



Action Kit

Insect Hide and Seek

Summary:

Monitoring is an essential component of IPM. Students select research sites inside the school, then place baited homemade "bug traps" to monitor local insects and/or pests that show up in the traps. They use the kit's poster and *Insects: A Golden Guide* along with Web and other references to help identify the insects, and record observations and data in their science journals.

Materials:

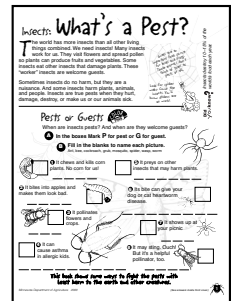
- Pest Patrol: A Backyard Activity Book for Kids*, page 1
- Research site signs (5)
- Petroleum jelly
- Insects: A Golden Guide*
- MDA Major Insect Orders poster
- 2-liter soda bottles (5)
- Paper for making funnel cones (5 sheets)
- Tape
- Bait food for traps (dry dog food, apple slices, bread, luncheon meat, etc.)
- Hand lenses
- Bug magnifying jars
- Journal for observations

Think you're the only one interested in a good dinner and a cozy home? Think again! Pests of all kinds — from insects to rodents — would love to move in with you. Like you, they are looking for food, shelter, and water. If just one of these needs is interrupted, indoor pests usually won't survive. What kinds of insects live in and around your school? Let's find out!

Guiding the Activity

You may wish to enlist support from your school staff and administration before you set out insect collection traps. All traps will be clearly identified by the Pest Patrol research site signs.

1. *What's a pest?* Explore the question with *Pest Patrol: A Backyard Activity Book for Kids*, p. 1.
2. *The first step in IPM is to monitor for pests. We usually see indoor pests only when they are going between their hiding places and their food or water sources; some come out only at night. So how will we know where the bugs are? We can outsmart the pests with some tricky traps and see if they take the bait!*
Brainstorm a list of school locations where you think insects might be found. (Possible places for traps are bathroom, kitchen, closets, hallway, gym; dark, moist places; wherever crumbs or food wrappers are.) *How will you decide where to set your five traps?*
3. Make the traps and set them in place. Remember to put a research site sign next to each trap!
4. Check all your traps after 24 hours. Count the number of insects and other organisms collected. Use reference resources to try to identify the organisms collected at each site. Make a chart like this for field notes in your science journal. Here's an idea:



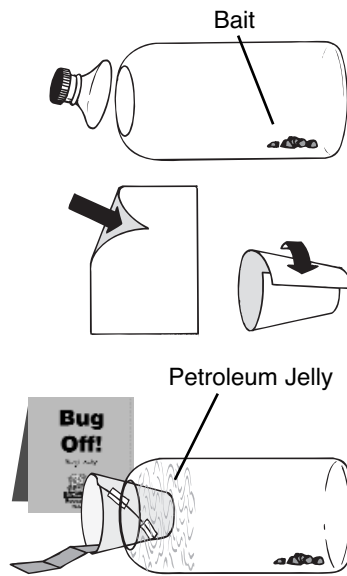
| Bug Collection Data | | | | |
|---------------------|----------|--------|-------|--------------------|
| Date | Location | Number | Kinds | Notes and Drawings |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

5. Students may be eager to leave the traps and check them again. Replace the food if you want to collect more insects. When you are done with the experiment, release living bugs outside. If you can't empty the trap each day, will bugs keep entering it? There's one way to find out: Try it! Free yourself to explore with the children.

Don't Miss This!
Pest World for Kids
www.pestworldforkids.org/index.html

Indoor Insect Trap Directions

1. Cut the top off a two-liter soda bottle. Put bait food inside the bottle.
2. Make a paper cone. The small opening of the cone needs to be about 1 inch wide. Seal the edges with tape.
3. Place a layer of petroleum jelly about four to five inches wide around the **inside** of the bottle. This sticky layer will prevent the trapped insects from leaving the bottle through the cone.
4. Insert the paper cone in the bottle. Tape a large paper flap on the cone to serve as the walkway for the insect to enter the bottle. Be sure this flap rests on the floor.



Discussion Questions

- What did you learn about where insects and bugs could be found?
- What did you observe when you looked at the insects with the hand lens or the bug jar? What behavior was most interesting? What behaviors do humans and insects share?
- Based on the data you collected, where were the most insects found?
- What was the most frequently collected bug? Do you think there are enough of these to qualify them as pests? (Remember, not all insects are pests!) Have you seen any signs of damage by this bug?
- Who is responsible for monitoring at your school? (Is everyone responsible?) Why is monitoring an important step in IPM?

Did You Know?

- Eleven species of ants may be found in Minnesota schools. Identifying the ant species is important to determine the nesting site, food preference, and the best method of control.
- Some pests can go 14–15 days without water and 30–40 days without food.
- Ants use chemicals called pheromones to warn other ants of emergencies and to lead others to food. An ant that finds a food source leaves a scent trail on the ground to lead the other ants back to the food. This is why ants are often seen marching along in single file!
- Not all insects are “pests.” Using a targeted program like IPM, you won’t eliminate all insects—just the ones that threaten your belongings. These critters are common but they shouldn’t raise alarm:

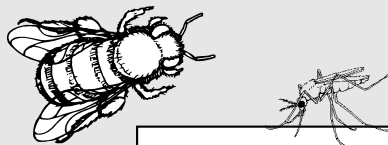
Spiders*
House Centipedes*
Asian Lady Beetles
Elm Leaf Beetles
Box Elder Bugs
Ground Beetles



*These can bite, so handle with care or not at all.

These are some pests that indicate a possible problem:

Clothes Moths
Carpenter Ants
Larder Beetles
Silverfish
Indianmeal Moths
Flour Beetles
Sawtooth Grain Beetles
Cockroaches





Don't Miss This!

“IPM Fact Sheets for Schools” from the Minnesota Department of Agriculture:

www.mda.state.mn.us/ipm/IPMinSchools.html

Digging Deeper

 Invite an exterminator to visit the classroom. What clues do exterminators use to find insects? Why are insect habitats sometimes destroyed?

 Encourage children to regularly monitor home and school for signs of insect activity. They can start with plants. Do they see holes in leaves, petals, or on other plant parts? Chewing insects may have left them there. Do they see long twisting tunnels on leaves? Leaf mining insect larvae feed between the layers of the leaf. Do they see spider webs? Note where. How many insects can they count in each web? (Remember: many insects are beneficial. A spider with insects in the web is doing her job!)

Bulletin Board IDEAS

Add one of your research site signs as a symbol of your monitoring study.

Minnesota Graduation Standards, Grade 3

History and Nature of Science:
A. Scientific World View.

Reading and Literature:
B. Vocabulary Expansion.

Speaking, Listening and Viewing: A. Speaking and Listening.

History and Nature of Science:
A. Scientific World View; B. Scientific Inquiry.

Life Science: B. Diversity of Organisms; C. Interdependence of Life.

Reading and Literature:
B. Vocabulary Expansion;
D. Research.

Speaking, Listening and Viewing:
Speaking and Listening