

About This Resource

This Teacher Guide was designed with the support of and in collaboration with Meat and Poultry Ontario.

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AN OVERVIEW OF MEAT PROCESSING



ALL ABOUT MEAT PROCESSING

INTRODUCTION

Meat has been part of a healthy diet for thousands of years. Industry has expanded upon consumer needs to provide healthy nutritious choices that reflect religious, cultural, diet and nutrition-related and/or personal preferences. However, before it can be consumed, there are many steps and processes put in place to ensure people are eating the safest and highest quality of product. This Teacher's Guide explores the history of the meat processing industry, the different Canadian meats that are processed, safety and handling, and the people who are involved in the food supply chain that brings the different products from farm to your plate.

HISTORY OF MEAT PROCESSING

Before industrialization, the processing of meat was commonly done by skilled workers known as butchers. While it is unknown when meat processing through butchery started, there is archaeological evidence dating back to as early as 400,000 years ago in Kent, England. In 2003, archaeologists found the remains of an elephant with various cutting tools surrounding it demonstrating that our ancestors participated in the practice of meat preparation¹.

FIRST NATIONS OF CANADA

All First Nations across the country hunted and gathered plants for both food and medicinal purposes. The actual percentage of meat, fish and plants in any First Nations person's diet depended on what was available in the local environment.

The Woodland First Nations (and all First Nations in the northern regions) hunted game animals with spears and bows and arrows. These First Nations also used traps and snares—a type of noose that caught the animal by the neck or leg. Northern hunters, such as the Gwich'in, built elaborate routing fences with stakes and brush. The Gwich'in used these fences to stampede animals into the area where snares had been set to trap them. To provide for times of hardship, the people dried large stores of meat, fish, and berries during the summer. During the winter, to keep frozen meat safe from animals such as the wolverine, some First Nations of the Mackenzie and Yukon River Basins stored their food high in a tree

with its trunk peeled of bark.

Camp scene with drying buffalo meat. July 1862
Source: https://recherche-collection-search.baclac.qc.ca/eng/Home/Search?q=first+nations+trapping&DataSource=Images &num=50&start=50

Because the buffalo was the main object of their hunt, Plains First Nations had a hunting culture that was highly developed over thousands of years. Communal hunts took place in June, July, and August when the buffalo were fat, their meat prime and their hides easily dressed. A single buffalo provided a lot of meat, with bulls averaging about 700 kilograms. Eaten fresh, the meat was roasted on a spit or boiled in a skin bag with hot stones, a process that produced a rich, nutritious soup. Just as common was the dried buffalo meat known as jerky, which could be stored for a long time in rawhide bags. Women also prepared high-protein

pemmican—dried meat pounded into a powder, which was then mixed with hot, melted buffalo fat and berries. A hunter could easily carry this valuable food stuff in a small leather bag².

GROWTH OF BUTCHERY IN EUROPE

Throughout recorded history, the role of butchery has grown and changed to serve the societies of each time period. As far back as the 2nd Century, ancient Roman relief artwork depicts butcher shops where the butcher used tools such as a meat cleaver, hooks for hanging meat and tables for dressing the meat. As populations grew, the skill and practice became more evident as an official trade and position going into the Middle Ages England (500 to 1400 Common Era). There is evidence of butchery guilds (*guild*: an organization of individuals of the same craft who work together for a mutual goal or purpose) dating back to as early as the late 900's common era³.

In the mid-14th Century, the role of the butcher became politically important, especially in Mediterranean regions, largely due to the reduction in cereal crops due to the lingering impact of the bubonic plague (black death). Farmland was converted from cereal crops into pasture, leading to more meat on the average citizen's table. With the establishment of guilds across Europe in the 15th and 16th centuries, new standards for meat handling and processing were established. Apprenticeship programs were developed to ensure important skills were passed on as the art of butchery became a cornerstone of society⁴.

INTRODUCTION OF BUTCHERY TO CANADA

Butchery arrived in North America in the late 16th and early 17th Century as early settlers slowly began to introduce various breeds of domestic livestock and settle the "new" land. In Canada, during the early French Regime, butchers were not common because of the mere lack of established herds, but by the early 18th Century imported livestock such as oxen, sheep, pigs, and chickens had time to breed and establish. This led to settlers to set up their own personal livestock herds. Once cattle were introduced, they were used both as work animals and for meat because they were a more affordable option than draft animals⁵.

Meat processing has always been a highly regulated industry in Canada. As early as the 18th Century, the Superior Council of New France enforced regulations that controlled the sale of meat throughout the seasons and required butchers to seek permission prior to the slaughter of an animal. Butcher shops were inspected regularly, and both the animal and its meat once slaughtered were checked for health and safety.

By the 19th Century, Lower Canada regulated the processing and packing of beef and pork, controlling portion and quality of meat cuts as well as how the meat was stored and preserved. The 19th Century also brought with it the introduction to meat processing for export to other markets. As production increased, butchers were able to sell fresh meat to locals as well as packed, cured meats to overseas markets. Depending on the season the options for increasing production continued to increase. The industrialization of the meat processing industry in the American Midwest in the late 19th and early 20th Centuries strongly influenced the Canadian industry. As demand increased, smaller scale butchers would be absorbed into larger businesses allowing for Canada to have the focused labour markets needed to provide products to international countries. Some of Canada's largest processing facilities began during this time including Fearmans Pork Inc. William Davies (known today as Canada Packers), Burns Food (later to be



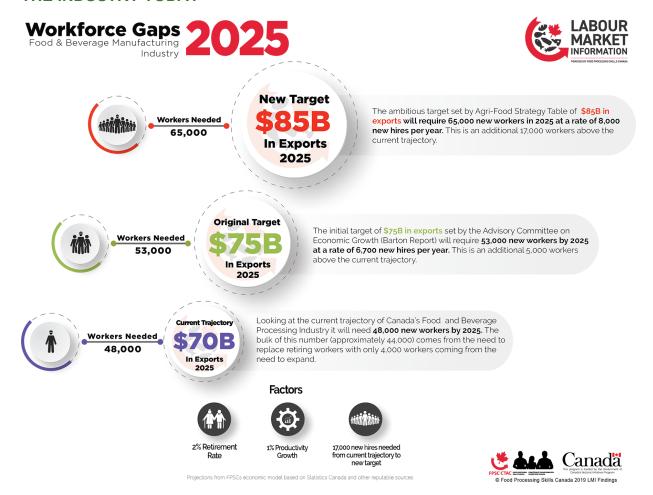
A view of the butcher shop owned and operated at Tecumseh, Ontario by Henri Bolleyn. He is seen here with his wife, son Emile and two Canadian employees Mr. Warren and Mr. Anderson [1953-1960] Source: https://recherche-collection-search.bac-

lac.qc.ca/eng/Home/Search?q=butcher&start=0&num=50&DataSource=Images

bought by Maple Leaf Food). Despite practices in place, there was no formal law or system that ensure food safety. Resulting from concerns around food safety and handling being raised in the United States

as well as internationally, the federal government of Canada passed the Meat and Canned Foods Act in 1907. This act established a regulatory system where all animals must be inspected by a federal officer prior to and post slaughter, describe the required sanitary conditions, as well as gave authority to federal officers to stop operations if requirements were not met. John G. Rutherford, a veterinary director general and later livestock commissioner for Canada, was instrumental in drafting the act⁶. Canada's early regulatory systems began the movement towards the country being known globally for having one of the safest food systems⁷.

THE INDUSTRY TODAY



FPSC Labour Market Information
Source: https://fpsc-ctac.com/canadian-stats/

Ontario's meat and poultry sector is one of the largest manufacturing employers in Ontario, employing 24% of Ontario's food and beverage processing industry and generating \$10 billion of the province's \$49 billion food and beverage processing industry revenue⁸. Across Canada, the meat processing industry contributes \$6.5 billion to Canada's GDP and employs nearly 60,000 people. ⁹ In addition to its contributions to Canada's economy, the meat processing industry exports products worth \$7.6 billion a year worldwide.

The meat processing industry in Ontario is comprised of approximately 700 businesses, primarily small and medium sized companies, operating in rural and urban locations across the province. They include provincially and federally licensed meat processing operations and abattoirs servicing thousands of wholesale and retail businesses in Ontario alone. The industry employs approximately 20,000 people in

Ontario and offers a multitude of jobs within each facility ranging from managerial level positions, highly skilled trades, through to general labour.

There are two different levels of meat processing: primary and secondary. Primary meat processing involves the slaughtering of various animal species such as cattle, pigs, sheep, chicken, turkey, etc. to obtain meat that is meant to be sold, cut and packaged. Secondary meat processing includes processing meat into various products such as sausage or deli meats, seasoned or marinated (ready to cook) products, portion ready cuts etc. that are packaged for sale. Every step of the way, in both primary and secondary meat processing, the product is inspected at various checkpoints for quality and safety ¹⁰.

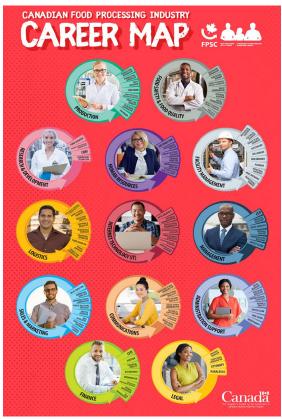
Despite its contributions to Ontario and Canada's economy, the sector does experience various challenges when it comes to finding skilled labour. In addition, there is much for consumers to learn about when it comes to the complexity of the sector and the work that goes into ensuring Canadians have safe food to eat.

Conestoga Meats - Our Story: https://www.youtube.com/watch?v=e_PR5hAiuDI

Schinkel's Legacy Family Story: https://www.youtube.com/watch?v=8-H uk6KG0U

LABOUR

Canada's meat processing industry contains a variety of careers that requires a wide diversity of skill sets. Due to the misconception of the meat processing industry being solely related to butchery as well as being laborious, there is a lack of understanding on the breadth of career opportunities available in areas such as research and development, human resources, food safety, finance in addition to production as well as much more. With the increasing worldwide population and growing demand for Canadian food products, the meat and poultry sector will need to hire more skilled workers. Currently, the sector predicts that over the course of the next 12 years it will need to hire an additional 25,000 skilled labourers with employers already sharing challenges in filling positions to date¹¹. These challenges are being experienced from small business of 10 employees or fewer to large business with 200 or more employees at every part of the processing process whether it be primary or secondary meat processing. Despite the challenges to hire, the sector is focused on ensuring those who work there have the ability for skill and career advancement, in addition to, the value of every occupation within the sector.



Food Processing Career Map

WOMEN IN THE INDUSTRY

Historically, the butchery trade was seen as a male role with the meat industry today still being predominately filled by males. Despite this, it is important to highlight the contributions women have made and could make in the sector. In the late 19th century, women in France played an important role in slaughtering small animals such as poultry and fish, developing relationships with customers, responsible for sales and purchases, dealt with the financials of the store and much more¹². Women, therefore, played an important role in the entrepreneurial success of early butchery businesses and processing

facilities. A picture of Mrs. Marguerite Mirka from mid 1900's Quebec is example of how women have shaped the meat processing industry through the ownership of her own butcher shop.

King Cole Ducks, Ontario's largest duck producer is a great example of a female-led business. It is Canada's third largest, producing 2.5 million a year that has remained true to time-honoured farming practices for over 65 years. Their farm controls the entire production process – from their breeding program through hatching and raising the ducks, to processing, cooking, and delivering to markets across the world.

Learn the King Cole Ducks Story:

https://www.youtube.com/watch?v=CiAisOuMzwE

Despite the opportunities for women, to this day, two-thirds of the workforce is predominantly male. To rectify this challenge and expand on the number of skills labours



Mrs. Marguerite Mirka, owner of a butcher shop in St-Jean, Quebec serving a customer at the deli counter.

Source: https://recherche-collection-search.bac-lac.gc.ca/fra/accueil/notice?app=FonAndCol&ldNumber=4365622

available, the meat and poultry sector, government and post-secondary institutions are making investments in awareness around the sector, positions available, policies around childcare, school holiday and parental leave and working to change overall perception of the industry.

Chicken Farmers of Ontario – Women in Leadership Industry Tour:

https://www.youtube.com/watch?v=GQVo-9PbXa8

Women in Meat Course at Mohawk College: <a href="https://www.mohawkcollege.ca/programs/get-prepared-for-college/city-school-by-mohawk/city-school-courses/women-meat#:~:text=Free%20Credit%20Course,through%20networking%2C%20education%20and%20mentorship

NEWCOMERS AND TEMPORARY INTERNATIONAL WORKERS

Newcomers and temporary international workers play an important role in the meat processing industry with newcomers making up 10% of workers with temporary international workers filling an additional 3% of positions. A few challenges exist in increasing employment of newcomers and temporary international workers with one being government restrictions for bringing temporary international workers to Canada to work on a short-term/seasonal basis and another consideration being the willingness, particularly of new Canadians, to live and work in rural and remote communities.

INDIGENOUS

First Nations, Inuit and Métis peoples have been historically underrepresented in the meat processing sector, demonstrating a need for more collaborative education and communication between their communities and the sector. Through programs such as Agriculture and Agri-Food Canada's Indigenous Agriculture and Food Systems Initiative, the Government of Canada is working with Indigenous communities and various agriculture sectors to reduce barriers for underrepresented groups in order for them to succeed in agriculture and food-related endeavours.

Agriculture and Agri-Food Canada's Indigenous Agriculture and Food Systems Initiative: https://agriculture.canada.ca/en/agricultural-programs-and-services/indigenous-agriculture-and-food-systems-initiative

YOUTH

Recruiting youth to work in the meat processing sector is becoming increasingly difficult. There is a general lack of knowledge of where food comes from, how the food system functions, as well as a belief that careers in the industry are manual and laborious. It is apparent that there is much work that needs to be done to increase interest in pursuing a career in the meat and poultry sector. Ontario's landscape is no exception. On this map you will see a large cluster of meat processing facilities around the Greater Toronto Area:

https://www.arcgis.com/apps/webappviewer/index.html?id=94b2995f891e4fd7be5fc34d4ef1784d

Building a stronger awareness of the rural and urban opportunities in the meat processing sector at the education level will provide Canadian youth the opportunity to better explore the diverse options available to them. In addition, the sector itself is continuously innovating and illustrating its technological advancements to make the industry more appealing to a young tech savvy generation. Organizations like AgScape, CareersNow, TasteYourFuture and FoodGrads help to highlight opportunities in agriculture and food processing as well as give youth hands-on learning experiences that connect them to sector experts while they unpack big questions and learn about all aspects of the food system.

AgScape - Learn About Careers in Agriculture: https://www.youtube.com/c/AgScape/playlists

CareersNOW: For Employers & Job Seekers: https://careersnow.ca/

FoodGrads: https://foodgrads.com/

Taste YourFuture: Career Profiles: https://tasteyourfuture.ca/industry-job-profiles/

Ontario Colleges and Universities also offer a wide variety of career opportunities in the meat processing industry:

College & University Programs: https://foodgrads.com/college-university-partners/

Meet Troy – Professional Butchery Techniques at Fanshawe College:

https://www.youtube.com/watch?v=p3osp1wPekE

Seaway Valley Meat Cutting Institute: https://svmeatcutting.com/

MEAT & POULTRY PROCESSING IN ONTARIO

In the following sections, we will review the landscape of the meat & poultry processing industry starting from the controls that are established at the government level, those who are involved at the industry level as well as the role of the consumer.

Canada's world-class food safety system is a shared-responsibility system that depends on the participation, engagements, and voices of each of the stakeholders. To be more specific on who are stakeholders are, we will discuss:

- 1. Government (Federal, Provincial/Territorial, Municipal)
- 2. Industry (livestock producers, primary and secondary processors, distributors, food service establishments and retailers)
- 3. Consumers

Each group of stakeholders has specific responsibilities when it comes to food safety and proper food handling. 13

PROCESSING IN ONTARIO

There are many factors that are in place when it comes to animal health & welfare and overall food safety practices in meat and poultry processing. These factors can vary at the different levels whether it be for



Source: Meat and Poultry Ontario Gallery

local distribution, provincial distribution, or national/international distribution, however, everyone who plays a part in bringing safe food to Canadians are responsible in playing a role in ensuring regulations are met and followed.

Animals grown on Ontario farms must be slaughtered and processed in either federally or provincially-inspected plants – with the only exception being meat that is produced for the farming family's own consumption. Meat that will be sold *only* within the province can be processed at a provincial plant but if the meat is bound for export across provincial borders, it must be processed in

a federally inspected plant. Provincial plants are allowed to offer "custom" services (they may offer killing, cutting, wrapping and/or smoking/curing of the animal according to the farmer's specifications). Federal plants cannot return animals to those who raised them. The meat is distributed nation-wide and sold through grocery stores and restaurants.

PROVINCIAL PROCESSING

With over 480 provincially licensed facilities, Ontario's slaughter plants serve local livestock producers and enable commercial operations to sell within Ontario's borders only. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) regulates provincially licensed meat plants under the Food Safety and Quality Act, 2001 and O.Reg 31/05 (Meat). There are two kinds of meat processing plants in Ontario that must be provincially licensed to operate in the province: slaughter plants (abattoirs) and freestanding meat plants (FSMPs or further processing facilities). All abattoirs that are not federally licensed need to be provincially licensed under the Food Safety and Quality Act, 2001.

SLAUGHTER PLANTS

These facilities conduct food animal slaughter activities and may also conduct further processing activities. In slaughter plants, OMAFRA meat hygiene officers conduct inspections and must be on-site anytime slaughter activities are conducted. Inspectors verify pre-operational conditions of the facility every day slaughter occurs and inspect each animal before slaughter and each carcass afterwards.

FREESTANDING MEAT PLANTS

These facilities do not slaughter food animals. They conduct further processing activities and are categorized differently depending on the kinds of processing they offer. Category one FSMPs offer lower-risk activities such as cutting, slicing, boning, marinating, and selling products wholesale. Category two FSMPs offer higher-risk activities such as canning, curing, smoking, and processing meat into ready-to-eat products.

MEAT PLANT AUDITS

Provincially licensed abattoirs and freestanding meat plants are audited to ensure they are adhering to food safety protocols as outlined in the Meat Regulation. These compliance verification audits provide a point-in-time snapshot of the plants food safety performance and offer areas for improvement and correction if necessary.

Ministry veterinarians conduct the compliance verification audit in abattoirs and third-party food safety auditors are selected, through a competitive procurement process, to conduct the audits in

FSMPs as well as in the processing portion of the slaughter plants. Most audits happen on an annual basis.

FEDERAL PROCESSING

The 230 federally inspected meat processing facilities (slaughter plants and freestanding meat plants) in Ontario do not offer direct-return services – they cannot return a particular animal to those who raised them. Instead, the meat is distributed nation-wide and sold through grocery stores, restaurants, etc. Meat processed in federally licensed meat processing facilities are also able to export product across provincial lines, but also elsewhere in the world. Federal meat processing facilities tend to be larger in size and are inspected by the Canadian Food Inspection Agency (CFIA).

Federal inspectors are affiliated with each plant and inspect arriving animals and carcasses for any signs of injury or illness. Traceability programs allow inspectors to trace any concerns back to the farm, helping to ensure the wellbeing of animals and safety of our food supply.

HALAL

In Guelph, Ontario, Cargill Proteins owns and operates the Dunlop facility- a large scale Halal facility in Canada that operates 100% Halal quality beef. What is Halal? Halal food is prepared based on a set of Islamic dietary laws and regulations. When it comes to Halal meats, there are steps involved in the treatment of the animal, reciting of blessings during the slaughter process, and being careful to ensure the animal experiences the least amount of suffering.

Buying Halal Meat in Canada: https://www.youtube.com/watch?v=uHgmWAhdT9A

Cargill Proteins: https://www.cargill.ca/en/meat-processing

REGULATIONS: GOVERNMENT

Food safety requires every part of the food chain to take responsibility for its share in the way food is produced, delivered, and consumed. Consumers are very aware and interested in this and are, more than ever, calling for their governments to take greater control of food safety and consumer protection.

The government's role is to set the regulatory framework in which a food safety system can function well. Make and enforce food laws to protect consumers. Today, regulatory systems are being based on sound science and an understanding of the importance of managing hazards at every level.

Food businesses are made stronger through effective food regulation and inspection systems which help them realize their business potential and access new markets.

The federal government is responsible for the main food law in Canada, the *Food and Drugs Act (F 27) (FDA)* and the Food and Drugs Regulations C.R.C., c 870. This statute is the foundation of food safety in Canada. From a food safety viewpoint, the purpose of the *FDA* is to establish standards for the safety of all foods sold in Canada. Responsibility for this Act is divided between Health Canada and the Canadian Food Inspection Agency (CFIA). Health Canada is responsible for setting the standards and overseeing their enforcement. The Canadian Food Inspection Agency is responsible for the enforcement of the Act and regulations.

The Safe Food for Canadians Act and Regulations (SFCA and SFCR) applies to food for human consumption (including ingredients) that is imported, exported or inter-provincially traded for commercial purposes. It also applies to the slaughter of food animals from which meat products to be exported or inter-provincially traded may be derived. All other food processing establishments are referred to as "non-federally registered". These establishments may be regulated under a variety of legislation at the provincial level.

Health Canada is responsible for setting food labelling policies with respect to health and safety matters (ex. nutritional content, special dietary needs etc.). The CFIA is responsible for the development of non-health and safety food labelling regulations and policies such as for grades and weights of food products. The CFIA administers and enforces both the health and safety and the non-health and safety food components of the *FDA* and the SFCA. All food-related inspection under all the Federal Acts is carried out by the CFIA.

Provincial and Territorial governments vary in their approach to food legislation and inspection. Their jurisdiction extends to all food manufactured and sold within their borders. Provincial governments may regulate all food premises within the province, which includes federally registered establishments. For example, Public Health may go into a federally registered establishment in the event of foodborne outbreak. Their mandate also extends to food retail and food service operations.

To help ensure a safe food supply for consumers and high standards of animal care, all meat offered for sale or distributed in Ontario must be inspected, according to the Food Safety and Quality Act, 2001 Meat Regulation 31/05.

The Act ensures that all meat products that reach consumers come from livestock or poultry that are fit for slaughter, humanely handled, and processed under sanitary conditions. Any meat destined for export markets must be processed at a federally licensed plant inspected by Canadian Food Inspection Agency staff.

Provincial inspectors are affiliated with each plant and inspect arriving animals and carcasses for any signs of injury or illness. Traceability programs - which include document name of food, address of manufacturer, details around preparation, storage, packaging, as well as assigned codes or tags- allow inspectors to trace any concerns back to the farm, helping to ensure the wellbeing of animals and safety of our food supply.

Ontario has specific food-safety related legislation for certain commodities. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) administers and enforces O. Reg. 31/05, Meat, under the *Food Safety and Quality Act, 2001*. This regulation regulates animal slaughter and meat processing facilities in Ontario, under a licensing program.

In Ontario the Ministry of Health and Long-Term Care (MOHLTC) is responsible for the protection of public health and sets food safety standards and policies for food premises including retail grocery stores and food service operations through R.R.O. 1990, Regulation 562, Food Premises, under the *Health Protection and Promotion Act R.S.O.1990*. It has the power to condemn and recall food. Its role in food safety inspection is given to the 36 public health units across Ontario, along with several other mandated programs.

Canadian Health Food Association - Safe Food for Canadians Regulations:

https://chfa.ca/en/Safe-Food-for-Canadians-Regulations

Canadian Food Inspection Agency (CFIA):

https://inspection.canada.ca/eng/1297964599443/1297965645317

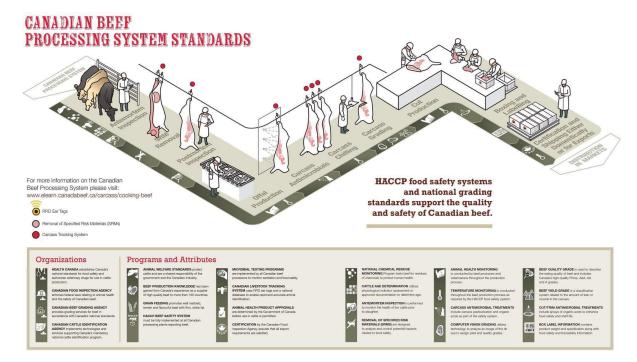
Meat Inspection Program

https://www.ontario.ca/page/meat-inspection-program

Public Health Ontario - Food Safety: A Guide for Ontario's Food Handlers

https://www.health.gov.on.ca/en/pro/programs/publichealth/enviro/docs/training_manual.pdf

REGULATIONS IN ACTION: HACCP & PREVENTATIVE CONTROLS



Click to view full-sized image: Primary Processing System Standards: https://canadabeef.ca/wp-content/uploads/2018/09/canadian-beef-advantage-9.jpg

HACCP is a systematic and preventative system developed in the 1960s by NASA and a group of food safety specialists. For the Apollo 11 mission to land on the moon, the astronauts had only 73 cubic feet of space and no toilets. A system was required to prevent the astronauts from contracting food-borne illnesses while in orbit. This system, and its success, led the HACCP principles to be used as the foundation for food safety plans around the world. HACCP is applied to every stage of the food supply chain, including production, preparation, packaging and distribution and crosses several food businesses and sectors.



Source: Meat and Poultry Ontario Gallery

The 7 principles of HACCP are:

- 1. **Conduct a Hazard Analysis** Identify all possible food safety hazards that could occur (from receiving product through cooking and/or serving the food to proper waste handling) and examine all avenues for potential contamination (biological, physical and chemical).
- 2. **Identify Critical Control Points** Identify each step in the process where a control measure should be applied to prevent, eliminate, or reduce hazards to an acceptable level.
- 3. **Establish Critical Limits** Identify the maximum or minimum value to which a food safety hazard (biological, physical, or chemical) must be controlled to prevent, eliminate, or reduce hazards to an acceptable level. (Critical limits use measurable parameters such as time, temperature, acidity, best before or expiry dates).

- 4. **Monitor Critical Control Points** Monitor CCPs using the criteria established in Step 3 using a variety of techniques: observation (ex. checking cleaning schedules), sensory (ex. using taste, smell, touch and/or sight), chemical (ex. checking acidity levels or performing nutritional analysis), physical (checking food temperatures, pressure, weight, etc.)
- 5. **Establish Corrective Actions** Using results from Step 4, corrective actions might be deemed necessary. They may be immediate (ex. throwing out contaminated food, rejecting a food delivery or refrigeration of food), or preventative (ex. performing routine maintenance on equipment, changing work procedures, training staff in food safety best practices).
- 6. **Establish Record Keeping Procedures** Keeping an up-to-date Food Safety Plan record of hazard analyses and details of corrective actions taken might include delivery checklists, cleaning schedules, temperature recordings, pest inspection results, staff training records and notes, etc.
- 7. Establish Verification Procedures A Food Safety Plan is a living document that should be updated regularly and should be audited at least once per year to verify that the system is working as expected and seek out new opportunities to improve it. Using internal inspections, external audits and/or employee feedback will ensure the plan continues to be a relevant and useful tool to ensure food safety best practices are being followed.

Hazard Analysis Critical Control Points (HACCP):

https://www.foodsafety.ca/blog/everything-you-need-know-about-haccp

Preventative Food Safety Controls

The preventative control requirements found in Part 4 of the Safe Food for Canadians Regulations (SFCR) contain the majority of the food safety requirements. The food safety requirements are based on internationally recognized principles of food hygiene, including *Good Manufacturing Practices*, Good Agricultural Practices, and the principles of Hazard Analysis Critical Control Point (HACCP). These preventative control requirements establish expected food safety outcomes to help prevent food safety hazards and reduce the likelihood of contaminated food entering the Canadian marketplace, whether the food is prepared within or outside of Canada.

Preventative Controls: https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a18

Good Manufacturing Practices (GMP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a9

Good Agricultural Practices (GAP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a8

Hazard Analysis Critical Control Point (HACCP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a12

Preventative food safety controls address hazards and risks in such areas as:

- sanitation and pest control,
- treatments and processes,
- equipment,
- maintenance and operation of establishments,
- unloading, loading, and storing food,
- employee competence,
- employee hygiene,

- employee health; and
- · complaints and recalls.

What is a Preventative Control Plan (PCP)?

A PCP is a written document that demonstrates how risks and food animals are identified and controlled. The controls are based on internationally recognized HACCP principles. The PCP also includes a description of measures taken related to packaging, labelling, grading, and standards of identity.

For importers, a PCP describes how the importer, and its foreign suppliers, are meeting preventative food safety control requirements.

Preventative Control Plan: https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a18

The industry is responsible for preparing, exporting, and importing safe food. Preventative food safety controls help businesses identify and correct issues early in the production process.

While many food businesses already have preventive controls in place, applying food safety requirements more broadly further enhances the safety of food across sectors. This better protects Canadians, helps avoid costly recalls, and ensures continued market access with countries that require similar food safety measures and mandatory control systems.

INSPECTION

As previously mentioned, to help ensure a safe food supply for consumers and high standards of animal care, all meat offered for sale or distributed in Ontario must be inspected, according to the Food Safety and Quality Act, 2001 Meat Regulation 31/05.

The Act ensures that all meat products that reach consumers come from livestock or poultry that are fit for slaughter, humanely handled, and processed under sanitary conditions. Any meat destined for export markets must be processed at a federally licensed plant inspected by Canadian Food Inspection Agency staff.



Source: Meat and Poultry Ontario Gallery

Provincial inspectors are affiliated with each plant and inspect arriving animals and carcasses for any signs of injury or illness. Traceability programs - which include document name of food, address of manufacturer, details around preparation, storage, packaging, as well as assigned codes or tags- allow inspectors to trace any concerns back to the farm, helping to ensure the wellbeing of animals and safety of our food supply.

Ina addition, as part of the inspection process, all packaged meat products sold in Ontario and across Canada must adhere to labelling requirements under the Food & Drugs Act (FDA), the Consumer Packaging and Labelling Act (CPLA), the Safe Foods for

Canadians Act (SFCA) and the regulations made under each.

In Canada there are various requirements for how things are labelled depending on the kind of food product, where it was produced, processed and/or packaged. As a country with two official languages, all pertinent information on the labels must be shown in both French and English.

As a part of inspection requirements and labelling rules, the Meat Inspection Legend (pictured included) can only be applied by registered operators and to inspected meat products. This requirement is separate from nutrition labelling rules as the Legend is a requirement of the inspection process.





Federal Meat Inspection Legend

Provincial Meat Inspection Legend

Meat & Poultry Ontario - Labelling Essentials:

https://www.meatpoultryon.ca/wp-content/uploads/2019/08/INFO-LabellingEssentials.pdf

LABELLING

Agriculture & Agri-Food Canada – Labelling – How to Identify Canadian Food: https://www.youtube.com/watch?v=5vBD9VqKyBQ&t=17s

Beyond countries of origin, processing and packaging, labels also provide important information to consumers reading ingredients, nutrition, and best before dates.

Health Canada establishes standards for the safety and nutritional quality of all foods sold in Canada under the *Food and Drugs Act & Regulations*. For those with food allergies, sensitivities/intolerances and/or other dietary restrictions, understanding the ingredient and nutritional information of foods is of the utmost importance. Most pre-packaged foods sold in Canada must carry a label with the ingredients listed. Labels that include claims or statements regarding food safety and potential allergens must adhere to the guidelines for use set out by each kind of label.

Understanding Nutrient Content Claims: https://www.canada.ca/en/health-canada/services/understanding-food-labels/nutrient-content-claims-what-they-mean.html

Health Canada's policy for enhancing the protection of food-allergic consumers in Canada is based on two guiding principles:

- prevent the inadvertent consumption of undeclared allergens by sensitive consumers; and
- enable a variety of safe and nutrition food choices for the allergic consumer.

Precautionary statements are not required on pre-packaged foods, but those companies who choose to utilize these statements must adhere to the protocols laid out in the Food and Drugs Act and ensure the labels are truthful, clear and non-ambiguous.

The Use of Food Allergen Precautionary Statements on Pre-Packaged Foods: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/pdf/label-etiquet/allergen/precaution_label-etiquette-eng.pdf

Information about dates on pre-packaged foods are a valuable source of information for consumers. There are different kinds of date markings that can be included on food labels in Canada, and they vary depending on the kind of product. Knowing what these terms mean helps consumers employ best practices for safe food handling in the home.

"Best-before" dates identify the durable life period of a pre-packaged food product. The durable
life span of a food refers to the anticipated amount of time that an unopened food product, when
stored under appropriate conditions, will retain its freshness, taste, nutritional value or any other
qualities claimed by the manufacturer.

- "Packaged on" dates are similar to "best-before" dates, but are used on retail-packaged foods with a durable life date of 90 days or less. These must be accompanied by durable life information either on the label or on a poster next to the food. Durable life information can refer to the number of days a product will retain its freshness or a best-before date.
- "Expiration" dates are often confused with but are not the same as "best-before" dates. Expiration dates are required on certain foods that have strict compositional and nutritional specifications. For example, meal replacement products, nutritional supplements and/or infant formula would all contain expiration dates because they are meant to provide specific nutritional benefit to the consumer. After the expiry date, the products may lose some nutritional value and therefore would not meet the consumer's nutritional needs.

Date Labelling on Pre-Packaged Foods: https://inspection.canada.ca/foodlabels/labelling/consumers/date-labelling/eng/1332357469487/1332357545633

WHO IS INVOVLED IN THE SUPPLY CHAIN?

We have mentioned that there are a diversity of opportunities and careers available in the meat and poultry processing industry. From the livestock producer to the consumer, there are many people involved in bringing quality meat products to your table. Along with all three levels of government, farmers, transporters, processors, wholesalers/brokers, tradespeople, retailers and more who are involved every step of the way.

In the following section you will find key roles and further information on the individuals responsible for bringing meat products from farm to table in Ontario, in addition to the different animals that are processed for meat products.

FARMERS

Canadian farmers are required to have a diverse skill set and knowledge, whether it be understanding machinery, reading data trends, knowing the health and welfare needs of their animals, following biosecurity practices and much more.

Life of a Beef Farm Family: https://www.youtube.com/watch?v=A7VD2yXB3tc

Life of a Turkey Farm Family: https://www.youtube.com/watch?v=mcU2gC7XenU

Ontario Pork Farm Visit: https://www.youtube.com/watch?v=O-1X7a6Jk90

ANIMAL PROFILES: RED MEAT ANIMALS

BISON

The Ontario Bison Association is a subsidiary of the Canadian Bison Association. Both organizations are committed to providing guidance to producers across the country. Bison are North America's largest land animal and are part of a robust industry that continues to evolve to this day to bring Ontarians, and Canadians, a healthy, sustainable, and lean specialty game meat to their tables.

Parks Canada – Restoring a Legacy:

https://www.youtube.com/watch?v=OtF9QBQGMt4&t=144s

Meet an Ontario Bison Farmer:



Bison du Nord: https://vimeo.com/198934385?embedded=true&source=vimeo logo&owner=61379608

BEEF

Beef farms in Ontario account for 13.7% of all farms in the province. There are beef farms found in every province across Canada and in Ontario, beef farming can be found in every county and district. In Ontario, there are over 19,000 beef farmers. The beef industry in Ontario represents 20% of the Canadian fed cattle population, and 6.5% of the beef cow population in Canada.

Beef Farmers of Ontario – Animal Care on Beef Farms: https://www.youtube.com/watch?v= zLcbVWOgPI&t=6s

Canadian Beef Grading System:

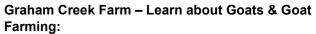
https://www.youtube.com/watch?v=vDyW5Rrocbk

Meet an Ontario Beef Producer & Processor – VG Meats Family Story:

https://www.youtube.com/watch?v=EORS5kuHhxM

GOATS

Ontario Goat represents Ontario's milk, meat and fibre goat farmers with a united voice and is dedicated to enhancing the goat industry through education, collaboration, innovation, and strategic alliances. The goat industry in Ontario has been steadily growing over the past couple decades.



https://grahamcreekfarm.com/all-natural-ontario-goat/

Canadian Food Focus - How Boer Goats are Raised: https://www.youtube.com/watch?v=vwi0e4A-EfM



Ontario has the most hog farms of any Canadian province and, second to Quebec has the largest swine herd in Canada. In 2020, Ontario's 1,143 farmers brought to market 5.8 million hogs. Ontario pork farms are located all throughout Ontario, but most pork farms in the province are located in Southwestern Ontario.

Canadian Food Focus – How are Pigs Raised: https://www.youtube.com/watch?v=7HNg62ed nA

Sustainability & Tech:

https://www.youtube.com/watch?v=sJTJBLBxVsg

Animal Care: https://www.youtube.com/watch?v=6A8AnhJvVcs&t=45s





SHEEP / LAMBS

Ontario has the most sheep in Canada, located on more than 3000 farms. They are versatile livestock that can live in a barn or our in a sheltered pastureland all year round. They graze well on land that is otherwise inhospitable to crop farming and provide milk, meat and fibre for the clothing we wear.

Ontario Lamb Farming:

https://www.youtube.com/watch?v= EqkWD4S490&t=84s

VEAL

Most of Ontario's veal has been raised on family farms, many of them passed down through generations. These farms support rural communities and the Ontario economy. VFO works with local farmers to ensure consistent quality, making animal health and welfare their top priority.

Fields to Forks – Veal Farmers of Ontario:

https://www.youtube.com/watch?v= aFBILGBaLc&list=PLO9Da-c 6lpBHwukZrrgR1mcO4IDt 79p

ANIMAL PROFILES: WHITE MEAT ANIMALS

CHICKEN / FOWL

There are more than 1,300 family run chicken farms in Ontario that work together to ensure consumers enjoy a reliable supply of safe, healthy, high quality, Ontario-grown chicken. The Ontario chicken industry is an important contributor to the economic health of the province. The industry is supported by an extensive value chain including Ontario chicken farms, Ontario corn and soybean growers, chick hatcheries, and chicken processors that collectively contribute more than \$3.8 billion annually to the Ontario economy and support more than 22,000 full-time local jobs.

Chicken Farmers of Ontario provides innovative and entrepreneurial leadership to the supply management system that matches domestic production to domestic consumer demand. The system helps ensure that Canadians have access to a stable supply of high quality locally grown chicken at a fair price.

Farm & Food Care Chicken Fact Sheet:

https://www.farmfoodcareon.org/wp-content/uploads/2017/05/Chicken2017.pdf

Raised by a Canadian Farmer Animal Care Program: https://www.youtube.com/watch?v=tN0dQDL8ijq

Artisanal Chicken Farm: https://www.youtube.com/watch?v=E29 XCwyjnw&t=87s

DUCK

The duck farming industry in Ontario is a thriving and innovative industry that has grown to include unique foods such as duck sausage, smoked breast, confit, potpie, wings and many more ready-to-serve products on both grocery store shelves and restaurant menus. It is also a key ingredient in a variety of

raw and processed pet foods and has other applications beyond food such as using the feathers for bedding products and the manure for compost.

King Cole Ducks, Ontario's largest duck producer is Canada's third largest, producing 2.5 million a year.

It is a 3rd generation-run farm that has remained true to time-honoured farming practices for over 65 years. Their farm controls the entire production process – from their breeding program through hatching and raising the ducks, to processing, cooking and delivering to markets across the world.



Duck processing, Meat & Poultry Ontario Gallery

Learn the King Cole Ducks Story: https://www.youtube.com/watch?v=CiAisOuMzwE

TURKEY

Turkey Farmers of Ontario is a farmer-led organization that promotes animal care and an efficient innovative marketing system for the industry to make turkey a healthy and regular choice for Canadian consumers. Located in Kitchener, Ontario, the organization represents approximately 160 turkey farmers across the province. We are proud of this producer-run, producer-funded organization that has been achieving success in the turkey industry for over 50 years.



Meet an Ontario Turkey Farmer: https://www.youtube.com/watch?v=mcU2gC7XenU

Hayter's Farm - Turkey Farmer, Processor & Retailer: https://www.haytersfarm.com/

Learn All About Turkey Farming with the Doan Family:

https://www.youtube.com/watch?v=H A2cfJbvJM

RABBIT

Established in 1964, Ontario Rabbit, as a representative and responsive organization, is dedicated to developing a progressive, profitable, high quality rabbit industry through promotion, education, advocacy, and industry collaboration.

Culinary Rabbit is growing in popularity and is known to be a lean, low-calorie alternative to other meats. It is easily digested, rich in Omega-3 fatty acids and is becoming more sought out as a white meat of choice for consumers.



Michel Dignard & Jeanette Mongeon Family Farm: https://www.youtube.com/watch?v=nlBn JFzgns

ANIMAL PROFILES: SPECIALTY MEATS

Ontario has a wide variety of farmed specialty white meats that can be found at various suppliers and restaurants throughout the province. Specialty white meats include emu, ostrich, rhea, fancy poultry, gamebirds and geese. Specialty red meats include alpaca, llama, deer and elk. To be sold commercially in Ontario, these animals must be farmed and processed in a licensed abattoir.

To explore more specialty livestock in Ontario, visit: http://omafra.gov.on.ca/english/livestock/index.html

ANIMAL PROFILES: WILD GAME MEAT

Ontario's history of angling, hunting, and trapping spans generations. As far back as the traditions of our First Nations, Inuit and Métis peoples, wild game has been hunted on this land. The Ontario Federation of Anglers and hunters has a passion for conservation and the traditions of fishing and hunting. They are passionate about maintaining the balance between important and traditional ways of feeding families and caring for the vast and unique Ontario landscapes – forests, wetlands, and grasslands. Other organizations such as the Ministry of Northern Development, Mines, Natural Resources and Forestry and NGOs such as Ducks Unlimited also play important roles in striving for an ideal balance between honouring Ontario and Canada's longstanding angling and hunting traditions and protecting our natural resources.

Small game species in Ontario include cottontail (rabbit) and hares, grouse (ruffed, sharp-tailed, spruce), squirrel (gray and fox), gray partridge, ring-necked pheasant, ptarmigan, raccoon, fox (red and Arctic), skunk, weasel, opossum, American crow, groundhog, porcupine, wild turkey, wolf/coyote, migratory game birds. Big game species in Ontario include black bear, moose, white-tailed deer, and elk. Members of the general public generally need a license and/or specific tag to hunt the species listed above. Indigenous Ontarians can hunt without a license when they are hunting on their traditional or treaty lands for food, social or ceremonial purposes.

Many hunters have both the skill and competency to process their own wild game meat. For those that opt to have their wild game meat processed by a provincially inspected meat processing facility, they may do so, but can still only use the meat for personal consumption. Wild game is not able to be inspected in the same way as farmed animals are, therefore, wild game cannot be sold commercially unless it is a farmed version of that animal.

Generally, when the butcher receives the animal, the hunter has already completed some of the basic processing steps. The meat arrives to the butcher with the hide, hooves, and head removed ahead of time. Butchers work closely with the Ministry of Northern Development, Mines, Natural Resources and Forestry to ensure the appropriate information is taken down about each wild game food animal that is brough in for processing. This may include the hunter's contact information and hunting license details. The animal must be tagged according to regulations and the tag must be present with the animal during



transport and at the time of processing. Facilities that offer wild game meat processing follow strict health and safety protocols and cannot process the wild game meat at the same time, in the same area as farmed meats are being processed. Farmed meats are closely monitored for contamination because they are processed and sold commercially, therefore it is imperative that wild game, which is not able to be closely monitored throughout its life, is processed away from farmed meats to eliminate the potential for cross-contamination. Many meat processors opt to processed wild game meat after hours when they can dedicate the time and space

to the job and eliminate the potential for cross-contamination. The wild game meat must also be stored away from the farmed meats while they are waiting to be picked up by the hunter.

Ontario Federation of Anglers & Hunters (OFAH) – Telling Our Story: https://www.youtube.com/watch?v=VgpejW5EAmQ

Ontario.ca Hunting Info: https://www.ontario.ca/page/hunting-licence-ontario-residents

North Country Premium Meats, Thunder Bay, Ontario: http://www.northcountrymeats.com/game.html

TRANSPORTATION

There are many factors to consider when transporting livestock. There are commodity-specific general codes of practice for the transportation of food animals under the National Farm Animal Care Council (NFACC). These codes of practice are in place to promote acceptable standards of animal husbandry and handling and are intended to achieve a workable balance between the best interests of the animals and the transportation industry. NFACC Codes of Practice voluntary but have been widely adopted by each respective commodity group as important considerations when making decisions about how they care for livestock throughout their lives, but also specifically during transport. Provincial and Federal regulations supersede NFACC's Codes of Practice, but many in the industry look to all of the above for guidance when making decisions regarding animal care and the processing journey. It is important to note that the CFIA's website references NFACC's Codes of Practice as recommended best practice for the general care of livestock in Canada¹⁴.

The Canadian Food Inspection Agency (CFIA) has specific requirements that livestock must meet before they can be transported. All who are involved in transporting animals are either directly or indirectly responsible to assess the animals for fitness and only handle the animals that are deemed healthy and fit for the intended journey.

Animals are fit for transport when there are no signs of illness or poor health. They must be:

- bright, alert, moving and breathing normally.
- in good body condition.
- able to bear weight evenly on all limbs.
- free from signs of disease.
- unlikely to give birth during the journey or be affected by metabolic conditions associated with late pregnancy or birth.

If any animals are deemed unfit for transport, there are a variety of steps involved to ensure they receive the care they need.

During transport, the vehicle operators must have specific knowledge, skills, and training to transport the specific species and be aware of the requirements for transporting that animal. They must have contingency plans in place to deal with unforeseen delays or if one of their animals become compromised or unfit during transport. They must be able to assess the animals for fitness before and after transport and be prepared to isolate animals that are incompatible with one another. They must monitor animals and risk factors through transport and pay close attention to all equipment during the loading, unloading and overall transport. Animals must also be given adequate space, water, and rest at required intervals.

The Ontario Trucking Association (OTA) is one of the largest tracking associations in North America and considered to be one of the most overall effective, dedicated, and respected trade associations in the province. In partnership with the Canadian Trucking Alliance and industry experts, the OTA strives to balance the needs of customers, employees, owner-operators, suppliers and the public while operating in a safe, environmentally, and socially responsible manner.

While Canadians are becoming more aware and discerning about where their food comes from and how it is produced, organizations such as the Governments of Canada and Ontario, the Canadian Trucker's Alliance (CTA) and the OTA are working to find ways to communicate the public about animal health and welfare regulations and codes of practice for the safe transport of livestock. They wish to



Source: Faces Behind Food: https://www.instagram.com/p/CK4pVK-BAi_/

enhance transparency and understanding behind the public-facing transportation practices and build positive community relationships while continuing to adhere to biosecurity and animal care regulations.

Canadian Trucking Alliance – House of Commons' Standing Committee on Agriculture and Agri-Food:

Perception of Public Trust in the Canadian Agriculture Sector, 2019 - https://ontruck.org/wp-content/uploads/2019/03/House-of-Commons-Agriculture-Sector_public.pdf

National Farm Animal Care Council – *Transportation:* https://www.nfacc.ca/codes-of-practice/transportation

Canadian Food Inspection Agency – *Livestock Transport in Canada:*

https://inspection.canada.ca/animal-health/humane-transport/livestock-transport-incanada/eng/1363748532198/1363748620219

LARGE ANIMAL VETERINARIANS & ANIMAL NUTRITIONISTS

Veterinarians and animal nutritionists play a key role in the care of Canadian livestock. These professionals provide support and guidance to farmers to ensure the livestock are being fed a nutritionally balanced diet and receive high-quality care.

Feeding Your Future – Focus on Livestock: Cattle Herd Health & Animal Welfare https://www.youtube.com/watch?v=Sea8HBMaksE

Feeding Your Future – Focus on Livestock: Proper Animal Handling on Feedlot Operations https://www.youtube.com/watch?v=0J3Eg9IEjAw

Meet Dr. Mike Jelinksi, Veterinarian, Animal Welfare Specialist:

https://www.youtube.com/watch?v=rsmYN5rxRHk

Meet Dr. Bette, Veterinarian, Animal Welfare Specialist:

https://www.youtube.com/watch?v=qYEDinu3lrU

PRODUCTION / OPERATIONS

MEAT CUTTER & PACKER (INDUSTRIAL/RETAIL)

Butchers and Packers help play a key role in bringing quality meat products to Ontarians' tables. Some farmers have their own processing and packing operations onsite, while most opt to transport their livestock to dedicated processing and packing facilities. As they gain experience, their responsibilities can grow to include management-level. Some butchers even choose to specialize in certain kinds of processing.

Meet Lorenzo, a Sausage Master with Halenda's Meats:

"I am Halenda's [Meats'] Sausage [Master]. Our sausage has won awards at the Royal Agricultural Winter Fair and in Ontario's Finest Meat competition. It's been an interesting craft to learn. We make sausages that originate from all over the world – from Germany, Yugoslavia, Austria – all different kinds. Our Kobassa is the most popular. Everyone loves it!"

Ontario Finest Butcher Competition:

https://www.youtube.com/user/OntMeatPoultry/videos

Source: Faces Behind Food: https://www.instagram.com/p/CeT4obEJTvw/

World Butchers' Challenge 2022: https://www.youtube.com/watch?v=gde6YAxD0wc

Taste Your Future "CHOP SCHOOL": https://tasteyourfuture.ca/the-chop-school/

Halenda's Family Story: https://www.youtube.com/watch?v=1PvqaTKPsB0

Shinkel's Legacy Family Story: https://www.youtube.com/watch?v=8-H_uk6KG0U

Troy - Professional Butchery Techniques: https://youtu.be/p3osp1wPekE

Meat a Certified Industrial Meat Cutter: https://www.youtube.com/watch?v=8oGtjAWoOCk

FOOD SAFETY

FOOD SAFETY COORDINATOR

A Food Safety Coordinator develops and oversees food safety regulations, policies, and procedures for processing plant operations. They work closely with localized quality control technicians and external food auditors and inspection agencies. They implement and enforce food safety policies and programs such as HACCP, Safe Quality Foods (SQF) and British Retail Consortium (BRC).



Source: Faces Behind Food: https://www.instagram.com/p/CSIB4DfLyDw/

Meet Sarah, a Food Safety Coordinator for King Cole Ducks:

I started here, working in this duck processing company, as a line worker when I was 22. My dad also used to work here as a plant manager. At the time, no other jobs were really grabbing me and after only a few days, I remember thinking, "I think this can be something!" I was really nervous on my first day of work, but the job intrigued me. I remember thinking, "So, this is where our food comes from. Now it all makes sense!" It's amazing the work that goes into producing one product.

I'm now a Food Safety Coordinator, and have been in this role since 1999. I'm here to make sure your food is safe and clean. I'm really proud of the protocols we have to ensure food safety – from hand washing to the cleanliness of the equipment. Every night there is a sanitation crew working for eight hours to ensure the plant is ready for the next day's production.

QUALITY CONTROL TECHNICIAN

A Quality Control Technician ensures all food safety programs and policies are being followed. They are highly trained workers who look for defects that might impact the quality of the food product before, during and after production. They work with other food safety professionals to ensure proper food safety practices are being followed. They would also contribute to discussions with management and other departments about potential areas for improvement.

Meet Jasleen, a Corporate Quality Control Manager:

I come [to work every day] and there are always new challenges. It is a changing environment all the time and I want to ensure that every day we are following regulations and programs to make safe, quality food."

Source: Faces Behind Food: https://www.instagram.com/p/B3KtpakhrIL/

AUDITOR

Auditors are integral to meat processing operations. They verify proper food safety practices are being followed and determine if food is being processed in a safe environment and that hazards are properly identified, controlled and/or eliminated. Food auditors document ongoing evidence of compliance with regulations and write comprehensive reports on their findings. When corrective actions are required, they communicate with the food safety team to address those concerns.

MEAT INSPECTOR

Inspectors play a vital role in the food chain as they will inspect the health and well-being of the animal at various stages, as well as oversee the processing of the animal into meat as well as other by-products.

We are the CFIA: https://www.youtube.com/watch?v=jOxPS6AfWsI

For more details on educational requirements needed for a career in food safety, visit:| https://www.agcareers.com/career-profiles/food-safety-specialist.cfm

PRODUCT DEVELOPMENT / RESEARCH & DEVELOPMENT

PRODUCT DEVELOPERS

Product developers in the meat processing industry must carefully look at consumer trends and also at the supply chain and come up with new ways of bridging the gap between what the producers and processors have to capacity to handle with consumer demands and preferences.

FOOD PACKAGING TECHNOLOGISTS

Food packaging technologists are responsible for the design, development, and manufacture for packaging a range of products. They are constantly trying to create new, more efficient, and more sustainable ways of packaging foods. Innovation in food packaging technology is more important that ever as consumers push for more environmentally friendly options. The technologist also must ensure that packaging meets all set provincial and federal regulations and specifications.

ECOLOGISTS

While Canadian farmers are committed to investing in research that invests back into growing the sustainability of the industry, they are also committed to investing in the overall betterment of humankind. For example, research has been done about the importance of grazing animals on Canada's grassland ecosystems. The Canadian Roundtable for Sustainable Beef, Ducks Unlimited Canada (DUC) and Alberta Beef Producers (ABP) teamed up to advance wetland and grassland conservation.

Watch "Guardians of the Grasslands": https://guardiansofthegrasslands.ca/

Canadian Pork farmers are committed to investing in research that invests back into growing the sustainability of the industry, and they are also committed to investing in the overall betterment of humankind. The Ontario Swine Research Centre is a partnership between the University of Guelph, the Government of Ontario, and the Ontario Swine Industry and upon completion, will implement state of the art technology to meet advanced training and research needs of the swine sector. U of G researchers will use the facility for wide-ranging studies, including animal health, nutrition, and welfare; consumer-oriented research; environmental factors; genetics and genomics; nutrient management; and reproduction. This research centre will replace the current Arkell Swine Research Facility.

Recent Research: https://www.ontariopork.on.ca/Research/Recently-Funded

The Canadian Poultry Research Council (CPRC) has co-funded over 60 research projects covering a variety of topics. The five main priority areas are: antimicrobial stewardship, poultry health, poultry welfare, food safety and sustainability.

Canadian Poultry Research Council: https://cp-rc.ca/en/research

SUPPLY CHAIN / LOGISTICS / DISTRIBUTION

BUYERS, SHIPPER / RECEIVERS & TRANSPORTATION

At every point in our supply chain, there are people organizing the distribution of Ontario meat and poultry products. On one end, you have the producers and processors and on the other end you have the commercial buyers and eventually, the consumers. Everyone who works each step of the way to ensure the safe and secure movement of product through the supply chain plays a very important role.

Meet Laura, an Ontario Order Picker/Shipper who works in the meat processing industry:

I've worked at this butcher shop and meat processing facility for seven years. I'm an Order Picker/Shipper. So daily, I put together orders that are going out to grocery stores, restaurants and neighbourhood shops across the province, package them, scan them and get them ready for shipping.

I really like this job. The owners respect their staff. I took a food safety handling course at the University of Guelph and that taught me so much."



Source: Faces Behind Food: https://www.instagram.com/p/CXMUQifNb //

Meet Denis a Senior Supervisor in Logistics at a Grocery Distribution Centre:

I'd worked in warehouse logistics for most of my career and while this job is different, working with food, the concepts are the same. I work in a Central Distribution Facility. Our team is loading and sending trucks all day every day to deliver products to Longo's grocery stores.

I love working with people and getting to know them. That's why I wanted to be a supervisor. We're always working together to deal with any situation or address any problem as it comes up. When COVID-19 hit, we adjusted to the new safety protocols really quickly because we knew how important it was for us to stay safe as essential workers—and also to keep product moving. People were panic shopping, so we were going through large volumes of key items.



Source: Faces Behind Food: https://www.instagram.com/p/CSZ_vlvLUPz/

Meet Sara, a Livestock Transporter (Truck Driver):

My dad worked for a livestock transportation company and from the time I was really little, I loved going to work with him. I wanted to be a mechanic and took a high school co-op placement

internship as a heavy diesel mechanic. I enjoyed working on the trucks and wondered what it would be like to drive them. After all, a good mechanic's got to know how to drive them!

When I was 18, I got my AZ license and have now been driving a livestock truck for five years. I bought my own truck three years ago and drive across Canada and the USA, delivering livestock to their locations.

I really consider livestock drivers to be the 'kings' of the road. We have to be great drivers because we're carrying live animals who need to arrive at their final destination in good shape. Livestock transporters also have a great work ethic and help each other out whenever needed. No one's going to leave each other strended, and my severters den't treat me any different here.



Source: Faces Behind Food: https://www.instagram.com/p/CK4pVK-BAi_/

other stranded – and my coworkers don't treat me any different because I'm female.

SKILLED TRADES

There are many jobs in the meat processing industry that require workers with specialized trades certifications.

MILLWRIGHT

Millwrights in meat processing facilities are responsible for the installation, layout, preventative and ongoing maintenance of machinery and equipment. Working as part of the Maintenance Team, the Millwrights ensure all machinery is running safely and the plant is operating in compliance with applicable regulations. All maintenance work will be carried out efficiently, while having the highest priority on safety.

ELECTRICIAN

Electricians in meat processing facilities are responsible for conducting scheduled preventative maintenance tasks and checklists, completing work orders, and ensuring any parts that need replacing get ordered. They troubleshoot, identify issues, read schematics and blueprints, and consult equipment manuals. The provide technical support, replace parts adjust settings and confirm proper operation of equipment while also making recommendations for improvements. In a more managerial role, they might train production staff and run teams in larger facilities. They must also follow all food safety protocols since they deal directly with food processing equipment.

MAINTENANCE MECHANIC

Maintenance mechanics are needed throughout the food system. Whether it be maintaining equipment on the farm or responsible for overseeing equipment maintenance at the abattoirs, maintenance mechanics play an important role in ensuring efficient operations.

SANITATION

Sanitation is a tremendously important part of how meat processing is done. Every day after processing is done, the cleaning crew comes in to fully clean and sanitize the facility. Every piece of equipment and its parts are thoroughly washed, rinsed, sanitized, and tested to ensure there is no possibility of contamination for the next day's processing work. The walls, floors and drains are also washed, rinsed, sanitized, and tested for the same reason. Without the workers who do the very important work of sanitation in meat processing facilities, it would be next to impossible to ensure safe products were making it to the grocery store shelves.

Intro to Sanitation: https://www.youtube.com/watch?v=D6QB-8Z4n38

ADMINISTRATION

OFFICE MANAGER

Office managers within the meat industry typically handle administrative and customer service duties. They work directly with customer service staff and customers and also process general administrative expenses and process staff timesheets and support facility managers and owners. They also organize day-to-day operations and maintain office organization and purchase necessary supplies.

Office Manager: https://www.agcareers.com/career-profiles/office-manager.cfm

HUMAN RESOURCES MANAGER

Human resources managers plan, direct and coordinate the administrative functions of an organization. They oversee recruiting, interviewing, and hiring of all new staff and serve as a link between an organization's management and its employees.

Human Resources Manager: https://www.agcareers.com/career-profiles/human-resource-manager.cfm

PLANT CONTROLLER & ACCOUNTING

Plant controllers maintain all finances for a company. They oversee bookkeeping, budgets, and financial reporting. They ensure the efficient flow of money in and out of the business and follow all local, provincial, and federal government reporting requirements and tax filings.

Plant Controller: https://www.agcareers.com/career-profiles/controller.cfm

Accountants help in the preparation and examination of financial records. They play a major role in ensuring taxes are paid and accurate financial records are kept: https://www.agcareers.com/career-profiles/accountant.cfm

Meet Maurie, an Accounting Manager for Finest Sausage & Meat:

I used to shop here all the time, so when the accounting job came open, I jumped at it! It's a family-owned business and they treat me like family. I'm like another daughter that just comes to work every day! It's important that you love your job. You spend more time at work than you do at home, so you've got to be happy there!"



Source: Faces Behind Food: https://www.instagram.com/p/CVOC-d3LrRy/

SALES, MARKETING & COMMUNICATIONS

SALES MANAGER

The people who sell the product are key to the success of any product or business. This is a very important role in the food industry as they are the main connection point between the industry and the consumer. Sales representatives and management support company growth by maintaining relationships with consumers and bringing in new customers. They develop a thorough working knowledge of the products they sell and are often well educated in business/sales practices and trained in the product lines and industry they work in.

MARKETING COORDINATOR

Marketing is all about connecting with the public and telling the story of a product or industry. Food Marketers oversee developing, managing, and implementing marketing activities and strategies for food products. They might organize events or promotional activities, stage demos, online and digital advertising campaigns, social media and/or the design and distribution of samples and print materials.

TECHNICAL SALES REPRESENTATIVE

These professionals work behind the scenes at ingredient companies and answer any questions various research and development groups might have. They provide technical information about the product they represent and are very knowledgeable about their company's product lines and/or ingredients.

FOOD WRITER

Meet Lilian, a freelance agricultural journalist:

I work as a freelance journalist in writing about research and innovation in agriculture. Over the years, I've been lucky enough to tour farms around the world and to meet agricultural journalists and communications specialist from those countries. [In the beginning], I didn't even know what a farm writer was. But being able to spend time with like-minded people, learning from each other and learning about agriculture internationally is just fabulous!



Source: Faces Behind Food: https://www.farmfoodcareon.org/faces-behindfood/

RETAIL & FOOD SERVICE

There are many people who play a role in the foodservice industry, whether it be cashiers at grocery stores, meat managers, butchers, store clerks, restaurant owners, servers or chefs, to the consumers.

REGISTERED DIETITIANS, NUTRITIONISTS & PHYSICIANS

Registered dietitians and nutritionists have specialized training in understanding the nutritional components of food and how nutrients work in the human body. These college and/or university-educated professionals help provide the public with important recommendations for foods that should be consumed based on a person's unique health profile.

Meet Carol Harrison, Registered Dietitian:

https://www.realagriculture.com/2019/06/meat-belongs-on-canadians-plate-says-dietitian/

Meet Dr. Emily Calhoun, Physician:

https://www.youtube.com/watch?v=3CZJAEil7I8

For more information on educational requirements and potential career pathways in agriculture, visit **AgCareers** - https://www.agcareers.com/career-profiles/

Career Paths in Food & Beverage -

https://drive.google.com/file/d/1g0LTI2TbHrgOD1m0AK25RU6ICvOiDx4I/view

SUPPLY CHAIN CHALLENGES

COVID-19

The COVID-19 pandemic has impacted the meat processing industry in many ways – from the way farmers manage their farm, to operations surrounding livestock auctions, transportation, and meat processing, to accessing government resources and financial supports. The entire supply chain across Canada consists of a wide variety of sectors working together collaboratively to bring high-quality Canadian meat products to consumers. While the pandemic will eventually come to its end, the effects of it will continue to resonate for years to come as the entire supply chain recovers.

CBC News – Pandemic has rattled – not broken – Canada's meat supply chain:

https://www.cbc.ca/news/business/coronavirus-meat-supply-chain-interrupted-1.5564106

FOOD FRAUD

Food fraud can have both economic and health impacts on countries, the agriculture industry and consumers. It can lead to food related illness if unidentified allergens and/or hazardous materials are added to food products which can impact individuals or entire communities. While Canada is recognized as having one of the best and safest food systems in the world, it also must take measures to catch incidents of food-related fraud both domestically and when importing foods from around the world.

Food can be misrepresented by substituting a product with something of a different character or quality (ex. using horse meat instead of beef), adulterating/diluting by mixing in other ingredients and not declaring them on the label (ex. adding alternative protein fillers), mislabelling a product as something it's not (ex. labelling grain-finished beef as grass-fed) and making false claims or misleading statements to make the product appear to be something that it isn't (ex. sodium-free when the thresholds for that labelling aren't met).

Food Fraud: https://inspection.canada.ca/food-labels/labelling/consumers/food-fraud/what-is-food-fraud/eng/1648661693364/1648661694161

The Canadian Food Inspection Agency (CFIA) takes steps to protect consumers from food fraud by identifying and targeting the areas along the food supply chain that are at highest risk. They conduct inspections at various levels of the food trade, including domestic manufacturers and importers. They analyze food samples and verify that the composition complies with Canadian food regulations. The CFIA also works with other governmental departments, provincial authorities, and other countries to investigate complaints and take preventative action.

Read more about the CFIA's role in protecting consumers from food fraud: https://inspection.canada.ca/food-labels/labelling/consumers/food-fraud/cfia-s-role/eng/1548444760712/1548444784124

LABOUR SHORTAGES & DISRUPTIONS

The Canadian Meat Council outlined one of the major disruptions to the meat processing industry's ability to meet supply chain goals as being its inability to fill vacant positions in the sector. There are few factors contributing to these shortages which include: an aging workforce, a cap on employing seasonal international workers, and perception around careers in meat and poultry processing. In addition to the challenge in recruitment, another factor is labour disruptions that can be caused by strikes and negotiations of union contracts.

It is important to understand these labour shortages and disruptions affect the whole supply chain. The meat and poultry processing sector has the potential to provide over 300 000 jobs across Canada. With approximately over 9500 butcher jobs going unfilled, these labour shortages mean a reduced export capacity, less availability of meat on grocery store shelves, less processing capacity, complete shutdowns of processing lines, plant closures and decreasing hog and cattle prices for Canadian farmers.

To counter these challenges, new investments from the provincial and federal governments, in partnership with Meat & Poultry Ontario and AgSights are helping to connect meat and poultry farmers with abattoirs that have available processing capacity as well as supporting recruitment, retention and offering training initiatives throughout the industry. With new human resource tools to support meat and poultry processing plants throughout Ontario, they hope to optimize food safety knowledge and culture in provincially licensed meat plants while simultaneously helping to address ongoing labour shortages.

Canadian Meat Council - Labour Shortages: https://cmc-cvc.com/industry/labour/

Government of Canada – Improving Processing Capacity in Ontario's Meat & Poultry Sector: https://www.canada.ca/en/agriculture-agri-food/news/2022/03/improving-processing-capacity-in-ontarios-meat-and-poultry-sector.html

AVIAN FLUFOREIGN ANIMAL DISEASE

Bovine Spongiform Encephalopathy (BSE) or commonly known as Mad Cow Disease, Hoof and Mouth, avian flu and African Swine Fever (ASF) are foreign animal diseases that can affect the supply chain. When animals infected with these diseases are detected through food safety controls, every possible effort by all parties involved in the food supply chain are used to control and neutralize the disease.

As an example, avian Influenza is a viral infection that spreads easily and quickly among wild and domestic birds. It is important that commercial poultry operations regularly review their biosecurity and preventative measures in order to keep their birds safe from this disease.

Canadian Food Inspection Agency - Protect your Flock from Bird Flu:

https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/eng/1323990856863/1323991018946

In February 2022, the CFIA confirmed the presence of H5N1 Highly pathogenic avian influenza in Canada. If the virus makes its way into commercial poultry flocks, it is detrimental to the birds, the farmer's business, and the food supply chain. This is also why the government takes a preventative approach and imposes strict regulations on the import of animals and animal products from countries where avian influenza is present or known to occur. These regulations are enforced by the Canada Border Services Agency (CBSA) and the CFIA.

The government, along with industry representatives and Canadian farmers worked together to prevent, detect, and eliminate the presence of H5 and H7 subtypes of notifiable avian influenza in Canada's domestic poultry flocks. The Canadian Notifiable Avian Influenza Surveillance System (CanNAISS), is designed to detect the presence of notifiable avian influenza strains in live Canadian poultry, helping to minimize the size and longevity of the outbreaks and protect Canada's domestic poultry flocks.

Canadian Food Inspection Agency – Avian influenza surveillance:

 $\frac{https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/surveillance/avian-influenza-surveillance/eng/1329693810008/1329694298513$

TRANSPORTATION DISRUPTIONS

Any time there are labour disputes and/or disruptions (train derailment, infrastructure issues due to floods or blizzards, etc.) in the transportation industry, the meat supply chain is impacted.

In January of 2022, there were blockades along the Canadian border which left more than 100 truckloads of Canadian beef stuck at the border in Coutts, Alberta. This led to a disruption in the flow of goods and could have led to the need to slow production down on the Canadian side if the blockade hadn't ended when it did.

Calgary Herald – Industry warns blockade at Coutts threatens supply chain to U.S.:

https://calgaryherald.com/news/local-news/industry-warns-blockade-at-coutts-threatens-supply-chain-to-u-s

In March of 2022, the Canadian Pacific Rail labour dispute threatened to further stress British Columbia's already strained supply chain. When things like fertilizers and grains cannot flow freely, this impacts the health and welfare of livestock who depend on these goods to meet their nutritional needs.

Global News – Food expert warns of CP Rail labour disruption impact on B.C. supply chain: https://globalnews.ca/news/8697001/cp-strike-bc-supply-chain/

When transportation infrastructure is compromised, even if there are no labour disputes and there are enough transport workers, the supply chain can grind to a halt. A days-long spring storm in Northwestern Ontario in April of 2022 that dropped 20-30 inches of snow led to highway closures and power outages that impacted remote, isolated communities – some of which only have one highway in or out of them. Food spoilage in homes, grocery stores and restaurants due to power outages were one thing, impassable highways where transport trucks were unable to deliver fresh goods to the communities were another thing entirely. Shortly after the snow started to melt and highways opened up again, the rain started, and highways began to wash out completely. 2022 saw the lakes in Northwestern Ontario and their highest levels ever in recorded history. Again, trucks full of food struggled to deliver the essentials to remote communities throughout the region.

CBC News: Highways closed, power knocked out as storm hits northwestern Ontario:

https://www.cbc.ca/news/canada/thunder-bay/northwestern-ontario-storm-closes-highways-knocks-out-power-1.6419515

TVO: 'Almost a perfect storm' – How this northern town is battling floods:

https://www.tvo.org/article/almost-a-perfect-storm-how-this-northern-town-is-battling-floods

DrydenNOW: Hwy 105 to Red Lake closed off again:

https://drydennow.com/articles/hwy-105-to-red-lake-closed-off-again

Everything in agriculture is so interconnected that if the transportation industry is disrupted for any reason, it can be detrimental to the overall flow of our supply chain.

CONSUMER

SOCIAL

Up onto this point we have covered a lot of information related to our government and industry stakeholders in the meat processing industry. Consumers play an equally important role to the perception of the industry, as well as decisions that are made in terms of processes and food safety. Consumers are exposed to many avenues of information that can be overwhelming and confusing to them as they make daily food decisions. Part of the development of foundational food literacy involves connecting consumers to truthful and unbiased information that helps them grow their understanding of food systems which, in turn, leads to greater confidence as they make food decisions and influence policy or regulations. This section seeks to unpack several misconceptions about the meat processing industry:

1. Myth: Livestock production is the largest contributor to global warming.

Truth: While the agriculture sector represents 10% of Ontario's total GHG emissions, the production of emissions from livestock (ex: dairy, beef, pork, poultry, etc.) represents 3.8% of the provincial total. Greenhouse gas (GHG) emissions from animal production in Ontario has decreased by 14% since 1990.

In fact, while livestock does contribute to total GHG emissions, they also offset some of those emissions by playing important roles in managing food waste (another tremendous GHG contributor) by upcycling food by-products (husks, stalks, etc.), contributing natural fertilizer (in the form of manure) and restoring and helping maintain biodiversity on our important grassland ecosystems by grazing on marginal, unfarmable land.

Government of Canada - Greenhouse Gases & Agriculture:

https://agriculture.canada.ca/en/agriculture-and-environment/climate-change-and-air-quality/greenhouse-gases-and-agriculture

Meat Myth Crushers: https://www.youtube.com/watch?v=5CiyPkFomBQ

Guardians of the Grasslands: https://guardiansofthegrasslands.ca/

What I've Learned – Eating Less Meat Won't Save the Planet - https://www.youtube.com/watch?v=sGG-A80TI5g

2. Myth: Meat is bad for your health.

Truth: Canadians consume red and prepared meat products well within Canada's Food Guide recommendations and are knowledgeable about the essential nutrients that meat provides The nutrients found in various meats can help strengthen the immune system, contribute to the formation of red blood cells, hormones and muscle tissues and help ensure proper functioning of the nervous system. Meat contains a wide variety of necessary nutrients in abundance, including Vitamin B12, Iron, Potassium, Selenium, Zinc, etc. Meat is a natural and complete protein source.

Understanding Beef: Health & Nutrition - <u>https://canadabeef.ca/wp-content/uploads/2022/02/Health-Nutrition-Fact-Sheet-April-2022.pdf</u>

Nutrition: Canadian Meat Council - https://cmc-cvc.com/consumers/nutrition/

3. Myth: Processed meats are not healthy.

Truth: Processed meats are simply whole meats that are prepared in a processing facility with additional ingredients. In the processing facility, they take the ingredients and cook and/or prepare the final product before packaging for sale. Those ingredients must be approved and safe according to industry and government health and safety regulations. Processed meats provide many nutritional benefits which can be found on the nutritional fact label.

Myth: Processed Meat Has No Place in a Healthy Diet - https://www.youtube.com/watch?v=IAvIhpWeUPk

4. Myth: The liquid at the bottom of the meat package is blood.

Truth: Blood is removed from the animal prior to its processing and packaging. The meat is made up of animal muscle and made up of 70%+ water. When meat rests, some of the water is released in the package/tray. It is tinged pink or red depending on the kind of meat it is because of the myoglobin in the animal. Myoglobin is a protein that is found in striated muscle tissue. It is not the same as hemoglobin which is found in red blood cells. The older the animal was at the time of processing, the more myoglobin they will contain in their muscles and the darker the colouring will be in the water found in the packaging.

Myth: The Liquid at the Bottom of a Meat Package is Blood - https://www.youtube.com/watch?v=ugb1DLp5RZ4

5. Myth: A meat product spoils on the date listed on the package.

Truth: It is more important to be able to identify signs of food spoilage rather than adhering strictly to the pack and best before date. There can be off-smelling odours and/or a change in texture that will indicate the meat has gone off. Spoilage organisms don't necessarily lead to illness if the meat is accidentally consumed – they are not the same kind of bacteria as the kind that lead to severe foodborne illness (ex. Salmonella, listeria, e coli, etc.)

Colour of the meat is generally dictated by the exposure of oxygen. When the meat turns a bit brown, that does not necessarily indicate spoilage. It is simply an indicator that the meat was exposed to certain levels of oxygen prior to packaging.

Best practices for food safety for consumers would be to use the best before date date on the package as an indicator of freshness, use their senses of smell and touch to determine if the meat feels/smells "off" and utilize food storage techniques such as freezing to extend the shelf life of the product if there is concern it will not be eaten before it spoils.

Myth: A Product Spoils on the Date Listed on the Package:

https://www.youtube.com/watch?v=rJlJb3v95VE

Love Food Hate Waste - https://lovefoodhatewaste.ca/use-it-up/best-before-dates/

Canadian Institute of Food Safety: The Difference Between Best Before and Expiry Dates – https://www.foodsafety.ca/blog/difference-between-best-and-expiry-dates

TRY COOKING WITH MEAT & POULTRY!

The meat and poultry processing industry plays an important role to the daily life of Ontario. In our final section of this guide, there are recipes showing different meals that can be made from the high-quality products produced and process in Ontario.

All Recipes: https://www.meatpoultryon.ca/recipes/

Apple Bacon Cheddar Soup

This recipe marries the smoky taste of bacon, tart apples and the bite of rich, old cheddar in this smooth, sensational soup.

Get started: https://www.meatpoultryon.ca/recipes/apple-bacon-and-cheddar-soup/

Beef Tortilla Pie

Layers of seasoned lean ground Ontario beef, fresh salsa and nutrient-rich black beans form a festive pie the whole family can enjoy. Garnish with your choice of avocado, lettuce, tomatoes and sour cream.

Get started: https://www.meatpoultryon.ca/recipes/beef-tortilla-pie/

BLT Turkey Burger

The cheddar cheese is mixed right in with the ground Ontario turkey creating a moist, flavourful burger that holds together well on the grill. Top with crisp Ontario bacon, lettuce and tomato and serve with a side salad or slaw for a quick and easy weeknight dinner the whole family will enjoy!

Get started: https://www.meatpoultryon.ca/recipes/blt-turkeyburger/

5 Spice Chicken Wings

Five-spice powder is a popular Chinese spice blend that adds an aromatic, spicy and slightly sweet flavour to these deliciously sticky Ontario chicken wings.

Get started: https://www.meatpoultryon.ca/recipes/5-spice-chicken-wings/











Six by Sixteen Healthy Recipe Toolkit:

There is a very clear link between healthy eating habits and lifelong health. Six by Sixteen wants to ensure the next generation knows how to make healthy, nutritious food choices!

For more information: http://www.sixbysixteen.me/pdf.html#toolkit/

LESSON PLAN: THE FIGHT AGAINST FOOD WASTE



ABOUT THIS LESSON

In this lesson, students will explore the issue of food waste, identify personal and industry responsibilities regarding food waste, and explore some of the food processing and packaging techniques that help reduce waste. They will participate in discussion and activities that deepen their understanding of meat and poultry processing and packaging, make relevant connections to global, regional and local food waste and create their own food packaging design using a 3D modeling program (TinkerCAD, Scratch, etc.) or design software (Canva, Photoshop, etc.).

MATERIALS NEEDED

Lesson Materials:

- Appendix 1.1: Food Processing & Food Packaging "Think-Pair-Share"
- Appendix 1.2: Personal Food Audit
- Appendix 1.3: Read that Label!
- Appendix 1.4: Packaging Design Final Project
- Appendix 1.5: Packaging Design Final Project RUBRIC

CURRICULUM EXPECTATIONS

HEALTH AND PHYSICAL EDUCATION

- Grade 7 Healthy Living
 - Making Healthy Choices

By the end of Grade 7, students will:

- D2.1 demonstrate the ability to develop healthier eating patterns, using
 information about the role that different foods play as contributing or preventative
 factors in a variety of health disorders.
- Grade 7 Healthy Living
 - o Making Connections for Healthy Living

By the end of Grade 7, students will:

- D3.1 demonstrate an understanding of personal and external factors that affect people's food choices and eating habits, and identify ways of encouraging healthier eating practices.
- Grade 8 Healthy Living
 - Making Healthy Choices

By the end of Grade 8, students will:

 D2.1 evaluate personal eating habits and food choices on the basis of the commendations in Canada's Food Guide, taking into account behaviours that support healthy eating. • Grade 8 – Healthy Living

Making Connections for Healthy Living

By the end of Grade 8, students will:

• **D3.1** identify strategies for promoting healthy eating habits and food choices within the school, home and community.

LANGUAGE ARTS

- Grade 7 Oral Communication
 - Listening to Understand

By the end of Grade 7, students will:

- 1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups.
- **1.9** identify a wide variety of presentation strategies used in oral texts and evaluate their effectiveness.
- Speaking to Communicate

By the end of Grade 7, students will:

• **2.3** communicate orally in a clear, coherent manner, using a structure and style appropriate to both the topic and the intended audience.

Reflecting on Oral Communication Skills & Strategies

By the end of Grade 7, students will:

 2.3 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills.

- Grade 8 Oral Communication
 - Listening to Understand

By the end of Grade 8, students will:

- 1.2 demonstrate an understanding of appropriate listening behaviour by adapting active listening strategies to suit a wide variety of situations, including work in groups.
- 1.9 identify a wide variety of presentation strategies used in oral texts, evaluate their effectiveness, and suggest other strategies that might have been as effective or more so.
- Speaking to Communicate

By the end of Grade 8, students will:

• **2.3** communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, the subject matter, and the intended audience.

Reflecting on Oral Communication Skills & Strategies

By the end of Grade 8, students will:

 2.3 identify what strategies they found most helpful before, during, and after listening and speaking and what steps they can take to improve their oral communication skills.

TEACHING & LEARNING STRATEGIES

1. Hook: "From This to That"

Ask Students: What does your food have to go through to get to you all the way from the farm to your dinner table? Brainstorm together as a class being certain to touch on the following and map the process together on your White or SmartBoard:

- a. Look at production of variety of foods fruits/vegetables, crops, meat/poultry
- b. Consider all levels including:
 - i. manufacturing (wash/sort/grade/test/pack),
 - ii. processing (using as ingredients, baking, long-term storage, etc.),
 - iii. retail/wholesale (food terminals/grocery stores/markets),
 - iv. food service (restaurants/hotels)
 - v. transportation to/from all of the above

Watch: Food Processing Skills Canada – Food Processing in Canada: https://www.youtube.com/watch?v=IQyzqqhNq3U

Ask Students: Did the video have any other jobs or steps that we missed on our map? What can we add?

Invite students to participate in the following discussion about the topic of FOOD WASTE. Use the Guiding Questions below as well as the video clip to inspire the discussion.

Guiding Questions:

- a. What percentage of food you put on your plate do you think you waste?
- b. What areas of the food chain do you think happens and where can it be potentially improved?
- c. What are some reasons you throw away food?
- d. Do you think food waste is a big problem? Why or why not?
- e. How do you think food waste impacts our environment?

Watch: Food Waste - The Hidden Cost of the Food We Throw Out

https://www.youtube.com/watch?v=ishA6kry8nc

Further Discussion Questions:

- f. Who is affected by the impacts of food waste?
- g. Who is responsible for addressing the problem of food waste?
- h. What are some strategies for decreasing food waste?



In 2022, the National Zero Waste Council conducted research on household food waste in Canada, and the results were astonishing:

- 63% of the food Canadians throw away could have been eaten.
- For the average Canadian household, that amounts to 140kg of wasted food per year - at a cost of more than \$1,300 per year!
- For Canada as a whole, that amounts to almost 2.3 million tonnes of edible food wasted each year, costing Canadians in excess of \$20 billion!
- All types of food are wasted, but in Canada the most prominently wasted foods by weight are:
 - Vegetables (30%)
 - Fruit (15%)
 - Leftovers (13%)
 - o Bread/Bakery (9%)
 - Dairy & Eggs (7%)
- To put this into perspective, EVERY DAY in Canada, we waste approximately:
 - o 130,000 heads of lettuce
 - o 1,300,000 tomatoes
 - o 2,600,000 potatoes
 - o 650,000 loaves of bread
 - o 1,300,000 apples
 - o 640,000 bananas
 - o 1,000,000 cups of milk
 - o 470,000 eggs

The 2017 Benchmark Study on Household Food Waste was updated in February 2022 to account for current food costs, new census population data, and new approaches to estimating GHG emissions.

https://lovefoodhatewaste.ca/about/food-waste/

One of the key strategies in the fight against food waste mentioned in the video involves **PROCESSING & PACKAGING.** Let's take a closer look at both!

3. Activity #1: Introduction to Meat Processing & Packaging in Ontario

Ask students: What does it mean to "process" food?

Food processing is ANY method used to turn fresh foods into food products. For example, with meats, this can involve one or a combination of various processes, including: cutting, boning, trimming, grinding, fermenting, cooking/smoking, packaging, etc. Meat processing can also include adding ingredients to add nutritional value, extend the shelf life of a meat, enhance flavours, etc.

There are also different categories for processed meats:

- 1. **Primary Processing** harvesting of food animals.
- 2. Unprocessed or Minimally Processed
- 3. **Further Processed**: cooking, curing, smoking, fermenting, canning, etc.

Why do we process food?

- Makes Food Edible: Certain foods are not as useful in their original state (wheat, corn, etc.) Example: Processing techniques like milling, grinding turns foods like wheat into flour that can be used in a wide variety of other foods like breads, cereals, pastas etc.
- Safety, Shelf Life & Preservation: Processing improves or even ensures food safety by removing harmful microorganisms. The main methods are pasteurization, air-tight packaging and the use of preservatives. Processing foods to preserve and extend shelf life also helps food during transport to other countries and reduce food waste.
- Price: Food processing can potentially decrease the cost of foods. For example, frozen vegetables have a similar nutritional value to fresh ones, but can be lower in cost as they have already been prepared, do not contain inedible parts, can be bought in bulk and can last longer. Processing by freezing can increase the shelf life of the food but decrease the amount of food waste and the overall cost involved.
- Cultural: There are many considerations that go into processing including for cultural and religious reasons. Halal meat is an example of how foods can be processed differently for cultural reasons. To learn more about what is Halal Meat, students can watch the following video: https://www.youtube.com/watch?v=hMG1FUUk6jE.

Meet a Meat Producer & Processor: VG Meats (family-owned Ontario farm and processing facility): https://www.youtube.com/watch?v=EORS5kuHhxM

Meet a Meat Processor: Halenda's Meats (family-owned Ontario processing facility): https://www.youtube.com/watch?v=1PvgaTKPsB0

Invite students to THINK-PAIR-SHARE using Appendix1.1: Food Processing & Food Packaging "Think-Pair-Share" to explore the following questions and present their ideas to the class: In what ways might Food Processing & Food Packaging help reduce food waste in the world? What food processing/storing techniques can they do at home to help reduce food waste?

Watch: Have students watch Cascades Sustainable Packaging: Do More with Less: https://youtu.be/7o1ZYvXgfYk

Ask Students: What considerations did Cascades have when developing their packaging?

4. Activity #2: Personal Food Audit (Optional Handout: Appendix 1.2: Personal Food Audit)

Individually, in pairs or as a class, have students share an inventory of a recent meal they ate.

- O What foods were included in the meal?
- How was that food prepared (washed, chopped, grilled, etc.)
- How big of a portion did they put on their plate?
- o Was there any waste on their plate at the end of the meal?
- Were there any leftovers after the meal was finished? How were the leftovers handled?

Repeat the same activity for the last time the students ate at a sit-down restaurant.

- o What meal did they order?
- o How were the foods prepared that were on their plate?
- Was the portion size on their plate appropriate for their level of hunger? Or too much/not enough food?
- o Was there any waste left on their plate at the end of the meal?
- o Did they leave the waste on the plate or take it home with them?
- o If there were leftovers taken home, did they get eaten or eventually thrown out?

Strategize as a class regarding both scenarios -

How can each of us work to reduce the amount of food waste we contribute personally?

Some ideas to offer/explore:

- Take smaller portions during meals (you can always go back for seconds, but you won't likely save whatever is left on your plate!)
- o Immediately divide your restaurant meal in half when it is set in front of you (if you get through the first half, pause and determine if you are truly still hungry for more, or if you'd rather a sufficient leftover portion for lunch or supper the following day).
- Plan meals around your leftovers (they can often be added to other dishes and "revitalized").
- o Buy local, in-season foods -

Foodland Ontario Food Availability Guide:

https://www.ontario.ca/foodland/page/availability-guide (explore Ontario produce options for affordable, environmentally friendly, seasonal meal planning)

Practice proper food handling and storage techniques:

Naturefresh: https://www.naturefresh.ca/how-to-store-vegetables/,

Ontario.ca: https://www.ontario.ca/document/student-nutrition-program-guidelines-2016/section-5-safe-food-handling-storage-and-preparation

- Composting Visit Hamilton's Central Compost Facility: https://www.youtube.com/watch?v=S6EPIXJvrYQ)
- Backyard Vermiculture -

The Wormery Project Tour: https://www.youtube.com/watch?v=OflVyQ-wkUw

What personal benefit can making small, individual changes make?

Some ideas to offer/explore:

- Saves money gives us the opportunity to stretch household finances in other directions rather than buying a food and wasting it.
- Environmental contribution helping lessen greenhouse gas emissions from wasted food (think of how much energy/greenhouse gas emissions are put into growing/raising that food and getting it to us - then add it to the amount of methane that is emitted from that food as it breaks down in a landfill without going through the proper digestive process –

Food Waste is a double-whammy on greenhouse gas emissions!

5. Activity #3: Packaging Design Challenge

Initial Research: Introduce students to a wide variety of packaging – cans, jars, bags, boxes, etc. The teacher or students can bring in various products (if this lesson is used in a virtual learning environment, turn it into a 2-minute scavenger hunt and have students return to their computers with a product) or visit a grocery store and run the first part of this lesson on-site.

Watch: Agriculture & Agri-Food Canada - How to Identify Canadian Food: https://www.youtube.com/watch?v=5vBD9VqKyBQ&t=1s to learn about how labels are used to explain where a food comes from and how to distinguish official statements about where a food comes from and what is contained in it from grading statements or other

Introduce the PURPOSE of effective and efficient packaging.

- To help PROMOTE: This includes labels that provide both nutritional information and information about the products ingredients and country of origin, as well as inspection legend grading statements about quality and content, but it also includes style and messaging that is meant to convince customers to select one product over a competitor's product.
- To help PROTECT & PROLONG: This includes everything related to meeting proper food storage and safety guidelines/requirements as well as maintaining freshness and nutritional quality as well as overall quality during transport to wherever it is being sold.

Ask Students to look at one of the products and identify key features of how the food was handled and packaged as well as the design and messaging behind it using **Appendix 1.3: Read that Label!**. Have students meet in pairs or small groups and share their product and discuss the answers they came up with and add any additional notes or points that arise from the discussion.

Culminating Task: Introduce the final project by sharing the announcement from Sobeys about their Plastic Waste Challenge: https://www.grocerybusiness.ca/news/sobeys-throws-down-the-gauntlet-on-plastic-waste-in-packaging. Discuss the need for more efficient, sustainable packaging.

Using **Appendix 1.4: Packaging Design Final Project** to guide students, have them select ONE product and come up with an innovative storage and packaging design that takes the key points listed on the handout into consideration.

- Appropriate <u>labeling</u> for that kind of food (the inspection Legend, <u>name</u>, <u>where it was</u> <u>made</u>, <u>grading statements</u>, <u>ingredients</u>, and <u>nutrition information</u>)
- o An <u>innovative design</u> that gives consideration to <u>environmentally sustainable materials</u> and sufficient storage to ensure the food is safely and securely stored.

Use Appendix 1.5: Packaging Design Final Project RUBRIC to evaluate the design and information aspects of their project. If desired, students may also generate and present their design using either a 3D modeling program or artistic design software and/or prepare a marketing/sales pitch to go along with their packaging design.

ASSESSMENT & EVALUATION

Formative Assessment: Through discussion participation and handouts, informal assessment can happen along the way. Teachers can gather these pieces together to evaluate the learning journey.

Summative Assessment: Formal evaluation will happen using the rubric for the culminating task – it will include criteria for the project itself and can be extended to include a packaging model using design software, a marketing/sales pitch and/or presentation to the class (subsequent sample rubrics for these optional activities can be found via internet search)

ENRICHMENT

As an expansion, students can build their 3-D model using sustainable materials and put it on display in the library/school.

Students can also use math to calculate the perimeter and area of their packaging design.

Other areas for enrichment might include exploring companies that make claims about their packaging being environmentally sustainable and how they put their claims and ideas into action.

LESSON PLAN:

FACING CHALLENGES IN MEAT PROCESSING



ABOUT THIS LESSON

In this lesson, students will explore various challenges facing Ontario's meat and poultry processing industry. They will engage in a detailed questioning exercise that is designed to provoke authentic curiosity about current issues and food processing practices. They will select one specific challenge to develop their own case study and presentation from. Students will plan to share potential solutions to the challenges and explore how various careers can help make a positive difference in the industry.

MATERIALS NEEDED

- Appendix 2.1: Article on Food Industry Challenges in 2022
- Appendix 2.2: Exploring Questions "Think-Pair-Share"
- Appendix 2.3: Making a Difference Final Project
- Appendix 2.4: Making a Difference Final Project RUBRIC
- Appendix 2.5a-b: Making a Difference Peer Review & Final Reflection (front and back)

CURRICULUM EXPECTATIONS

SOCIAL SCIENCES & THE HUMANITIES

EXPLORING FAMILY STUDIES - GR 9/10 (HIF 10/20)

RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to individual and family needs and resources to identify topics for research and inquiry.
- A1.3 formulate effective questions to refine their research and inquiry.
- A2.2 locate and select information relevant to their investigation from a variety of primary sources and/or secondary sources.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

DAILY LIVING SKILLS

By the end of this course, students will

- C1.1 identify and use effective decision-making strategies to make sound decisions related to their own well-being and that of their family.
- C1.2 demonstrate individual and collaborative problem-solving skills that could be applied in situations involving family, peers, or members of the community.
- C3.1 describe and demonstrate appropriate procedures that contribute to household safety.

• **C3.2** describe the elements of a healthy diet, and demonstrate the practical knowledge and skills required to prepare healthy meals and snacks.

EXERCISING RESPONSIBILITY

By the end of this course, students will

- **D1.1** identify strategies and resources that individuals can use to improve and/or maintain their personal health and well-being.
- **D1.2** explain the importance of taking personal responsibility for maintaining their health and well-being.
- D3.1 describe strategies for making informed and responsible consumer decisions.

FOOD & NUTRITION - GR 9/10 (HFN 10/20)

RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food and nutrition to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- A2.2 locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

NUTRITION & HEALTH

By the end of this course, students will

• **B2.4** evaluate existing programs and policies that encourage eating for optimal health.

FOOD PREPARATION SKILLS

By the end of this course, students will

- E1.2 demonstrate an understanding of safe practices within the food-preparation area.
- E2.1 describe the causes and symptoms of foodborne illnesses and techniques for preventing them.

LANGUAGE ARTS – GRADE 9 ACADEMIC (ENG1D)

ORAL COMMUNICATION

- **1.2** identify and use several different active listening strategies when participating in a variety of classroom interactions.
- **1.9** explain how several different presentation strategies are used in oral texts to inform, persuade, or entertain.
- **2.1** communicate orally for several different purposes, using language suitable for the intended audience.
- **2.3** communicate in a clear, coherent manner appropriate to the purpose, subject matter, and intended audience.
- 2.7 use several different audio-visual aids to support and enhance oral

presentations.

WRITING

By the end of this course, Grade 9 students will:

- **1.2** generate and focus ideas for potential writing tasks, using several different strategies and print, electronic, and other resources, as appropriate
- **1.3** locate and select information to support ideas for writing, using several different strategies and print, electronic, and other resources, as appropriate
- 1.4 identify, sort, and order main ideas and supporting details for writing tasks, using several different strategies and organizational patterns suited to the content and purpose for writing
- **1.5** determine whether the ideas and information gathered are relevant to the topic, sufficient for the purpose, and meet the requirements of the writing task
- 2.2 establish an identifiable voice in their writing, modifying language and tone to suit the form, audience, and purpose for writing
- **2.3** use appropriate descriptive and evocative words, phrases, and expressions to make their writing clear and vivid for their intended audience
- 2.6 revise drafts to improve the content, organization, clarity, and style of their written work, using a variety of teacher-modelled strategies
- **2.7** produce revised drafts of both simple and complex texts written to meet criteria identified by the teacher, based on the curriculum expectations
- 3.1 use knowledge of spelling rules and patterns, several different types of resources, and appropriate strategies to spell familiar and new words correctly
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing word choice, using several different types of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly to communicate their intended meaning
- 3.4 use grammar conventions correctly to communicate their intended meaning clearly
- 3.5 proofread and correct their writing, using guidelines developed with the teacher and peers
- 3.6 use several different presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to engage their audience

LANGUAGE ARTS - Grade 9 APPLIED (ENG1P)

ORAL COMMUNICATION

- **1.2** identify and use a few different active listening strategies when participating in classroom interactions.
- **1.9** identify how a few different presentation strategies are used in oral texts to inform, persuade, or entertain.
- 2.1 communicate orally for a few different purposes and audiences.
- 2.3 communicate in a clear, coherent manner for a few different purposes.
- 2.7 use a few different audio-visual aids to support oral presentations.

o WRITING

By the end of this course, Grade 9 students will:

- **1.2** generate and focus ideas for potential writing tasks, using several different strategies and print, electronic, and other resources, as appropriate
- **1.3** locate and select information to support ideas for writing, using several different strategies and print, electronic, and other resources, as appropriate
- 1.4 identify, sort, and order main ideas and supporting details for writing tasks, using several different strategies and organizational patterns suited to the content and purpose for writing
- **1.5** determine whether the ideas and information gathered are relevant to the topic and meet the requirements of the writing task
- **2.2** establish an identifiable voice in their writing, modifying language and tone to suit the form, audience, and purpose for writing
- **2.3** use appropriate descriptive words, phrases, and expressions to make their writing clear for their intended audience
- **2.6** revise drafts to improve the content, organization, and clarity of their written work, using a variety of teacher-modelled strategies
- **2.7** produce revised drafts of texts written to meet criteria identified by the teacher, based on the curriculum expectations
- 3.1 use knowledge of basic spelling rules and patterns, a few different resources, and appropriate strategies to spell familiar and new words correctly
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing word choice, using a few different types of resources and strategies
- 3.3 use punctuation correctly to communicate their intended meaning
- 3.4 use grammar conventions correctly to communicate their intended meaning clearly
- **3.5** proofread and correct their writing, using guidelines developed with the teacher and peers.
- 3.6 use several different presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to engage their audience

LANGUAGE ARTS – GRADE 10 ACADEMIC (ENG2D)

ORAL COMMUNICATION

- 1.2 select and use appropriate active listening strategies when participating in a variety of classroom interactions.
- 1.9 evaluate the effectiveness of a variety of presentation strategies used in oral
 texts, including increasingly complex texts, and suggest other strategies that
 could be used effectively.
- 2.1 communicate orally for a variety of purposes, using language appropriate for the intended audience.
- **2.3** communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, subject matter, and intended audience.

2.7 use a variety of audio-visual aids appropriately to support and enhance oral
presentations and to engage an audience.

o WRITING

By the end of this course. Grade 10 students will:

- **1.3** locate and select information to appropriately support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- 1.4 identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and organizational patterns suited to the content and the purpose for writing
- 2.3 use appropriate descriptive and evocative words, phrases, and expressions
 to make their writing clear, vivid, and interesting for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and accurately, varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- **2.6** revise drafts to improve the content, organization, clarity, and style of their written work, using a variety of teacher-modelled strategies
- 3.1 use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and appropriately to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and fluently
- 3.6 use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their work and to heighten its appeal for their audience

LANGUAGE ARTS - GRADE 10 APPLIED (ENG2P)

ORAL COMMUNICATION

By the end of this course, Grade 10 students will:

- **1.2** identify and use several different active listening strategies when participating in a variety of classroom interactions.
- **1.9** explain how several different presentation strategies are used in oral texts to inform, persuade, or entertain.
- **2.1** communicate orally for several different purposes, using language suitable for the intended audience.
- **2.3** communicate in a clear, coherent manner appropriate to the purpose, subject matter, and intended audience.
- **2.7** use several different audio-visual aids to support and enhance oral presentations.

WRITING

- **1.3** locate and select information to support ideas for writing, using several different strategies and print, electronic, and other resources, as appropriate
- 1.4 identify, sort, and order main ideas and supporting details for writing tasks, using several different strategies and organizational patterns suited to the content and the purpose for writing
- **2.3** use appropriate descriptive and evocative words, phrases, and expressions to make their writing clear and vivid for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and accurately, varying sentence type, structure, and length to suit different purposes and making logical transitions between ideas
- 2.6 revise drafts to improve the content, organization, clarity, and style of their written work, using a variety of teacher-modelled strategies
- 3.1 use knowledge of spelling rules and patterns, several different types of resources, and appropriate strategies to spell familiar and new words correctly
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing word choice, using several different types of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly to communicate their intended meaning
- 3.4 use grammar conventions correctly to communicate their intended meaning clearly
- 3.6 use several different presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to engage their audience

GUIDANCE & CAREERS EDUCATION – (GLC20)

B2: PREPARING FOR FUTURE OPPORTUNITIES

By the end of this course, Grade 10 students will:

- **B2.1** investigate their own interests, values, skills (including transferable skills), strengths, and areas that require further development, documenting their insights in a personal profile.
- **B2.2** identify factors and conditions other than an individual's strengths, interests, and needs that inform education and career/life choices and explain which of these factors may be influencing their own decisions.
- B2.3 explain how digital media use and a social media presence can influence their education and career/life opportunities, while at the same time demonstrating an understanding of the importance of managing their personal information and protecting their privacy online.
- B2.4 analyze the role of networking, including traditional and online social networking, in exploring and securing education and career/life opportunities.

B3: IDENTIFYING POSSIBLE DESTINATION & PATHWAYS

- B3.1 use a research process to identify and compare a few postsecondary options that suit their aspiration, skills, interests, values and personal circumstances.
- B3.2 identify the pathways towards their preferred destinations, including the

courses and/or specialized programs that lead to the destination and meet the requirements for a secondary school certificate or diploma, as well as the supports available at school and in the community that can enhance their secondary education.

GREEN INDUSTRIES - GRADE 10 (THJ20)

A: GREEN INDUSTRY FUNDAMENTALS

By the end of this course, Grade 10 students will:

- A2.1 describe environmental factors that affect growth and post-harvest quality.
- A2.2 describe biological factors that affect growth and post-harvest quality.
- A3.2 identify a variety of design concepts and production processes and systems used in the green industries.
- A3.3 demonstrate an understanding of a variety of processes used in plant and/or animal care.
- **A3.4** identify and describe a variety of structural or mechanical systems used within the green industries.
- A4.1 demonstrate an understanding of terminology used in the green industries and use it correctly in oral and written communication.
- A4.2 identify sources of information about techniques and best practices in the green industries.

C: TECHNOLOGY, THE ENVIRONMENT & SOCIETY

By the end of this course, Grade 10 students will:

- C1.1 identify ways in which green industry activities affect the environment.
- C1.2 identify best management practices, environmentally sustainable practices, and technologies that can be used to reduce the harmful effects of green industry operations.
- C2.1 describe the societal and economic implications of recent innovations and trends in the green industries.
- C2.2 identify ethical issues related to the green industries.
- **C3.1** identify local green industries and describe their activities or products within a specific region.
- **C3.3** describe the effects of local green industries on the community.

D: PROFESSIONAL PRACTICE & CAREER OPPORTUNITIES

- D2.1 describe career opportunities in a variety of sectors in the green industries and the education, training, and certification required for employment in green industry occupations.
- D2.2 identify ways of acquiring knowledge and experience in green industry occupations.
- **D2.3** identify groups and programs that are available to support students who are interested in pursuing non-traditional career choices in the green industries.
- **D2.4** demonstrate an understanding of the Essential Skills that are important for success in the green industries, as identified in the Ontario Skills Passport.

 D2.5 demonstrate an understanding of the work habits that are important for success in the green industries, as identified in the Ontario Skills Passport.

TEACHING & LEARNING STRATEGIES

- 1. **Hook**: What are some of the key challenges facing food processing according to the following article: https://www.foodincanada.com/food-business/the-challenge-for-food-companies-in-2022-is-managing-inflation-152551/ (Optional Handout found in **Appendix 2.1**)
 - a. Shortage of Skilled Workers
 - b. Difficulty in Getting **Food Inputs**(Inputs = resources, materials and energy needed to produce a product)
 - c. Packaging & Reliability of Shipments
 - d. Rising Costs & Inflation

The following can also be added to the discussion as potential challenges in food processing:

- e. Food Safety
- f. Climate Change

2. Invite Questions:

Set a timer for 4-5 minutes and invite students to write down as many questions as they possibly can in response to the article and the list of challenges in Part 1.

- a. They should not edit their questions.
- b. They should not be concerned about spelling, grammar or punctuation.
- c. They should not stop writing until the timer stops!

(Try hard not to lead their questioning! If they're having difficulty, point out broad, simple topics without giving them specific questions – ex. there are many challenges presented in this article, etc.)

- 3. Edit Questions: Give students time to go through their questions and organize their thoughts:
 - a. Change any statements to questions.
 - b. Identify questions that are CLOSED (yes or no) with a C.
 - c. Identify questions that are OPEN (allow for exploration/research) with an O.
 - d. Give them time to try and re-word their CLOSED questions so they become OPEN ones.
 - e. Have them choose the questions they are most curious about to share with the class using sticky notes on a "questioning wall" in the classroom or using Google Jamboard or Padlet or another equivalent online program.

(This "questioning wall" can be revisited throughout this unit and will aid in future discussion!)

4. **Discussion:** Using **Appendix 2.2: Exploring Questions "Think-Pair-Share"**, invite students to select one of the BIG QUESTIONS they came up with about the key challenges facing the meat and poultry processing industry, share with a classmate and then discuss as a class.

a) THINK: (on your own)

i. Hypothesize about the answer to your question – what ideas can you come up with without doing any research?

ii. Where might you look for answers to your question? Who might you reach out to or speak with about your question?

b) PAIR:

i. With a classmate, take turns sharing your comments from the THINK phase. Offer insights to each other on possible solutions or places you might find answers or information about your questions.

** THEY DO NOT NEED TO FIND THE ANSWERS TO THEIR QUESTIONS – this is about exploring and brainstorming, not about finding the ultimate solution! **

c) SHARE:

- i. As a class, discuss student questions and ideas
 - a. Do we notice any big themes emerging?
 - b. Is there one question that many seem to have?
 - c. Are there questions we wish to research more about?

OPTIONAL: You may wish to spend MORE time unpacking these questions – perhaps there is an opportunity to invite a guest speaker to share more about the things your students are curious about. Don't hesitate to "off-road" a bit to invite further discussion on this section!

5. Activity: Making A Difference Final Project

Invite students to select ONE of the following KEY CHALLENGES facing the Food Processing Industry from the beginning of this lesson:

- a. Shortage of Skilled Workers
- b. **Difficulty in Getting Food Inputs**(Inputs = resources, materials and energy needed to produce a product)
- c. Packaging & Reliability of Shipments
- d. Rising Costs & Inflation
- e. Food Safety
- f. Climate Change

Using **Appendix 2.3: Making A Difference Final Project**, students should begin to outline a creative, multi-layered solution package to their chosen **KEY CHALLENGE**. Their solution should consider and/or include the following:

- ... how the challenge *directly affects* the meat and poultry processing industry and consumers.
- ... the possibility of using cutting edge/innovative new technologies (both mechanical and/or biological) as part of the solution.
- ... both realistic and creative potential/ideological solutions are welcome!
- ... a showcase of career pathways that can make a difference in this particular challenge area.

Using **Appendix 2.4: Making A Difference Project Rubric** as a guide, students should put all their research and ideas together into a package using a format of their choice (written, visual, video etc.) and be prepared to share it with the class and teacher.

 Peer Review & Final Reflection: Invite students to partner off and engage in peer-review of each other's presentations or packages (Appendix 2.5a-b: Making A Difference Peer Review & Final Reflection). Handouts should be submitted to the teacher to be considered as part of the final evaluation.

OPTIONAL: Revisit the "Big Questions" together as a class from Part 2.

Were any of these questions answered? Share thoughts and ideas. Do we have any new questions because of the learning we have done? Share questions and what potential next steps might be taken to continue the learning.

ASSESSMENT & EVALUATION

Formative Assessment: Using participation in the various activities (discussions, the "questioning wall" process, final reflective discussions, etc.), teachers can collect anecdotal evidence of learning and engagement.

Summative Assessment: To assess the more formal summative pieces in this unit, teachers can use the Rubric, Peer and Self-Reflection handouts.

ENRICHMENT

- 1. Have students dive into specific commodities and learn and share about the entire supply chain from caring for the animals on the farm through meat processing to the grocery store and consumer. What careers can be found throughout the supply chain? What are the roles/responsibilities of the people who work in these careers? What challenges are faced in each part of the supply chain? How are some of these groups handling some of the "big challenges" discussed in this unit? Look at their "industry news" tabs and see if students can find any updates on how they are tackling some of these challenges in their industry.
 - a. Ontario Sheep Farmers: https://www.ontariosheep.org/
 - b. Beef Farmers of Ontario: https://www.ontariobeef.com/
 - c. Chicken Farmers of Ontario https://www.ontariochicken.ca/
 - d. Ontario Pork: https://www.ontariopork.on.ca/
 - e. Ontario Turkey: https://ontarioturkey.ca/
 - f. Ontario Veal Farmers: https://vealfarmers.ca/
 - g. Meat and Poultry Ontario: https://www.meatpoultryon.ca/

Careers to explore that are involved:

- Career Ladders: Food Processing Skills Canada (fpsc-ctac.com: https://fpsc-ctac.com/career-ladders/
- Careers Now: https://foodandbeverageontario.ca/careersnow/

LESSON PLAN: FOOD SAFETY



ABOUT THIS LESSON

In this lesson, students will explore consumer fear and misconception around food recalls and food safety. They will examine foodborne illness and food safety pre and post the Sanitation Revolution of the early 20th Century by learning some important figures in food safety history and exploring their important contributions to the movement. Finally, students will become "food detectives" and learn about the process organizations such as the Canadian Food Inspection Agency (CFIA), the Public Health Agency of Canada (PHAC) and Health Canada (HC) go through in order to ensure the safety of our food system and the overall health and wellbeing of Canadians.

MATERIALS NEEDED

Station #1 Materials:

- Appendix 3.1a: News Article "Listeria Contamination"
- Appendix 3.1b: News Article "E Coli Contamination"
- Appendix 3.1c: News Article "Plastic Pieces Contamination"
- Appendix 3.2: "Fear of Food Recalls" Think-Pair-Share
- Appendix 3.3a: Faces in Food Safety
- Appendix 3.3b: Faces in Food Safety (Teacher Discussion Notes)
- Appendix 3.4: Become a Food Safety Detective
- Appendix 3.5: Reflections on Food Safety

CURRICULUM EXPECTATIONS

SOCIAL SCIENCES & THE HUMANITIES

FOOD & CULTURE - GR 11 (HFC3M)

o RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food and culture to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- A2.2 locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

FOOD PREPARATION SKILLS

By the end of this course, students will

- **D1.2** demonstrate an understanding of safe practices within the food-preparation area.
- **D2.1** explain the causes of food-borne illnesses and describe the symptoms of and the techniques for preventing these illnesses.

FOOD & CULTURE - GR 11 (HFC3E)

o RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food and culture to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- A2.2 locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

FOOD PREPARATION SKILLS

By the end of this course, students will

- D1.2 demonstrate an understanding of safe practices within the food-preparation area.
- D2.1 explain the causes of food-borne illnesses and describe the symptoms of and the techniques for preventing these illnesses.

NUTRITION & HEALTH - GR 12 University Preparation (HFA4U)

RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food and culture to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- A2.2 locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

o FOOD PREPARATION SKILLS

By the end of this course, students will

- E1.2 demonstrate an understanding of safe practices within the food-preparation area.
- **E2.1** outline the causes and symptoms of food-borne illnesses and techniques for preventing these illnesses.

NUTRITION & HEALTH - GR 12 College Preparation (HFA4C)

RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food and culture to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- A2.2 locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

FOOD PREPARATION SKILLS

By the end of this course, students will

- E1.2 demonstrate an understanding of safe practices within the food-preparation area.
- **E2.1** outline the causes and symptoms of food-borne illnesses and techniques for preventing these illnesses.

FOOD & HEALTHY LIVING - GR 12 Workplace Preparation (HFL4E)

RESEARCH & INQUIRY SKILLS

By the end of this course, students will

- A1.1 explore a variety of topics related to food preparation and consumption to identify topics for research and inquiry.
- A1.3 formulate effective questions to guide their research and inquiry.
- **A2.2** locate and select information relevant to their investigations from a variety of primary and/or secondary sources.
- A3.3 analyze and interpret research information.
- A3.5 synthesize findings and formulate conclusions.
- A4.3 clearly communicate the results of their inquiries and follow APA conventions for acknowledging sources.

KITCHEN FUNDAMENTALS

By the end of this course, students will

- **B1.1** describe common accidents that can occur in the kitchen.
- **B1.2** demonstrate an understanding of safe practices within the food-preparation area.
- B2.1 outline the causes and symptoms of food-borne illnesses and techniques for preventing these illnesses.

o THE FOOD CONSUMER

By the end of this course, students will

D1.5 identify proper methods for storing perishable and non-perishable foods.

FOOD & THE WORKPLACE

By the end of this course, students will

• **E1.1** identify occupational opportunities in the food industry.

- **E1.2** identify personal knowledge, skills and attitudes that may make them suited to occupations in the food industry.
- **E1.3** describe the training and knowledge required for a variety of occupations in the food industry.

THE ARTS

EXPLORING AND CREATING IN THE ARTS-GRADE 11/12 (AEA 30/AEA 40)

CREATING AND PRESENTING

By the end of Grade 11/12, students will

- A1.1 use a variety of strategies (e.g., brainstorming with a partner, think-pair-share, mind
 maps, graphic organizers) to generate innovative ideas and to develop and refine detailed
 plans to address an integrated art challenge, individually and/or collaboratively
- A1.2 use the appropriate stages of the creative process to produce and present integrated art
 works, individually and/or collaboratively, in response to creative challenges, and revise them
 on the basis of reflection and peer- and self-assessment
- A3.2 use technologies, tools, and techniques associated with more than one arts discipline to create integrated art works/productions that demonstrate creativity and/or innovation

MEDIA ARTS-GRADE 11 UNIVERSITY/COLLEGE PREPARATION (ASM 3M)

CREATING AND PRESENTING

By the end of Grade 11, students will

- A1.1 use a variety of strategies (e.g., brainstorming, concept webs, mind maps, group
 discussions, research using sources such as case studies) to investigate creative challenges
 and generate innovative ideas, individually and/or collaboratively, for addressing them
- A1.2 develop plans, individually and/or collaboratively, that address a variety of creative challenges
- A3.1 explore a wide range of traditional and emerging technologies, tools, and techniques, and use them to produce effective media art works
- A3.2 create and present media art works that are appropriate for specific audiences and venues, using various technologies, tools, and techniques

MEDIA ARTS-GRADE 11 OPEN (ASM 30)

CREATING AND PRESENTING

By the end of Grade 11, students will

- A1.1 use a variety of strategies to generate and explore ideas, individually and collaboratively, for solutions to creative challenges
- A1.2 develop plans, individually and/or collaboratively, that address a range of creative challenges and revise their plans on the basis of self-assessment and the input of others
- A1.3 produce and refine media art works, using experimentation, input, and reflection
- A3.1 explore a variety of traditional and emerging technologies, tools, and techniques, and use them to produce effective media art works
- A3.2 use appropriate technology, tools, and techniques to create and present media art works that are appropriate for specific audiences

MEDIA ARTS-GRADE 12 UNIVERSITY/COLLEGE PREPARATION (ASM 4M)

CREATING AND PRESENTING

By the end of Grade 12, students will

 A1.1 use a variety of strategies to investigate increasingly complex creative challenges and to generate and organize innovative ideas, individually and/or collaboratively, for addressing these challenges

- A1.2 develop detailed plans, individually and/or collaboratively, that address a variety of
 creative challenges, including increasingly complex challenges and assess and refine their
 plans on the basis of feedback and reflection
- A1.3 produce and refine media art works, including increasingly complex art works, using research, exploration, input, and reflection
- **A3.1** explore a wide range of increasingly complex traditional and emerging technologies, tools, and techniques, and use them to produce highly effective media art works
- A3.2 create and present media art works that are highly appropriate for a variety of specific audiences and venues

MEDIA ARTS-GRADE 12 WORKPLACE PREPARATION (ASM 4E)

CREATING AND PRESENTING

By the end of Grade 12, students will

- A1.1 use a variety of strategies to generate and organize ideas, individually and/or collaboratively, for addressing creative challenges
- A1.2 develop production plans, individually and/or collaboratively, that address a variety of creative challenges, and modify their plans on the basis of feedback from their teacher, their peers, and others
- A1.3 use experimentation, input, and reflection to produce a media art work based on their production plan and to refine their art work
- **A3.1** explore and refine their use of a variety of traditional and emerging technologies, tools, and techniques, and apply them to produce effective media art works
- A3.2 create and present media art works that effectively communicate specific messages to specific audiences

LANGUAGE ARTS

ENGLISH – GRADE 11 UNIVERSITY PREPARATION (ENG3U)

ORAL COMMUNICATION

By the end of this course, Grade 11 students will:

- 1.1 identify the purpose of a range of listening tasks and set goals for specific tasks
- **1.2** select and use the most appropriate active listening strategies when participating in a range of situations
- 2.1 communicate orally for a range of purposes, using language appropriate for the intended audience
- 2.2 demonstrate an understanding of a variety of interpersonal speaking strategies and adapt them to suit the purpose, situation, and audience, exhibiting sensitivity to cultural differences
- 2.3 communicate in a clear, coherent manner, using a structure and style effective for the purpose, subject matter, and intended audience
- **2.4** use appropriate words, phrases, and terminology, and a variety of stylistic devices, to effectively communicate their meaning and engage their intended audience
- **2.5** identify a variety of vocal strategies, including tone, pace, pitch, and volume, and use them effectively and with sensitivity to audience needs and cultural differences
- 2.7 use a variety of audio-visual aids effectively to support and enhance oral presentations and to engage an audience

READING AND LITERATURE STUDIES

- 1.2 select and use the most appropriate reading comprehension strategies to understand texts, including increasingly complex or difficult texts
- 1.3 identify the most important ideas and supporting details in texts, including increasingly complex or difficult texts

- **1.5** extend understanding of texts, including increasingly complex or difficult texts, by making appropriate and increasingly rich connections between the ideas in them and personal knowledge, experience, and insights; other texts; and the world around them
- 1.6 analyse texts in terms of the information, ideas, issues, or themes they explore, examining how various aspects of the texts contribute to the presentation or development of these elements
- 3.1 automatically understand most words in a variety of reading contexts
- 3.2 use decoding strategies effectively to read and understand unfamiliar words, including words of increasing difficulty
- **3.3** use a variety of strategies, with increasing regularity, to explore and expand vocabulary, focusing on the precision with which words are used in the texts they are reading

o WRITING

By the end of this course, Grade 11 students will:

- 1.3 locate and select information to effectively support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- 1.4 identify, sort, and order main ideas and supporting details for writing tasks, using a variety
 of strategies and selecting the organizational pattern best suited to the content and the
 purpose for writing
- **1.5** determine whether the ideas and information gathered are accurate and complete, interesting, and effectively meet the requirements of the writing task
- **2.1** write for different purposes and audiences using a variety of literary, informational, and graphic forms
- 2. 2 establish a distinctive voice in their writing, modifying language and tone skilfully and effectively to suit the form, audience, and purpose for writing
- **2.3** use appropriate descriptive and evocative words, phrases, and expressions imaginatively to make their writing clear, vivid, and interesting for their intended audience
- **2.4** write complete sentences that communicate their meaning clearly and effectively, skillfully varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- 3.1 use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and effectively to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and effectively
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal and effectiveness for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

ENGLISH – GRADE 11 COLLEGE PREPARATION (ENG3C)

ORAL COMMUNICATION

- 1.1 identify the purpose of a variety of listening tasks and set goals for specific tasks
- 1.2 select and use appropriate active listening strategies when participating in a variety of classroom interactions
- **2.1** communicate orally for a variety of purposes, using language appropriate for the intended audience
- 2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, subject matter, and intended audience
- **2.4** use appropriate words, phrases, and terminology, and several different stylistic devices, to communicate their meaning and engage their intended audience

- **2.5** identify a variety of vocal strategies, including tone, pace, pitch, and volume, and use them appropriately and with sensitivity to audience needs and cultural differences
- **2.7** use a variety of audio-visual aids appropriately to support and enhance oral presentations and to engage an audience

READING AND LITERATURE STUDIES

By the end of this course, Grade 11 students will:

- **1.2** select and use appropriate reading comprehension strategies before, during, and after reading to understand texts, including increasingly complex texts
- 1.3 identify the most important ideas and supporting details in texts, including increasingly complex texts
- **1.5** extend understanding of texts, including increasingly complex texts, by making appropriate connections between the ideas in them and personal knowledge, experience, and insights; other texts; and the world around them
- 1.6 analyse texts in terms of the information, ideas, issues, and themes they explore, examining how various aspects of the texts contribute to the presentation or development of these elements
- 3.1 automatically understand most words in a variety of reading contexts
- 3.2 use appropriate decoding strategies to read and understand unfamiliar words
- 3.3 identify and use a variety of strategies to expand vocabulary

o WRITING

By the end of this course, Grade 11 students will:

- **1.3** locate and select information to appropriately support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- **1.4** identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and organizational patterns suited to the content and the purpose for writing
- **1.5** determine whether the ideas and information gathered are relevant to the topic, accurate, complete, and appropriately meet the requirements of the writing task
- 2.1 write for different purposes and audiences using a variety of informational, literary, and graphic forms
- 2. 2 establish a distinctive voice in their writing, modifying language and tone skillfully to suit the form, audience, and purpose for writing
- 2.3 use appropriate descriptive and evocative words, phrases, and expressions to make their writing clear, vivid, and interesting for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and accurately, varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- 3.1 use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and appropriately to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and fluently
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

ENGLISH – GRADE 11 WORKPLACE PREPARATION (ENG3E)

ORAL COMMUNICATION

By the end of this course, Grade 11 students will:

• 1.1 identify the purpose of several different listening tasks and set goals for specific tasks

- 1.2 Identify and use several different active listening strategies when participating in a variety of classroom interactions
- 2.1 communicate orally for several different purposes, using language appropriate for the intended audience
- 2.3 communicate in a clear, coherent manner appropriate to the purpose, subject matter, and intended audience
- **2.4** use appropriate words, phrases, and terminology, and several different stylistic devices, to communicate their meaning and engage their intended audience
- 2.5 identify several different vocal strategies and use them selectively and with sensitivity to audience needs
- 2.7 use several different audio-visual aids to support and enhance oral presentations

READING AND LITERATURE STUDIES

By the end of this course, Grade 11 students will:

- **1.2** use several different reading comprehension strategies before, during, and after reading to understand both simple and complex texts
- 1.3 identify the important ideas and supporting details in both simple and complex texts
- **1.5** extend understanding of both simple and complex texts by making connections between the ideas in them and personal knowledge, experience, and insights; other texts; and the world around them
- 1.6 analyse texts in terms of the information, ideas, issues, or themes they explore, examining how various aspects of the texts contribute to the presentation or development of these elements
- 3.1 automatically understand most words in several different reading contexts
- 3.2 use appropriate decoding strategies to read and understand unfamiliar words

o WRITING

- **1.3** locate and select information to appropriately support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- **1.4** identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and organizational patterns suited to the content and the purpose for writing
- **1.5** determine whether the ideas and information gathered are relevant to the topic, accurate, complete, and appropriately meet the requirements of the writing task
- **2.1** write for different purposes and audiences using a variety of informational, literary, and graphic forms
- 2. 2 establish a distinctive voice in their writing, modifying language and tone skillfully to suit the form, audience, and purpose for writing
- **2.3** use appropriate descriptive and evocative words, phrases, and expressions to make their writing clear, vivid, and interesting for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and accurately, varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- **3.1** use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and appropriately to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and fluently
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

ENGLISH – GRADE 12 UNIVERSITY PREPARATION (ENG4U)

ORAL COMMUNICATION

By the end of this course, Grade 12 students will:

- 1.1 identify the purpose of a wide range of listening tasks and set goals for specific tasks
- 1.2 select and use the most appropriate active listening strategies when participating in a wide range of situations
- 2.1 communicate orally for a wide range of purposes, using language effective for the intended audience
- 2.2 demonstrate an understanding of a variety of interpersonal speaking strategies and adapt them to suit the purpose, situation, and audience, exhibiting sensitivity to cultural differences
- **2.3** communicate in a clear, coherent manner, using a structure and style effective for the purpose, subject matter, and intended audience
- **2.4** use the most appropriate words, phrases, and terminology, and a variety of stylistic devices, to communicate their meaning in a compelling way and to engage their intended audience
- 2.5 identify a variety of vocal strategies, including tone, pace, pitch, and volume, and use
 them effectively and with sensitivity to audience needs and cultural differences
- **2.7** use a variety of audio-visual aids effectively to support and enhance oral presentations and to engage an audience

READING AND LITERATURE STUDIES

By the end of this course, Grade 12 students will:

- **1.2** select and use, with increasing facility, the most appropriate reading comprehension strategies to understand texts, including complex and challenging texts
- 1.3 identify the most important ideas and supporting details in texts, including complex and challenging texts
- **1.5** extend understanding of texts, including complex and challenging texts, by making rich and increasingly insightful connections between the ideas in them and personal knowledge, experience, and insights; other texts; and the world around them
- 1.6 analyse texts in terms of the information, ideas, issues, or themes they explore, examining how various aspects of the texts contribute to the presentation or development of these elements
- 3.1 automatically understand most words in a variety of reading contexts
- 3.2 use decoding strategies effectively to read and understand unfamiliar words, including words of increasing difficulty
- 3.3 regularly use a variety of strategies to explore and expand vocabulary, discerning shades
 of meaning and assessing the precision with which words are used in the texts they are
 reading

o **WRITING**

- **1.3** locate and select information to fully and effectively support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- **1.4** identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and selecting the organizational pattern best suited to the content and the purpose for writing
- **1.5** determine whether the ideas and information gathered are accurate and complete, interesting, and effectively meet the requirements of the writing task
- **2.1** write for different purposes and audiences using a variety of literary, informational, and graphic forms
- 2. 2 establish a distinctive and original voice in their writing, modifying language and tone skillfully and effectively to suit the form, audience, and purpose for writing
- 2.3 use a wide range of descriptive and evocative words, phrases, and expressions precisely
 and imaginatively to make their writing clear, vivid, and compelling for their intended audience

- **2.4** write complete sentences that communicate their meaning clearly and effectively, skillfully varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- 3.1 use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and effectively to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and effectively
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal and effectiveness for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

ENGLISH – GRADE 12 COLLEGE PREPARATION (ENG4C)

ORAL COMMUNICATION

By the end of this course, Grade 12 students will:

- 1.1 identify the purpose of a range of listening tasks and set goals for specific tasks
- 1.2 select and use the most appropriate active listening strategies when participating in a range of situations
- 2.1 communicate orally for a range of purposes, using language appropriate for the intended audience
- 2.3 communicate in a clear, coherent manner, using a structure and style effective for the purpose, subject matter, and intended audience
- **2.4** use appropriate words, phrases, and terminology, and a variety of stylistic devices, to effectively communicate their meaning and engage their intended audience
- 2.5 identify a variety of vocal strategies, including tone, pace, pitch, and volume, and use them effectively and with sensitivity to audience needs and cultural differences
- 2.7 use a variety of audio-visual aids effectively to support and enhance oral presentations and to engage an audience

READING AND LITERATURE STUDIES

By the end of this course, Grade 12 students will:

- 1.2 select and use the most appropriate reading comprehension strategies to understand texts, including increasingly complex or difficult texts
- 1.3 identify the most important ideas and supporting details in texts, including increasingly complex or difficult texts
- 1.5 extend understanding of texts, including increasingly complex or difficult texts, by making
 appropriate and increasingly rich connections between the ideas in them and personal
 knowledge, experience, and insights; other texts; and the world around them
- 1.6 analyse texts in terms of the information, ideas, issues, and themes they explore, examining how various aspects of the texts contribute to the presentation or development of these elements
- 3.1 automatically understand most words in a variety of reading contexts
- 3.2 use appropriate decoding strategies to read and understand unfamiliar words, including words of increasing difficulty
- **3.3** use a variety of strategies, with increasing regularity, to explore and extend vocabulary, focusing on the precision with which words are used in the texts they are reading

WRITING

By the end of this course, Grade 12 students will:

• 1.3 locate and select information to effectively support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate

- **1.4** identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and selecting the organizational pattern best suited to the content and the purpose for writing
- **1.5** determine whether the ideas and information gathered are accurate and complete, interesting, and effectively meet the requirements of the writing task
- **2.1** write for different purposes and audiences using a variety of informational, literary, and graphic forms
- 2. 2 establish a distinctive voice in their writing, modifying language and tone skillfully and effectively to suit the form, audience, and purpose for writing
- 2.3 use appropriate descriptive and evocative words, phrases, and expressions imaginatively to make their writing clear, vivid, and interesting for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and effectively, skillfully
 varying sentence type, structure, and length to suit different purposes and making smooth
 and logical transitions between ideas
- **3.1** use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and effectively to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and effectively
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal and effectiveness for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

ENGLISH – GRADE 12 WORKPLACE PREPARATION (ENG4E)

ORAL COMMUNICATION

By the end of this course. Grade 12 students will:

- 1.1 identify the purpose of a variety of listening tasks and set goals for specific tasks
- 1.2 select and use appropriate active listening strategies when participating in a variety of classroom interactions
- 2.1 communicate orally for a variety of purposes, using language appropriate for the intended audience
- 2.3 communicate in a clear, coherent manner, using a structure and style appropriate to the purpose, subject matter, and intended audience
- **2.4** use appropriate words, phrases, and terminology, and several different stylistic devices, to communicate their meaning and engage their intended audience
- **2.5** identify a variety of vocal strategies, including tone, pace, pitch, and volume, and use them appropriately and with sensitivity to audience needs and cultural differences
- **2.7** use a variety of audio-visual aids appropriately to support and enhance oral presentations and to engage an audience

READING AND LITERATURE STUDIES

- **1.2** select and use appropriate reading comprehension strategies before, during, and after reading to understand texts, including increasingly complex texts
- 1.3 identify the most important ideas and supporting details in texts, including increasingly complex texts
- **1.5** extend understanding of texts, including increasingly complex texts, by making appropriate connections between the ideas in them and personal knowledge, experience, and insights; other texts; and the world around them

- **1.6** analyse texts in terms of the information, ideas, issues, and themes they explore, examining how various aspects of the texts contribute to the presentation and development of these elements
- 3.1 automatically understand most words in a variety of reading contexts
- 3.2 use appropriate decoding strategies to read and understand unfamiliar words
- 3.3 identify and use a variety of strategies to expand vocabulary, with a focus on vocabulary
 needed to function effectively as responsible citizens, pursue careers, and participate actively
 in the community

WRITING

By the end of this course, Grade 12 students will:

- 1.3 locate and select information to appropriately support ideas for writing, using a variety of strategies and print, electronic, and other resources, as appropriate
- **1.4** identify, sort, and order main ideas and supporting details for writing tasks, using a variety of strategies and organizational patterns suited to the content and the purpose for writing
- **1.5** determine whether the ideas and information gathered are relevant to the topic, accurate, complete, and appropriately meet the requirements of the writing task
- **2.1** write for different purposes and audiences, using a variety of informational, graphic, and literary forms
- 2. 2 establish a distinctive voice in their writing, modifying language and tone skillfully to suit the form, audience, and purpose for writing
- 2.3 use appropriate descriptive and evocative words, phrases, and expressions to make their writing clear, vivid, and interesting for their intended audience
- 2.4 write complete sentences that communicate their meaning clearly and accurately, varying sentence type, structure, and length to suit different purposes and making smooth and logical transitions between ideas
- **3.1** use knowledge of spelling rules and patterns, a variety of resources, and appropriate strategies to recognize and correct their own and others' spelling errors
- 3.2 build vocabulary for writing by confirming word meaning(s) and reviewing and refining word choice, using a variety of resources and strategies, as appropriate for the purpose
- 3.3 use punctuation correctly and appropriately to communicate their intended meaning
- 3.4 use grammar conventions correctly and appropriately to communicate their intended meaning clearly and fluently
- **3.6** use a variety of presentation features, including print and script, fonts, graphics, and layout, to improve the clarity and coherence of their written work and to heighten its appeal and effectiveness for their audience
- 3.7 produce pieces of published work to meet criteria identified by the teacher, based on the curriculum expectations

GUIDANCE AND CAREER EDUCATION

DESIGNING YOUR FUTURE - GRADE 11 OPEN (GLW 30)

EXPLORATION OF OPPORTUNITIES

- Identify through research, various sources of career-related information and assess these sources on the basis of identified criteria.
- demonstrate the ability to communicate effectively to gather career-related information
- demonstrate the ability to obtain and interpret career-related information from labour-market statistics, charts, graphs, and tables
- identify fields of work, jobs, and self-employment and entrepreneurship opportunities in local, regional, national, and international contexts that are growing as a result of identified trends
- use the inquiry process to obtain detailed information about selected sectors of employment, and describe the work opportunities and emerging trends within these fields

• summarize the results of their career related research, using a variety of presentation formats

LEADERSHIP AND PEER SUPPORT - GRADE 11 OPEN (GPP 30)

EXPLORATION OF OPPORTUNITIES

By the end of this course, Grade 11 students will:

• Identify occupations or fields of work that require skills in leadership and peer support

ADVANCED LEARNING STRATEGIES: SKILLS FOR SUCCESS AFTER SECONDARY SCHOOL GRADE 12 OPEN (GLS 40/GLE 40/GLE 30)

EXPLORATION OF OPPORTUNITIES

By the end of this course, Grade 12 students will:

- locate, select, and summarize relevant educational and career information from a variety of sources (e.g., print material, Internet websites, information interviews, job shadowing, work experience) based on their personal interests and abilities
- describe the knowledge, talents, and skills required for success in selected occupations, and the education/training routes that prepare people for these occupations
- demonstrate an understanding of career development as a process involving lifelong learning.

NAVIGATING THE WORKPLACE-GRADE 12 OPEN (GLN 40)

EXPLORATION OF OPPORTUNITIES

By the end of this course, Grade 12 students will:

- use an inquiry process to locate information about postsecondary learning and work options
- locate information about learning opportunities and work, using a variety of career information resources
- summarize and communicate information about occupations of interest and the education and/or training recommended for these occupations

TEACHING & LEARNING STRATEGIES

1. **Hook**: Show students the following articles using the handouts in **Appendix 3.1a-c** and have them Think-Pair-Share, using the guiding questions on the handout: **Appendix 3.2: The Fear of Food Recalls "Think-Pair-Share"**.

Discuss student responses once they have finished the Think & Pair time together.

Explore their answers to the following:

- a. What information in the article helps put your mind at ease about food recalls?
- b. Why might food recalls be a GOOD thing?
- c. Why do you think we might be seeing more food recalls than we used to 10 or 20 years ago? (e.g., better technology, better communication, better overall food safety/better standards, etc.)

Then discuss further:

- d. Food recalls especially where they are voluntary or pre-emptive due to potential hazards are proof that our Food Safety System is WORKING. Imagine if we did not have food recalls. What would that look like?
- e. What steps/procedures might need to be in place to ensure the food on our grocery store shelves is SAFE? What safety check points might need to be considered to catch

potential contamination/hazards?

As a class or in partners, explore:

f. How might risk be assessed for various kinds of foods – for example, meat vs. produce? On the board, write two columns – one for **LETTUCE**, the other for **BEEF**. Invite students to evaluate **RISK** involved with each. They should consider each step along the supply chain (production, transportation, processing, grocery store, in the home, etc.) and areas such as physical, biological and./or chemical contamination.

2. Explore the Historical Faces of Food Safety in Canada:

- a. Introduce this section by sharing excerpts, links or discussion based on the historical information around meat processing in Canada found in the first section of the Teacher's Guide. Be sure to point out that as policies around meat processing were developed, government and public health were also greatly involved in establishing and enforcing these regulations.
- b. Have students explore pertinent sections of the Teacher's Guide (All About Meat Processing) as well as the following two articles on the history of Public Health & Food Safety in Canada:
 - This is Public Health: A Canadian History (Chapter 1):
 https://www.cpha.ca/sites/default/files/assets/history/book/history-book-print chapter1 e.pdf
 - Sanitation, Public Hygiene and the Fight Against Disease: 1882 1942:
 http://www.archives.gov.on.ca/en/explore/online/health_promotion/sanitation_hygiene_disease.aspx
- c. Give students the handout Faces in Food Safety Appendix 3.3a and have them select ONE of these key people in Canada's public health and food safety journey. They should spend some time researching (beginning with the two articles above and then branching of into finding their own articles and information) and learning about the figure they select and be prepared to share a few key points about:
 - i. the job titles and responsibilities they held at the time,
 - ii. their contribution in helping to lay a foundation in public health and food safety,
 - iii. one or two interesting facts about their passion/ambition for health and safety,
 - *iv.* some of the current career opportunities their work helped to pave the way for in public health and/or food safety.

Once students have gathered some information about their respective important figure, have them share this new information with each other:

- Gallery Walk post their notes under headings around the classroom
- Pair & Share rotate around the room sharing and teaching each other about the figure they learned about.
- Class-wide Discussion facilitated by the teacher, walk through each
 figure and discuss student notes and ideas about the contributions of each.

^{**} TEACHERS feel free to use **Appendix 3.3b – Faces in Food Safety (Teacher Discussion Notes)** to help facilitate the discussion. **

3. Introduce the CFIA - Canadian Food Inspection Agency

The Canadian Food Inspection Agency is a regulatory agency that is dedicated to the safeguarding of food, plants, and animals in Canada, thus enhancing the health and well-being of Canada's people, environment and economy. The agency is governed by the Minister of Agriculture and Agri-Food and Minister of Health.

Watch: https://www.youtube.com/watch?v=6L8vY5v9jcM to learn about some of the responsibilities of the CFIA and how they keep Canadians safe.

Introduce HACCP - Hazard Analysis & Critical Control Point

HACCP is an internationally recognized preventative system for assuring food safety.

Watch: https://www.youtube.com/watch?v=_xWhEdcKsYU to learn more about the steps involved in HACCP and why it is important to have these steps as part of our food safety system.

Activity: Present students with the following scenario and have them examine and identify the various RISKS in each element of the food explored.

Scenario: You are sitting down at your favourite restaurant to enjoy a meal. You order a cheeseburger with all the toppings: cheese, mustard, ketchup, lettuce, tomato, pickles and onions. Look at each element of the burger and determine potential risk factors for contamination and what check points might be required to ensure the end product on your plate is safe for consumption.

Discuss student ideas as a class and determine if any potential check points would need to be added and why.

4. Activity: Solve the Outbreak

As a class or as individuals, visit the following website and "solve the outbreak" together.

- Step 1 Go to Website: https://www.cdc.gov/mobile/applications/sto/web-app.html
- Step 2 Click on LEVEL 1.
- Step 3 Scroll Sideways to #4 "Case of the Conference Blues" and CLICK START.
- Step 4 **Accept the Mission** and walk through the entire scenario, using clues to determine the steps to solving the mystery.
- 5. **Culminating Activity:** Using the information you have acquired to this point in this unit, as well as information from the following Public Health Video Series and food safety links, to have students research and compare between foodborne illness detection in the late 1800s/early 1900s and today using the handout in **Appendix 3.4: Become a Food Safety Detective**.
 - A Historical Look at Food Safety: https://www.cdc.gov/mobile/applications/sto/web-app.html
 - Food Poisoning An On-going Saga: https://www.historyandpolicy.org/policy-papers/papers/food-poisoning-an-on-going-saga
 - Public Health Agency of Canada Video Series:
 - Something You Ate? Episode 1: Outbreak Response The Big Picture: https://www.youtube.com/watch?v=dy5emkBBfLE
 - Something You Ate? Episode 2: Tracking the Source: https://www.youtube.com/watch?v=L7BcfsXQabY

- Something You Ate? Episode 3: Tales from the Lab: https://www.youtube.com/watch?v=o1QhO5P8j94
- Something You Ate? Episode 4: Protecting Yourself: https://www.youtube.com/watch?v=0h01ANHYfm8

When students have finished and handed in their comparisons, invite them to debrief together in pairs or as a class.

 Final Reflection: Using Appendix 3.5: Reflections on Food Safety, have students share their thoughts on this learning journey. Be sure to revisit the initial activity regarding the fear of food recalls and how important education about how our food safety system works is.

ASSESSMENT & EVALUATION

Formative Assessment: Using engagement in the various activities (discussions, think-pair-share and the Solve the Outbreak activity, etc.), teachers can collect anecdotal evidence of learning. Using the notes and reflections in **Appendices 3.1** & **3.2**, teachers can collect more formal assessment pieces to evaluate if curriculum goals are being met.

Summative Assessment: To assess the more formal summative pieces in this unit, teachers can use the results of **Appendices 3.3, 3.4 and 3.5** to gather more targeted evidence of learning.

ENRICHMENT

- 1. Public Health & Food Safety Historical Timeline work together in pairs or as a class to put together a visual timeline of progress from the mid-1800s through today, noting significant events, historical figures, policies and practices along the way. This can be set up on paper, on a white/Smart board or around the classroom "gallery walk" style. Discuss specific achievements and how they keep Canadians safe.
- 2. **The Future of Food Safety in Canada** After looking through all of the historical growth public health and food safety has experienced throughout the past couple centuries, take some time to explore and discuss the next steps. What technologies or innovations might be needed or used to further the Food Safety agenda in our country? How might genetic research/genomics be used? What other ideas do the students have?

CITATIONS

¹ The Clactonian elephant butchery site at Southfleet Road, Ebbsfleet, UK:

https://www.southampton.ac.uk/assets/imported/transforms/content-block/UsefulDownloads Download/1383AF507E8149A4A4D9D77B3979A95C/W-Smith etal 2006.pdf

- ² First Nations in Canada: https://www.rcaanc-cirnac.gc.ca/eng/1307460755710/1536862806124
- ³ Campbells A History of Butchery & Butchers: https://www.campbellsmeat.com/blog/a-history-of-butchery-and-butchers---national-butchers-week
- ⁴ **The Butcher's Guild A Meat Story**: https://www.thebutchersguild.org/meat-story-an-incomplete-chronicle-of-butchery
- ⁵ The French Canadian Genealogist Le Boucher | The Butcher: https://www.tfcg.ca/butcher-old-occupation
- ⁶ Manitoba Historical Society John Gunion Rutherford: http://www.mhs.mb.ca/docs/pageant/23/rutherford_jg.shtml
- ⁷ The Canadian Encyclopedia Meat-Processing Industry: https://www.thecanadianencyclopedia.ca/en/article/meat-processing-industry
- ⁸ Meat & Poultry Who We Are: https://www.meatpoultryon.ca/about-us/
- ⁹ Food Processing Skills Canada Securing Canada's Meat Workforce: https://fpsc-ctac.com/wp-content/uploads/2020/03/exec-summary-canadian-meat-and-poultry-lmi-final-report.pdf
- ¹⁰ The Canadian Encyclopedia Meat-Processing Industry: https://www.thecanadianencyclopedia.ca/en/article/meat-processing-industry
- ¹¹ Food Processing Skills Canada Securing Canada's Meat Workforce: https://fpsc-ctac.com/wp-content/uploads/2020/03/exec-summary-canadian-meat-and-poultry-lmi-final-report.pdf
- ¹² The place of women in butchery the role of the spouse in French butcher's retail business: https://www.academia.edu/40600522/The place of women in butchery the role of the spouse in the French butchers retail business 1860 1960
- ¹³ The Canadian Food Safety System Health Canada: https://www.mcgill.ca/macdonald/files/macdonald/enrico buenaventura hc role in hr during outbreaks s.pdf
- ¹⁴ **Canadian Food Inspection Agency:** https://inspection.canada.ca/animal-health/humane-transport/livestock-and-poultry-transport-in-canada/eng/1363748532198/1363748620219

LINKS

GOVERNMENT

Agriculture and Agri-Food Canada's Indigenous Agriculture and Food Systems Initiative: https://agriculture.canada.ca/en/agricultural-programs-and-services/indigenous-agriculture-and-food-systems-initiative

Agriculture & Agri-Food Canada – Labelling – How to Identify Canadian Food: https://www.youtube.com/watch?v=5vBD9VqKyBQ&t=17s

Canadian Food Inspection Agency – *Livestock Transport in Canada:* https://inspection.canada.ca/animal-health/humane-transport/livestock-transport-incanada/eng/1363748532198/1363748620219

Canadian Health Food Association - Safe Food for Canadians Regulations:

https://chfa.ca/en/Safe-Food-for-Canadians-Regulations

Canadian Food Inspection Agency (CFIA):

https://inspection.canada.ca/eng/1297964599443/1297965645317

Canadian Food Inspection Agency – Avian influenza surveillance:

https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/surveillance/avian-influenza-surveillance/eng/1329693810008/1329694298513

Canadian Food Inspection Agency - Protect your Flock from Bird Flu:

https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/eng/1323990856863/1323991018946

Canadian Food Inspection Agency – We are the CFIA:

https://www.youtube.com/watch?v=jOxPS6AfWsI

Food Fraud: https://inspection.canada.ca/food-labels/labelling/consumers/food-fraud/what-is-food-fraud/eng/1648661693364/1648661694161

Food Safety Resources: https://www.canada.ca/en/services/health/food-safety.html

Good Manufacturing Practices (GMP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a9

Good Agricultural Practices (GAP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a8

Government of Canada - Greenhouse Gases & Agriculture:

https://agriculture.canada.ca/en/agriculture-and-environment/climate-change-and-air-quality/greenhouse-gases-and-agriculture

Government of Canada – Improving Processing Capacity in Ontario's Meat & Poultry Sector:

https://www.canada.ca/en/agriculture-agri-food/news/2022/03/improving-processing-capacity-in-ontarios-meat-and-poultry-sector.html

Hazard Analysis Critical Control Point (HACCP): https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a12

Meat Inspection Program: https://www.ontario.ca/page/meat-inspection-program

National Farm Animal Care Council: https://www.nfacc.ca/

National Farm Animal Care Council – *Transportation:* https://www.nfacc.ca/codes-of-practice/transportation

OMAFRA's Responsibilities Under the Meat Regulation:

http://omafra.gov.on.ca/english/food/inspection/meatinsp/resp-under-meat.htm

Preventative Controls: https://inspection.canada.ca/food-safety-for-industry/toolkit-for-food-businesses/glossary-of-key-terms/eng/1430250286859/1430250287405#a18

Provincially Licensed Meat Processing Facilities

https://www.arcgis.com/apps/webappviewer/index.html?id=94b2995f891e4fd7be5fc34d4ef1784d

Public Health Ontario - Food Safety: A Guide for Ontario's Food Handlers

https://www.health.gov.on.ca/en/pro/programs/publichealth/enviro/docs/training_manual.pdf

Safe Food Handling In The Home:

https://www.canada.ca/en/health-canada/services/general-food-safety-tips/safe-food-handling-home.html

INDUSTRY

BISON

Canadian Bison: https://www.canadianbison.ca/producers/regional-associations/ontario

Hinterland Who's Who: https://www.youtube.com/watch?v=yswCh sVUsQ

Parks Canada - Restoring a Legacy: https://www.youtube.com/watch?v=OtF9QBQGMt4&t=144s

Bison du Nord: https://vimeo.com/198934385?embedded=true&source=vimeo logo&owner=61379608

BEEF

Beef Farmers of Ontario: https://www.ontariobeef.com/

Beef Farmers of Ontario – Animal Care on Beef Farms: https://www.youtube.com/watch?v=zLcbVWOgPl&t=6s

Canadian Beef Grading System:

https://www.youtube.com/watch?v=vDyW5Rrocbk

Guardians of the Grasslands: https://guardiansofthegrasslands.ca/

Life of a Beef Farm Family: https://www.youtube.com/watch?v=A7VD2yXB3tc

Meet an Ontario Beef Producer & Processor – VG Meats Family Story:

https://www.youtube.com/watch?v=EORS5kuHhxM

Understanding Beef: Health & Nutrition - <u>https://canadabeef.ca/wp-content/uploads/2022/02/Health-Nutrition-Fact-Sheet-April-2022.pdf</u>

GOATS

Ontario Goat: https://ontariogoat.ca/

Graham Creek Farm – Learn about Goats & Goat Farming:

https://grahamcreekfarm.com/all-natural-ontario-goat/

Canadian Food Focus - How Boer Goats are Raised: https://www.youtube.com/watch?v=vwi0e4A-EfM

PORK

Ontario Pork: https://www.ontariopork.on.ca/

Ontario Pork Recent Research: https://www.ontariopork.on.ca/Research/Recently-Funded

Canadian Food Focus – How are Pigs Raised:

https://www.youtube.com/watch?v=7HNg62ed nA

Canadian Food Focus - Raising Heritage Pigs & Wild Boar in Canada:

https://www.youtube.com/watch?v=YfSSWEErJvY

Sustainability & Tech: https://www.youtube.com/watch?v=sJTJBLBxVsg

Animal Care: https://www.youtube.com/watch?v=6A8AnhJvVcs&t=45s

Ontario Pork Farm Visit: https://www.youtube.com/watch?v=O-1X7a6Jk90

SHEEP / LAMBS

Ontario Sheep Farmers: https://www.ontariosheep.org/

Ontario Lamb Farming: https://www.youtube.com/watch?v= EqkWD4S490&t=84s

VEAL

Veal Farmers of Ontario: https://vealfarmers.ca/

Fields to Forks – Veal Farmers of Ontario:

https://www.youtube.com/watch?v= aFBILGBaLc&list=PLO9Da-c 6lpBHwukZrrgR1mcO4IDt 79p

CHICKEN / FOWL

Canadian Poultry Research Council: https://cp-rc.ca/en/research

Chicken Farmers of Ontario: https://www.ontariochicken.ca/

Chicken Farmers of Ontario – Women in Leadership Industry Tour:

https://www.youtube.com/watch?v=GQVo-9PbXa8

Farm & Food Care Chicken Fact Sheet:

https://www.farmfoodcareon.org/wp-content/uploads/2017/05/Chicken2017.pdf

Raised by a Canadian Farmer Animal Care Program: https://www.youtube.com/watch?v=tN0dQDL8ijq

Artisanal Chicken Farm: https://www.youtube.com/watch?v=E29_XCwyjnw&t=87s

Learn the King Cole Ducks Story: https://www.youtube.com/watch?v=CiAisOuMzwE

Explore Careers on an Ontario Duck Farm: https://www.youtube.com/watch?v=2iraGP8xNU8

RABBIT

Ontario Rabbit: http://ontariorabbit.ca/

Michel Dignard & Jeanette Mongeon Family Farm: https://www.youtube.com/watch?v=nlBn JFzgns

TURKEY

Turkey Farmers of Ontario: https://turkeyfarmers.on.ca/

Meet an Ontario Turkey Farmer: https://www.youtube.com/watch?v=mcU2gC7XenU

Learn All About Turkey Farming with the Doan Family:

https://www.youtube.com/watch?v=H A2cfJbvJM

WILD

Ontario Federation of Anglers & Hunters (OFAH) - Telling Our Story:

https://www.youtube.com/watch?v=VgpejW5EAmQ

Ontario.ca Hunting Info: https://www.ontario.ca/page/hunting-licence-ontario-residents

North Country Premium Meats, Thunder Bay, Ontario: http://www.northcountrymeats.com/game.html

MEAT & POULTRY PROCESSING

Accountant: https://www.agcareers.com/career-profiles/accountant.cfm

Accountant - Faces Behind Food: https://www.instagram.com/p/CVOC-d3LrRy/

Buying Halal Meat in Canada: https://www.youtube.com/watch?v=uHgmWAhdT9A

Canadian Institute of Food Safety: The Difference Between Best Before and Expiry Dates -

https://www.foodsafety.ca/blog/difference-between-best-and-expiry-dates

Canadian Meat Council - Labour Shortages: https://cmc-cvc.com/industry/labour/

Canadian Meat Council - Nutrition: https://cmc-cvc.com/consumers/nutrition/

Canadian Trucking Alliance – House of Commons' Standing Committee on Agriculture and Agri-Food: Perception of Public Trust in the Canadian Agriculture Sector, 2019: https://ontruck.org/wp-content/uploads/2019/03/House-of-Commons-Agriculture-Sector public.pdf

Conestoga Meats - Our Story: https://www.youtube.com/watch?v=e PR5hAiuDI

Feeding Your Future – Focus on Livestock: Cattle Herd Health & Animal Welfare https://www.youtube.com/watch?v=Sea8HBMaksE

Feeding Your Future – Focus on Livestock: Proper Animal Handling on Feedlot Operations https://www.youtube.com/watch?v=0J3Eg9IEjAw

Food Safety Coordinator - Faces Behind Food: https://www.instagram.com/p/CSIB4DfLyDw/

Food Safety Specialist: https://www.agcareers.com/career-profiles/food-safety-specialist.cfm

Freelance Agricultural Journalist - Faces Behind Food:

https://www.farmfoodcareon.org/faces-behind-food/

Halenda's Family Story: https://www.youtube.com/watch?v=1PvgaTKPsB0

Human Resources Manager: https://www.agcareers.com/career-profiles/human-resource-manager.cfm

Intro to Sanitation: https://www.youtube.com/watch?v=D6QB-8Z4n38

Livestock Transporter – Faces Behind Food: https://www.instagram.com/p/CK4pVK-BAi /

Logistics Supervisor – Faces Behind Food: https://www.instagram.com/p/CSZ_ylvLUPz/

Meat Myth Crushers: https://www.youtube.com/watch?v=5CiyPkFomBQ

Meat & Poultry Ontario – Labelling Essentials:

https://www.meatpoultryon.ca/wp-content/uploads/2019/08/INFO-LabellingEssentials.pdf

Mechanic - Faces Behind Food: https://www.instagram.com/p/CFP3AzXBo2t/

Meet a Certified Industrial Meat Cutter: https://www.youtube.com/watch?v=8oGtjAWoOCk

Meet Carol Harrison, Registered Dietitian:

https://www.realagriculture.com/2019/06/meat-belongs-on-canadians-plate-says-dietitian/

Meet Dr. Bette, Veterinarian, Animal Welfare Specialist:

https://www.youtube.com/watch?v=qYEDinu3lrU

Meet Dr. Emily Calhoun, Physician:

https://www.voutube.com/watch?v=3CZJAEil7l8

Meet Dr. Mike Jelinksi, Veterinarian, Animal Welfare Specialist:

https://www.youtube.com/watch?v=rsmYN5rxRHk

Meet the Van Groningen Family of VG Meats: https://www.youtube.com/watch?v=EORS5kuHhxM

Meet Troy – Professional Butchery Techniques at Fanshawe College:

https://www.youtube.com/watch?v=p3osp1wPekE

Office Manager: https://www.agcareers.com/career-profiles/office-manager.cfm

Picker/Shipper - Faces Behind Food: https://www.instagram.com/p/CXMUQifNb //

Plant Controller: https://www.agcareers.com/career-profiles/controller.cfm

Quality Control Technician - Faces Behind Food: https://www.instagram.com/p/B3KtpakhrlL/

Seaway Valley Meat Cutting Institute: https://svmeatcutting.com/

Schinkel's Legacy Family Story: https://www.youtube.com/watch?v=8-H uk6KG0U

Sausage Maker - Faces Behind Food: https://www.instagram.com/p/CeT4obEJTvw/

OTHER

AgCareers: https://www.agcareers.com/career-profiles/

AgScape - Learn About Careers in Agriculture: https://www.youtube.com/c/AgScape/playlists

CareersNOW: https://foodandbeverageontario.ca/careersnow/

Canadian Paediatric Society - Caring for Kids: Food Safety at Home

https://caringforkids.cps.ca/handouts/safety-and-injury-prevention/food safety at home

Career Paths in Food & Beverage -

https://drive.google.com/file/d/1g0LTI2TbHrgOD1m0AK25RU6ICvOiDx4I/view

College & University Programs: https://foodgrads.com/college-university-partners/

FoodGrads: https://foodgrads.com/

Meat & Poultry Ontario - All Recipes: https://www.meatpoultryon.ca/recipes/

Six by Sixteen Healthy Recipe Toolkit: http://www.sixbysixteen.me/pdf.html#toolkit/

MEDIA

Calgary Herald – Industry warns blockade at Coutts threatens supply chain to U.S.:

https://calgaryherald.com/news/local-news/industry-warns-blockade-at-coutts-threatens-supply-chain-to-u-s

CBC News: Highways closed, power knocked out as storm hits northwestern Ontario:

https://www.cbc.ca/news/canada/thunder-bay/northwestern-ontario-storm-closes-highways-knocks-out-power-1.6419515

CBC News - Pandemic has rattled - not broken - Canada's meat supply chain:

https://www.cbc.ca/news/business/coronavirus-meat-supply-chain-interrupted-1.5564106

DrydenNOW: Hwy 105 to Red Lake closed off again:

https://drydennow.com/articles/hwy-105-to-red-lake-closed-off-again

Global News - Food expert warms of CP Rail labour disruption impact on B.C. supply chain:

https://globalnews.ca/news/8697001/cp-strike-bc-supply-chain/

Hazard Analysis Critical Control Points (HACCP):

https://www.foodsafety.ca/blog/everything-you-need-know-about-haccp

Myth: Processed Meat Has No Place in a Healthy Diet -

https://www.youtube.com/watch?v=IAvIhpWeUPk

Myth: The Liquid at the Bottom of a Meat Package is Blood -

https://www.youtube.com/watch?v=ugb1DLp5RZ4

Myth: A Product Spoils on the Date Listed on the Package -

https://www.youtube.com/watch?v=rJlJb3v95VE

Love Food Hate Waste - https://lovefoodhatewaste.ca/use-it-up/best-before-dates/

Partnership for Food Safety Education: https://www.fightbac.org/

Sustain Ontario's "Ontario Meat Basics": https://sustainontario.com/2012/11/20/ontario-meat-basics/

TVO: 'Almost a perfect storm' – How this northern town is battling floods:

https://www.tvo.org/article/almost-a-perfect-storm-how-this-northern-town-is-battling-floods

What I've Learned - Eating Less Meat Won't Save the Planet -

https://www.youtube.com/watch?v=sGG-A80Tl5g

ADDITIONAL RESOURCES

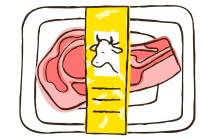
AgCareers	<u>www.agcareers.com</u>
Agriculture and Agri-Food Canada	https://agriculture.canada.ca/er
AgScape	<u>www.agscape.ca</u>
Careers in Food	www.careersinfood.com
Canada's Food Guide	<u>https://food-guide.canada.ca/en</u>
Canadian Food Inspection Agency	https://inspection.canada.ca
Careers Now	https://foodandbeverageontario.ca/careersnow/
Farm Food 360º	<u>www.farmfood360.ca</u>
Feeding Your Future	https://feedingyourfuture.ca
Food Grads	https://foodgrads.com/
Foodland Ontario	<u>www.ontario.ca/foodland-ontario</u>
Food Processing Skills Canada	
Health Canada	www.hc-sc.gc.ca
_ove Food, Hate Waste	
Meat & Poultry Ontario	https://www.meatpoultryon.ca/
National Farm Animal Care Council	www.nfacc.ca
Ontario Agricultural College	www.uoguelph.ca/oac
Ontario Ministry of Agriculture, Food and Rural Affairs.	
The Real Dirt on Farming	



DATE:



Food Processing & Food Packaging "Think-Pair-Share"



THINK: Jot your notes to the following two questions below.

PAIR: Share your ideas with a classmate, add ideas to your notes.

innovative materials or techniques might be used to achieve this?

SHARE: Report your ideas back to the class.

What food processing and/or food storage techniques can you use at home to help reduce your personal food waste while still ensuring proper food safety?
percental reca waste write still encaring proper reca safety.
percental food waste write still encountry proper food safety.
percental food waste write still eriodining proper food safety.
percental reca waste write stall chearing proper reca safety.

In what ways might food processing and packaging help reduce food waste in the world? What



NAME: DATE:

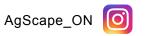


Personal Food Audit

In the following spaces, take a personal food inventory for each of the two scenarios. Use this information to strategize as a class how each of us can work to reduce the amount of food waste we contribute. As a class, make a list of ideas together!



Share a recent meal you have eaten at home:
What foods were included in the meal?
How was that food prepared (washed, chopped, grilled, etc.)?
Was there any waste on your plate at the end of the meal?
Were there any leftovers after the meal was finished? How were they handled?
Share a meal you ate at a restaurant recently:
Share a meal you ate at a restaurant recently:
What foods were included in the meal?
What foods were included in the meal?
What foods were included in the meal?







DATE:

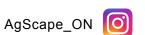


Read that Label!

Select ONE product and deconstruct the messages behind the labels that the manufacturer opted to include on their product. Use the prompts below to make notes about the messaging and share with your class.



What product did you choose?
Identify the following about your product:
Are any of its ingredients from Canada?
Was it processed and/or packaged in Canada?
Does it have a Nutrition Label?
What is the recommended portion size?
Is there a government inspection legend?
Are there any other labels or statements that provide information?
Is there anything you find confusing about the labelling on your product?
What messages are you noticing that your labelling is trying to convey?







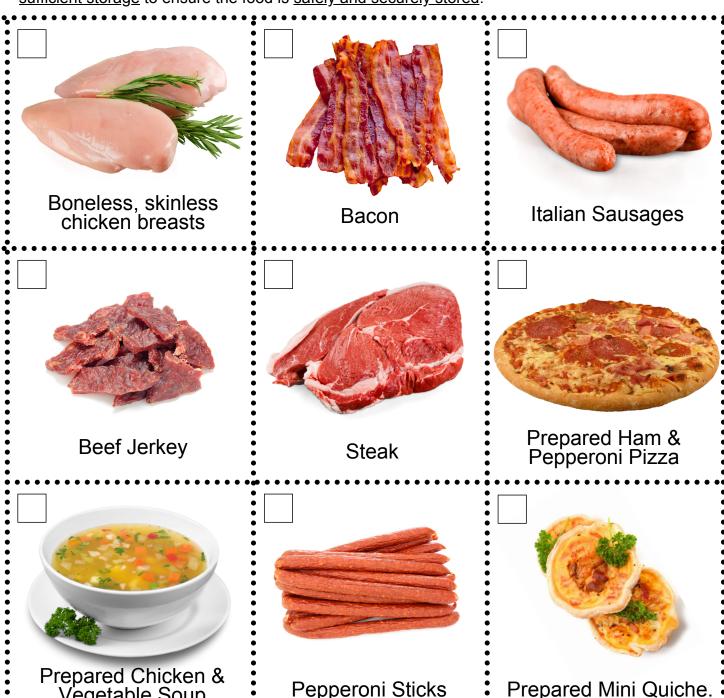
NAME: DATE:



Packaging Design Final Project

Select ONE of the foods below to design new packaging for it. The packaging should include:

- Appropriate <u>labeling</u> for that kind of food (<u>name</u>, <u>where it was made</u>, the appropriate <u>inspection legend</u>, ingredients and nutrition information).
 - An innovative design that gives consideration to environmentally sustainable materials and sufficient storage to ensure the food is safely and securely stored.





Vegetable Soup



DATE: NAME:



Packaging Design Final Project RUBRIC

	Level 1	Level 2	Level 3	Level 4
DESIGN Does the packaging design match well with the product? Is it artistically pleasing and exhibit an innovative design that uses environmentally sustainable materials and offers sufficient storage that ensures the food is safely and securely stored?	Packaging design is lacking elements to give it a cohesive look. It considers food safety and proper storage, but may be missing a few key components in the innovation and/or materials used.	Packaging design is relatively pleasing to the eye. It has a basic design that gives some consideration to environmentally sustainable materials and offers reasonable storage to ensure the food is safely and securely stored.	pleasing to the eye. It has an innovative design that gives full consideration to environmentally sustainable materials and offers sufficient	Packaging design is creative and pleasing to the eye. It has an innovative design that gives extra consideration to environmentally sustainable materials and offers ideal storage to ensure the food is safely and securely stored.
INFORMATION Does the information on the packaging label it appropriately > name of product, where it was made, applicable inspection legend, ingredient lists, nutritional information etc. Does the overall labelling on the packaging clearly communicate the necessary and/or appropriate message?	Information on the package has a few of	Information on the package has most of the key labelling components. The information on the label generally communicates the necessary and/or appropriate messaging to consumers.	Information on the package has all of the key labelling components. The information on the label clearly communicates the necessary and/or appropriate messaging to consumers.	Information on the package has all of the key labelling components and may explore other kinds of voluntary labelling. The information on the label clearly goes above and beyond to communicate the necessary and/or appropriate messaging to consumers.
NOTES:				
			FINAL	MARK:











The challenge for food companies in 2022 is managing inflation

Douglas Hart | Food in Canada | Posted: May 2, 2022

Food companies have always had challenges in running their businesses ranging from facing new competitors, improving products, managing production to finding new customers and increasing sales. COVID-19 has thrown many wrenches into the works for food processors over the last two years. Many of these challenges, such as shortage of workers, difficulty in getting food inputs and packaging and reliability of shipments, are still with us. One of the overriding challenges this year is rising costs and how to manage inflation.

Each food sector has had its own challenges contributing to rising costs. Climate change is one. Last summer, the drought in the prairie provinces had a devastating effect. Ranchers sold off their herds as there was no water or feed. Floods in BC caused havoc for beef and dairy herds and crop producers experienced low yields. Further, higher feed costs have driven up ranchers costs. As a result, beef costs have increased.

The war in Ukraine, in addition to the devastating impact on its citizens, will result in lower wheat output this year. Ukraine and Russia produce 14.6 per cent of the world's wheat. (Canada produces 4.3 per cent and US produces 6.5 per cent of world's wheat) A shortage of wheat and flour will impact food companies in many sectors, resulting in the the prices of commodities.

Food companies in Canada are experiencing a shortage of skilled labour for their processing plants. As a result, some food plants experience inconsistent production outputs. Companies have had to increase wages to attract new workers, but training new hires takes time. This has increased labour costs.

The challenge in 2022 for food companies is how to deal with the culmination of these overlapping factors leading to rising costs and inflation across the entire food industry. Most senior managers at food companies today have never experienced inflation in their careers. Inflation is here to stay longer than most of us would like, and food processors need to understand how to manage their costs and prices to succeed.

Inflation increased significantly in Canada. In February 2020, the inflation rate in Canada was 1.1 per cent. By February 2022, inflation increased to 5.7 per cent in Canada. This is the highest inflation rate in Canada since 1991.

Food prices have increased as well. The cost of food at grocery stores in Canada increased by 7.4 per cent in the last year. Beef prices are up by 20 to 30 per cent. The price of food in grocery stores rose at the fastest rate in 13 years. The top contributors to inflation in Canada today are food, gas and

housing. Clearly inflation is firmly set in the economy. The Bank of Canada raised its prime lending rate by 50 basis points in mid-April and further increases are expected this year to rein in inflation.

Food processors find that while their food input and ingredient costs may be up by 10 per cent or more packaging costs are up higher than that. This includes plastic packaging, bottles, containers, lids and other packaging materials. Higher oil prices are causing plastic costs to rise. Bottles, cans and other packaging costs are also rising due to increased shipping costs for products sourced from China and other countries.

Typically food companies face stiff opposition from grocery retailers for any price increase request. One of the more public examples of this was when Loblaws refused to permit a price increase for Frito-Lay products. In response Frito-Lay pulled its products off Loblaws shelves. After a few months Loblaws reached a new pricing deal with Frito-Lay and the chip products are now back on Loblaws shelves.

I spoke to a number of food companies in BC and Ontario in preparing this article and found that food companies have been successful in passing on their higher costs to grocery stores. Clearly higher prices are being passed on to grocery retailers, as consumers are seeing higher prices for most products including baked goods, fruits and vegetables, packaged and prepared foods, beverages and meat.

Consumers will notice that food products are not only more expensive but the size of the products has also been reduced.

Food companies need to come prepared to demonstrate to retailers exactly what their higher costs are. A well planned-out presentation showing higher food ingredient, packaging and shipping costs is required to have a grocery buyer consider a price increase. A change in the grocery retail environment is category buyers being receptive to a justifiable request for a price increase. An interesting but compelling reason for accepting higher supplier costs is that grocery retailers make higher dollar profits on a higher priced product as their usual margin is applied to the higher price. While food companies may be able to pass their higher costs on to grocery stores, the stores end up making more money.

During this inflationary period food companies need to know their costs in detail on a real-time basis. While prices used to be set for a year or longer, companies must know how their costs are changing for ingredients, packaging, shipping and labour to determine their profit, and whether an adjustment to their prices is required to maintain profitability. Controlling costs improvements in efficiencies remain on-going prime tasks of management.

Source Article: https://www.foodincanada.com/food-business/the-challenge-for-food-companies-in-2022-ismanaging-inflation-152551/







info@agscape.ca





DATE:



Exploring Questions "Think-Pair-Share"

THINK: Jot ONE of your "big questions" down in the space provided. Hypothesize about the answer - where can you find the answer? Who might you be able to talk to?

PAIR: Share your question and ideas with a classmate, add ideas to your notes based on your discussion and do the same for them.

SHARE: Report your ideas back to the class.

My "Big Question" is:
Notes & Ideas I have about my question:
Notes & Ideas from the PAIR discussion:



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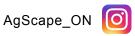
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Making A Difference Final Project

Select ONE of the key challenges and prepare a creative, multi-layered solution package to help the industry navigate these challenges. Your solution should consider the following criteria. Use the check list to help guide you:

eiec	ct ONE key challenge to explore:	BRAINSTORM NOTES :
	Shortage of Skilled Workers	
	Difficulty in Getting Food Inputs (Inputs = resources, materials, and energy needed to produce a product) Packaging & Reliability of Shipments	
	Rising Costs & Inflation	
	Food Safety	
	Climate Change	
	ke sure your project has the owing key components:	
	Explore how the challenge directly affects the meat processing industry and consumers.	
	Explore the possibility of using cutting edge/innovative new technologies (both mechanical and/or biological) as part of the solution to your chosen challenge.	
	Include both realistic and creative/ideological potential solutions.	
	Include a showcase of career pathways that can help make a difference in your chosen challenge area.	



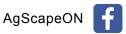


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Making a Difference Project RUBRIC

	Level 1	Level 2	Level 3	Level 4
IMPACT Explore how the challenge directly affects the meat processing industry and consumers.	Communicates some key ways the meat processing industry and consumer are impacted by challenge.	Clearly conveys a few key ways the meat processing industry and sconsumers are impacted by challenge.	several key ways the meat processing industry and consumers are impacted by	Provides and indepth look at how the meat processing industry and consumers are impacted by challenge.
TECHNOLOGY Explore the possibility of using cutting edge/innovative new technologies (both mechanical and/or biological) as part of the solution to your chosen challenge.	Includes <u>a few</u> examples of mechanical <u>and/or</u> biological new and/or proven technologies that address key areas of the challenge the industry is facing.	Includes some examples of mechanical and/or biological new and/or proven technologies that address key areas of the challenge the industry is facing.	biological new and/or proven technologies that address key areas of the challenge the	Includes an in-depth exploration of several examples of both mechanical and biological new and/or proven technologies that address key areas of the challenge the industry is facing.
IDEAS Include both realistic and creative/ideological potential solutions to your challenge.	Creatively provides a few solid realistic and/or ideological potential solutions to the challenge.	Creatively provides some solid realistic and/or ideological potential solutions to the challenge.	Creatively provides both realistic and ideological potential solutions to the challenge.	Creatively provides several realistic and ideological potential solutions to the challenge.
CAREERS Include a showcase of career pathways that can help make a difference in your challenge area.	Includes a few career profiles that connect to the challenge area relating specifically to the meat supply chain.	Includes several career profiles that clearly connect to the challenge area relating specifically to the meat supply chain.	connect directly to the	Includes a wide variety of career profiles that connect directly to the challenge area and the overall meat supply chain.
PRESENTATION Final package is organized and clearly communicates the exploration journey.	Final package is somewhat organized, has some or most of the vital components and uses appropriate language.	Final package is organized, has all vital components and communicates the entire exploration journey.	the entire exploration	Final package is well- organized, has all vital components and clearly communicates the entire exploration journey in a creative and engaging way.
IOTES:				
			FINAL	MARK:













DATE:



Making a Difference - Peer Review & Final Reflection

Pair up with a classmate who covered a different topic than you and take turns presenting your Making a Difference Project Package to one another. Be sure to walk each other through each key component and be prepared to discuss and answer questions along the way.

I reviewed work done by:	
Which KEY CHALLENGE did they explore?	Student Name
☐ Shortage of Skilled Workers☐ Packaging & Reliability of Shipments☐ Food Safety	☐ Difficulty in Getting Food Inputs☐ Rising Costs & Inflation☐ Climate Change
How well did the student cover each of the key of	components in their project?
Explore how the challenge directly affects the m	leat processing industry and consumers.
Explore the possibility of using cutting edge/inno	• • • • • • • • • • • • • • • • • • • •
Include both realistic and creative/ideological po	otential solutions.
Include a showcase of career pathways that car challenge area.	າ help make a difference in your chosen









DATE:



Making a Difference - Peer Review & Final Reflection







DATE:



Dole recalls salad kids for possible Listeria contamination

Kits were sold nationally under Dole, President's Choice brands

Vernon Ramesar | CBC News | Posted: Jan 8, 2022 3:11 PM AT | Last Updated Jan 8, 2022.

Dole Canada is recalling some salad kits sold nationally under the Dole and President's Choice brands because of possible Listeria contamination.

A recall notice issued by the Canadian Food Inspection Agency on Saturday said food contaminated with Listeria monocytogenes may not look or smell bad but can still cause sickness.

It said people who are elderly, immuno-compromised or pregnant are most at risk and that severe cases of illness can lead to death.

Ingesting Listeria, the notice said, can cause vomiting, nausea, persistent fever, muscle aches, severe headache and neck stiffness.

The CFIA said anyone who has the recalled salads in their home should throw them out or return them to the location where they were purchased.

Anyone who is sick as a result of consuming a recalled product, the notice said, should call a doctor.

The recalled products are:

- Dole Garden Salad, 340 g, UPC 0 71430 01135 5. All packages bearing a lot code beginning with "B" and a best before date up to and including Jan. 8, 2022 and all packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole Very Veggie, 283 g, UPC 0 71430 01008 2. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole Greener Selection, 312 g. UPC 0 71430 00965 9. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole American Blend, 340 g, UPC 0 71430 00933 8. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022

- Dole Asian Island Crunch Suprême Kit, 368 g, UPC 0 71430 01721 0. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole Southwest Salad Suprême Kit, 369 g, UPC 0 71430 01711 1. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole Chop Chop Kit Peppercorn Ranch, 257 g, UPC 0 71430 00098 4. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- Dole Chop Chop Kit Teriyaki Pineapple, 276 g, UPC 0 71430 00182 0. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- President's Choice Garden Salad, 340 g, UPC 0 60383 22268 0. All packages bearing a lot code beginning with "B" and a best before date up to and including Jan. 8, 2022 and all packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- President's Choice Mixed Greens, 340 g, UPC 0 60383 00188 9. All packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- President's Choice Ranch Salad Kit, 347 g, UPC 0 60383 00493 4. All packages bearing a lot code beginning with "B" and a best before date up to and including Jan. 8, 2022 and all packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022
- President's Choice Sesame Ginger Salad Kit, 369 g, UPC 0 60383 02320 1. All packages bearing a lot code beginning with "B" and a best before date up to and including Jan. 8, 2022 and all packages bearing a lot code beginning with "W" and a best before date up to and including Jan. 9, 2022

The CFIA said there have been no reported illnesses in connection with the consumption of any of the recalled salads.

Source Article: https://www.cbc.ca/news/canada/nova-scotia/dole-salad-kit-recall-president-s-choice-1.6308575



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DATE:



Beef products sold in Alberta, B.C. and Ontario recalled due to possible E. coli contamination.

Recall is related to investigation at Toronto meat packing plant

Sarah Rieger | CBC News | Posted: Oct 6, 2019 7:22 PM MT | Last Updated Oct 6, 2019.

Burgers and ground beef produced by The Beef Boutique are being recalled due to possible E. coli contamination, the Canadian Food Inspection Agency said in a warning issued Sunday.

The products were sold to hotels, restaurants and other establishments in Alberta, B.C., and Ontario, and may possibly have been distributed in other provinces and territories, the agency said.

There have been no reported illnesses associated with the consumption of the products.

The recalled products are:

- Beef Burger 6 oz., packed June 12, 2019, with product number 2530450.
- · Lean Ground Beef (HF) RWA, packed June 14, 2019, with product number 2614850.
- · Lean Ground Beef 500 gm., 17 per cent fat, packed June 12, 2019, with product number 2664250.

The recall was triggered by a CFIA inspection, the agency said, adding that it's conducting a food safety investigation which could lead to further product recalls.

The investigation was at Toronto's Ryding-Regency Meat Packers, which had its licence suspended a few weeks ago and a nationwide recall issued.

 Ryding-Regency raw beef, veal being recalled due to possible E. coli contamination

The agency warned that food contaminated with E. coli may not look or smell spoiled.

"Symptoms can include nausea, vomiting, mild to severe abdominal cramps and watery to bloody diarrhea. In severe cases of illness, some people may have seizures or strokes, need blood transfusions and kidney dialysis or live with permanent kidney damage.

In severe cases of illness, people may die," the agency's warning read.

CFIA said anyone who has the recalled products should return the items to the location where they were purchased.



Ground beef products from The Beef Boutique are being recalled, CFIA says.

Source Article: https://www.cbc.ca/news/canada/calgary/beef-boutique-recall-1.5311310







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DATE:



Some Enjoy Life baked goods recalled - they could contain plastic pieces

6 products include soft cookies, chewy bars and breakfast ovals sold under the Enjoy Life brand

CBC News | Posted: Jul 1, 2022 5:47 PM AT | Last Updated Jul 1, 2022.

Six kinds of Enjoy Life bakery products are being recalled across Canada and the U.S. because pieces of hard plastic may have contaminated the items.

"The recalled products have been sold nationally and online," said a recall warning from the Canadian Food Inspection Agency issued Saturday.

"This recall was triggered by a recall in another country," the warning added. "There have been no reported injuries associated with the consumption of these products."

The products are as follows:

- Enjoy LifeSoft Baked Cookies Snickerdoodle, 170 grams, UPC 8 53522 00018 4, best by 23/MR/10.
- Enjoy LifeSoft Baked Cookies Chocolate Chip, 170 grams, UPC 8 53522 00019 1, best by 23/MR/05 and 23/MR/12.
- Enjoy LifeSoft Baked Cookies Double Chocolate Brownie, 170 grams, UPC 8 53522 00021 4, best by 23/MR/06.
- Enjoy LifeChewy Bars Chocolate Chip and Caramel, 165 grams, UPC 8 19597 01133 3, best by
- Enjoy LifeBreakfast Ovals Chocolate Chip and Banana, 250 grams, UPC 8 19597 01270 5, best by 23/JA/18 and 23/JA/19.
- Enjoy LifeBreakfast Ovals Berry Medley, 250 grams, UPC 8 19597 01271 2, best by 23/FE/10 and 23/MR/10.

"Do not consume, use, sell, serve, or distribute recalled products," said the CFIA warning, posted on the Healthy Canadians website. "Recalled products should be thrown out or returned to the location where they were purchased."

The agency said a food safety investigation is underway, and other products may also need to be recalled.

Source Article: https://recalls-rappels.canada.ca/en/alert-recall/certain-enjoy-life-brand-bakery-

Enjoy Life Natural Brands, LLC., is headquartered in Chicago.

A June 30 notice on its website said the company was voluntarily recalling the specified products in the United States because of the possible presence of hard plastic pieces. "The company became aware of this issue as a result of internal quality assurance surveillance," it said.



Chocolate chip and caramel chewy bars, with the UPC 8 19597 01133 3 and the best-by date of March 3, 2023, are among the six recalled Enjoy Life products. (Healthy Canadians site/CFIA







DATE:



Fear of Food Recalls "Think-Pair-Share"

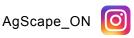
THINK: Jot your notes to the following two questions below.

PAIR: Share your ideas with a classmate, add ideas to your notes.

SHARE: Report your ideas back to the class.

how do they make you feel? What concerns or questions do they raise in you?
What information in the article helps put your mind at ease about food recalls? Why might food recalls be a GOOD thing? Why do you think we might be seeing more food recalls than we used to 10 or 20 years ago?

When you read a news article about food recalls or see a recall posting at the grocery store,





DATE:



Faces in Food Safety

Select ONE of the important figures in the Canadian food safety journey below. Research the person and make notes about: their job title(s) and responsibilities, their contributions in helping to lay a foundation for Canadian public health and food safety, one or two unique or interesting facts about their passion and/or ambition for health and safety, and some of the current career opportunities their work helped to pave the way for in public health and/or food safety.



Dr. Charles Hastings



Jeff Farber



Adelaide H. Hoodless



Dr. Peter Bryce



Temple Grandin



Dr. John G. Rutherford



Frank Yiannas



Dr. Paul A. Lachance



Dr. Louis Pasteur





DATE:



Faces in Food Safety TEACHER DISCUSSION NOTES

Select ONE of the important figures in the Canadian food safety journey below. Research the person and make notes about: their job title(s) and responsibilities, their contributions in helping to lay a foundation for Canadian public health and food safety, one or two unique or interesting facts about their passion and/or ambition for health and safety, and some of the current career opportunities their work helped to pave the way for in public health and/or food safety.

Dr. Charles Hastings

- Obstetrician & Public Health Pioneer
- Lost his daughter to typhoid because of contaminated milk.
- Crusaded to make Toronto the first Canadian city to pasteurize milk.

Dr. Peter Bryce

- Public Health Pioneer & First Secretary of Ontario Board of Health.
- Prepared the comprehensive Public Health Act, 1884.
- Advocate for health education in Canada.

Dr. Jeff Farber

- Microbiologist well known for Listeria research and policy development.
- Played a vital role in developing many of Health Canada's food safety policies.

Temple Grandin

- American Scientist, academic and animal behaviourist & consultant in the livestock industry.
- Advocate for humane treatment of livestock for slaughter.
- Member of neuro-divergent community & autism spokesperson.

Adelaide H. Hoodless

- · Lost her 14m old son due to illness from drinking contaminated milk.
- Advocated for addition of domestic science education - hygiene, cleanliness and frugality so students could learn how to safely care for their families.

Dr. John G. Rutherford

- Veterinarian & Agriculturist
- Advocated for dairy inspection (creamery cleanliness and milk quality/purity)
- Advocated for nation-wide animal inspection and quarantine services.
- Est. Meat Inspection Service that led to all meats bound for export or inter-provincial trade being inspected beforehand.

Frank Yiannas

- Microbiologist and Deputy Commissioner for Food Policy and Response for the US FDA.
- Played vital role in elevating food safety standards and building effective food safety management systems based on modern science and riskbased prevention principles.

Dr. Paul A. Lachance

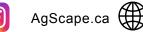
- Developed space food program for NASA.
- Professor of Food Science at Rutgers U.
- Developed HACCP system that has prevented millions from becoming ill or dying from foodborne illness.

Dr. Louis Pasteur

- French microbiologist renowned for discovery of principles of vaccination, microbial fermentation and pasteurization.
- His research led to breakthroughs in the understanding of causes and preventions of diseases, laying the foundations for hygiene, public health and modern medicine.











DATE:



BECOME A FOOD SAFETY DETECTIVE

CASE STUDY: Examine the following scenario and research how it may have been dealt with with the tools, policies and knowledge of the late 1800's/early 1900's vs. today's food safety standards.

SCENARIO: In a smaller, rural community near Toronto, Ontario, there is a holiday gathering. This special event has booths selling food and snacks, a carnival and games for the children to play. After the first day of the event reports of people falling ill begin to roll in. The local hospital becomes overwhelmed with dozens of people experiencing body aches, upset stomach, diarrhea and vomiting, a few of whose symptoms are quite severe and require overnight care and observation. The doctors are worried there is some kind of outbreak in the community. You are called in to confer with the doctors about next steps in order to identify and isolate the threat and take steps to prevent further illness. What do you do?

CRITERIA FOR CONSIDERATION

Look at the above scenario from the TWO following perspectives and compare them:

- 1. The time period is between 1880-1920. We have little information about how pathogens spread or even what kinds of pathogens are associated with certain foods. There are few policies in place to help prevent foodborne illness and no food safety laws or regulations.
- 2. The time is now present day. We have all kinds of information about how pathogens spread and detailed information about the kinds of pathogens and which foods they are associated with. There are food safety laws and regulations for safe food handling in place as well as numerous best practices and checkpoints to prevent consumers from becoming ill.

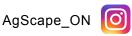
SHARE

Assemble your research and ideas together in a way that illustrates the difference between the two time periods. How would your job be different in each time period? What obstacles might you encounter? What might the overall impact be on the community in each time period?

DISCUSS

As a class, discuss your conclusions from this comparison. Build on each other's ideas and dig deeper together into the benefits of current food safety policy and the work of groups like the Canadian Food Inspection Agency, the Public Health Agency of Canada and Health Canada.









NAME: DATE:



Reflection on Food Safety

Think back to the initial discussion on the fear of food recalls and the importance of safe food handling and proper education. Share (3) key takeaways from this unit.



Questions I Still Have
Questions I Still Have
Share (3) questions you still have about food safety and/or safe food handling practices in Canada.
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