

# Markham Fair Education Guide 2018

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## ***To the Teacher:***

Your visit to Markham Fair can help students to:

- learn new vocabulary about animals, farming, farm implements and food; develop a respect for living things;
- develop a concern and care for the environment; investigate similarities and differences among living things;
- investigate plant and animal products including fruits and vegetables, grains, and beef and dairy products;
- investigate human dependence on plants and animals;
- develop a positive attitude about agriculture and its importance to the food they eat; and the communities we live in

By visiting Markham Fair, students have an opportunity to:

- investigate, experiment, and discover;
- observe, describe and compare a wide variety of plants and animals common to the immediate environment;
- become more familiar with many different aspects of the agriculture industry;
- learn about the increasing interdependence of urban and rural communities;
- become aware of some of the machines that are used in cultivating, harvesting, processing, storing, or transporting plant and animal products; .become more aware of the various farming methods and practices as they relate to the agriculture industry of Canada;
- increase their awareness of the common scientific and geographical language of agricultural science and the agricultural community;
- meet people from the rural farm community: farmers, children from farms, 4-H young people, agriculture business people;
- become aware of some careers in the agriculture field.

Adapted from Science is Happening Here. A policy Statement for Science in the Primary and Junior Division (1988), Ministry of Education

## ***Pre-Visit Activities***

A combination of activities, such as the following, will help to ensure the visit to the Markham Fair will be a meaningful educational experience for all your students. Students should be warned that there may be strange sounds and smells that are all part of the housing of agricultural animals. These new sensory experiences can become part of the learning experience rather than a detractor.

1. Examine food samples, packaging, recipes, or advertisements to determine ingredients and suggested sources of the food students eat at home (breakfast is a good example). Predict which of these food sources students may see at the fair.
2. Have children decide on the type of clothes to wear based on the predicted weather: follow the radio weather forecasts, read the weather section of the newspaper several days in advance, look at temperature patterns for early October. Remember that many of the activities of the fair are outside.
3. Collect and study magazine or newspaper articles that deal with a particular aspect of agriculture.
4. Examine some farm technology by using farm toys or tools from the farm. A hand-out called "Technology on the Farm" is available from the O.M.A.F. office in Guelph. Your board resource centre may have a farm toy kit.
5. Involve the students in predicting what they might observe at the fair by asking them to make a picture of what the fair may be like.
6. Involve the students in developing a list of questions that they would like to pursue. They can also decide upon strategies for trying to find answers to each question. If students will be asking questions of people at the fair, have them work out an appropriate approach to the farm people.
7. Involve the students in planning the details of the trip including individual or group responsibilities. What data will be collected? How will it be recorded? What guidelines of conduct will be followed during the trip.
8. Have students decide on a route to get from the school to the fair grounds.
9. Using a map of the fair grounds and list of events and activities (see Teacher's Guide on page 8) have the children explore the things they particularly want to see and decide on a sequence or route within the fair grounds.

## ***Day of the visit***

### **Be sure that each student has:**

- proper clothing including a rain coat and proper boots if rain is predicted; remember many activities are outside, or a warm coat if it is cold;
- a button or name tag with the student's name, home school and school phone number;
- knowledge of safety rules and behaviour code;
- instructions to speak with a policeman or anyone with a Fair Committee Ribbon and Name tag if there is an emergency;
- knowledge of the location of the Lost Children area, just inside the Main Gates (East end of the grounds). This is where the students should go to if they become separated from their group.
- a litter-less lunch or as little garbage as possible;
- necessary materials to complete assignments. Do not attempt to have the children carry too much.

### **Be sure that each group leader or parent volunteer has:**

- a set of instructions and times;
- a list of children in their group
- a map of the Fair Grounds
- a description of their role for the trip

Many volunteers give a great deal of their time to present Markham Fair. You will see them around the various displays with some symbol of the Fair. Take time to stop and give them some feedback about the Fair: the things you like, the things that are frustrating, the things you would suggest be changed. You may even like to offer to assist them in some aspect of the Fair by volunteering next year.

### **Admission fee (payable on the bus)**

\$2.00 per person Including teachers and parent volunteers payable at the gate for school groups on Thursday and Friday.

## Washrooms:

- At front of Livestock Barn
- Behind the Livestock Barn: north-west side
- South east corner of the General Exhibits building
- Between Commercial Building East and Commercial Building West
- Portable washrooms inside Main Gate

## Lunch:

Students can eat their lunch in the following areas

- in the livestock area while watching THE AMAZING COW demonstration
- on any of the bleachers during the various shows in the Livestock Barn, Old Mac Donald's Barn, Outdoor Stage, Race Track and Horse Show
- on the picnic tables in front of the General Exhibits building
- on the grass beside the main road directly in front of the entrance
- on the bleachers watching either of the Horse Shows
- in the Special Events Tent, Entertainment Tent or Picnic Shelter

Please have students deposit waste in the garbage containers and recycling bins.

## Food and Drinks:

- Food booths are located throughout the grounds
- Milk is available in the Agrifood Tent

## Hand Washing Stations:

- Located in Old MacDonald's Barn, outside and around the Livestock Building, or around any area where livestock is located.
- Hand Sanitizer stations are located around all animals
- **Remember to wash hands before handling food and after handling animals**

## **Lost and Found:**

- Children should be advised to speak to a policeman or a Markham Fair Committee Member if they are lost.
- Teachers or parents of lost children are to go immediately to the Lost Children's Area inside the Main Gates.
- All found articles are returned to the Fair Office in the south end of the General Exhibits Building.

## **Building Accessibility:**

All of the buildings at Markham Fair are accessible from a paved pathway.

## **Be Careful Around Large Animals:**

Students should be warned to be careful around large animals: cows and horses. These animals are from a farm and may be frightened by loud noises or unfamiliar people. Please ask the owner or the adult in charge before touching any of these large animals.

## ***Getting There Activities***

Activities along the way can enhance the value of your trip by making sure the students observe features of the rural landscape. You might want to establish your route to and from the fair to make sure particular observations are possible.

Try some of the following activities on the bus or in the cars.

1. Have the students predict things they might see as they travel. From their list of predictions they could each choose the ones they feel most confident about and create a "Bingo" card to be completed as they make their observations. (e.g. barn, implement shed, horse, tractor, farm wagon, combine, silo, corn field, bean field, dairy cattle, beef cattle, goats, sheep, fruit trees, hay field, pumpkin patch, vegetable garden, woodlot). The teacher may want to travel the route in advance to identify items of interest.
2. Create a crossword puzzle that is dependent upon observations made during the ride to the fair.
3. Have groups or individuals tally observations along the way. e.g. types of farms, silos, animals, tractors, types of mail boxes, types of barns, rural features other than farms (churches, cemeteries, schools, etc.).
4. Have students draw a picture of something they see on the trip.
5. Have students count sets of farm buildings to see how many farms there are per concession (1.25 miles by historic measurement).
6. Have students identify where the urban community stops and the rural region begins.

## ***Teacher Guide To Markham Fair 2018***

There are many ways a teacher can enhance the learning experience for children at Markham Fair. Children will have opportunities to use several senses as observers as well as practice their interview and recording skills. You should also be able to find ways to challenge student's ability to infer, predict and analyze. It is not necessary for all students to have exactly the same experiences. You could have some experiences common to all while having others that are spread out among the groups. This can enhance the value of sharing sessions back at school because students will then be teaching something new to their peers. Variation can also be achieved by having each group record information in a different way. One group could be working as radio interviewers using a tape recorder as they ask questions and collect farm sounds. Another could be preparing a newspaper report by taking notes and photographs. If possible you could have a television crew with a video camera. With permission you could have a group collecting real materials for use and display in the classroom. What textures or smells are they able to find? Containers such as plastic tubs, pill vials, or film canisters can be helpful in this task. Do not hesitate to ask questions of anyone wearing a Markham Fair Committee Ribbon.

The following description of each feature of the fair can help you plan activities for your students.

1. There is a large map of the fair grounds just inside the East entrance. Orient yourself to the buildings you want to visit. Visit the Welcome Booth near the entrance or the Information Booth for a map and list of events. Walk-around Entertainment will be there to greet the students as they enter.
2. Notice the Heritage Showcase behind the Welcome Booth. What are the men making? What is the product used for? Where would these machines be used? What are the names of the machines being used? What do they do? What kind of clothes are the men who are using these machines wearing? Why? If you had the chance to use one of these machines, which one would you choose?
3. Visit the Livestock Barn and arena: beef cattle (Angus, Charolais, Hereford, Shorthorn, Simmental), dairy cattle (Ayrshire, Holstein, Guernsey, Jersey), sheep (Dorset, Oxfords, Suffolk), goats (Alpine, Nubian, Saanen, Toggenburg, Lamancha), swine. (Not all breeds will be or present throughout the entire fair) What are the products from the animals in this barn? Find out the breed name of two of these animals? Are there any new born animals? What are they called? Does the building smell different? What do the animals lay on? See if you can find out where it comes from? What are the animals eating? Drinking? Do all of the animals at the fair have the same kind of feet? Which animals look friendly? Which animals look dangerous? Do some of the animals have clothes like you? How are the animals kept in their place? What noises do the animals make? Do they talk to each other like you and your friends? Find the names of some of the animals? (look at the card above the animal) Who is working in these barns? Are

- they the farmers? Find out the name of one farm family? Talk to the children working with these animals? Are they from a farm? Do you think you would like to live or work on a farm?
4. Visit Old MacDonald's Barn: cattle, sheep, goats, swine, horses, mules, llama, rabbits, chickens, chick hatching, geese, toy farm implements. Near the entrance there will be a display of plants, grains, and feed. You are welcome to pick up samples to take back to your classroom. There will also be a resource centre where teachers can pick up materials on request. Watch for the sign as you enter Old MacDonald's Barn. What is the largest/smallest animal? Which new born animals do you like the best? See how many different animals there are in the barn? Which is the tallest animal? The heaviest? Why do animals come in different colours? Will the animals let you touch them? Which is the softest? Which animals give you sweaters? Which animals or birds give you something to eat? Which animals are the noisiest when you are there? Which animals do you think can live easiest in the cold? What are the animals sleeping on? Where does it come from? Do all of the animals eat the same things?
  5. See the Centre Ring,
    - 10:00 Sheep Shearing: the story of wool
    - 12:30 THE AMAZING COW: The story of MilkCattle Barn Demonstrations beside Old MacDonald's Barn
    - 2:00 Sheep Shearing: the story of wool
  6. Visit the Poultry and Small Livestock building: poultry, pigeons, doves, ducks. Children are not to put their hands in the cages.
  7. Visit the General Exhibits Building: Children's crafts, special needs handiwork, photography, flowers, 4-H, hay, apples, potatoes, roots and vegetables, and scarecrow displays, the largest pumpkin, the largest watermelon, Jack-O-Lanterns, School Children's Exhibits.

Can you make some of the same things you see in the children's crafts? Which vegetables do you like to eat? Do you have some of the flowers at your home? Which flower does your Mother like? How much do you think the pumpkin weighs? .. a bale of hay? How would you dress a scarecrow? What are they used for?
  8. See the Farm Implement Display: tractors, disc, plow, combine, hay baler, etc. Use the descriptions in the FARM MACHINERY section of this guide to identify the various implements and their parts.

Would you like to drive one of these tractors when you grow up? Find out how much one of these machines would cost? Which one costs the most? Which one is used most often on the farm? Which one looks the most dangerous? Which one do you think would be on every farm? Can you determine the sequence of use on the farm: those used in the spring, summer, fall, or planting, harvesting?

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9. Visit the Special Events, Entertainment, Agri-Food Tent, and Farm tents: Performances from 10AM to 1:30PM in the Special Events tent. The Entertainment Tent has continuous entertainment during the day. Look for the list of events on the sign in front of the tent for times.
  
10. Visit the Horse Shows: - The Show horses are inside the racetrack: do not be afraid to cross the track. There are bleachers for the children to watch the horses perform. On Friday the Junior Horse and Gymkhana show. This will be a fun event which the children will enjoy.  
How can you tell the difference between the breeds of horses? Who drives the horses? How do they steer the horses? What do they call the straps on the horses back? What is the name of the object the riders sit on? How do they steer these horses? How tall would you say the horses are? What do horses have on their feet? How much do you think the horses weigh? How do they bring the horses to the fair? How do they care for the horses?  
Saturday and Sunday in the Infield Show Ring; Show horses (Hunter, Arabian, Western, Morgan, Welsh Pony)
  
11. Visit the Commercial Buildings: food, safety displays, home products, clothing.
  
12. Visit the Homecraft Building: bread, rolls, pies, tarts, cakes, muffins, cookies, jams, jellies, canned fruits, pickles, candy, needlecraft, knitting, quilts, Christmas decorations, wreaths, crafts, art, paintings.  
Which Art and Crafts do you like the best? Does your mother or father make any of these things? Do you think you can make these things? Are there any things we can make in the classroom?
  
13. Of course you can visit the Midway behind the General Exhibits buildings after 1 p.m.  
Remember the children will need money if they are going to enjoy any of the rides or games.
  
14. There will be a variety of entertainment throughout the grounds, please check the list of events for entertainment

### Follow-Up Activities

Follow-up back in the classroom will provide an opportunity for synthesis and the use of further communication skills. Students could share what they have learned by making a display of materials collected at the fair, creating a bulletin board display, making a model, mapping in a sand centre, publishing a book, writing a newspaper article, or creating an advertisement. Follow-up activities should relate to the pre-fair activities. For example, changes in perceptions about agriculture and animals could be reviewed. The link between farm products and student consumers could be solidified by further study at locations such as a supermarket, a pizza shop, or a restaurant.

Some additional follow-up activities:

1. Grow some plants from the seeds you purchase from a local seed supply (untreated wheat, oats, barley, corn or beans, tomato, cucumber, sunflower). Make observations at different stages. Chart growth and development. Compare growth to other plant types.
2. Classify and sort crops, fruits and vegetables into categories based on the parts we eat; e.g. root, stem, fruit, seeds, flowers. Extend classification by sorting into groups those we eat raw; those we eat cooked, those we eat raw or cooked. Sort by colour and shape. Chart and/or graph your classifications.
3. Encourage students to bring foods into the classroom made from plants not grown in Ontario. Try making simple recipes in the classroom using unfamiliar plant products. Research the origins of the plant.
4. Have students list all of the dairy products they eat: e.g. foods made from milk. Have a team of students find out from each student in the class how many litres of milk they drink in one week. The total for the year could then be calculated. Compare the ratios of various kinds of milk to the Ontario statistics.
5. Make a list of all of the cereals students eat for breakfast. Classify according to the grains used to make each one.
6. Compare the foods animals eat with those humans eat. Look for similarities and differences. What are the reasons for these differences?
7. Make up a diorama of a farm scene and research the animals and plants grown on the farm. There are some excellent new books that give an accurate picture of modern agriculture. See the resources section for a source of a bibliography.
8. Collect and dry examples of plants students can find around their neighbourhood. Classify as to whether they are grown for food, for aesthetics, or for medicinal purposes or are they weeds that grow wild.
9. Create a Food Chain. Ask one student to be a milk producer and another - someone who loves ice cream - to be the consumer. Now ask, "who are some of the people who help the farmer get his milk to the consumer?" As each child mentions a role, have them join hands between the producer and the consumer, forming a "food chain". You should be able to get the whole class into this chain.
10. Put up a bird feeder outside your classroom window and observe, name and classify all of the birds that come to feed. If you start this activity you must keep it up for the whole winter because the birds will come to depend on your feed station to survive, particularly when the snow is deep. You may want to solicit

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- funds from parents to purchase the necessary feed. This activity can provide a wonderful observation exercise for children as they watch the feeding activities of the various species.
11. Children can experience many skills and the development of positive attitudes by taking responsibility for the landscaping and flower beds around their school. Food plants such as carrots, peppers, tomatoes, popcorn, cabbages and sunflowers can be planted among the ornamental. The south side of the school is an ideal location.
  12. Prepare and perform skits or songs based on farm animal literature and the experiences of the students at the fair. Students can make the props.
  13. Have students research the production chain from farm producer to consumer of any food or piece of clothing. e.g. loaf of bread, potato, head of lettuce, wool sweater, cotton shirt, box of cereal, orange, steak, hamburger, hot dog, fries, a carton of milk, etc. Students can write about the stages or draw a pictogram. Students can do the research in groups and present the results to the whole class. This is an excellent activity to make use of the variety of jobs of family members who may have careers in the chain e.g. work in a grocery store, drive a truck, work in a processing plant or bakery, etc.
  14. Purchase or borrow some toy farm implements. Students can learn the names and function, research the cost, classify as to time of year each is used, or which ones are used together (e.g. work the soil, harvest). Many boards now have Farm Implement kits in the media centre.
  15. Make a list of all of the consumer products made from one agricultural product. e.g. corn, beef animal, beans, milk.
  16. Have children make a vegetable animal using vegetables from the garden or create cards for a vegetable/fruit concentration game.
  17. Following board guidelines you may wish to hatch some chickens in your classroom.
  18. The Ontario Agricultural Museum at Milton offers spring and fall school educational programs at both the elementary and secondary level. Contact the Museum for a full list of programs.  
Ontario Agricultural Museum P. O. Box 38  
Milton, Ontario L9T 2Y3 (905) 878-8151
  19. Visit a real farm or invite a farmer to visit the classroom. Try to find a farm or farmer that matches your needs. Most modern working farms are specialized and your students should be aware that they will not see the whole range of farming in one visit. For young children who are having their first experience on a farm it

may be appropriate to go to one of the hobby or day-camp farms in the York Region area that have a variety of animals. Although they do not accurately reflect modern agriculture, the range of animals and activities can help children to know more about farm animals and products. When studying a specific product you should try to find a farm with that specialty. Dairy farms are interesting because of the range of activities and the many uses of technology. Fruit and vegetable growers are often eager to accommodate classes in the fall as they harvest crops such as apples or pumpkins. Intermediate or senior classes studying topics such as genetics, energy, or ecology may benefit most from visiting a farm that involves the development of breeding stock or certified seed.

### ***Resource Materials***

A wide range of free Agriculture in the Classroom resource materials for Primary, Junior, Intermediate and Senior Divisions are available from the Ministry of Agriculture and Food. Many of these materials are available in both English and French.

Ontario Agri-Food Education Inc.  
8560 Termaine Rd.,  
PO Box 460,  
Milton, ON L9T4Z1  
<https://agscape.ca/resources>

See additional Links section at the end of this guide.

## ***Farm Vocabulary Children May Experience At the Fair***

- Barrow** - A castrated male pig
- Bay** - A reddish brown horse with a black mane and tail
- Bedding** - Material used to cover the floor of stalls or pens where livestock are kept: usually straw or wood shavings
- Boar** - A male pig
- Bred** - A bred animal is one that is safely pregnant
- Bridle** - The leather harness that fits over a horse's head that is used to control the horse. It may have a bit that fits in the horse's mouth
- Broiler** - A chicken that is raised for meat at 2 to 3 kg--sometimes called a fryer
- Brooder** - A heat source such as a heat lamp used to keep young chickens warm
- Bull** - A male cattle beast. A steer is a castrated male.
- Candling** - The process of shining a bright light through the shell of an egg to check for blood spots and other impurities
- Calf** - The newborn young of a cattle beast
- Capon** - A male chicken whose reproductive organs have been removed. These chickens grow to a large size without developing the usual male characteristics of large head and red skin. They also do not fight with each other and damage the skin and meat.
- Carcass** - Body of an animal that has been killed and dressed for food
- Castrate** - To remove the testes of a male animal
- Chestnut** - A reddish brown horse
- Chick** - A newly hatched chicken
- Cockerel** - A young male chicken (rooster)
- Colt** - A male foal or young horse or donkey
- Colostrum** - The mother's first milk which is rich in antibodies and vitamins and is needed by the young to have a healthy start to life
- Comb** - The fleshy crest on a chicken's head--usually a shade of red
- Cow** - Female cattle beast that has had one or more calves
- Creep** - Feed for lambs that is not accessible to the ewes
- Crop** - A pouch at the base of a chicken's esophagus where food is stored and the digestion process begins
- Crossbred** - An animal that is the result of the crossing of two or more registered breeds
- Crutching or tagging** - The process of trimming off all excess wool and dirty locks on the rear quarters and udder of the ewe
- Cud** - The regurgitated or swallowed food brought up for chewing
- Cull** - To eliminate an animal of low quality from the herd
- Dam** - The female parent of an animal - The sire is the male parent
- Dock** - Trimming of the lamb's tail at 10 days of age
- Drake** - A male duck
- Dry Period** - The period in which a cow is not giving milk, after she has completed her lactation (about 300 days) until she has another calf (approximately 60 days)
- Ewe** - An adult female sheep
- Farrow** - For a sow (female pig) to give birth to a litter of young pigs

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- Feeder** - A calf purchased by a feedlot operator and fed grass and hay, then gradually introduced to a high energy "grain diet to fatten the animal for slaughter.
- Finish** - The degree of fatness of an animal. At finish, the fat should be smoothly laid over the body in the proper degree as to suit the market.
- Filly** - A female foal or new born horse or donkey
- Fleece** - A coat of wool on a sheep. This is the part cut off during shearing
- Foal** - A new born horse or donkey: a male foal is a colt, a female foal is a filly
- Fresh Cow** - A cow that has just given birth to a calf
- Frog** - The elastic horny substance in the middle of the sole of a horse's foot that acts as a buffer to absorb impact and prevent slipping
- Gander** - A male goose
- Germination** - When a seed begins to develop or sprout
- Gelding** - A castrated male horse
- Gestation Period** - The period in which the animal carries her developing young from conception to birth. It varies from species to species. (Cow: 9 months, sheep: 5 months, goat: 151 days, horse: 11 months, pigs: 114 days)
- Gilt** - A young female pig before she has had her first litter
- Gobbler** - A male turkey
- Gosling** - A young goose
- Grading Eggs** - The process of classifying eggs according to their quality, cleanliness and size
- Grain** - Fruit or seeds of domesticated plants: kernels of corn, oats, barley or wheat
- Grit** - Sand or gravel that a chicken eats to help digest its food in its crop
- Harness** - The leather or web straps used to enable a horse to pull a wagon, buggy or implement; a thick collar is part of the harness for heavy work horses.
- Hay** - Sun dried mixture of grasses, clovers and alfalfa
- Heat Period** - The recurrent period of sexual excitement in mature animals, when they will accept a male and are capable of conceiving
- Hen** - An adult female chicken that lays eggs
- Heifer** - A female cattle beast that has not yet given birth to a calf
- Incubator** - An enclosure that keeps eggs at the proper temperature and humidity for hatching
- Insemination** - To manually inject semen into the genital tract of a female animal to achieve conception
- Jack** - A male donkey
- Jenny** - A female donkey
- Lactation** - To secrete milk beginning with the birth of the young
- Lamb** - A young sheep of either sex or the meat of a young sheep
- Layer** - A chicken raised to produce eggs
- Mare** - A adult female horse
- Paddock** - A fenced in area used to confine horses: it usually has wooden fences so horses cannot get caught as in the traditional wire fence
- Pasture** - Land planted with grass used for the grazing livestock
- Polled** - Animals that are born without horns
- Ram** - A male sheep
- Roughage** - A course, bulky food that stimulates the activity of the intestines

- Ruminant** - An animal such as a cattle beast. that has a stomach of four compartments enabling the animal to efficiently digest grasses by bring swallowed food back into the mouth to be chewed and swallowed again. A non-ruminant has only one stomach like a human.
- Silage** - Chopped corn or hay stored in a silo to ferment for use as animal feed
- Sire** - The male parent of an animal- Dam is the female parent
- Sow** - An adult female pig that has already been bred
- Stallion** - An adult male horse
- Steer** - A male cattle beast that has been castrated
- Straw** - Dried stock from grain plants that is used to keep livestock warm and dry. It is left after the total grain plant is combined and the grain separated out.
- Sweetfeed** - A mixture of grains used to feed horses: oats, corn, molasses and supplements
- Teat** - The nipple portion of the udder of an animal through which the milk passes when pressure or suction is applied
- Thinning** - The removal of excess fruit or vegetables to increase the size of the remaining fruit or vegetable
- Udder** - The mammary gland that produces and stores the milk from an animal
- Wean-** To teach a young animal to take food other than by nursing and to remove the young from its mother

## ***Farm Machinery***

### **Tractor:**

The tractor is the most frequently used machine on the farm. It has two large wheels at the rear for power and two smaller ones at the front for steering, with a gasoline or diesel engine in the centre. Tractors come in many sizes depending on the pulling power required. Most tractors have a three point hitch system for hooking onto implements and raising them out of the ground. Most tractors have a power-take-off shaft at the rear for providing power to other implements. Some tractors have front-end loaders for moving manure, dirt, and large round hay bales. Some tractors have a cab which encloses the driver from the rain, cold, wind, and dust. Some modern cabs have air conditioners and stereo radios for the comfort of the operators. Most tractors also have hydraulic pumps that enable the operator to raise and lower machinery from the seat and to raise and lower the front-end loader.

### **Plow:**

The plow is pulled by a tractor to turn the ground over. This covers over any plant material on the ground and brings fresh soil to the surface. The plow consists of a series of moldboards mounted on a heavy drawing bar that is attached to the tractor. The number and width of the furrows i.e. the number of moldboards on the plow, will determine the size of the tractor needed to pull it through the field. Farmers tend to plow in the fall after the crops have been harvested. They like to leave the ground rough so the frost will break down the particles of soil over the winter.

### **Cultivator:**

The cultivator has a series of sharp teeth mounted on spring arms that is pulled over the field to prepare the ground for seeding in the spring. Cultivators come in various widths from 2.8 m to 16 m.

### **Disk Harrow**

A disk harrow consist of a several gangs of round metal disks mounted in a box frame and pulled over the soil to break up the soil for seeding or to till grain stubble after harvest. The frames raise out of the soil for transporting the disk harrows.

## Corn And Grain Planter

Planters consist of a box or boxes mounted over a set of disks to plant seeds in predefined row spacing. A hose runs from the box to each of the disks to carry the seeds. Corn rows are spaced from 750 mm to 1016 mm apart. Corn planters come in 4, 6, 8 or 12 row. Grain rows are spaced 150 mm to 356 mm apart. Grain planters range from 3.18 m to 13.7 m. Fertilizer is usually applied on or beside the seed row. Planters are pulled by a tractor to apply seed and fertilizer in the spring. New minimum tillage or no-till drills are now available to seed directly into last year's crop residue so that spring tilling is not necessary.

## Haybine

Haybines cut the hay (alfalfa, clovers and grasses), then pass it through rollers to crush the stalks and deposit them in a neat windrow for natural drying by the wind and sun. These rows are then gathered up by the hay baler.

## Hay Baler

Balers gather alfalfa, clovers, and grasses that have been cut into windrows in the field and allowed to dry naturally by the sun and wind and compact them into either square bales or round bales with twine wrapped around them. Square bales weigh about 25 kg and round bales weight between 250 kg and 1000 kg. Some square balers have bale throwers at the back of the machine that throw the bales into wagons with sides. Many of these wagons can hold at least 200 bales. Bales are then stored under cover and fed to livestock over the winter months.

## Combine

A combine moves through a field of grain or corn and separates the kernels from the stock. In the case of grain the entire plant is cut close to the ground, taken through the combine where the kernels are separated from the plant stalks. The kernels are stored in a tank on the combine while the plant stalks and chaff are expelled through the back of the combine into windrows on the field. This is called straw. In the case of corn, the combine pulls the cob from the plant, separates the kernels from the central cob, stores the kernels in the tank and expels the waste cob from the back of the machine. The kernels are emptied into a grain wagon for transporting to storage bins near the barn. Combines come in many different sizes from 4.6 m to 9.2 m wide.

## **Grain Wagon**

The grain wagon is a metal box mounted on four wheels, and is usually made of four high metal sides with one side sloping at 45 degrees so that the grain it carries will flow out an opening into a grain auger for elevation into a storage bin.

## **Grain Auger**

The grain auger is a long tube mounted on one set of wheels. Inside the tube is a metal auger that is driven by a pulley or gear at the top. The auger takes in grain at the bottom where it is open and empties it at the top. The grain auger is used to elevate grain from the ground to the top of grain bins at the farm or to load trucks from a grain bin.

## **Manure Spreader**

Manure Spreaders are used to carry animal waste from the barn and spread it on the fields as fertilizer. Spreaders are usually loaded from the storage pile with a tractor and loader and towed with another tractor to the field. The power-take-off from the tractor is used to drive the apron and the beaters at the back of the spreaders so that the manure is spread evenly on the field. The manure is then plowed under or worked into the soil using a disk or cultivator.

## ***Dairy Cattle Breeds***

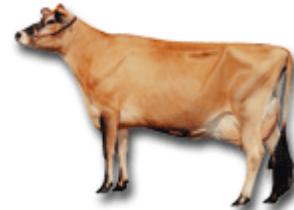
### **Holstein**

- Makes up 93 per cent of the provincial herd.
- Originated in the Netherlands, it is the largest of all dairy breeds.
- Superior milk production averages 8,500 litres per cow per year.
- Average test for fat is 3.7 per cent and 3.2 per cent for protein.
- Black and white with distinct markings, sometimes red and white.



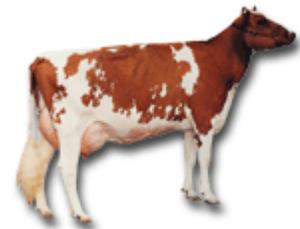
### **Jersey**

- Makes up four per cent of the provincial herd.
- Originated in Island of Jersey, Channel Islands, Britain.
- Averages 6,000 litres per cow per year.
- Average test for fat is 4.8 per cent and 3.8 per cent for protein.
- Fawn or brown, shading from light to dark, some with distinct white markings.



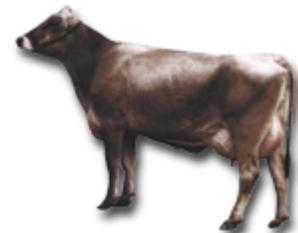
### **Ayrshire**

- Makes up less than two per cent of the provincial herd.
- Originated in Scotland.
- Averages 6,600 litres of milk per cow per year.
- Average test for fat is 3.9 per cent and 3.3 per cent for protein.
- White with dark red or brown with distinct markings.



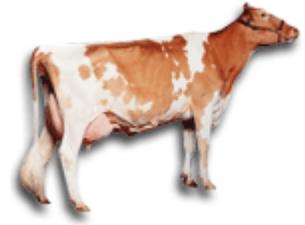
### **Brown Swiss**

- Makes up less than one per cent of provincial herd.
- Originated in Switzerland.
- Averages 7,000 litres of milk per cow per year.
- Average test for fat is 3.9 per cent and 3.5 per cent for protein.
- Dark brown to silver gray in colour.



## Guernsey

- Makes up less than one per cent of provincial herd.
- Originated in Islands of Sark, Alderney and Guernsey, Channel Islands, Britain.
- Averages 6,400 litres of milk per cow per year.
- Average test for fat is 4.3 per cent and 3.5 per cent for protein.
- Bright fawn colour with distinct markings.



## Milking Shorthorn

- Makes up less than one per cent of provincial herd.
- Originated in England.
- Averages 6,100 litres of milk per cow per year.
- Average test for fat is 3.8 per cent and 3.4 per cent for protein.
- White and roan.



## **Questions And Answers**

1. What are the most popular breeds of dairy cows in Ontario?  
Holstein, Guernsey, Jersey, Ayrshire, Brown Swiss
2. What are the most popular breeds of beef cows in Ontario?  
Hereford, Angus, Shorthorn, Limousine, Simmental, Charolais and Main Anjou
3. Why don't beef cows give milk?  
They do, but only enough to feed their own calves. Beef cattle breeders select animals that convert feed into muscle (meat) more efficiently than into milk.
4. The animals all look alike. How does a farmer tell them apart?  
Each animal with more than one colour has a unique pattern of hair. Farmers use drawings or photographs of these unique patterns on the official Registration papers (like a birth certificate) for purebred animals. For day to day identification dairy cattle usually have a numbered tag hanging from a neck chain or leather strap.  
Beef cattle usually have a numbered ear tag or sometime a brand on their hip.  
Pigs will frequently have notches in their ears. Some animals have a tattoo on their ear or lip
5. What do Dairy cattle eat? How is this different from Beef cattle?  
A large 550 kg holstein dairy cow in heavy milk production will eat as much as 25 kg of roughage(corn silage, haylage and/or dry hay), 20 kg of ground or rolled grain, 5 kg high protein concentrate and 80 litres of water (a bathtub full) to produce 35 litres of milk per day.  
A 450 kg beef animal will eat 20 kg of roughage(corn silage, haylage and/or dry hay), 15 kg of rolled grain(barley, oats) and drink 30 litres of water to gain on average 1.5 kg of weight per day
6. How old are beef steers and heifers when they are sold for meat?  
Usually 15 to 20 months.
7. Why do people milk goats?  
Goat milk has very small fat globules that are evenly distributed throughout the milk so it is naturally homogenized. It has a unique flavour that is favoured by many nationalities around the world. Some people find it easier to digest than cows milk. Goats can produce up to three litres of milk per day on much less feed than a cow.
8. Do all cows have horns?  
No, some are born polled, that is, they have no horns. In most cases farmers choose to "dehorn" or remove the horns from the young calves when they are very small. This is done to prevent injury to both the farmer and other cows. The horn

buds can be removed with very little pain, when the calf is small, by using chemicals or a hot iron.

9. When does a cow begin to give milk?

A heifer or young female cow is not able to make milk until she is at least two years old and has given birth to a calf. Dairy cows make more milk than their calves will ever need so humans use the extra milk for food. After a heifer or a cow has a calf or "freshens" she will be milked for 305 days (10 months).

However, approximately 90 days after her calf is born, the cow is bred again to have another calf. She is pregnant for nine months. Two months before her calf is due, the farmer stops milking her so she will stop producing milk. The cow is then "dry". When she has another calf, she again produces milk. A cow may have a production life for as long as ten years. The average Ontario dairy cow produces 9000 litres of milk per year for 6 to 8 years.

10. What does it mean that a cow is a "ruminant"?

All cows have four stomachs. These stomachs allow them to eat grass and hay, which humans cannot completely or easily digest. Cows swallow grass without chewing it completely. It goes into the reticulum

or first stomach where it is stored and broken down into balls or a "cud" and any bits of metal or stone are trapped. When the cow has eaten her fill, she rests and "chews the cud or ruminates", by bringing a ball of cud back into her mouth and chewing it into a pulp. She swallows it again, and it goes into the second stomach or the "rumen" where the food is stored and reduced in size and fermented (digested) by microbes or tiny organism.

From the rumen it goes to the third stomach, or the "omasum" which strains the pulp and sends back any undigested food to the rumen. The rest passes into the fourth stomach or the "abomasum", where digestion is completed. The abomasum is also known as the true stomach because it is like a human stomach.

11. What diseases do cattle get? Who treats sick animals?

Calves are very susceptible to scours and pneumonia; flies in summer can cause "pink eye"; an injured foot can develop into "foot rot"; cattle that have been shipped long distance can get shipping fever; dairy cows get mastitis in their udder; cattle can swallow a piece of wire which punctures the wall of the reticulum often called hardware disease. In addition they can have heart attacks, and strokes. The farmer and the veterinarian work together to try and prevent sickness and treat it when it happens.

12. How do you care for a new born calf?

A good mother cow takes the best care of her calf, but it is necessary for the farmer to provide a clean dry place for the birth. The cow will lick the calf dry and her licking stimulates it to get up and suck from the mother's teats, usually within twenty to thirty minutes. This first milk, called the colostrum, is rich in antibodies and vitamins and is needed by the calf to get a good start in life. The farmer will also dip the end of the umbilical cord in disinfectant to prevent

- infection and keep the udder of the cow clean. Cows normally have just one calf but twins and triplets are possible.
13. How many lambs does a ewe produce and where are they born?  
One or two is most common, three is not unusual, and four or five are possible but rare. Lambs are usually born in some type of shelter with lots of clean straw, particularly when the weather is cold. The farmer will make sure the new born lambs get milk from their mothers soon after birth, make sure the mother cleans the lambs quickly and may help her if she gives birth to more than two lambs. A ewe has two teats to feed her lambs so more than two lambs can create competition.
14. How do you identify good hay for the livestock?  
It is nice and green, is not mouldy or dusty, it smells nice and has plenty of leaves left on the stock.
15. How often do you feed the animals on the farm?  
Cattle and horses are usually fed twice a day, morning and evening, with extra hay to "nibble at" during the day and night. Sheep usually have hay most of the time with grain once a day prior to breeding and lambing. Livestock that graze outside in the summer will eat whenever they are hungry.
16. How do you tell the age of a horse?  
The age of a horse is determined by the wear on its teeth.
17. What is the difference between English and Western riding?  
There are differences in the kind of equipment you use as well as the style of riding. Western is usually associated with ranches, cattle, roping and cowboys. English is usually associated with jumping, and hunting.
18. Why do pigs like to roll in the mud?  
They do not have sweat glands so they roll in the mud to keep cool?
19. What colours can pigs be?  
Their skin can be black, red or white depending on the breed. Pigs have hair, not wool, and can get sunburned if they do not have shade.
20. How many piglets are born to one sow?  
A sow (female pig) will have between eight and fourteen pigs at one birth. The piglets are usually given protection in another part of the pen under a heat bulb so that the mother will not lie on them.
21. What plants and grains are normally fed to livestock?  
Alfalfa, timothy: as dried hay or stored in the silo, com: chopped up and stored in a silo, barley, oats, corn, soybeans: ground and mixed with high protein concentrates usually carefully formulated to get a proper balanced diet for

maximum growth or milk production.

Animals may also require some minerals and vitamins depending on the quality of the plants and grain

22. What is a market garden?

A farm where vegetables are grown to be sold fresh to the consumer, either at a roadside stand, pick-your-own, a farmers' market or at a nearby grocery store.

23. Why would a farmer decide to grow vegetables rather than grain or cattle?

Some areas of the province have the right type of soil and the right climate to produce vegetables profitably. They are also close enough to a large population of consumers.

24. What vegetables are grown in the greater Toronto area?

Many, many variety of vegetables are grown close to Toronto, including carrots, potatoes, peas, tomatoes, beans, onions, cabbage, cauliflower, peppers, zucchini, pumpkin, squash, cucumbers, beets, corn. There are also local pick-your-own fruits such as strawberries, raspberries, and apples.

25. How big are farms in the Markham area?

Farms vary in size depending on the type. Historical farms were 100, 150 or 200 acres. Each rural block is 2 kilometres square and contain 1000 acres broken up into 200 acre lots, concession to concession. Thus with a farm on each end of the concession lot (100 acres each) there would be 5 farms on each side of the concession road. Parts of farms were sold to each other, usually in blocks of 50 acres. Some farms became smaller as land was sold to build houses. Some farmers now rent vacant land so they can grow more crops. Some farmers in York Region now "work" over 1000 acres.

## ***Did You Know***

1. In one year Canadian farmers produce approximately \$20 billion worth of food. One in five workers in Ontario is involved in the field-to-table agri-food industry.
2. In 1950 it took thirteen weeks to produce a 2 kg chicken. Today with modern farm practices it takes only six weeks.
3. In Ontario 5000 dairy farms with 372,000 dairy cows produced 2,563,756,000 litres of milk in 2004. Some of this was sold as (Annual production (in thousand kilograms) by Ontario's dairy processors)  
Butter (salted & unsalted) = 26,880  
Cheddar Cheese = 40,814  
Other Cheese = 67,828  
Ice Cream = 193,218  
Yogurt = 57,275  
Skim Milk Powder = 31,204
4. In one day, an average dairy cow eats:
  - 4.5 kg of hay
  - 9.0 kg of hay/age
  - 9.0 kg of corn silage
  - 10.0 kg of dairy ration
  - 57 g of minerals and salts
  - 80 to 160 litres of water
5. The typical dairy cow will produce 27 litres of milk each day, from two daily milkings. Ideally, a heifer has her first calf at two years of age and begins what is called a "lactation" or milk cycle. Each lactation lasts about 10 months, then the cow stops milk production during a two-month "dry" period. During this time, she rests and prepares for the next milk cycle. At the end of the "dry" period, the cow will give birth and begin another 10-month lactation.
6. Cows spend as much as 8 hours per day chewing their cud or 'ruminating'.
7. One Canadian farm family today produces enough food to feed 120 people. Only a hundred years ago, each farm could only feed 4.
8. About 50% of Canada's production is exported. Fifty percent of this export is wheat.
9. There are 59,728 farms in Ontario today. There were 149,920 in 1957. The average farm size in Ontario is 73 hectares (180 acres). Less than 1 % of Ontario's land is classified as Class 1 with top productivity. York Region has 1,020 farms (2001 Census Farms by County)
10. The average Canadian family spends 17% of its income on food. This includes both groceries and eating out.
11. One bushel of hard red spring wheat, the type grown in Western Canada, produces about sixty seven 500 gm loaves of bread.
12. The farmer receives about; \$1.94 for a 4 litre bag of whole milk; \$1.05 per dozen for Grade A eggs; and 6 cents for the grain in a 500 gm box of cereal or for the wheat in a 500 gm loaf of bread.

## ***Gender on the Farm***

<b>Animals</b>	<b>Male/neuter</b>	<b>Female</b>	<b>Young</b>	<b>Group</b>
<b>Cattle</b>	bull/steer	heifer/cow	calf	herd
<b>donkey</b>	jack	jenny	foal	pace
<b>horse</b>	stallion/gelding	filly/mare foal	colt/filly	herd
<b>goat</b>	buck/billy	doe/nanny	kid	herd
<b>llama</b>	bull	cow	calf	herd
<b>mule</b>	jack	jenny	colt	herd
<b>rabbit</b>	buck	doe	kit	warren
<b>sheep</b>	ram	ewe	lamb	flock
<b>swine</b>	boar/barrow	gilt/sow	piglet	drove
<b>chicken</b>	rooster/capon	pullet/hen	chick	flock
<b>duck</b>	drake	hen	duckling	flock
<b>goose</b>	gander	goose	gosling	gaggle
<b>turkey</b>	gobbler	hen	poult	flock

## ***Garden Products Grown In Ontario***

Here is a sample of Ontario grown fruit and vegetable garden products. Underline those you have tried at least once. Put a check beside those you have never tried. Add other products to the list if you know they are grown in Ontario. Draw a garden with some of these products.

blueberries	beans
herbs	raspberries
asparagus	cucumbers
peas	carrots
potatoes	peppers
sweet corn	squash
kale	apples
cabbage	mushrooms
wild rice	broccoli
turnips	rhubarb
grapes	snapbeans
pumpkins	pears
strawberries	peaches
melons	plums
onions	cherries
tomatoes	apricots
cauliflower	radishes
beets	celery

### ***Animal Sayings***

Here are some common Canadian sayings that involve an animal's name. Underline those you have heard before. Add to the list some expressions your parents might use at home.

Bats in the belfry

Hungry as a hippo

Swims like a fish

Bald as an eagle

Lame duck

Where's the beef?

Chicken

Wise as an owl

Looks like a pig sty

Slow as a turtle

Watch like a hawk

Raining cats and dogs

Sly as a fox

Bug off

Stubborn as a mule

Hold your horses

Strong as an ox

Eagle Eye

Eat like a pig

Pig out

Scaredy cat

Duck soup

Bull in a china shop

As the crow flies

Memory like an elephant

## ***"What Kind of Cow is That?"***

	Holstein	Jersey	Ayrshire	Milking Shorthorn	Brown Swiss	Guernsey
Description (Size & Colour)	largest breed black & white or red & white	smallest breed shades of fawn/brown	large size red & white	medium size red & white, often roan	large breed silvery brown	medium size fawn & white
Ontario Dairy Herd	92%	7%	<1%	<1%	<1%	<1%
Origin	The Netherlands	Jersey Island	Scotland	England	Switzerland	Island of Guernsey
Average Annual Milk Production	9,500litres	6,200 litres	6,800 litres	7,000 litres	7,900litres	6,600 litres
Average Milk Components (Fat, Protein)	3.7% fat 3.2% protein	4.9% fat 3.8% protein	3.9% fat 3.3% protein	3.7% fat 3.3% protein	4.0% fat 3.5% protein	4.5% fat 3.4% protein
Average Weight at 2 Years Old	575 kg or 1265 pounds	390 kg or 858 pounds	500 kg or 1100 pounds	500 kg or 1100 pounds	575 kg or 1265 pounds	500 kg or 1100 pounds

### **Links**

Ayrshire Canada [www.ayrshire-canada.com](http://www.ayrshire-canada.com)  
Canadian Brown Swiss Association [www.rkde.com/browncow](http://www.rkde.com/browncow)  
Canadian Guernsey Association [www.guernseycanada.ca](http://www.guernseycanada.ca)  
Canadian Milking Shorthorn Society [www.cmss.on.ca](http://www.cmss.on.ca)  
Holstein Canada [www.holstein.ca](http://www.holstein.ca)  
Jersey Canada [www.jerseycanada.com](http://www.jerseycanada.com)  
Dairy Farmers of Ontario [www.milk.org](http://www.milk.org)  
Dairy Farmers of Canada [www.dairygoodness.ca](http://www.dairygoodness.ca)  
Moo Milk Web site [www.moomilk.com](http://www.moomilk.com)  
Agriculture in the Classroom Ontario <https://agscape.ca/>  
Ontario Farm Animal Council [www.ofac.org](http://www.ofac.org)  
Agriculture & Agri-Food Canada [www.agr.gc.ca](http://www.agr.gc.ca)  
Ontario Ministry of Agriculture, Food and Rural Affairs [www.omafra.gov.on.ca](http://www.omafra.gov.on.ca)  
Teach Nutrition [www.teachnutrition.org](http://www.teachnutrition.org)  
Dietitians of Canada [www.dietitians.ca](http://www.dietitians.ca)  
Ontario Cattleman's Association [www.cattle.guelph.on.ca](http://www.cattle.guelph.on.ca)  
Ontario Egg Producers Marketing Board [www.eggs.ca](http://www.eggs.ca)  
Foodland Ontario [www.foodland.gov.on.ca](http://www.foodland.gov.on.ca)  
Ontario Sheep Marketing Agency [www.ontariosheep.org](http://www.ontariosheep.org)  
The Christmas Tree Growers' Association of Ontario Inc. [www.christmastrees.on.ca](http://www.christmastrees.on.ca)  
Ontario Corn Producers [www.ontariocorn.org](http://www.ontariocorn.org)  
Ontario Wheat Producers [www.ontariowheatboard.com](http://www.ontariowheatboard.com)  
Ontario Pork Producers [www.ontariopork.on.ca](http://www.ontariopork.on.ca)  
Croplife Canada [www.croplife.ca](http://www.croplife.ca)  
Food Safety Network [www.foodsafetynetwork.ca](http://www.foodsafetynetwork.ca)  
Council for Biotechnology Information [www.whybiotech.com](http://www.whybiotech.com)  
Farm Issues [www.farmissues.com](http://www.farmissues.com)  
Canada's Agri-Food Internet Directory [www.farms.com/canada](http://www.farms.com/canada)  
Dairy Science and Technology <http://www.foodsci.uoguelph.ca/dairyedu/>  
Career Growth [www.agriscience.ca](http://www.agriscience.ca)