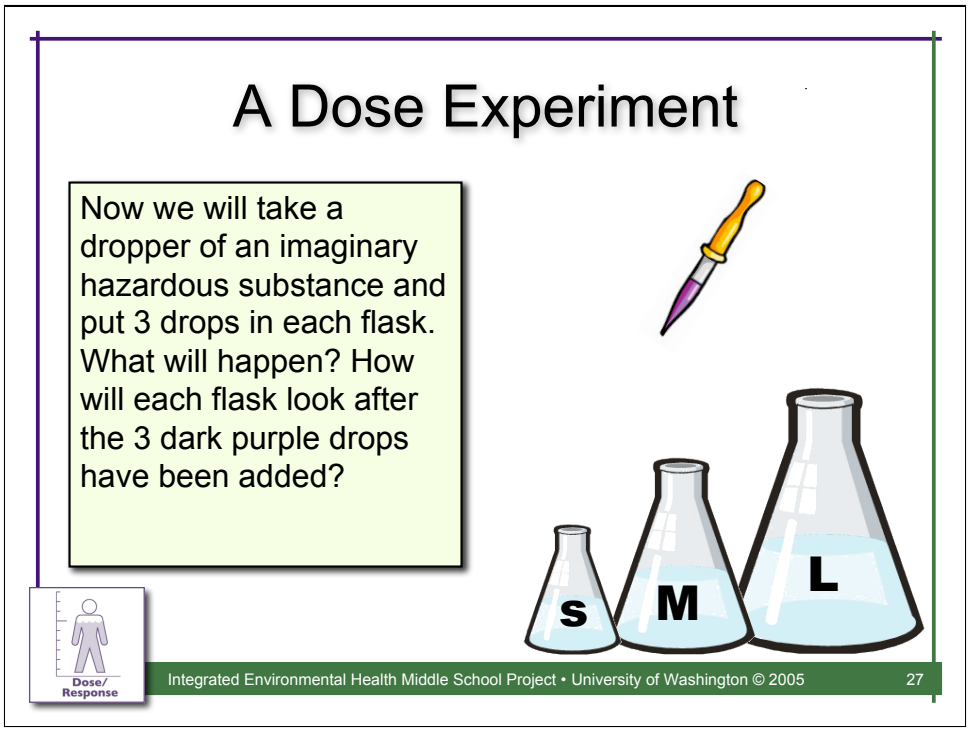


Procedure: This slide and the four that follow it reproduce graphically a simple demonstration of the dose/response relationship. After reading the text box to your students, **CLICK ONCE** to replace the small, medium, and large bodies with 3 similarly sized flasks. It is important that your students think of the flasks as representing different sizes of human bodies for this demonstration to make sense.

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

The dose you receive can influence how your body responds to a hazard. For most hazards, the larger the dose, the more extreme the **response** will be. The smaller the dose, the more mild the response will be. Drinking one can of a caffeinated soda might be fine. Drinking three cans in a row may make you jittery. Drinking five cans of soda might make you feel light-headed and sick."

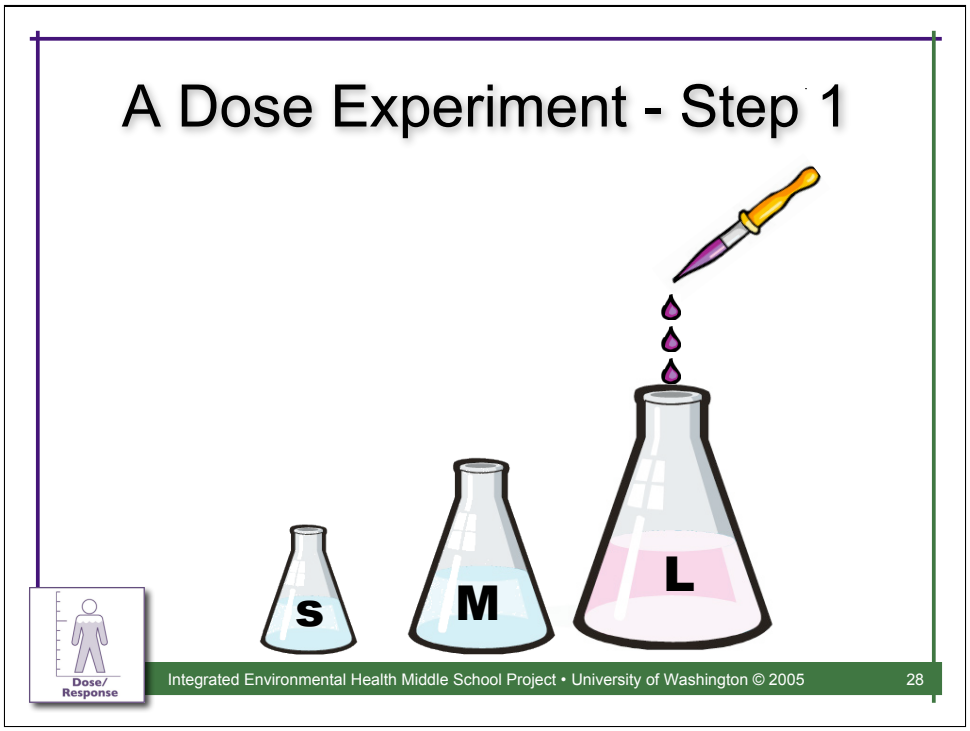


Procedure: Read the text box to your students. Ask them to make a prediction about what will happen as they add the same number of drops to each of the three flasks. You can assume that the small flask contains roughly half as much water as the medium flask, which contains about half as much water as the large flask.

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

The dose you receive can influence how your body responds to a hazard. For most hazards, the larger the dose, the more extreme the **response** will be. The smaller the dose, the more mild the response will be. Drinking one can of a caffeinated soda might be fine. Drinking three cans in a row may make you jittery. Drinking five cans of soda might make you feel light-headed and sick."

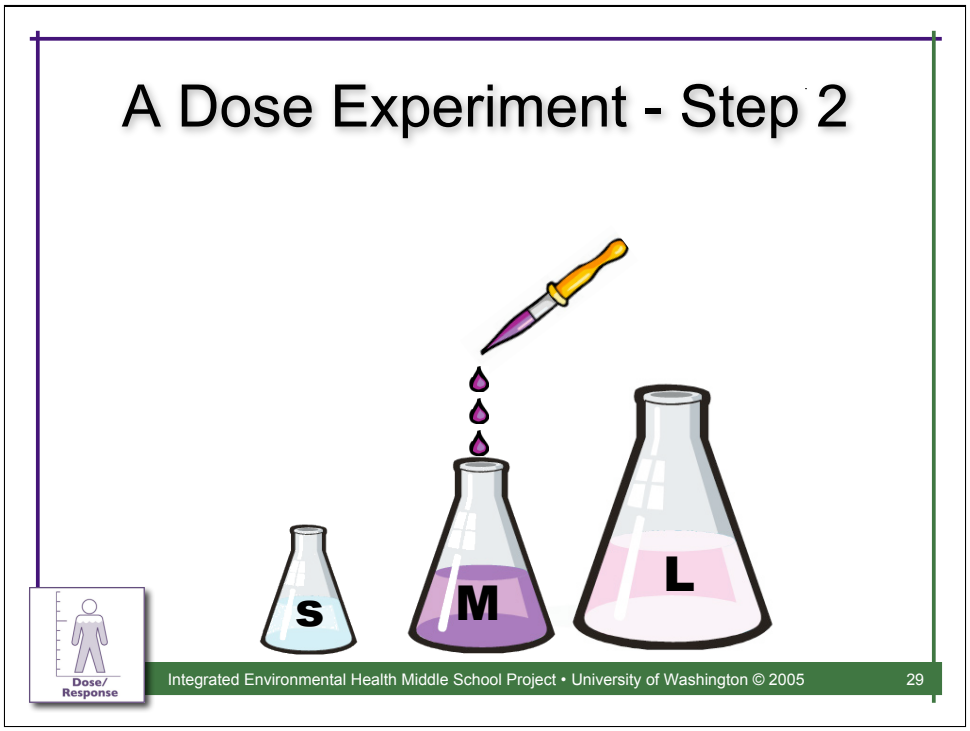


Procedure: **CLICK ONCE** to make the drops disappear and the water in the large beaker change color.

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

The dose you receive can influence how your body responds to a hazard. For most hazards, the larger the dose, the more extreme the **response** will be. The smaller the dose, the more mild the response will be. Drinking one can of a caffeinated soda might be fine. Drinking three cans in a row may make you jittery. Drinking five cans of soda might make you feel light-headed and sick."

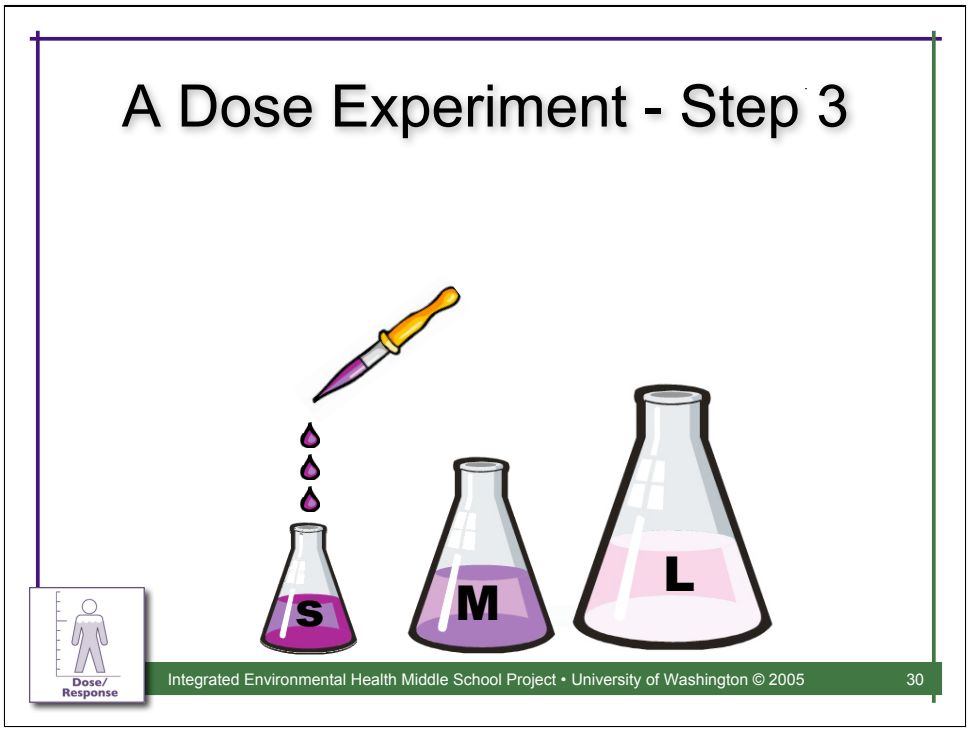


Procedure: **CLICK ONCE** to make the drops disappear and the water in the medium beaker change color.

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

The dose you receive can influence how your body responds to a hazard. For most hazards, the larger the dose, the more extreme the **response** will be. The smaller the dose, the more mild the response will be. Drinking one can of a caffeinated soda might be fine. Drinking three cans in a row may make you jittery. Drinking five cans of soda might make you feel light-headed and sick."

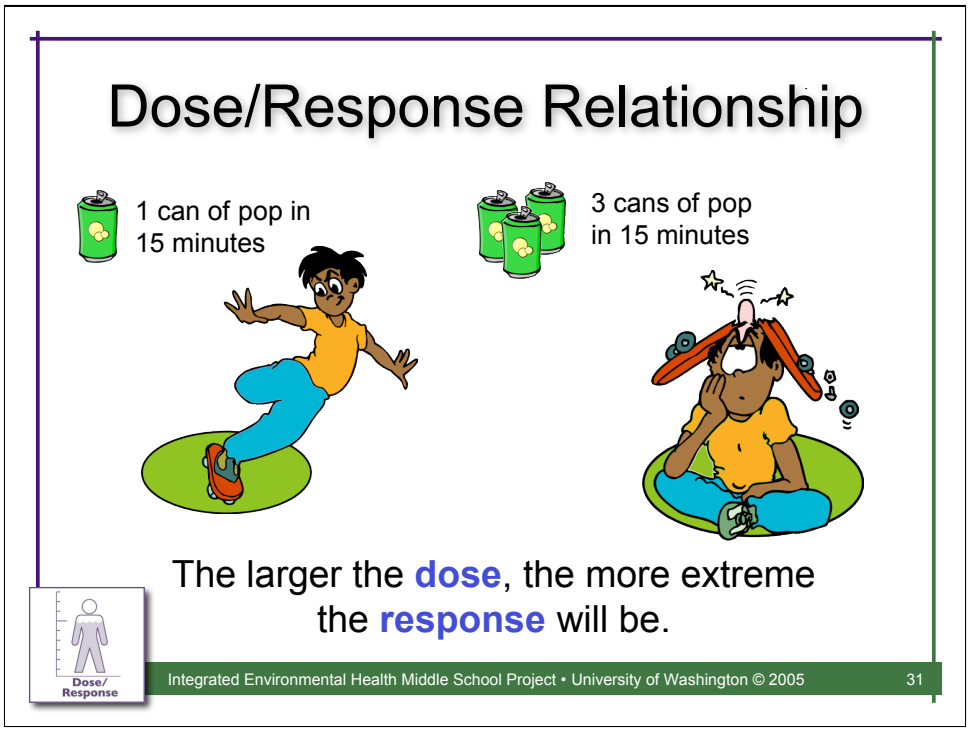


Procedure: **CLICK ONCE** to make the drops disappear and the water in the small beaker change color. Ask students if the results of the demonstration matched their predictions. Discuss different real life examples of the dose/response principle illustrated by the demonstration, (for example, the effect of one glass of wine on a 200 pound man versus a 125 pound woman versus a 50 pound child).

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

The dose you receive can influence how your body responds to a hazard. For most hazards, the larger the dose, the more extreme the **response** will be. The smaller the dose, the more mild the response will be. Drinking one can of a caffeinated soda might be fine. Drinking three cans in a row may make you jittery. Drinking five cans of soda might make you feel light-headed and sick."



Procedure: Use this slide to get your students to brainstorm about how different doses can lead to different responses. One can of pop might give you a burst of energy, but three could make you jittery, dizzy and give you a headache from too much sugar and caffeine. **CLICK ONCE** to replace the question mark with the fallen skateboarder and the definition of dose/response.

Relevant Text from Student Reading:

"Dose can also depend on how big or small you are. When a doctor prescribes a medicine for you, he or she calculates the amount of the medicine you should have based on your body size. The doctor can then give you the correct dose of the medicine for your body weight. While a teaspoon of medicine might be right for an adult, it may be far too large of a dose for an infant.

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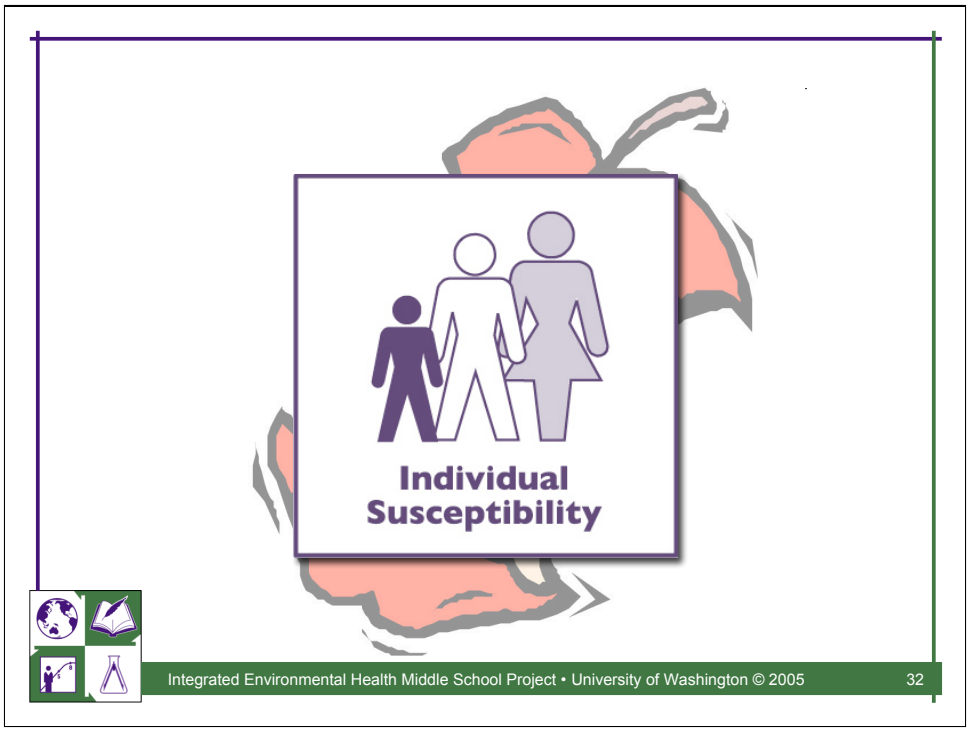
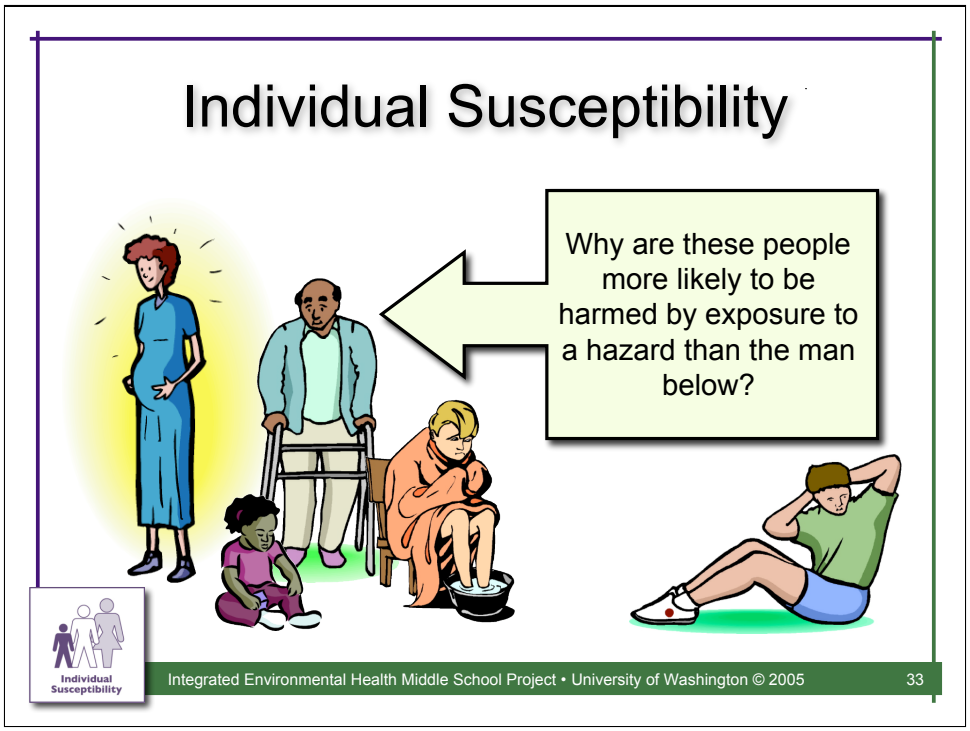


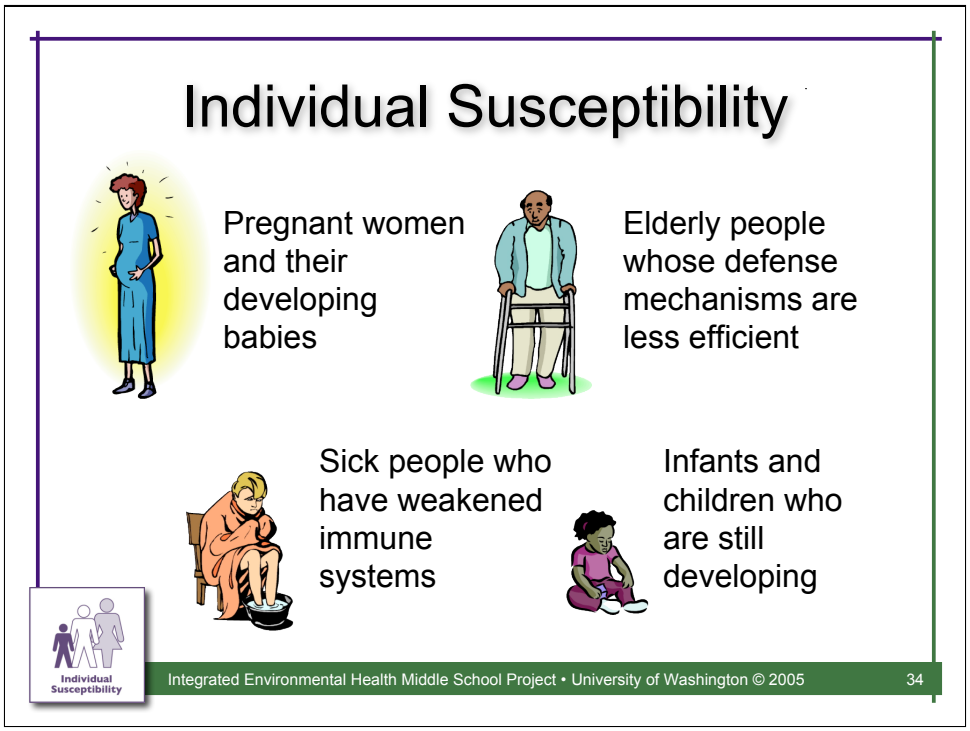
Procedure: Transition slide to introduce next section.



Procedure: Invite your students to suggest what particular types of individuals might be more susceptible to environmental hazards. Use the graphics as cues. When you have a good selection of answers, continue on to the next slide.

Relevant Text from Student Reading:

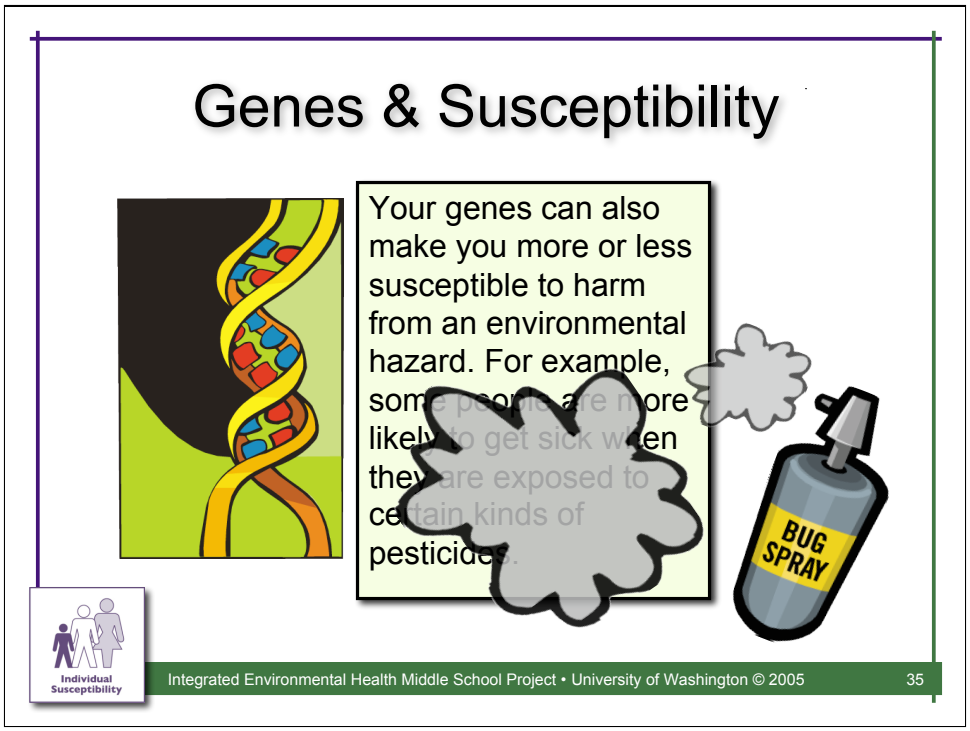
"Some people are more likely than others to get sick when they are exposed to environmental hazards. This might be because of their **genetics**, body size, age, gender or general health. This is called their **individual susceptibility**."



Procedure: **CLICK ONCE** to make the text next to the pregnant woman appear. A developing fetus is especially vulnerable to harm because it is growing so rapidly. Fetal Alcohol Syndrome (FAS) is an example of a tragic result of fetal exposure to a hazard during a crucial stage of development. **CLICK AGAIN** to make the text next to the elderly man appear. The physiological changes that accompany aging can make us less able to defend ourselves against environmental hazards. **CLICK AGAIN** to make the text next to the sick boy appear. Illness can weaken our ability to defend ourselves as our immune systems may already be overwhelmed or weakened. **CLICK AGAIN** to make the text next to the baby appear. Babies are still growing and developing at a rapid pace, so exposure to a substance such as lead can have far more serious cognitive effects than the same exposure would have on a fully developed adult. Babies also engage in behaviors that make them more vulnerable, such as crawling around on dirty floors and carpets and exploring objects by putting them in their mouths.

Relevant Text from Student Reading:

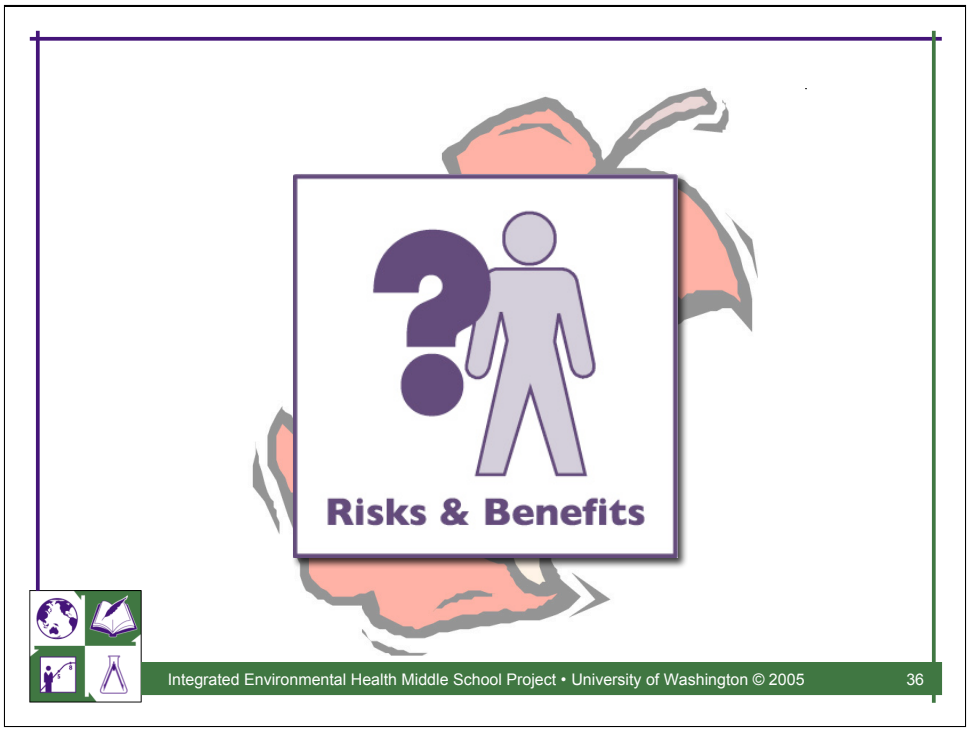
"Some people are more likely than others to get sick when they are exposed to environmental hazards. This might be because of their **genetics**, body size, age, gender or general health. This is called their **individual susceptibility**."



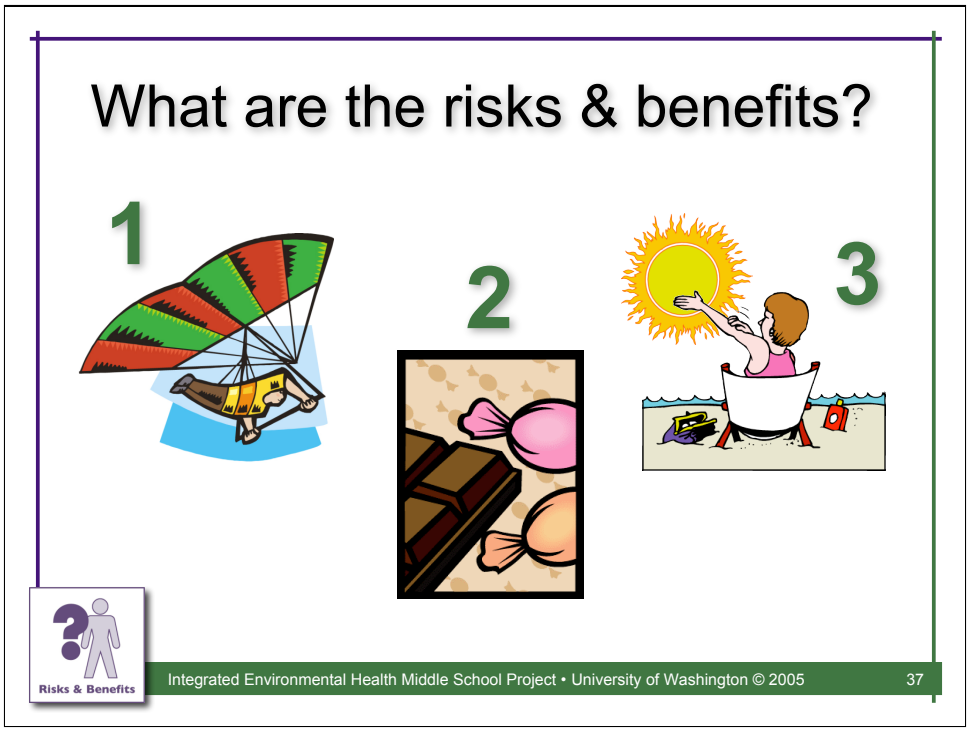
Procedure: This slide explains how individual genetic variations can also make some people more susceptible to specific hazards. **CLICK ONCE** to make the cloud of bug spray disappear and reveal the underlying text. You might also consider using this slide to introduce the idea of genetic testing and its ethical implications. Imagine a pesticide company decides to test all of its employees for susceptibility to the particular pesticide they produce - then fires all those employees that are genetically vulnerable. Is that reasonable and fair?

Relevant Text from Student Reading:

"For example, some people are more likely than others to get sick when they are exposed to certain kinds of pesticides, just because of their genes. We all know that genes help determine things like hair color and eye color, but they also lead to some important (and invisible) differences in the way bodies work. It turns out that some people have a more extreme response to certain pesticides because of their genes. These people are said to be more "individually susceptible" to pesticide poisoning. Someone who lives or works on a farm where pesticides are sprayed might want to know how susceptible he or she In order to avoid exposure and stay healthy."



Procedure: Transition slide to introduce next section.

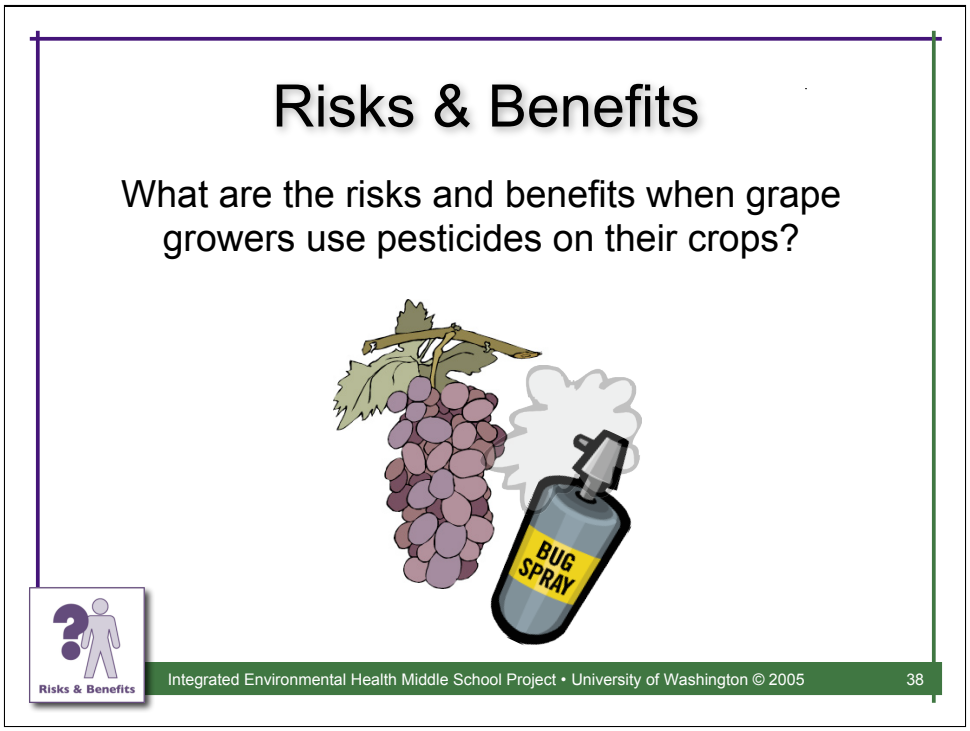


Procedure: This slide is an opportunity to brainstorm with your students and help them to see how much they already know about the risk. For each activity pictured (hang-gliding, eating candy, sunbathing), make two columns on the board and label them “risks” and “benefits.” Have students fill in the columns and then discuss how our everyday lives are full of decisions about risk.

Relevant Text from Student Reading:

“We live in an industrial society that depends on the use of both natural and human-made chemicals to function. The use of these chemicals results in **benefits** to society as well as **risks**. Pesticides, for example, make it easier to grow fruit. Unfortunately, in some cases, pesticides can make people sick. Most of us have heard that we can reduce the risk of getting sick without giving up the health benefits that fruit offers by washing or peeling the fruit before we eat it.

Scientific researchers and government officials measure the risks and benefits that we face when we manufacture or use certain products. They work to explain what they have learned to the public and create safety standards that help people protect themselves from unnecessary risk. Their goal is simple – to help us enjoy the greatest benefits from the products that we manufacture, while exposing ourselves to the least possible risk. By understanding the risks and benefits that we face each day, we can make decisions that reduce our risk and keep us as safe and healthy as possible.”



Procedure: This slide introduces the next activity which asks the students brainstorm the risks and benefits associated with the use of pesticides on crops.

Relevant Text from Student Reading:

"We live in an industrial society that depends on the use of both natural and human-made chemicals to function. The use of these chemicals results in **benefits** to society as well as **risks**. Pesticides, for example, make it easier to grow fruit. Unfortunately, in some cases, pesticides can make people sick. Most of us have heard that we can reduce the risk of getting sick without giving up the health benefits that fruit offers by washing or peeling the fruit before we eat it.

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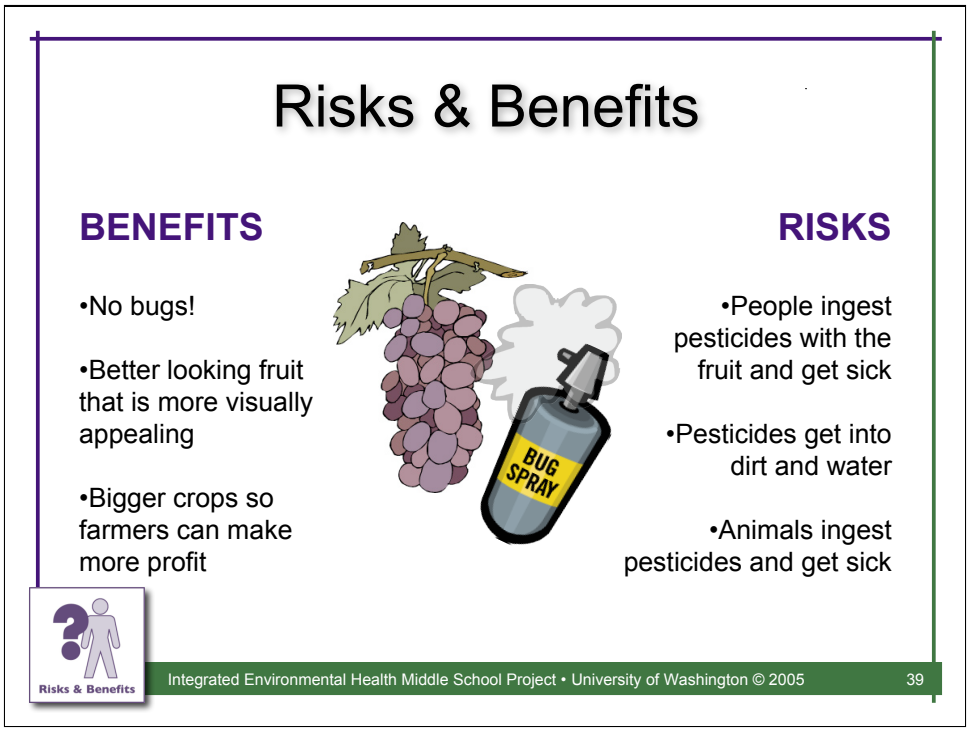

Procedure: Once the students have had a chance to suggest a number of risks and benefits associated with the use of pesticides on crops, **CLICK ONCE** to complete the "benefits" column. **CLICK AGAIN** to complete the "risks" column. Discuss the role government plays in setting policy based on this sort of risk/benefit analysis.

Relevant Text from Student Reading:

"We live in an industrial society that depends on the use of both natural and human-made chemicals to function. The use of these chemicals results in **benefits** to society as well as **risks**. Pesticides, for example, make it easier to grow fruit. Unfortunately, in some cases, pesticides can make people sick. Most of us have heard that we can reduce the risk of getting sick without giving up the health benefits that fruit offers by washing or peeling the fruit before we eat it.

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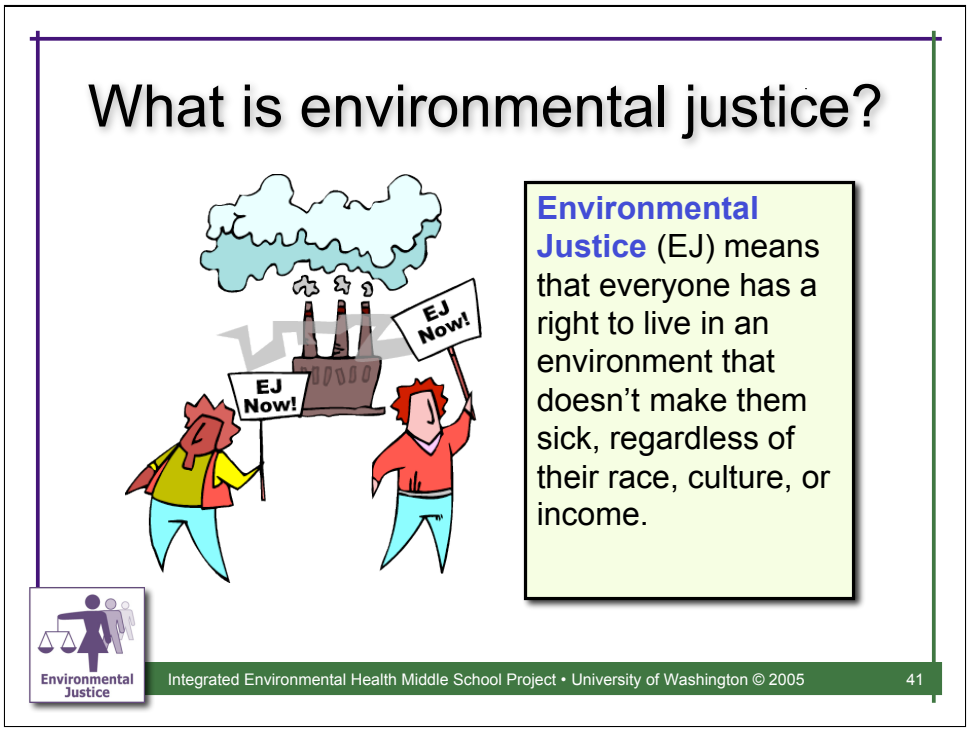
Procedure: Transition slide to introduce next section.

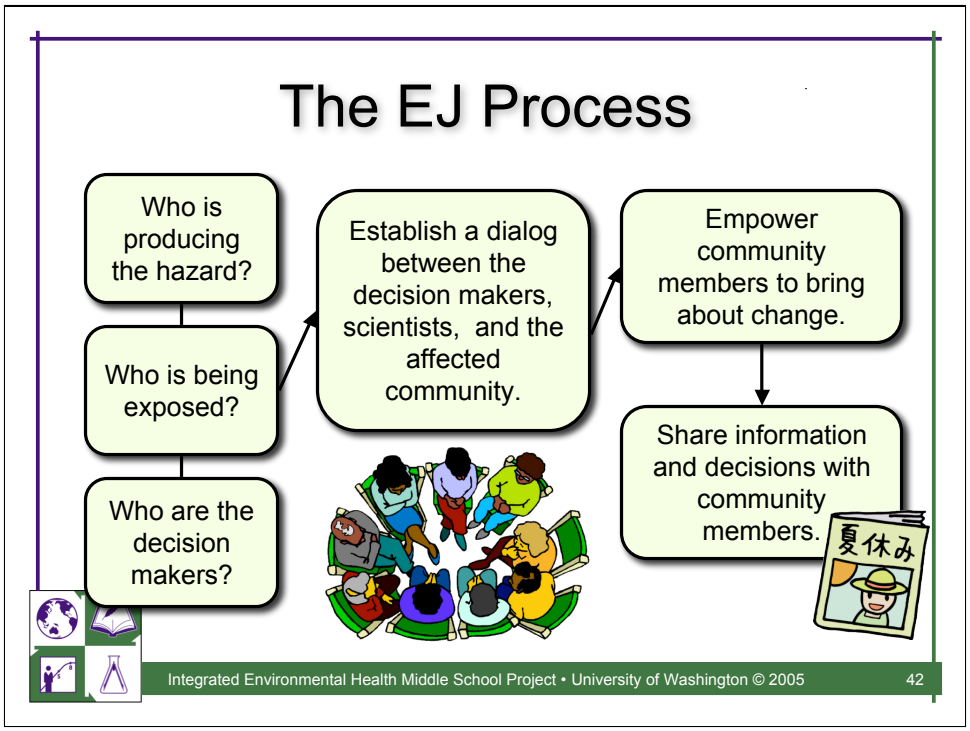


Procedure: This slide introduces the concept of environmental justice (EJ). **CLICK ONCE** to make the text box with the definition appear.

Relevant Text from Student Reading:

"Everyone has the right to live in an environment that doesn't make them sick, regardless of their race, culture, or income. This is called **environmental justice** (EJ).

Unfortunately, some neighborhoods or communities are exposed to more environmental hazards than others, and may suffer higher rates of health problems. These communities often have less economic or political power in society when decisions are made. For example, toxic waste dumps, polluting factories, and busy highways are often built in lower-income neighborhoods or communities of color. Communities recognize this as an environmental health issue and work to seek environmental justice."

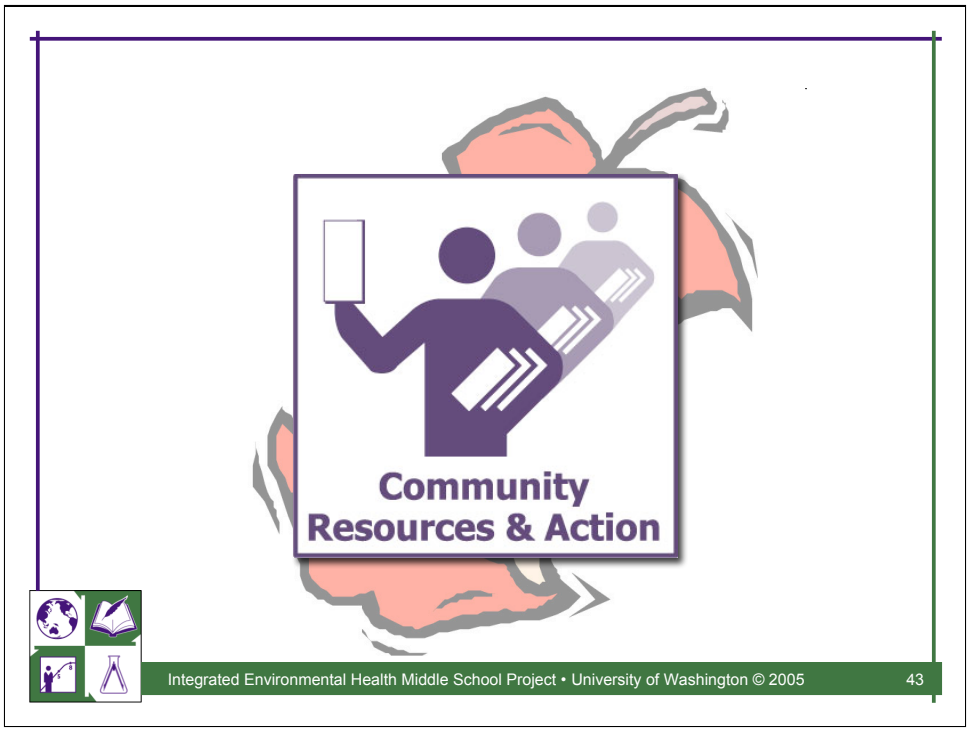


Procedure: This slide presents a flow chart of what a typical EJ process might look like. **CLICK THREE TIMES** to reveal the whole chart. You may wish to discuss with your students the challenges involved in bringing all the stakeholders involved in an issue to the table and facilitating an open dialogue between parties that may have very different communication styles. You may also wish to mention how important it is that any materials associated with the process (flyers, posters, invitations to meetings, reports, etc.) are accessible to members of the affected community. That often means translating them into languages other than English or presenting them in different formats, such as pictures or live presentations.

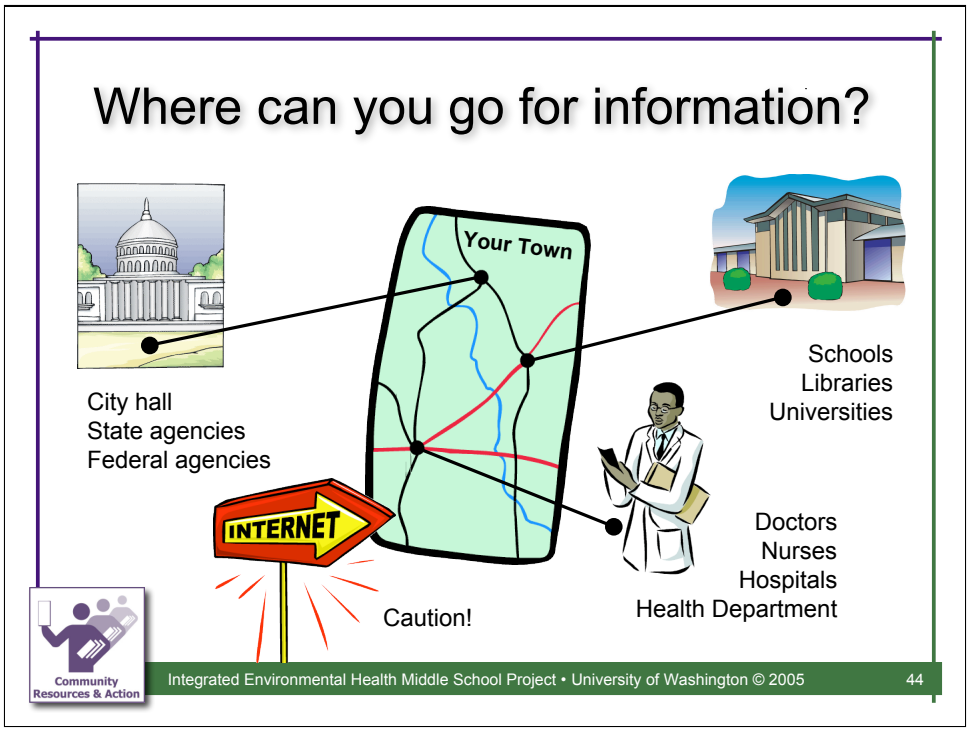
Relevant Text from Student Reading:

"Everyone has the right to live in an environment that doesn't make them sick, regardless of their race, culture, or income. This is called **environmental justice** (EJ).

Unfortunately, some neighborhoods or communities are exposed to more environmental hazards than others, and may suffer higher rates of health problems. These communities often have less economic or political power in society when decisions are made. For example, toxic waste dumps, polluting factories, and busy highways are often built in lower-income neighborhoods or communities of color. Communities recognize this as an environmental health issue and work to seek environmental justice."



Procedure: Transition slide to introduce next section.



Procedure: This slide can be used to prompt a discussion about where in your community students can go to get EH related information. Have students brainstorm ideas, then cluster them together under the headings of "government," "education," and "healthcare." Next **CLICK 3 TIMES** to reveal the three broad categories of resources available in every community. The list your students came up with will most likely be more specific and detailed than the one presented on the slide. Finally, **CLICK AGAIN** to reveal the "Internet: Caution!" graphic. Discuss the importance of evaluating internet resources for accuracy. Not all web sites are created equal!

Relevant Text from Student Reading:

"Where can you go in your own community to collect information about an environmental health issue? You can learn more about specific issues, understand environmental laws or seek environmental justice by using community resources. Community resources include places like the library and city hall. You could search the Internet for local, state, or federal agencies that can give you information about your issue. You can also talk to environmental health scientists at local universities or health departments, and ask your teachers and family members what they know about the issue."

Procedure: Have students brainstorm what they could do to create change once they have learned about an environmental health issue that affects their community. You might want to give them a specific example, such as harmful exhaust from school buses, and ask them to come up with concrete actions they could take to help protect students and staff from being exposed. Write their ideas on the board, then **CLICK ONCE** to see how many of the actions on the slide they came up with on their own. This is also a great place to discuss the fact that all the research and knowledge in the world is meaningless unless people take action and change behaviors based on what they know!

Relevant Text from Student Reading:

"Once you have gathered your resources and studied the issue carefully, it's time to take action! First, ask yourself what you as an individual can do to help solve the problem. If you are concerned about air pollution, for example, you might decide to walk to school instead of getting a ride in a car. Next, ask yourself how you can share what you have learned with others so that they can help too. Maybe you could write a letter to the editor of your local newspaper or speak to your community council or school board. Maybe you could create a flyer to hand out in your neighborhood. There are many great ways to get the word out and make positive changes in the world – use your imagination and be creative!"

Procedure: Ask students if they have any final questions or comments.

This presentation was prepared as part of the **Integrated Environmental Health Middle School Project** at the University of Washington. For more information, please contact Katie Frevert, Program Manager, at 206.685.5379.