

ToxMystery Lesson Plan 1: Introduction to Common Household Chemical Hazards

Grade Level: 2-6

Description: This lesson plan will introduce students to potential environmental health hazards in their day-to-day environment. Students will be introduced to ToxMystery, a computer game activity, and either individually or in groups, they will find potential environmental health hazards in each room of the house that is presented by the game. They will then answer multiple choice questions posed by the game about the hazards they encounter and complete assigned activity sheets.

National Science Educational Standards

Unifying Concepts and Processes:

- Understanding of evidence, models, and explanation
- Understanding of form and function

Science as Inquiry:

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

Science in Personal and Social Perspective:

- Personal health
- Types of resources
- Natural hazards
- Changes in environments
- Science and technology in society

History and Nature of Science

- Science as human endeavor
- Nature of science
- History of science

Learning Outcomes

Students will be able to:

- Compare and analyze appropriate uses for chemicals and other household products
- List and describe several chemicals and their potential dangers.

- Describe, in written and verbal form, the actions that can be taken if environmental hazards are encountered.

Background

ToxMystery is a computer game activity developed by the National Library of Medicine to increase awareness of possible environmental health hazards around the house. ToxMystery was developed with ages 7 to 11 in mind. The activity presents Toxie, the Cat as the narrator. Students navigate through Toxie's house and detect hazards in each of the rooms. When a health hazard is discovered, the student is then presented with a multiple choice question about the health hazard. The activity is complete when the student has successfully answered all of the questions in each of the rooms of the house. The activity is enhanced through the use of animation, audio, and music. Toxie, the narrator, is a friendly guide to the mystery of environmental health hazards.

Time Needed

One hour class period

Materials Needed:

- Computer
- Tox Mystery Game (online or Cd-Rom)
- Large paper (for discussion time for recording notes)
- Markers/Pencils
- ToxMystery Paper Quiz: (located in Teacher Resource Section with answer key)
- ToxMystery Activity page(s) or Packet

Procedure:

Lesson 1: Group Lesson

1. Assess student awareness about potential hazards in the home and where they might be found. Record their responses on large paper, the blackboard, or a projector.
2. Show ToxMystery to classroom and begin to navigate the game. Explain that Toxie is their guide, and they are going to help him look for potential hazards in his home.
3. Engage students by asking in which room they would like to begin.
4. Continue to engage students by asking them what to click on as you roll over the hotspots.

5. As you discover the hazards in the room, encourage discussion about the environmental hazards in the room and record feedback and concerns.
6. Introduce vocabulary and terms as you go through the house. Encourage discussion and record interesting points on blackboard. (link to glossary and terms)
7. Have students point out where the same chemical hazard may appear in a different place in the house.
8. Review the activity after all of the hazards have been found. Encourage discussion on positive action that can take place if a potential hazard is discovered. Discuss why it is important to develop awareness of potential environmental health hazards.
9. Discuss one example of a hazard found in ToxMystery and discuss what action could be taken if the hazard was discovered at home.
10. Hand out printouts of the certificate and have students sign their names and color certificate if it is a black and white print out.

Evaluation

The ToxMystery activity sheets in the teachers resource section can serve as a reinforcement and evaluation tool.

Students will demonstrate their ability to:

- Identify where potential environmental health hazards may be found in the home.
- List at least two actions to take when an environmental health hazard is discovered.
- List and describe some of the uses of products that contain the potential hazards