

# TEACHING RESOURCES

The following extension activities have been compiled for use in the classroom.

## Section 1: AGRICULTURE – Pre or Post Festival Ideas

### Language

#### GENERAL:

- Write a “Thank You” letter to the Huron Perth Agriculture and Water Festival Committee or a local agricultural association
- Write a letter to your local Ontario Ministry of Agriculture, Food and Rural Affairs Office requesting material (519-482-3333).
- Make a major list of vocabulary words associated with agriculture.
- Research and compare the farms of 100 years ago.
- Brainstorm and map everything you know about farming.
- Write an agricultural cinquain.
- Compare food on a voyage of the 18<sup>th</sup> century with present.
- Invite agricultural speakers into your classroom.
- Write a pattern book in response to “A Snake Is Totally Tail” by Judy Barrett.
- Develop a diary of what you might see and do in one week on a family farm.

#### DAIRY:

- Research – trace the links in milk production from grass through to the table (Reference: The Amazing Milk Book).
- Write about the differences in the life of a dairy farmer of the 1800’s vs. 2000’s.
- Write a pattern book in response to A Calf is Born.
- Research the word for “milk” in other languages.
- Research and compare the different breeds of dairy cows.
- Plan an oral presentation explaining how a cow is milked, how machinery has made dairy farming easier, or how milk and milk products (butter, cheese, ice cream, and yogurt) are processed.

## Section 1: AGRICULTURE – Festival Ideas (continued) –Language

- Research and present on milk uses, types and differences in the different types of milk (1%, 2%, skim, homogenized, table cream, coffee cream, whipping cream).

#### BEEF CATTLE:

- Research the links in beef/ pork production from the farm to the table.
- Research and compare the different breeds of pigs and beef cattle.

- Make booklets to show foods made from beef and pork.
- Collect and study magazine or newspaper articles that deal with the aspects of beef farming/ pork production (e.g. farm market reports in local papers or on-line).
- Play “pig-tionary” with your class using the following terms: piglet, sow, boar, gilt, barrow, farrowing unit, weaned, etc.

#### GRAIN:

- Visit a local grain elevator to see the grains stored. Find out where the grain is sent and for what purpose. Map a story about the journey of the grain.
- Brainstorm as many kinds of cereals as possible. Write letters to the cereal companies for more information.
- Use a computer to create a word search using grain and cereal words.

#### POULTRY AND EGGS:

- Check the yellow pages of the telephone book to see how many “fried chicken” businesses are in your area. Arrange to visit one and learn about the business.
- Research how feathers and down from different types of fowl are used. Arrange a display and present to another class in your school.
- Write some haiku poetry using the names of different kinds of poultry in the first line.

#### FARM SAFETY:

- Have students play Pictionary using different hazards, etc. that could be found on the farm (accident, burns, chain saw, combine, explosion, fire, fall, gas, grease, hazard, helmet, lawn mower, poison, rollover, ditches, saw, tractors, wagon).
- Brainstorm as many kinds of farm hazards as possible. Write letters to the Farm Safety Association for more information.
- Use a computer to create a word search using farming words.

## **Section 1: AGRICULTURE – Festival Ideas (continued) - The Arts**

#### GENERAL:

- Design a collage using magazines, farm catalogues.
- Paint a mural showing different kinds of farming.
- Make a mobile of the food cycle.
- Cut and paste pictures from magazines and arrange them according to food groups.
- Role play Food Chain Links including all roles implicated in food production
- Write and perform a puppet play on farming.
- Make a poster presenting any area of farming.

- Sing a song in 'rounds' to the tune of "Frere Jacques" music. Write lyrics related to the farm theme.

#### DAIRY:

- Develop a collage which shows life on a dairy farm.
- Make a Swiss cheese candle. (Reference: The Amazing Milk Book).
- Design a mural – From Moo to You. (Reference: Dairy Farmers of Ontario).
- Dramatize a day in the life of a dairy farm family.
- Role play the links in milk production from grass through to the table. (Reference: The Amazing Milk Book).
- Design milk carton boats from recycled milk cartons. (Reference: The Amazing Milk Book).

#### RED MEAT:

- Cut and paste pictures from magazines showing the by-products of beef and pork.
- Create a life size picture of a pig, cow, goat, etc including information about its size, weight and food it eats.
- Make a mobile of different breeds of pigs and beef cattle
- Present a puppet play related to a pork or beef farm.
- Develop a drama or puppet play about the difficulties you might experience in trying to raise farm animals in the city.

#### GRAIN:

- Using various grain seeds create a mosaic pattern.
- Paint a picture of grain fields showing the four seasons.
- Pop some popcorn and use it to build models.
- Dramatize a story about the journey of a grain seed from the farm to its final destination in a food product.
- To the tune of a familiar song create your own song about grain farming.

### **Section 1: AGRICULTURE – Festival Ideas (continued) - The Arts**

- Look at how cereal makers advertise. Create your own oral presentation of advertising a cereal.

#### POULTRY AND EGGS:

- Blow out the contents of some eggs and decorate them for Easter.
- Make quill pens from some duck or goose feathers. Use them to print or write a poem.
- Using the shape of an egg as the main body part, create egg people or egg animals.
- Research the connection with eggs and Easter. Dramatize your findings.
- Do the bird dance as part of a physical education activity.

- Prepare a skit to illustrate the many by-products that come from turkey, geese, etc.

#### FARM SAFETY:

- Paint a picture of someone practicing farm safety (e.g. wearing a helmet on an ATV, shutting off a power take off shaft before fixing it, etc.) and have them explain their picture to the rest of the class.
- Create an advertisement telling children how to be safe on the farm.
- Cut and paste pictures of hazardous product symbols from magazines, websites, etc. and label what the symbol means and one product you could find that symbol on.
- Develop a collage which shows the machinery used on a farm.

### **Mathematics**

#### GENERAL:

- Measure mass and volume of different vegetables.
- Survey how many different food groups are in one lunch.
- Do word problems with the four basic operations.

#### DAIRY:

- Draw a graph showing how a 100 hectare dairy farm would be divided up for hay, corn for silage, grain corn and pasture.
- Compare the fat content of different types of milk and cream.

#### BEEF CATTLE:

- Survey and graph students' favourite meats (i.e. roast, hamburger, steak).
- Measure mass and volume of different meats.

### **Section 1: AGRICULTURE – Festival Ideas (continued) – Mathematics**

- Have students visit the grocery store with their parents and bring back information on pricing and packaging of beef/ pork, see if they found a product that had beef/ pork in it (such as soup or pre-packaged product) or try to name some of the cuts of beef/ pork found in the store.

#### GRAIN:

- Using a bar graph, chart the growth of different grains planted (time, size, etc.)
- Measure and record the weight of a cup of different cereals or grains.
- Find pictures of food products made from grain and identify its price.

#### POULTRY AND EGGS:

- Chart and record your observations while chicks are hatched in a classroom incubator.

- Have the children measure and weigh different eggs and record their findings.
- Using a bar graph, record how many students like eggs boiled, fried, poached, etc. Extend this activity to a cooking activity.

## **Science and Technology**

### GENERAL:

- Design and perform an experiment involving seed germination and plant growth.
- Investigate human dependence on plants and animals.
- Identify and describe several machines used in cultivation, harvesting, processing, storing and transporting plant or animal products.
- Design a farm of the 2000's and make a model.
- Design farm machinery and make models.
- Investigate how technology helps the farmer.
- Investigate levers, gears, inclined planes, screws and wedges used in a farm setting.
- Plan a menu including all food groups from Canada's Food Guide. Cook an item from your menu.
- Research the process of cheese making and make curds and whey. Students can sample cheese curds and different kinds of cheeses. Describe the tastes. Try to figure out why the cheeses taste differently.

## **Section 1: AGRICULTURE – Festival Ideas (continued) - Science and Technology**

### DAIRY:

- Map a model of a dairy farm showing location of buildings and organization of fields (pasture, hay, corn for silage, grain corn).
- Design a dairy barn (free stall vs. tie-up style).
- Find out how many different milk products there are and how they are produced.
- Make curds and whey.
- Collect and make recipes that use dairy products.
- Perform science experiments: "Milk Explosions", "Milk Glue", and the "Milk-Spoiler Test". (Reference: The Amazing Milk Book).

### RED MEAT:

- Research the life cycle of the cow, what it needs to live and grow, the work a farmer does to maintain a herd.

### GRAIN:

- Examine how technology has helped improve cultivation and processing of grain crops over the years.

- Make a model of a typical grain elevator site.
- Using various cereals and toothpicks, build a structure.
- Plant a number of different varieties of grains and observe and record your findings (variables) such as light, moisture, etc.
- List a number of occupations related to the grain industry. Explore in depth one of these occupations.
- Compare and contrast different grains such as oats, barley, wheat, corn and beans. Charts could be set up where students fill in information on the physical properties of the grains.
- Choose any grain plant and label its parts.

#### POULTRY AND EGGS:

- Inquire about the process used to grade eggs. Chart the stages of this process. (Reference: Amazing Egg Book).
- Invite a turkey farmer to visit the classroom and talk about the industry.
- How an egg is made inside the body of a female chicken.
- The parts inside of an egg (See The Amazing Egg Book – pg. 46-48).
- Design a model of a farm pond that would attract wild geese and provide a suitable home for ducks and geese.
- Invite a broiler industry farmer to your classroom to explain the operation of his barns. Ask about ventilation, space, heat, etc.

### **Section 1: AGRICULTURE – Festival Ideas (continued) – Science and Technology**

- Invent a package for a raw egg so that it can be dropped from a ladder and not break.
- Use an empty egg carton and hollow egg shells to make egg shell plant pots. Transfer your plants to the garden when large enough. The shells will decompose.
- Some ducks are domestic while others survive in the wild. Compare the food and nesting habits of each.
- On a map of Huron County indicate the broiler farms in your area.

#### FARM SAFETY:

- Invite a farm safety representative to your classroom to explain the working of power take off shafts, combines, lawn mowers, etc.

### **Social Studies**

#### GENERAL:

- Study types of weather that are helpful/ harmful to farmers.

#### DAIRY:

- On a map of Canada and USA, mark the major dairy producing provinces and states. (Reference: The Amazing Milk Book).
- Research methods to encourage environmental awareness on dairy farms, keeping in mind the 3 R's (reduce, reuse, and recycle).

#### RED MEAT:

- Make a diagram of a farm animal. Show the body parts where we get different cuts of meat.
- Design a barn for a farrowing operation vs. fattening pigs.
- Make a chart of meat cuts to show if they are beef or pork (e.g. bacon, hamburger, sausage).
- Pretend you are a farm product being exported to another country. Write about your experience.
- Experiment with red meats to find out what will happen if not stored properly. Discuss the importance of proper storage.

## Section 2: WATER – Pre or Post Festival Ideas

### Introduction

Water is the basis of all life in this world. Without it nothing lives, nothing grows.

Civilization was built on the availability of water – water to grow food, water to drink, water to feed livestock, and water to travel and trade. Water has turned the mill wheels, provided the basis of steam, produced electric power and has become an element for virtually every industrial process.

In Ontario, we enjoy what appears to be a superabundance of water. Nearly 17% of the province's area consists of fresh water lakes and rivers, many forming the province's boundaries. The unending thunder of Niagara Falls has become a dramatic symbol of Ontario's water resources.

We get 58% of our water supply from our lakes and rivers, and 42% from groundwater. We realize we have access to vast quantities of water, but only recently have we come to realize that all this water is not clean and that in some cases that asset has become a liability.

This Guide has been compiled to help prepare classes for the Huron Perth Agriculture and Water Festival and to support continued studies in the classroom. All activities:

- Reflect the beliefs that guide education in our region – accountability, quality, equity, partnerships and a safe environment.
- Are connected to the curriculum in ways that help students achieve the desired expectations (Science & Technology, Social Studies, Mathematics, Physical Education).
- Are designed to be as hands-on and experiential as possible in order to enhance and personalize the learning.

### **The Arts**

- Draw a picture of the water cycle.
- Have the students create posters on the importance of water quality and/ or actions they want to promote that will improve water quality.

### **Mathematics**

- Using the water facts provided, calculate the amount of water you are buying when you purchase a given weight of food items such as tomatoes or hot dogs.
- Price some varieties of bottled water at the local supermarket. If your town is on metered water, find out how much it costs people who live there.

## **Section 2: WATER – Festival Ideas (continued) –Mathematics**

- Compare the costs to other liquids we use in our everyday lives (e.g. pop, juice, gasoline, etc.). Graph the findings. How would your lives change if we had to use bottled water for all our water needs? How much would it cost to take a bath in bottled water?
- Measure how much water is wasted by a leaky tap over a given time period. Calculate the waste per hour, day, month and year. Calculate the waste if everyone in the class or school had a leaky tap. A family in an underdeveloped country uses two litres per day for cooking. How long could they get along with the amount wasted by a leaky tap in a month? Try similar calculations on the amounts that could be saved by water saving devices such as shower head, aerators, toilets, etc.

### **Science and Technology**

- Investigate water's effectiveness as a solvent by adding a small quantity of salt, sugar and cooking oil to different glasses of water. Have the students make observations around how this can be good and bad (e.g. Do they enjoy making Kool Aid, is clear water always clean water suitable for drinking and can pollutants be carried from one place to another by water?)
- Observe what water tastes like. Ask students if the water from their taps (home, at the school, etc.) is good, how they know, who monitors it and if it is treated. Obtain water test bottles from the Health Unit.
- Research and discuss how water can be treated.

- Discuss what water quality might be needed for different uses (e.g. drinking, cooking, bathing, swimming, watering lawns, etc.). Ask, “Do we really need drinking quality water to flush our toilets?”
- Discuss the importance of water quality for farm animals, wildlife, fish, etc.
- Discuss factors that could impact on the quality of our drinking water and water in our lakes and rivers.
- Research methods for home treatment of water (e.g. distillation, reverse osmosis, filters, tablets, etc.) and compare their effectiveness and costs. Find out how people treat their water on remote camping trips.
- Research the term “groundwater”. Use containers filled with gravel and sand to illustrate the concepts of groundwater, aquifers, water table, etc.

### **Social Studies**

- Compare water use and availability today with 100 years ago (e.g. plumbing, hot water, bathing, washing dishes, washing the car, fighting fires [bucket brigade vs. hydrants and fire trucks], bathrooms, etc.).

## **Section 2: WATER – Festival Ideas (continued) –**

### **Social Studies**

- Research what happens to the water that goes down the drain where they live.
- Investigate local concerns about water quality (e.g. are beaches ever closed, are any local wells contaminated, are there limits to eating fish from Lake Huron [See MNR publication], etc.).
- Arrange to visit a local water treatment and/or sewage facility.
- Research how soil erosion impacts on water quality and measures that can be taken to reduce it.
- Research where students get their water from where they live (e.g. lakes, rivers, wells).
- Research what watershed the students live in, the path water leaving their home would take and where it would end up.

#### **NOTE:**

Much of the material used on these and the following pages has been adapted from Environment Canada Publications Let’s Not Take Water for Granted and A Primer on Fresh Water. Both documents and other useful information can be found online at the Environment Canada website (<http://www.ec.gc.ca/water>). Follow the link to the “Teacher’s Corner”.