

# Storm Water

Grade Level: 8

## Materials:

- Water Under Fire webisode: Storm Water <http://www.waterunderfire.ca/>
- EnviroScape Watershed Model (see Borrowing Resources from the City of Lethbridge)
- EnviroScape Watershed Model: Storm Water Demonstration
- Oldman River Basin image [www.oldmanbasin.org](http://www.oldmanbasin.org)
- Stormwater Pollution Worksheet
- Notepaper and pencil or pen

## Background

The water that enters storm drains found along streets is called storm water. Storm drains are the drainage system that ensures water from heavy rains is diverted away from buildings. Any water that enters the storm drains flows directly from Lethbridge streets into the Oldman River. Unfortunately, there are usually other things washed into storm drains that are harmful to the river ecosystem. These include chemicals used for lawn care, detergents, pet waste, oil and gasoline, heavy metals and garbage. Bylaws within the City of Lethbridge protect the river from pollutants entering the drainage system. Protecting our fresh water resources is important as they are limited and provide life for humans and other living things.

## Objectives

*Students will:*

- Describe what storm water is and what effect the pollution associated with it has on the Oldman River and other freshwater ecosystems.
- Examine the Oldman River Basin to find out what areas contribute to pollution in the Oldman River.
- Share their research about storm water with their peers.

Lesson continued on page 2.....

## Curriculum Alignment

Junior High Science, Unit E: Freshwater and Saltwater Systems

Learner Outcomes: *Students will:*

1. Describe the distribution and characteristics of water in local and global environments, and identify the significance of water supply and quality to the needs of humans and other living things.
  - In general terms, describe the distribution of water in Alberta, Canada and the world; and interpret information about water characteristics.
4. Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues.
  - Analyze human water uses, and identify the nature and scope of impacts resulting from different uses.
  - Identify current practices and technologies that affect water quality, evaluate environmental costs and benefits, and identify and evaluate alternatives.
  - Provide examples of problems that cannot be solved using scientific and technological knowledge alone.

## Cross-Curricular Connections

Social Studies

Drama

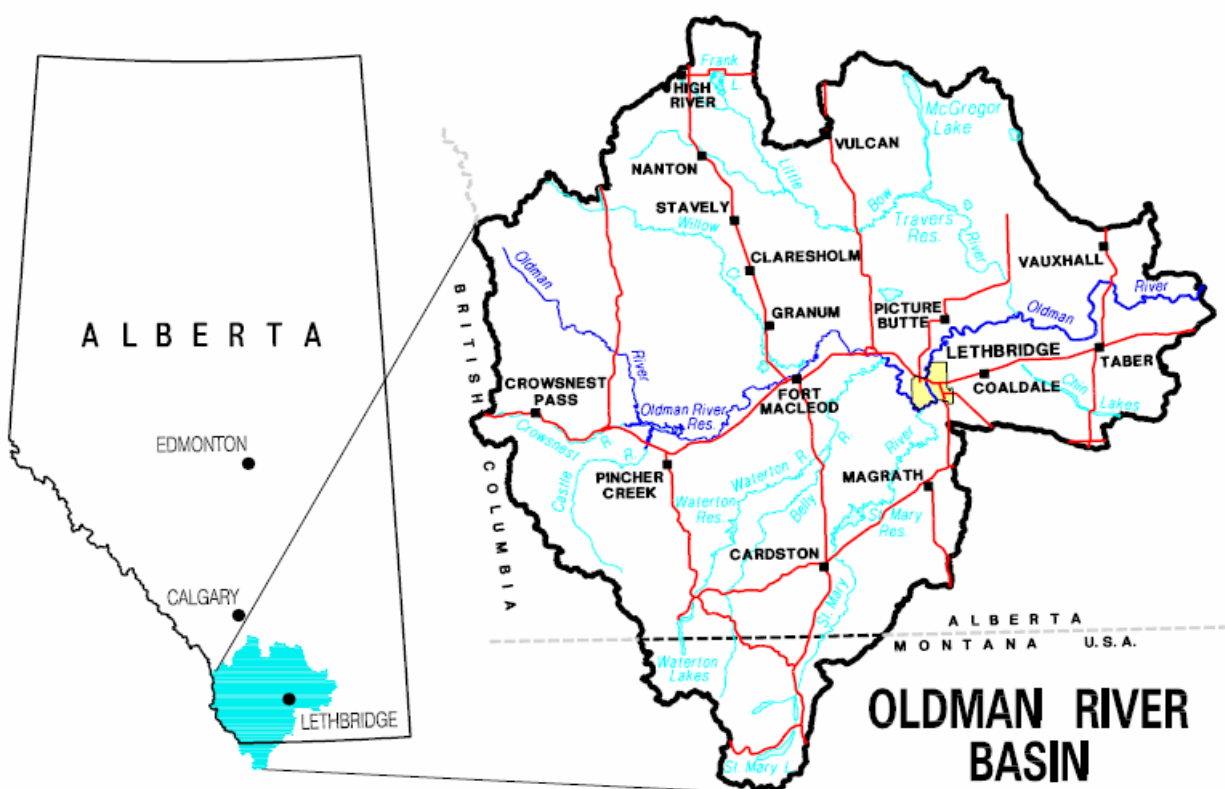
English Language Arts

## Introduction

- Students will watch the Water Under Fire webisode: Storm Water (4:23 min)

## Activity #1

- Using the EnviroScape Watershed model, demonstrate how pollution from streets and landscapes ends up in the local water supply. See EnviroScape Watershed model: Stormwater Demonstration
- Students will be provided with an image of the Oldman watershed



Oldman Watershed Council [www.oldmanbasin.org](http://www.oldmanbasin.org)

- Classroom discussion about how the entire area of the Oldman River Basin contributes water to the Oldman River that runs through Lethbridge.
  - How would you feel about someone dumping harmful chemicals in the storm drains in \_\_\_\_ (choose another town in the Oldman watershed)?
  - What other areas, besides runoff from towns and cities, might contribute to surface water pollution in the Oldman watershed? (chemicals from agriculture, livestock waste, industrial waste, parks and public recreation areas)

Lesson continued on page 3.....

## Activity #2

- Students will complete worksheet: Storm Water Pollution by using previous knowledge and web sources (as listed on worksheet)

## Activity #3

- In groups, students will conduct mock interviews where:
  - The media would like to know why the City of Lethbridge has a storm water by-law.
  - Groups will be required to create a list of questions and answers to aid them with the interviews as well as select the person that is being interviewed (ex. the mayor, a university professor, an environmental activist, etc.)

## Conclusion

- As a class, go over the answers to the worksheet questions.
- Have some groups present their mock interviews to the class.

### Additional Resources

- Find out about the City of Lethbridge storm water bylaw at <http://www.lethbridge.ca/NR/rdonlyres/867748D-F-2658-49D5-A454-687AE52B0601/12742/bylaw5594.pdf>
- See what Alberta Environment has to say about surface water at <http://environment.alberta.ca/3223.html>
- Find out what is being done to protect and monitor our watershed at [www.oldmanbasin.org](http://www.oldmanbasin.org)

### Extension Activities

- Visit the Oldman River at the outflow where storm water enters the river.
- Participate in the Yellow Fish Road program.
- Create posters about storm water awareness to be displayed in the community.
- Borrow the EnviroScope Watershed model from the City of Lethbridge to demonstrate how surface water pollutants are collected from the landscape and deposited into freshwater systems.

### Local Field Trips/ In-Class Presentations

- University of Lethbridge Water Science Building—Dana Andrei # 403-332-4040
- Lethbridge Waste & Water Treatment Facilities - Duane Guzzi # 403-320-3081
- City of Lethbridge: Watershed model presentation - Andrea Vaxvick # 403-320-4669
- Yellow Fish Road program - Trouts Unlimited # 1-403- 221-8360
- Ducks Unlimited Canada - Wetlands program - Rosemarie Ferjuc # 1-403-476-1877 ext. 116

Helen Schuler Nature Centre  
910—4th Ave. S.  
Lethbridge, AB

Phone: 403-320-3064  
E-mail: [hsccl@lethbridge.ca](mailto:hsccl@lethbridge.ca)

Municipalities often have seasonal programs throughout the year! Check out what's happening at the City of Lethbridge at

[www.lethbridge.ca](http://www.lethbridge.ca)



CITY OF  
*Lethbridge*

### Storm Water Pollution Worksheet

Use the these resources answer the following questions:

- The City of Lethbridge website [www.lethbridge.ca](http://www.lethbridge.ca) (hint: click on City Hall tab > Departments > Environmental Management > Programs and Initiatives)
- The Yellow Fish Road website [www.yellowfishroad.org](http://www.yellowfishroad.org)
- The Yellow Fish Road Program Guide

1. What is storm water?

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2. How does Lethbridge storm water enter the Oldman River?

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Students can use the websites referenced on  
the worksheets or collect library books to  
assist with their research!

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### Storm Water Pollution Worksheet

3. Use the Program guide to help you fill in the following table:

Pollutant found in storm water	Where in your neighbourhood, does this pollutant come from?	Effects on the Oldman River

4. List four ways that you can prevent surface water runoff from entering the storm drains in your own yard?

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5. Why is it important for you to protect the water quality of the Oldman River?

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