



Lesson 1

Preventing Pollution: Environmental Impact and Regulations



Student handout



Assessment tools



Resources



Videos



Lesson 1:

Environmental Impact and Regulations

Learn More About...

CRD Sanitary Sewer

- Regulations and best management practices
- Monitoring wastewater and the marine environment

CRD Waste and Recycling

- Hartland landfill
- Hazardous waste

CRD Storm drain

- Model Regulation: Storm Sewer and Watercourse Protection
- Monitoring stormwater
- Watershed information and maps

WorkSafe BC

- Young Workers Series
- Six Minute Safety Talks
- Health & safety topics regulations, resource and tools

Resources

Electronic and hardcopy lesson plans, handouts, maps and more information are available online at:

www.crd.bc.ca/teacher

or by contacting:

education@crd.bc.ca

Purpose

Use the following information to introduce how our kitchens, at home or at a local food service businesses, are connected to the environment and what regulations are in place to limit what can go down the drain.

Preparation

Display or prepare copies of the:

- student handout *"Background"*
- CRD *"Sewered Area"* map, CRD *"Watersheds map"* and CRD *"Flow Diagram"* for community. www.crd.bc.ca/teacher

Set up viewing activities:

- interactive artwork by Chris Jordan *"Paper Bags"*
 www.chrisjordan.com/gallery/rtn/#paper-bags

Procedure

1. (Optional) Display Chris Jordan's artwork paper bags (2007)
 www.chrisjordan.com/gallery/rtn/#paper-bags

- Ask students what they think Chris Jordan used to create this image.
- Click on the image and watch the focus zoom-in to show 1.14 million brown paper supermarket bags used in the USA every hour.

2. Discussion:

Lead students in a discussion about waste and the impact of choices and actions in food preparation. Use the paper bags as an example of a food related waste that can be avoided by using reusable bags, saving precious resources.

- What other kinds of waste can be generated in food preparation?
- Have they ever thought about what might be washed down the drain when preparing food or washing the pots and pans?
- Where does that used water go?
- What impact do they think it could have (e.g. on public health and safety and the environment)?

3. Explain that like WorkSafe BC regulations that help keep workers safe at work, CRD environmental regulations help prevent pollution protecting workers, the public and the environment.

4. Distribute and read *Background* individually or as a class.
5. Explain that what goes down the drain from our homes, businesses, industries and institutions can impact the environment as shown in the video.
6. Display your community's *Sewered Area* map to build on the connections made in the video between the kitchen and the environment.
 - The pipes which carry wastewater from our homes, businesses, industries and institutions can be connected to a sanitary sewer system (sewered) or septic system (unsewered).
7. What's the difference?
 - Drains connected to CRD sanitary sewers discharge wastewater into the ocean via deep sea outfalls after treatment (note: CRD facilities have different types and levels of treatment).
 - Drains connected to a septic system send wastewater into a tank, then through a distribution box into a network of underground perforated pipes which allows the wastewater to percolate into the ground.
8. Discuss the importance of preventing pollution in the food service facility.
 - Preventing contaminants from flowing down a drain connected to the sanitary sewer or a septic system is important for protecting the environment regardless of the level or type of wastewater treatment in place. Some pollutants may not make it to the treatment plant, blocking the system.
 - Some pollutants are not removed or only partially removed while others can be reactivated or negatively altered by treatment. Contaminants may also upset the treatment process, e.g. killing beneficial bacteria in a treatment plant or septic system.
 - If connected to the sanitary sewer, we are protecting the marine environment near the sewage outfall.
 - If connected to a septic system, we are protecting the groundwater, watershed, waterways and the near shore marine environment.
9. Display your community's *Watersheds* map and watershed *Flow Diagram*.
 - Explain that buildings connected to septic systems directly affect the surrounding watershed and that outside the building, storm drains direct water that flows over the ground along with any contaminants into nearby waterways and to the ocean.
 - What is a watershed? Have students cup their hands together and visualize or use water to demonstrate that water called "runoff" (rainwater, snow melt, irrigation water) and any contaminants it picks up along the way (dirty hands, grit, oil etc.) flows through the creases in their hands (stream, creeks and rivers) and water that pools in their palms (lakes, reservoirs, oceans) eventually drips out between their hands to the ocean. The area of their hands that drains the runoff into a body of water is called the "watershed".
 - Preventing contaminants from flowing into a septic system or storm drain protects groundwater, watercourses and nearshore marine environments.
 - Have students locate your school or facility on the map and identify known landmarks (e.g. parks, playgrounds, lakes, and streams), living things (people, plants, animals) and activities (e.g. swimming, fishing) in the watershed that you are helping to protect.
10. Write and post in the classroom:
We are helping to protecting the _____ watershed and/or the marine environment near the _____ sanitary sewer outfall.

Learn more about...

- CRD Sewer Use Bylaw
- Best Management Practice Guide
- Regional Sanitary Sewer Outfalls and Environmental Monitoring
- Greater Victoria Wastewater Treatment
- Watersheds of the capital region
- Septic Systems

www.crd.bc.ca/teacher

Home Economics: Foods and Nutrition

FOOD PREPARATION

- A1 identify sources of food contamination or food borne- illnesses and demonstrate appropriate preventative measures (grade 8-12)
- A2 demonstrate a knowledge of precautionary measures and emergency response associated with food preparation (grade 8-12)
- A3 demonstrate safe use of equipment needed to prepare food items (grade 8-12)
- A5 care for and store equipment appropriately (grade 8-12)
- A6 demonstrate co-operation in partner and group work (grade 8-12)

SOCIAL, ECONOMIC AND CULTURAL INFLUENCES

- D1 analyse comparative costs of convenience, restaurant, and self-prepared foods (grade 12)
- D2 analyse global and environmental health issues related to the production and consumption of food
- D2 demonstrate an awareness of environmental and health issues related to the production and consumption of food (grade 11)

Professional Cook

TRADE KNOWLEDGE

- Describe roles and responsibilities in the workplace.

SAFETY STANDARDS

- Describe general safety practices
- Describe workplace hazards (WHMIS Pre-requisite)
- Describe WorkSafe BC Regulations in the workplace.

SANITARY STANDARDS

- Describe the procedures to maintain workplace sanitation and personal hygiene

Production Procedures

- Identify common types of kitchen equipment and their use, cleaning and maintenance.

Ordering Inventory

- Describe principles of reducing waste, reusing and recycling materials
- Identify correct waste management procedures

Cafeteria Training

SAFETY, SANITATION AND EQUIPMENT

- Use commercial kitchen tools and equipment in a safe manner
- Describe relationship between personal hygiene and public safety

PRINCIPLES OF FOOD PREPARATION

- Describe principles of purchasing, receiving, storage, and waste management in a food-service operation

FOOD SERVICE

- Identify and evaluate factors that affect the food-service industry
- Demonstrate an understanding of social, financial, and environmental issues related to the food-service industry

