



*Dedicated  
to Reducing  
Pesticides*

## Unit 5 Section 3 Lesson 2: Pesticides on the Move

**Focus Areas:** Pest Control: Chemical; Science, Language Arts

**Focus Skills:** recognizing cause and effect, conducting a simulation, composing expository sentences

### Objective

To understand the dangers and negative effects of using chemicals to control pests

### Essential Question

How can the use of chemicals to control pests hurt the environment?

### Essential Understanding

Chemical powders and sprays applied to get rid of pests can harm land, water, plants, and animals including people!

### Background

Chemicals are considered by many to be the most effective form of pest control. However, they pose a potential danger to every part of the Earth's environment. The very ingredients that make various chemical products devastating to targeted pests are often highly toxic to non-targeted plants and animals as well. Powders and sprays don't stay in a precise location when applied. Wind drift disperses the toxins to the surrounding area. When mixed with water, liquefied chemicals can seep into ground or surface water, affecting rivers, streams, and wells. Evaporation of these same products pollutes the air and contributes to the formation of acid rain.

Chemical controls are a part of IPM, but because of the potential dangers involved in their use, chemicals should never be the first line of defense in the war on pests.

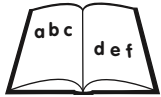


University of  
Connecticut  
College of Agriculture  
and Natural Resources  
Cooperative Extension System



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### Vocabulary



<b>chemical control</b>	a product containing toxic ingredients used to control pests
<b>ground water</b>	water that is underground, but mixes with lakes, rivers, and streams to travel to the oceans
<b>surface water</b>	water found in streams, rivers, lakes, ponds, and oceans
<b>toxic</b>	something that hurts plants, animals, and our environment
<b>wind drift</b>	light material like powder or water drops that are blown all around by breezes

### Logistics



**Time:** two sessions of 30 minutes each  
**Group Size:** 5 to 20  
**Space:** a floor or table area for mural preparation, an area for comfortable seating

### Materials



Izzy puppet \*  
spray bottles filled with colored water (4 or 5)  
water soluble markers, chalk, or poster paint  
large sheets or a roll of light blue construction paper (preferably not color fast)  
powdered poster paint in small cups (4 or 5)  
white paper

\* single copy provided



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### Preparation



1. Gather the art supplies.
2. Prepare the spray bottles.
3. Prepare the basic mural according to the following directions:
  - a. Paint “waves of blue” across the bottom of the mural paper. (ground water)
  - b. Paint an area of brown above the blue. (soil)
  - c. Paint green grass above the brown.

### Activity



#### Introduction

1. Using the Izzy puppet, ask the following questions:
  - a. What is a weed? (a plant growing where it isn't wanted)
  - b. When is a dandelion a weed? (when it's growing in the lawn or garden)
  - c. When is grass a weed? (when it's growing in cracks in the sidewalk or in the garden)
  - d. How do people get rid of pesky weeds? (pull them up, put “stuff” on them that kills them)
  - e. Which way, pulling the weeds up **one by one** or spraying/ powdering them with “stuff,” is the easiest? (spraying)
2. Izzy explains that the powders and sprays used on lawns, on crops, in homes, and even on pets and people are called **chemical controls**. Print the words on the board and have the children repeat it.
3. Print the word “**TOXIC**” on the board and have Izzy ask the children if they know what the word means. (no)

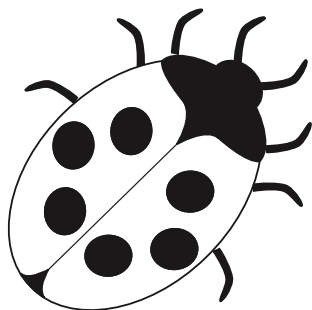


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- a. Add “= **POISON**” to the right of **TOXIC** and allow time for children to explain the meaning of the word. (something that makes people sick, etc.)
- b. Add “= **Chemical Control**” to the equation.
- c. Izzy says, “Chemical controls kill pests and are easy to use, but they are toxic and should never be used first! Would you like to help me show you why? (yes)

### Involvement

1. Display the mural vertically and ask the children to name the parts. (grass, soil, water)
2. Izzy interjects that this water is under ground and is called **ground water**, but it mixes with lakes, rivers, and streams and is in wells that people use for drinking water!
3. Divide the group in thirds and assign each a task:
  - a. Create a tree or a flower on the mural.
  - b. Create an animal on the mural.
  - c. Create a weed or other pest on the mural.
4. Call the children’s attention to the spray bottles and powder, and tell them that these represent chemicals that can be sprayed or sprinkled to get rid of pests.
5. Select children to apply “chemical controls” to the pest plants.



- a. Spray first. Call attention to other areas that were hit by the spray. Ask the children:
  - i. What happened to the other plants, animals, and even the air near the pest targets? (They got poisoned too.) Call attention to the spray that runs into the ground water.
  - ii. What happened to the ground water that we drink? (It became poisoned.)



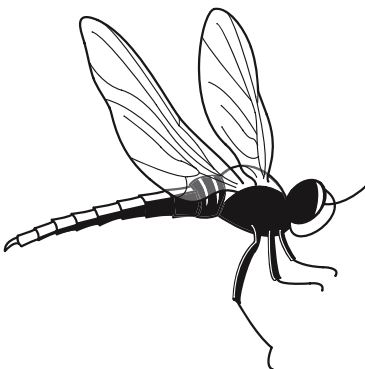
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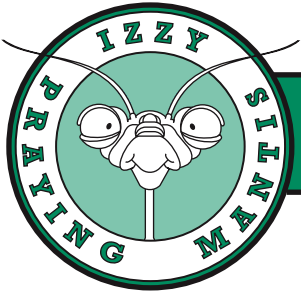


- iii. What will happen when other animals and people eat the poisoned plants or drink the water? (They will get sick.)
- b. Apply powder by blowing or sprinkling it onto targeted pests. Discuss results. (It stays closer to the target.) **Note:** You may want to demonstrate how wind causes chemical powders to disperse to non-targeted areas by holding powder in your hand and blowing it toward the mural with a hair dryer.
- c. Izzy interjects, “But what if it rains?” and sprays clear water on powder. Discuss results. (The powder mixes with the “rain” and runs into non targeted areas.)

### Follow Up

1. Izzy says, “Now you all know why I want people to **STOP** using chemical controls as their first choice for pest control! Let’s make a poster to remind people that the easiest way to kill pests isn’t the best way!”
2. Distribute 8” x 12” white paper to the children and tell them to fold it in half as you demonstrate a horizontal fold.
3. Children print **CHEMICAL CONTROL** in the center of the upper half (fold side down) as you print it on the board.
4. Izzy draws a red circle around the phrase on the board and the children do the same on their work sheet.
5. Izzy slashes through the phrase with a diagonal line while saying this is the symbol for **STOP**.
6. Children draw the diagonal line on their sheets.
7. Izzy tells the children that sometimes chemical controls have to be used to control pests but they should never be the first choice!
8. Have the children print a sentence that explains why chemical controls can be dangerous on the lower half of their paper.
9. Display and discuss the results.





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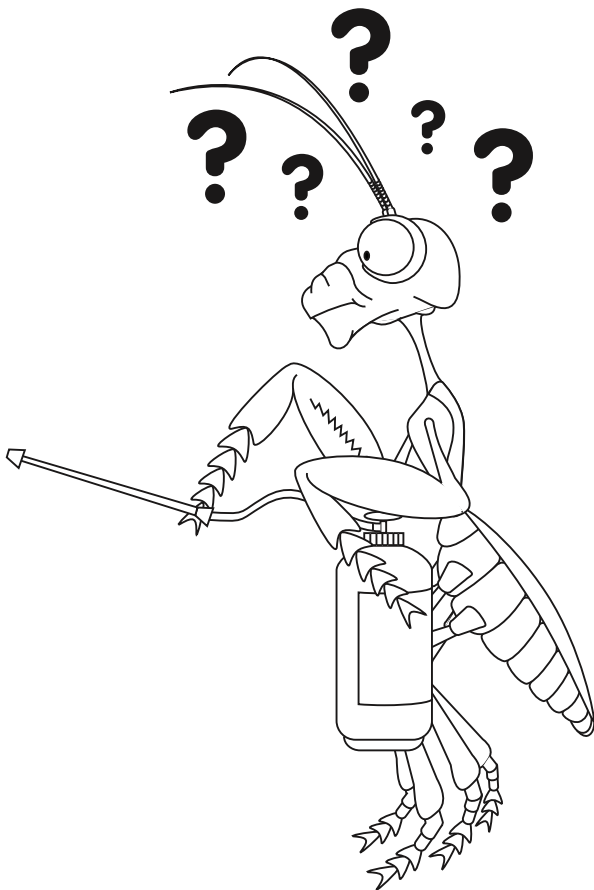
### Notes





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