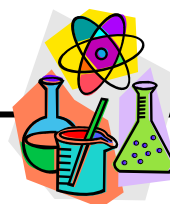


Grade 9 Unit C: Environmental Chemistry



Toxins

Hazard: Danger a person may come across.

Risk: The chance of danger, harm or loss.

Toxicity: The level of toxins (poisons) in a sample of water, air, etc.

Concentration: The amount of a substance in a sample of water, air, etc.

Dispersal: The spreading of a substance away from its source and over a larger area.

Before you begin this section, review [Solving Societal Problems](#).

1. Predict the effect of the following situations on toxicity levels. Research and discuss. Use the terms: concentration, dispersal, hazards and risks in your discussion. Find possible solutions, discuss consequences and choose the best course of action to resolve the problem.

Situation A:

A farmer spreads nitrogen-rich fertilizer over a field.
A stream running by the field fills a local pond.



Situation B:

A factory on the edge of a city burns fossil fuels, such as coal, natural gas or oil. This causes sulphur dioxide (a chemical in smog and acid rain) to rise out of the smokestacks. Winds blow toward the housing area in the city.



Use Tools [Cause and Effect Chart](#) and [Problem-solving Planner II](#).

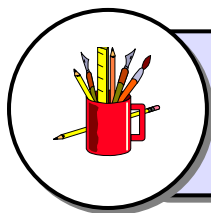
Toxins, such as asbestos, mercury and DDT, can be ingested or absorbed. Toxins are often produced as part of a chemical process, for example, as a by-product or waste when creating chemicals we need. Toxins affect humans and other living things in a negative way.



2. Find a news story about a toxin found in the air or water. Analyze the problem. Use the following questions to guide your analysis.

- What happened?
- Who was involved?
- What was the toxin?
- How was the toxin created or where did it come from?
- How is the toxin ingested or absorbed?
- What are the potential risks of the toxin?

Share your findings in a presentation.



Use Tools [Note Taking III](#), [Analyzing an Issue](#) and [Thinking About Form for Presentations](#).

3. With a group, investigate safe and proper ways to transport, store and dispose of hazardous household and workplace materials such as bleach, ammonia, paint thinner, motor oil, paint and industrial adhesives. Create a safety handbook based on the best ways to transport, store and dispose of these materials. Include diagrams and pictures in your handbook.



4. Investigate a workplace or industry in your community that deals with toxins (e.g., uses them or creates them). Find out what is being done to minimize the risks to employees, others in the community and the environment. Create a presentation to inform others.



Use Tools [Finding Sources](#), [Evaluating Sources II](#) or [Evaluating Sources VI](#) and [Thinking About Purpose for Presentations](#).

5. Investigate the risks involved in handling toxins at home or as part of an industrial process. Create a dramatic presentation (e.g., a short play, musical show, cartoon) that illustrates the risks and promotes safety. Present your dramatic presentation to others in the class or school.



Use Tools [Note Taking III](#) and [Thinking About Form for Presentations](#).