Classroom Experiments with Mice

Using live rodents in the classroom can add a great deal of enrichment and can really aid in teaching science to students. Students love working with live rodents. While simply the presence of pet animals in the classroom can add enrichment, some students will learn more than others. Some children can observe the animals for hours if given the chance and learn a great deal from it. Others will scarcely give the animals a glance. Conducting simple experiments with them makes every student engaged in the activity. Students gain hands-on experience conducting real experiments. For elementary students, being trusted to conduct scientific experiments with real animals can be very empowering.

If you have the means and the desire to conduct experiments with mice in the classroom, I strongly recommend purchasing the book:

Kneidel, S., 1999. *Classroom Critters and the Scientific Method.* Fulcrum Publishing.

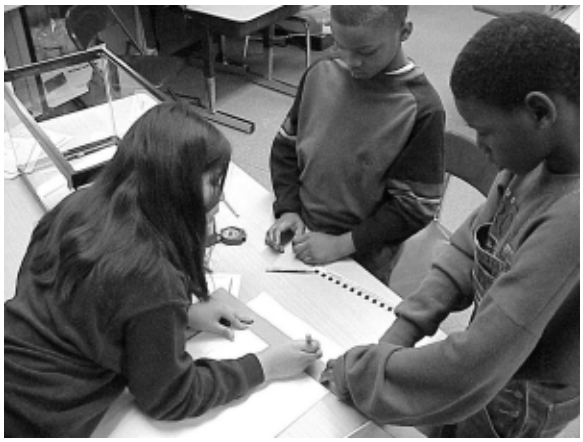
In addition to experiments with mice, Dr. Kneidel describes experiments with fish, hamsters, gerbils, lizards, kittens and puppies. The experiments with mice are the most relevant to teaching IPM.

Due to copyrights, I have not included the actual experiments here. Below are some IPM extensions to use with some experiments found in the book. Adult helpers are highly recommended to assist with these activities. For younger students (3rd and 4th grade), one adult with each group is almost essential.

1. Are Mice Wall-Seekers?

(Classroom Critters, page 1)

Materials: one of each of the following for each group: mouse, aquarium (15 gallon works well) or similar sized box, paper to fit in the bottom of the box or aquarium (cut to size prior to class period), rulers and straight edges, permanent marker. Also clock and worksheet for each student.



Doing the Experiment:

Follow the experiment as described. Walk the students through the experiment before they go to their station. Have them repeat the procedure to you. Reiterate rules for working with live animals (see lesson #10 in this resource). Emphasize that you trust that they will be real scientists today and be careful around the mice and each other. It is helpful to assign jobs to each student in the group (ie: *timer*-watches the clock and says "time" every 10 seconds, *mouse watche*r- watches the mouse and says "wall" or "center" every 10 seconds, *recorder*-records tallies of mouse position, etc.) After the experiment, have each student complete the graph for their group's results (included in the book). Have each group report on their results. Add the data for the entire class together and create a graph of the entire class' data. Have students write their conclusions on their worksheet. The results to this experiment are pretty predictable. The data will show that mice are clearly wall-seekers. Mice that have already experienced this experiment with one

class, however, may be a bit more daring (more counts away from the wall) for the second class.

Discussion/IPM Extensions:
In addition to the valuable experience of conducting scientific experiments, this activity clearly shows one behavior of mice that we use to help us control them. Ask: *What does this experiment tell us about mice? How can we use this information to help control them?* Put traps against the wall. *Why did you need to do an experiment? If you didn't record the position of the mice, but just observed them, would you have known that they spent so much more time against the wall than in the middle?*

Other Experiments

- Do mice prefer tunnels of a particular diameter? p. 6
- Do mice prefer tunnels open on one end or two? p. 11
- How fast can a rodent learn to make the correct turn consistently to find a food treat in a T-maze? p. 16

Keeping Mice in the Classroom

Mice are inexpensive and easy to maintain. Many pet stores sell mice primarily as food for reptiles. You can usually return them to the store after you use them in the classroom. While it is a fact of life that all organisms need to eat, many students will have trouble with the knowledge that their class pet may become food for a snake. Use discretion in deciding what to tell your students about the fate of the classroom mice, saying they went back to the pet store is usually sufficient.

Where to get them: pet store

What to put them in: small aquarium or cage designed to hold mice. A 5 ½ gallon aquarium with a wire mesh lid is adequate for 6 mice.

Bedding: recycled paper bedding is the best (at most pet stores), the oils in some wood chips can irritate their skin. Change the bedding often; mice are smelly.

What they eat: mouse or small rodent food from pet stores. Supplement that with treats that contain water like carrots, apples, and other fruits and vegetables. Mice often do not drink readily from bottles or bowls, so it is important to give them some moist food.

Enrichment: wrapping paper rolls or toilet paper rolls will provide a place for the mice to run through, sleep, hide, and even shred for their nest. Putting too many extra things in their cage can affect how they respond in experiments.

Note: Withhold food prior to experiments that involve food treats! We didn't do this once, and the mice were very content to just sit in the maze.