# Integrated Pest Management: An Introduction

**Guiding Questions (See also Core Learning Questions):**

- What is Integrated Pest Management (IPM)? What are its goals? Where is it used, and by whom?
- What are some other common ways of dealing with pests, and how are they similar and different from IPM?
- What are pesticides, and what are they used for? How do they affect human health and the environment?
- How are decisions made about how to handle pest problems? What factors are considered?

**Learning Goals:**

- To get a basic understanding of Integrated Pest Management, and how it compares to other approaches to pest control.
- To introduce the terms and themes that will be emphasized throughout the IPM module.

**Length:**

One to two class periods.

**Overview Description:**

The introductory lesson on IPM is a time for the teacher or a guest speaker to set the stage for the whole module. It is not only an opportunity to introduce important concepts and vocabulary, but also to help students grasp why IPM is an important thing to study, how it relates to the environment and to health, and how it is relevant to students' everyday lives. You may want to bring in a guest speaker for at least part of the intro lesson, or incorporate a field trip or service trip during this early part of the module.

It is highly recommended that teachers or guest speakers introduce the main concepts of this module by drawing upon students' existing knowledge and experience of pest management in an interactive format. Here is one method that has worked extremely well, though of course this is only a suggestion and teachers should work in a fashion that best suits their class and the IPM module they've designed.

1) Using a blackboard or paper taped to the wall, create space for three lists with the following titles: PEST, PESTICIDE, and IPM.

2) Ask the class, what are examples of pests? Write responses under the heading PESTS and guide brainstorming as necessary. What makes these critters pests? Are they always pests, or

only in certain places, or at certain times? What role might these species play in a natural ecosystem when they are not pests?

3) Ask the class, looking at our list, what words do you think would be important to have in a definition of "pest"? Write responses on the list, and guide brainstorm as necessary. If important concepts are still missing, ask leading questions until you have the makings of your definition, then synthesize to a complete sentence or statement, which you write at the bottom of the list. (See reference definitions below.)

4) Repeat this process to define the term PESTICIDE (see reference definition, below).

5) Give students a hypothetical pest problem. For example, tell a short story about a house where there is a roach problem in the kitchen and living room. The family who lives there has two kids, one of whom is an infant, and they also have a dog. Ask the students, what are some ways the family might try to solve their cockroach problem? What might they do to prevent them from coming back? What economic, health and environmental risks should they consider? You can list responses on the blackboard or paper. You may ask them to brainstorm in small groups and then report back. If certain concepts are not well represented, you might ask leading questions, or add other things to the list.

6) Talk with students about pesticides and environmental health. How can pesticides and other environmental contaminants get into our bodies, or the bodies of animals (pets or wildlife)? What do they do when they're in there? This may be a good time to use the Environmental Exposure Demonstration, or to talk about cholinesterase inhibition, or other aspects of human exposure to pesticides.

7) Look back at the list of pest control options generated earlier - ask the students, which of these options have the lowest risk for human, animal, or environmental exposure to pesticides? List low-risk options under the IPM heading. Again, ask leading questions or give hypothetical situations if certain themes are not making it on to the list.

8) What are some common factors among the low-risk options that have been selected, that you think might be part of a definition of IPM? List responses, then synthesize into a definition sentence or statement.

9) Discuss North Carolina's new School Children's Health Act requirement that all public schools use IPM, and pose the question: where else in our community could IPM be helpful?

10) Use the remainder of the class period to introduce the activities and research projects you've chosen to use for the rest of the module.

**Reference Definitions (adapted from EPA's Definitions:)**

**Pest:** An animal, plant, fungus, or microorganism that is a nuisance, dangerous, or otherwise unwanted. Includes weeds, bugs, rodents, mold & mildew, and crop diseases.

**Pesticide:** A substance or mixture of substances put into the environment to kill, repel, regulate, or otherwise get rid of pest species. These include bug sprays, weed killers, rat poisons, and chemicals used to regulate crop growth.
Extra Pesticide Facts: Pesticides are poisonous - that is their job. Several types of pesticides are derived from poisons that were originally developed to be used as weapons during wars.

**Integrated Pest Management, or IPM,** is a common sense approach to pest problems that seeks to reduce reliance on toxic pesticides and minimize the risk for human or environmental pesticide exposures. It uses a prevention-based system to manage pest populations, and controls pest outbreaks using the least-toxic and lowest risk methods possible. (For more information, download a factsheet about Integrated Pest Management from www.PESTed.org.)