

INSPECTING THE SCHOOL

An Integrated Pest Management Lesson

Karen Vail, Professor and Extension Urban Entomologist, Department of Entomology and Plant Pathology



Inspecting the School

An Integrated Pest Management Lesson

Skill Level

- *Beginner (4th-5th grades)*
- *Intermediate (6th-8th grades)*

Learner Outcomes

The learner will be able to:

- *learn the needs of several common indoor pests.*
- *apply knowledge by looking for signs of pests and habitats.*
- *discuss how to modify the habitats they discover.*
- *learn how the behavior of people affects pests.*

Tag(s)

4-H Science

Success Indicator

Students are successful if they can:

- *Identify common indoor pests.*
- *Apply the knowledge to create wanted posters.*

Time Needed – 30-120 minutes

Materials Needed

Each group should have:

- *Clipboard*
- *Flashlight*
- *Pencil*
- *Inspection sheet*
- *Wanted poster*
- *One copy of "Knowing What to Look For" worksheet*
- *Colored markers*
- *Thumbtacks or dot stickers*

Author(s)

Design and content resourced from a publication of Michigan State University Extension and used with the permission of Michigan State University.

Karen Vail, Professor and Extension Urban Entomologist,
Department of Entomology and Plant Pathology

Introduction to Content

Pests are all over. Review the lesson from "What is IPM?" Students will be able to inspect the school for pests.

Introduction to Methodology

Students inspect their school for evidence of pests and conditions good for pests and suggest changes to help fix the problems.

Places to Inspect

Inside:

Teacher's lounge (refrigerator, soda machine, sink, furniture), bathrooms (sinks, seals around toilets and pipes), cafeteria, kitchen, doorways, hallways, classrooms (windows, baseboards, sinks, closets, near desk, cluttered areas, art supplies, snacks), locker rooms and lockers

Pests are often found in the kitchen, teacher's lounge, and custodian's closet, but you should obtain permission before you take or allow the students into these areas.

Outside:

Dumpster, doorways, plantings next to the building, gutters and overhang of roof, windows, holes or damage on building.



Setting the Stage

Inspecting and investigating is one of the most important steps in IPM. In this step we check to discover:

- What pests do we have?
- Where are they coming from?
- What are they eating and drinking?

Since we target control methods at the places where pests are living and getting in, the information we learn in the inspection tells us where to start. We discover things that need to be fixed or cleaned. After we learn what pest we are dealing with we can do some research to discover what it needs to live and where it likes to live. All of this information helps us choose the best way to control the pest and focus our energy in the right place.

Before this activity, talk with the building manager or IPM coordinator for the building about the problem pests and areas for your school. If possible, walk through the building with this person. Choose pests and places to focus on based on previous problem areas and any new areas you find when you walk through the building. Obtain permission for the students to inspect these areas of the school from the principal and others as your school's policies dictate. For example, the kitchen, teacher's lounge and custodian's closet are often good places for pests, but you should obtain permission before you take the students into these areas. Instead of inspecting the whole school, you may also choose to inspect just specific parts like the cafeteria, lockers, playground, classroom, hallways and doorways, and bathrooms. It is helpful to have adult helpers for this activity. With the support of your administrator, you may wish to ask the custodian(s) and/or food service workers, the IPM coordinator or pest management personnel to assist the groups in this inspection.

Opening Questions

Review the IPM steps with the students. Ask, "*Why is inspecting and investigating so important?*" Emphasize the importance of knowing what pests we have and where they are coming from. If the students interviewed people in the school, review what they learned from the interviews. Remind the students that we need to have proof that the pests are here. Talking to people is the first step. The next step is gathering clues on what pests we might have in our school.

Experience

Pass out what students need: *Knowing What to Look For* worksheets (one per student per pest. It may help to copy the different pest sheets on different colored paper), inspection sheets (one per group or per student), clipboard (optional), pencil, flashlight, maps of school. The key things we are looking for in an inspection are:

- pests (live or dead mice, cockroaches, etc.)
- signs of pests (cast skins, droppings, tracks, damage they have caused)
- conditions good for pests (cracks and holes, clutter, damaged doorways and window, leaky faucets, dirty dishes, etc.)

Strategies to Increase Student Engagement

- Be sure that all students have an opportunity to answer questions about their thoughts on pests.
- Be sure to prepare your materials in advance to maximize instructional time.

Teacher Notes

Remind the students that since we are scientists, we need to know as much as we can about what we are looking for before we look for it. Review the wanted posters if completed. Based on your conversations with the IPM coordinator or pest management personnel and your own inspection, choose the pests you wish to focus on. Complete pest profile worksheets with the class on these pests. You may wish to project the pest profile sheets and complete them with the class.

Split the students into smaller groups of five or less. Assign an adult and a part of the school to each group. Review the inspection form with the class so they know how to fill it out. Review the procedures before you hand out the clipboards and flashlights! Give a flashlight, clipboard and inspection worksheet to each group. They should also bring one set of the pest profile worksheets. It may help to assign students specific jobs (for example: recorder, flashlight holder, person who will report to the class). Each group inspects their assigned part of the building or grounds. After about 15 minutes students should return to the classroom and complete the inspection sheet.

Share/Process

Each group should choose a person to present their findings to the class. When they report to the class, they should say who was in their group, where they inspected, what they found, and what they decided people could do to change what they found. Enlarge the maps of the school so that they are poster-sized. Develop a color code for each pest (i.e. green-cockroaches, red-mice, blue-ants, yellow-other). Have a member of the group put a colored thumbtack or dot stickers or use a marker to show what they found in their part of the building. Alternatively, you could use a PowerPoint slide with the school map and use different colored shapes to indicate the location of each type of pest. Discuss the results with the class. What pests are problems in the school? Where do we need to monitor for pests?

Generalize

Today we searched the school for: pests (live or dead mice, cockroaches, etc.), signs of pests (cast skins, droppings, tracks, damage they have caused), and conditions good for pests (cracks and holes, clutter, damaged doorways and window, leaky faucets, dirty dishes, etc.).

Apply

Ask the following questions:
Why did some areas of the school show more signs of pests than others?
What can we do to prevent or keep out pests in these areas?
What do adults need to do?

Supplemental Information

Educational Standards Met

Demonstrate an understanding of scientific principles and the ability to conduct investigations through student-directed experiments, authentic performances, lab reports, portfolios, laboratory demonstrations, real world projects, interviews, and high-stakes tests.

TIPPS ***Life Skills***

4th Grade

- Follow instructions. (Heart)

5th Grade

- As part of a group, identify and agree on a common task (set a goal). (Hands)

References

Jenkins, Erica B. "Exploring Urban Integrated Pest Management: Activities and Resources for Teaching K-6." October 2001, Michigan State University.

Supplemental Information

Conditions Good for Pests

Inside

1. Dirty dishes
2. Food or crumbs on the floor, carpet, counters
3. Grime around drains, sinks, refrigerators, stoves
4. Leaky pipes, sinks, faucets, water fountains
5. Pet food or water (and the spills around them)
6. Food in unsealed bags or boxes
7. Empty soda cans and other cans for recycling (not rinsed or in sealed containers)
8. Garbage cans without tight-fitting lids
9. Garbage or litter
10. Cracks around doors and windows
11. Holes or cracks in walls or floors
12. Clutter (piles of stuff that pests can hide in or behind)

Outside

1. Holes in the building
2. Broken gutters, gutters full of debris or plants growing in gutters
3. Cracks or spaces around doors and windows
4. Plants growing on or into the building
5. Dumpster area, garbage not in bags or outside the dumpster, no lid, doors open

Supplemental Information

Things People Can Do to Keep Pests Away

1. Keep dishes washed or rinsed.
2. Don't eat food around the house or school.
3. Clean everywhere, especially where food is.
4. Vacuum and clean floors. Move furniture to vacuum and clean around items.
5. Fix any leaks.
6. Keep food in tightly sealed containers.
7. Put empty soda cans inside sealed bags. Do not let huge numbers pile up in the room.
8. Keep garbage in cans with lids and empty often.
9. Don't leave wrappers or garbage and litter around!
10. Fix doors and windows so they seal tightly.
11. Fix all holes and cracks.
12. Place garbage in sealed bags before putting it in the dumpster. Keep the lid shut.

Student Worksheet - What We Found

Date: _____ Room/Location in school: _____

Team members: _____

We found evidence of pests. In the lines below write what you saw. Examples are the actual pest, its droppings, gnawing, damage, nest/anthill.

cockroaches

mice or rats

ants

others?

We found conditions good for pests. In the lines below write what you saw. Examples are open dumpsters, garbage or clutter, cracks or holes, drips or leaks

Things that we can do to make this place worse for pests.

Things adults can do to make this place worse for pests.

Name: _____

Date: _____

Pest name: _____



Likes to eat:

This pest needs these things to survive:

Where in the school would you look for it?

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

List evidence of this pest that you can look for.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

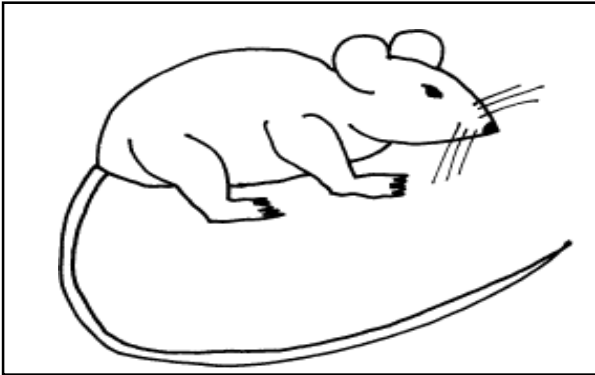
List conditions of the school you could look for that make this a perfect place for pests to live.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Name: KEY

Knowing What to Look For

Pest name: House Mouse



Likes to eat:

peanut butter, cereal, grains, rice,
oatmeal, flour, fruits and vegetables,
nuts, butter, candy bars

This pest needs these things to survive:

food water shelter

Where in the school would you look for it?

<u>doorways</u>	<u>basement</u>
<u>kitchen</u>	<u>storage rooms</u>
<u>janitor closets</u>	<u>in walls, under sinks</u>

List evidence of this pest that you can look for.

<u>droppings</u>	<u>noises in walls</u>
<u>chewed holes</u>	<u>bad smell</u>
<u>tracks/footprints</u>	<u>spilled or nibbled food</u>

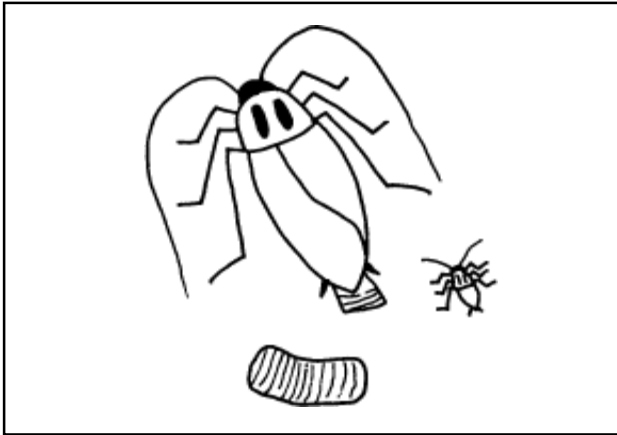
List conditions of the school you could look for that can make this a very good place for pests to live.

<u>space around doorways</u>	<u>broken windows or screens</u>
<u>open containers or boxes</u>	<u>dirty dishes</u>
<u>holes the size of dimes</u>	<u>clutter or piles of stuff</u>

Name: KEY

Knowing What to Look For

Pest name: German Cockroach



Likes to eat:

almost anything
crumbs and leftovers
soap and soap scum
wallpaper glue
pet food, food waste, garbage

This pest needs these things to survive:

food water shelter

Where in the school would you look for it?

<u>kitchen</u>	<u>food storage</u>
<u>garbage</u>	<u>cabinets</u>
<u>kindergarten room</u>	<u>Art room</u>

List evidence of this pest that you can look for.

<u>live or dead roaches</u>	<u>old skins or legs</u>
<u>egg cases</u>	<u>droppings that look like black dots</u>
<u>rustling noise</u>	<u>smell</u>

List conditions of the school you could look for that can make this a perfect place for pests to live.

<u>pet food storage</u>	<u>litter in rooms and lockers</u>
<u>leaky faucets or sinks</u>	<u>unrinsed soda cans</u>
<u>food in unsealed containers</u>	<u>grime in food areas</u>



UTIA.TENNESSEE.EDU

Real. Life. Solutions.™

W 1066-E 8/22 23-0019

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.