



Module 1:

Why is the Environment Important?

Unit A: What is an environment?

Identifying what an environment is can be difficult to do, because an environment comes in many shapes and sizes. Environments can be as small as the period at the end of this sentence or as large as an ocean. Whether you are looking at a small environment or a large environment, understanding what makes environments different is a key to understanding how all environments are connected to each other.

One easy way to start identifying and understanding what an environment is, is to look all around you. What can you touch, smell, see, taste or hear? Ask yourself questions; Are you inside or outside? Can you hear insects or vehicles? Your five senses help you identify and understand what is in your environment.

An environment is your surroundings and your environment changes depending on where you are. There are even things in your environment that your five senses cannot detect, such as, bacteria, bugs and viruses to name just a few. So think of an environment as you, your surroundings, your community and how everything interacts with each other.

Indiana has many natural environments that include but are not limited to: forests; wetlands; prairies; lakes; caves; rivers; etc. Some items in Indiana's environments are renewable, meaning an item can restore itself naturally such as a tree, wind, sun, plants and animals. Some items in Indiana's environments are nonrenewable and either cannot be created again or take a very, very long time to be created such as a rock, coal, or metals.

Activity #1:

Your Classroom Environment

Purpose: Students will gain a better understanding of what an environment is.

Materials: Paper, pen or pencil, computer or encyclopedia

Instructions: Have students compare and contrast two different environments in Indiana, so they can gain a better understanding of what an environment is. Environments can be a classroom, bedroom, kitchen, backyard, or any environment you would like. The students will need time to research the materials that makeup their items.

The following is an example of a classroom environment. Have students list the following: something they can touch, smell, see, taste, and hear in a classroom. Students can save their sense of taste for lunch time. Following is an example of the activity:

1. Touch = Desk
 2. Smell = Pencil
 3. See = Chalkboard
 4. Taste = Apple
 5. Hear = Vehicles
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Now list what those items are made from.

1. Desk = Wood
2. Pencil = Wood and graphite
3. Chalkboard = Slate stone (old) or a piece of board painted with matte dark paint (new)
4. Apple = Apple Tree
5. Vehicles = Steel, plastic, rubber, leather

Now list the renewable or nonrenewable items that make up your list.

1. Desk = Wood = Trees
2. Pencil = Wood and graphite = Trees and mineral
3. Chalkboard = Slate stone (old) or a piece of board painted with matte dark paint (new)
4. Apple = Apple Tree
5. Vehicle = Metal alloy, plastic = oil, rubber = trees (*Hevea brasiliensis*), leather = tanned hides



Your Classroom Environment

List 5 items you find in your classroom.

1. _____
2. _____
3. _____
4. _____
5. _____

Now list what those items are made from.

1. _____
2. _____
3. _____
4. _____
5. _____

Now list the renewable or nonrenewable items that make up your list.

1. _____
2. _____
3. _____
4. _____
5. _____



Unit B: Who needs the environment?

Who do you think the environment is important to? Is it important to trees? Is it important to frogs? How about you, is the environment important to you? The environment is important to all of the plants and animals in Indiana. Everyday, your decisions impact the environment. Everything from brushing your teeth, washing the dishes, throwing away a piece of paper, driving to school and even turning on a light in your bedroom has an impact on the environment. What other things do you do that impacts the environment?

Activity #2:

Paper Pounds

Purpose: To help students identify some possible ways they can reduce waste and how they can make an impact on their environment and community.

Materials: Paper, poster board, pen, scale, bags

Background: No matter where you live, everyday you use paper; it is given to you or generated for you. The U.S. Postal Service delivers more than 90 billion pieces of “direct mail” every year, so everyday actions and decisions have a direct impact on the amount of waste generated in Indiana. Even a simple act like throwing away a piece of paper, which seems like an insignificant amount of waste, can quickly add up when thousands or millions of Hoosiers do it everyday. Each of us in Indiana throws away approximately 680 pounds of paper a year, which includes cardboard, paperboard, magazines, newspaper, computer paper, mail, etc. That totals 4,293,193,600 pounds of paper thrown away each year in Indiana that ends up in one of Indiana’s 43 operating landfills (pounds of paper x population of Indiana=pounds of paper thrown away each year). Most of this paper could have been recycled, but instead it was thrown away, and makes up 39% of the items found in a landfill.

Paper is everywhere. People use paper at school, home and work. It comes in the mail and is received at stores when a receipt is given with a purchase. Instead of throwing the paper away, have students collect it for one school week. They can bring in mail, receipts, computer paper, drawings, etc.

Instructions: First, have students collect paper for one school week (5 days). Second, at the end of the week have each student weigh their bag of paper. Third, students can then write the weight of their paper on individual charts or a classroom chart. Finally, have students write their collected paper weight on the chart to see how much the class brought in.

- Students can individually add up the classes total weight of paper collected.
- Students can figure out what their weight in paper would be for the whole year by dividing the total weight of their paper collected by 5 to get a daily weight.
- To get the annual amount of paper, students can multiply the daily rate by 365.
- Students can then add up everyone’s total from the class to see how much paper could be recycled for one year.
- Average the classroom total for one year and multiply it by 6,313,520 (the population of Indiana) to see approximately how much paper Hoosiers throw away each year.



Discussion/ Follow-up: Ask the class if they knew how much paper they threw away each day. Ask students what a difference they can make if they recycle paper. Think about all the space paper takes up in the trash and at a landfill and how recycling could make landfills last longer. There are 79 curbside recycling programs and more than 570 recycling drop-off sites in Indiana. Ninety-five percent of Indiana residents live within eight miles of a recycling location or are directly serviced by a curbside recycling program. Using a map of your town, indicate where you live and locate the nearest recycling location.

To find recycling locations and services visit IDEM at: www.recycle.IN.gov

Unit C: What makes a good environment?

Now we have a better understanding of what an environment is and how we impact it. But what makes an environment healthy? Clean air, land and water are essential to a good healthy environment. We can ask ourselves questions using our five senses again to help us quickly determine if an environment is healthy; does the air, land or water smell? How does it look?

We can not always determine quickly if an environment is healthy or unhealthy. A river may look clean one day but the next day may not for many reasons. Did it rain and wash pollutants into the river through storm sewers? Did someone dump a pollutant directly into the river? Once again you can use your five senses to investigate why the river does not look clean, but you may not know why since pollution can travel through the air, land and water. When we don't know exactly where pollution comes from, we call it non-point source pollution. Everyone, in some way, contributes to nonpoint source pollution, through regular household activities (the "at home" water section has more on nonpoint source pollution). Major rivers in Indiana are affected by nonpoint source pollution, such as: White River; Ohio River; Wabash River; Whitewater River; Kankakee River; Eel River; and the Tippecanoe River. The streams, creeks, groundwater and other waterways of Indiana are all connected, so if the major rivers are affected by nonpoint source pollution so are all of the water sources in Indiana. Using a map of Indiana, identify the nearest major river to your town and trace its path. What happens to water pollution from your town? Where does it end up?

Activity #3:

What's Wrong with this Picture?

Purpose: To encourage students to think about how their environment can be affected by their everyday activities.

Materials: Pen or pencil, copies of "What's Wrong with this Picture"

Instructions: The following picture is of a neighborhood where people are engaged in everyday activities. Divide students into small groups for the activity. Have students find seven things in the following picture that are wrong for the environment. Encourage students to discuss different options to the make the picture more environmentally friendly.



Can you find the 7 things that are wrong with this picture?

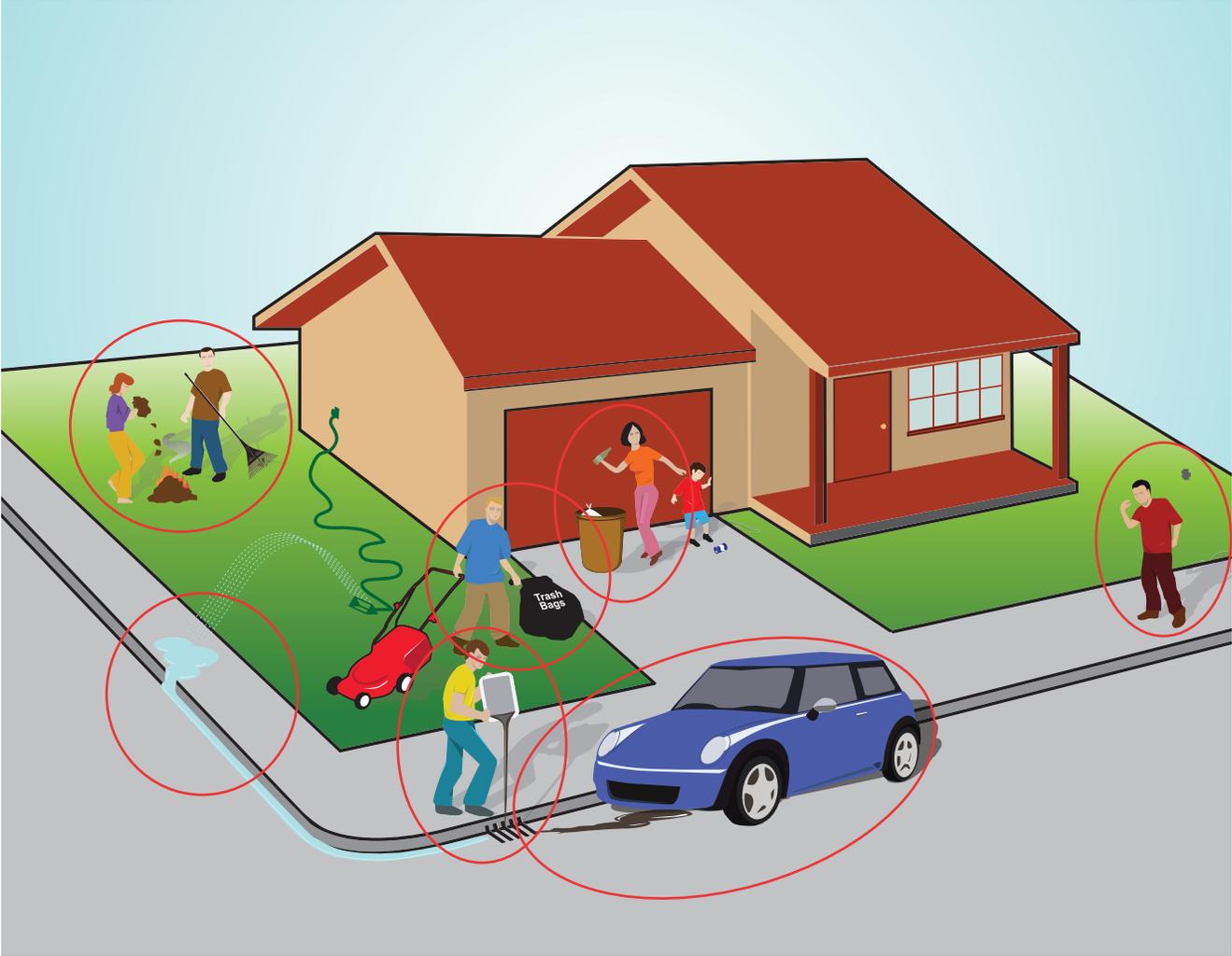


Activity courtesy of the U.S. EPA: www.epa.gov/OWOW/NPS/kids/whatwrng.htm



Answers to:

Can you find the 7 things that are wrong with this picture?



1. The woman is throwing a glass bottle into the trash instead of recycling it. Recycling helps both the environment and the economy by reducing the need for raw materials to be extracted, and recycling also creates many jobs. Recycling also prevents materials from being thrown away, reducing the need for landfills and incineration.
2. The man is raking grass clippings and leaves into trash bags. You can use leaf bags to recycle your leaves and grass, or you can leave mowed grass clippings on the lawn as a source of nutrients for the grass. Leaving grass clippings on the lawn also reduces erosion. You can also compost grass clippings and fallen leaves, and later use the compost to fertilize the soil.
3. The car is leaking oil and antifreeze into the street. When oil and antifreeze leaks out of cars it is then washed into storm drains when it rains. Storm drains often lead directly to rivers and streams in the community. Check your cars for drips and leaks. If you find any, ask an adult to have the car fixed.
4. The man is throwing litter into the street. Street litter, such as plastic bags, cups, and candy wrappers, often gets swept away with rain water into storm drains and ends up floating in rivers or washing up on land. A great deal of street litter is made up of plastic, which takes hundreds of years to break down. Animals can mistake plastics for food and can become tangled up in it. Recycle as much of your trash as possible, and put all other litter in garbage cans.
5. The man is pouring motor oil down the storm drain. Motor oil and antifreeze can damage or kill underwater plants and animals. Never pour used motor oil or antifreeze down a storm drain, onto the soil, or into a waterway. Put used oil or antifreeze in a sturdy container and take it to a local service station or other approved center.

Some storm drains are stenciled “DUMP NO WASTE, DRAINS TO LAKE” (or river, etc.) so that people will know that allowing liquids other than storm water to get into the drain leads to pollution of lakes and streams.

6. The sprinkler is watering the sidewalk. Place sprinklers so that the water goes only on the lawn not the street or sidewalk. Water the lawn or garden during the coolest part of the day, such as early in the morning, to reduce evaporation and increase the amount of water that sinks into the soil and reaches the plants’ roots. Avoid watering on windy days when water may be blown onto streets or sidewalks.
7. The man and woman are burning leaves. Smoke from five pounds of leaves contains about one pound of air pollution which contains harmful pollutants. Open burning contributes to the formation of ground-level ozone that damages human health, vegetation and buildings. Some of the health problems caused by open burning include eye, nose and throat irritation; lung irritation and congestion; shortness of breath and coughing; stomach or intestinal upset; and headaches.

Activity courtesy of the U.S. EPA: www.epa.gov/OWOW/NPS/kids/whatwrng.htm

For additional ideas on environments and their effects, visit IDEM’s Enviroville at:
www.in.gov/idem/who/kids/envirovill



Unit D: What does Indiana's environment look like?

Think of Indiana's environment as separate pieces of a puzzle that when put together make up the shape of our state. The first piece is your home. The second piece is your neighbor's home. When you connect the two pieces it makes a larger piece. You find a piece that is the park down the street but before you can connect it to you and your neighbor's house you have to find the school that lies between your house and the park. Don't forget about the grocery stores, banks, farms, coal mines, sport stadiums, zoos, race tracks, forest, wetlands, the list goes on and on.

Activity #4:

Indiana's Environment and You Puzzle

Purpose: To demonstrate to students that their everyday activities affect Indiana's many environments, and to help students recognize the importance of clean air, land and water. As the puzzle is being put together students will also understand how Indiana's many environments are connected, and that their activities affect the entire earth.

Materials: Copy of "Indiana's Environment and You Puzzle," crayons or markers, scissors, poster board, glue sticks or tape

Instructions: Give each student one or two puzzle pieces and have them create their own environment on each piece, either an environment you assign them or one they come up with on their own. Second, have each student cut out their puzzle piece. Third, gather the students around the poster board and have them put the puzzle together. Finally, have students glue or tape their pieces of puzzle to the poster board.

[*Click here to get a copy of the puzzle*](#)

Discussion/Follow-up: Have the students make predictions about how their puzzle piece will affect their neighbors puzzle piece, and how our everyday actions can affect Indiana's environment.



