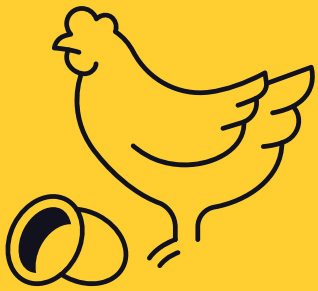
AgScape®

AN EXPLORATION OF EGG FARMING IN ONTARIO



TEACHER'S GUIDE
GRADES K-8

About This Resource

This Teacher Guide was designed with the support of and in collaboration with Egg Farmers of Ontario.

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AN OVERVIEW OF EGG FARMING

Grades K-8

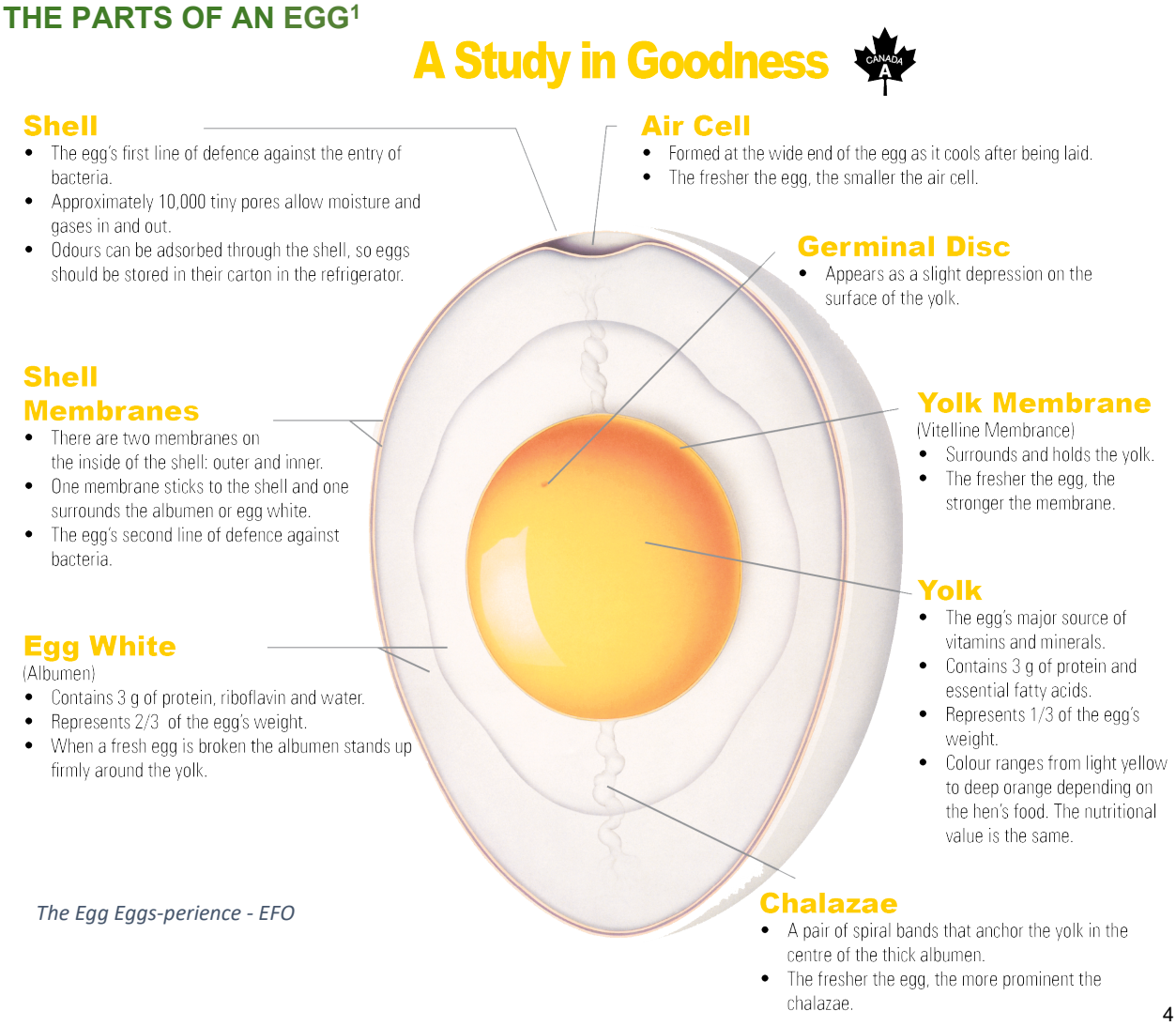
WHAT ARE EGGS?

HISTORY

Domestication of the modern chicken (*Gallus domesticus*) began in India in the year 3200 B.C., where the ancestor of the modern laying hen, the Red Jungle Fowl of India (*Gallus ferrugineus*) was found. The Red Jungle Fowl of India were the size of a modern day leghorn (one of the most popular breeds of today's domesticated chicken), however only produced approximately 20-26 eggs per year. Domestication drifted to Europe in 2000 B.C. and finally reached North America during the pre-Columbian period (pre-1492) via China and South America.

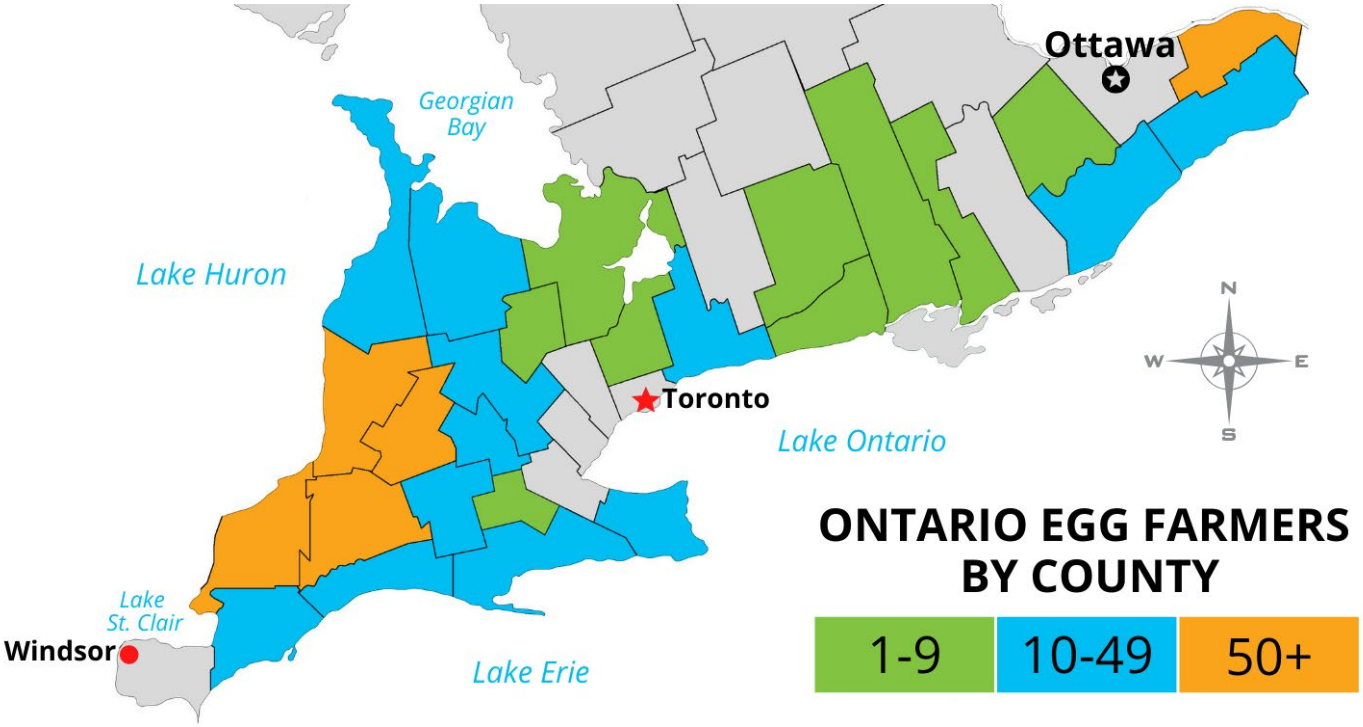
Selection of hens among farmers for high-quality eggs and consistent laying patterns began during the agricultural boom of the Roman era. Mixed farming operations then reduced the focus on laying hen production until the 19th century when egg production and consumption began to intensify, once again beginning in Europe. Scientific advancements in the understanding of selection and heredity have now delivered a modern domesticated leghorn with the ability to produce approximately 340 eggs per year.

THE PARTS OF AN EGG[1]



WHERE ARE THE EGG FARMS IN ONTARIO?

In Canada, there are over 1,100 egg farmers who produce, on average, over 750 million dozen eggs. Ontario has the largest concentration of egg farmers with over 500 egg farmers producing over 300 million dozen eggs.



Ontario Egg Farmers by County, EFO, 2021.

WHY IS EGG FARMING IMPORTANT?

ECONOMY

Egg farming in Ontario is a vibrant and growing industry that has increased its overall production. In the past 5 years, Ontario has introduced over 80 new egg farmers bringing the total to over 500 in the province. Canada's egg industry contributes over $1.3 billion to Canada's Gross Domestic Product (GDP), of which Ontario is the largest contributor at $530 million.

Canada's egg industry supports over 18,500 direct jobs across the country. In addition to egg farmers, the industry supports a variety of career paths including poultry veterinarians, poultry nutritionists, grading station workers, truck drivers, accounting professionals, various tradespeople (electricians, plumbers, equipment technicians, etc.), hatchery employees and grocery store employees. The career connections in this industry are, indeed, far-reaching!

NUTRITION & HEALTH

Eggs are a valuable source of protein, Vitamins A, D, E, B12 and folate. While all eggs offer Omega-3 fatty acids, the concentration varies depending on the type of feed being given to the laying hens. Laying hens that are given feed with high concentrations of flax can produce eggs with 12 times more Omega-3 fatty acids compared to regular eggs. Omega-3 fatty acids are known to help protect against heart disease.

What Makes Eggs So Amazing?: https://www.youtube.com/watch?v=YJ98wx12H6U

Nutrients in an Egg:
https://www.getcracking.ca/sites/default/files/media/document/Good-For-The-Body.pdf

Iron	Carries oxygen to the cells and may help prevent anemia. Also helps our muscles store and use oxygen.
Vitamin A	Helps maintain healthy skin and eye tissues; assists in night vision.
Vitamin D	Strengthens bones and teeth; may help protect against certain cancers and auto-immune diseases.
Vitamin E	An antioxidant that plays a role in maintaining good health and preventing disease.
Vitamin B12	Helps protect against heart disease.
Folate	Helps produce and maintain new cells; helps prevent a type of anemia; helps protect against serious birth defects, if taken prior to pregnancy and during the first 3 months.
Protein	Essential for building and repairing muscles, organs, skin, hair and other body tissues; needed to produce hormones, enzymes and antibodies.
Selenium	Works with Vitamin E to act as an antioxidant to help prevent the breakdown of body tissues.
Lutein and Zeaxanthin	Maintains good vision; may help reduce the risk of age-related eye diseases, such as cataracts and macular degeneration.
Choline	Plays a strong role in brain development and function.

Egg Farmers of Ontario – Egg Nutrition Facts

With its high-quality protein and all 9 essential amino acids, eggs provide the basic building blocks for the body to build its own protein, which helps it build and maintain muscle, fight infections, and grow strong hair and nails. Eggs also help stimulate brain development and function, maintain good vision, protect against different types of anemia, carry oxygen to cells and much more!

Protein-Packed Snacking to Beat the Afternoon Energy Crash:
https://www.youtube.com/watch?v=BtPpeDKz384

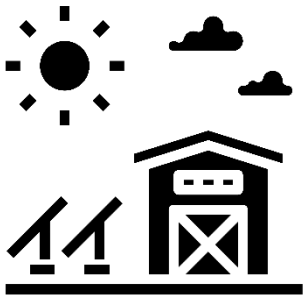
In the past, there have been concerns around the high cholesterol levels in eggs, especially for individuals that already have high levels of cholesterol or those at risk for heart disease. However, studies now show that "dietary cholesterol" which is acquired from animal foods like beef, chicken and pork, is ***not*** the cause of high blood cholesterol.

Dietitians of Canada explains:

> " …although some foods contain high amounts of cholesterol, saturated fat and trans-fat have a higher impact on blood cholesterol than dietary cholesterol. There are many reasons why you may have high blood cholesterol levels. Genetics, body weight and your diet are all factors that impact your blood cholesterol levels … it is important to limit foods that are high in saturated and trans fats as well as cholesterol." [2]

If you make food choices based on natural, whole foods and limit processed foods, the saturated fat found in lean protein, like eggs, have little effect on blood cholesterol.

ENVIRONMENT



When it comes to the environment, egg farmers, like all farmers, strive to reduce their impact and become more sustainable. In fact, “finding new ways to make egg production more environmentally sound,” is just one of the five pillars egg farmers across Canada have put in place to increase overall sustainability. The other four pillars are: protecting the health and welfare of hens; delivering safe, high-quality eggs to Canadians; enhancing the well-being of others; and empowering their people.

Read through Egg Farmers of Canada’s Sustainability Story: http://www.eggfarmers.ca/wp-content/uploads/2018/02/2018_Egg-Farmers-of-Canada_Sustainability-Story.pdf

In terms of the environment, studies have shown that in the past 50 years, the egg industry has been able to reduce their environmental footprint by 50%, while also increasing egg production by 50%. This has been accomplished through the increasing use of precision agriculture technologies such as net-zero barns, recycling poultry manure into energy, use of solar energy to run barns and maximizing the use of technology on the farm when it comes to automation for feeding and watering for hens and removing manure. These advancements have led to a reduction of labour costs, an increase in number of birds housed per facility, improvements in animal health and welfare, as well as an increase in overall egg production. The reduction of environmental impacts can also be attributed to major developments in feed composition, feed use efficiency, as well as improved genetic selection for egg production.

Burnbrae Farms’ first solar-powered egg farm is a good example of how innovations and advancements are leading to reducing overall environmental impact with its use of high-efficiency motors, lighting and ventilation systems to use as little power as possible.

Egg Farming Off the Grid: https://www.youtube.com/watch?v=tQsc9vN5r90

FOOD SECURITY

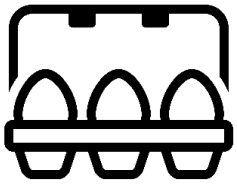
Egg farms all across Canada operate under a framework of fair farm pricing through a supply management system. Farmers purchase quota; the amount of quota a farmer has determines how many hens they can have on their farm to ensure the market is not over-supplied. Egg farmers are then paid using a cost of production formula that is determined by the overall cost of labour, as well as inputs such as feed, housing and vaccinations required for their hens. The purpose of this system is to ensure fair and consistent income for egg farmers and steady access to high-quality eggs for the consumer at a fair price.

Across Ontario, as well as in many other provinces, there has been an increase of backyard poultry farming or “urban hens”, where households keep between 2-5 hens depending on the municipality and their bylaws. Similar to commercial egg farmers, the owners of urban hens are responsible for the health and welfare of their animals, biosecurity as well as environmental practices. Some distinct differences between farmers and backyard flock owners is that the supply chain from the farmer to consumer is regularly checked by various professionals to ensure the overall safety and quality of the final egg product and that backyard flock owners are not required to purchase quota. [3a] In any case, it is important for both parties to have knowledge and awareness of the flock they are tending to ensure a safe and healthy egg is produced and animal care and welfare is maintained.

Globally, eggs have had difficulty making it into the households of individuals and families of lower socio-economic status. The reason behind the lack of consumption of eggs in this demographic is due to a combination of cost and lack of awareness of the health benefits attributed to eggs. The Food and Agriculture Organization of the United Nations (FAO) explains that nutrition and education awareness are considered the best tools to building knowledge around the nutritional importance of eggs. [4] The egg industry in Canada, at all levels (locally, provincially and nationally), has made a commitment to delivering

millions of eggs both across Canada and internationally to provide eggs to those in need, while also building awareness of eggs' nutritional benefits.

HOW ARE EGGS PRODUCED?



Much goes into bringing eggs to our tables in an average of just 4-7 days. The following section highlights each step from the hatchery, to egg production, collection and grading, to the marketing and sale of eggs to the consumer.

BREEDER FARMS & HATCHERIES

The first steps in egg production begin with the selection of breeding stock that contain characteristics that are considered desirable for egg production. Their fertilized eggs are collected and carefully stored, then sent to a hatchery.

At hatcheries, eggs are carefully incubated for 21 days. Once hatched, chicks are vaccinated to protect them against common and serious poultry diseases and then sent to be raised on pullet farms.

PULLET FARMS

For the first 18 weeks, hens, called pullets, are fed a nutritionally balanced diet and given supplemental heating and special care to ensure optimal growth and well-being. Some layer farmers raise their own pullets, but many get theirs from designated pullet farms. For biosecurity and animal welfare reasons, most pullet farms use an "all-in, all-out" system where all birds arrive together and move to the layer farm together. This allows the barns to be thoroughly cleaned between groups of pullets and limits aggression as the birds are comfortable with each other.

LAYER FARMS

There are two commonly kept commercial breeds of laying hens in Canada: White Leghorn (white hens) and Rhode Island Red (brown hens), with each having a variety of sub-breeds. Laying hens come to the layer farms around 19 weeks of age, right around the time they will begin laying eggs.

Laying hens are housed in a variety of barns:

https://www.getcracking.ca/hen-housing

Enriched Colony Housing is becoming a very popular method of housing hens on Canadian egg farms for the many benefits it provides. Hens live together in small social groups which gives them more room to move around, stretch, spread their wings and express natural behaviours. These include perching, scratching and laying their eggs in a private nesting area. Housing birds in smaller social groups also helps reduce aggressive behaviours from the more dominant hens.

Enriched Colony Housing, EFO

More about Enriched Colony Housing:
https://www.getcracking.ca/enriched-colony
See the Veldman's Enriched Colony Barn: https://www.youtube.com/watch?v=DUXq9fpC9K0

Free Run Housing is set up so the hens live in one large social group and have access to the entire barn floor, but do not go outside. The hens are able to scratch, dust bathe, walk freely and lay their eggs in nesting boxes.

Free Run Housing, EFO

More about Free Run Housing: https://www.getcracking.ca/free-run
See the Ottens Family's Free Run Barn:
https://www.youtube.com/watch?v=CmPS-j8GzSE

Free Range Housing gives hens access to the entire barn floor and also gives them the opportunity to roam outside when weather permits. Hens live in one large social group and are given the opportunity to express natural behaviours, including sunbathing and scratching for bugs outside when the weather is nice.


Free Range Housing, EFO

More about Free Range Housing:
https://www.getcracking.ca/free-range
See the Ottens Family's Free Range Barn: https://www.youtube.com/watch?v=nM-Crp4Lt10

Aviary Housing gives hens access to the entire barn floor as well as different levels of the barn where they live in large social groups and can express a variety of behaviours including perching, scratching, climbing, short flights, dust bathing and laying eggs in nesting boxes.


Aviary Housing, EFO

More about Aviary Housing: https://www.getcracking.ca/aviary
See the Ottens Family's Aviary Barn:
https://www.youtube.com/watch?v=ogOzGcBEG9Y

Conventional Housing is an older style of small group hen housing that is being phased out by Canadian egg farmers. In its time, this housing system dramatically improved laying hen welfare by keeping them elevated off the floor, in more hygienic conditions and in smaller social groups. The newer housing styles (as listed above) have expanded and improved upon this housing method.

More about Conventional Housing: https://www.getcracking.ca/conventional

Regardless of the type of housing, farmers make sure their hens always receive the best care possible, with continual access to fresh food and clean water. Farmers constantly monitor the barn environment and check several times a day to make sure the equipment in their barns is working properly to control temperature, humidity, light and ventilation at optimal levels for their birds. Many newer barns have computerized sensors that can send a message directly to the farmers' cell phones to alert them of any changes or potential issues.


Enriched Colony Housing, EFO

Farmers work with poultry nutritionists and veterinarians to ensure their hens are fed a balanced diet. Egg farmers, through either growing their own feed or purchasing from a feed company, will use a combination of wheat, corn, soybean meal, oyster shell, vitamins and minerals to ensure their laying hens are getting the best nutrients and producing high-quality eggs.

In order for hens to produce Omega-3 enriched eggs, farmers will add flax seed to their hens' diet. This increases the amount of Omega-3 found in the eggs.

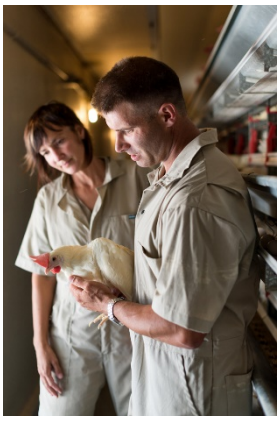
Egg farmers are required to follow the National Farm Animal Care Council's *Code of Practice for the Care and Handling of Pullets and Laying Hens* which has been developed and is regularly updated in co-operation with the government, animal scientists, farmers, veterinarians and other industry partners. This code of practice outlines the proper care, in terms of housing, husbandry, health and transportation that all farmers are required to provide for their laying hens. Egg farmers work directly with nutritionists and veterinarians to ensure they are providing the best care possible while meeting all code requirements.

HEN CARE


Caring for Hens, EFO

Hen care is a top priority for egg farmers and is consistently researched and updated to ensure the highest quality of care is provided throughout the entire industry. Standards of care exist as outlined in the National Farm Animal Care Council's *Code of Practice for the Care and Handling of Pullets and Laying Hens*. Each stage of development consists of unique requirements and challenges that must be met to ensure individual birds are healthy and properly cared for. *The Code of Practice for the Care and Handling of Pullets and Laying Hens* outlines the required provisions for caring for birds beginning with receiving and caring for chicks and ending with the final depopulation of the laying house. These universal standards help to ensure that quality care is being provided to birds throughout the industry.

When caring for hens, farmers must ensure their requirements for shelter, hydration and nutrition are met. These requirements are constantly monitored and are adapted for the age of the bird. For instance, young chicks and pullets require a warmer environment and less space than their adult counterparts. Farmers must also adapt the feed to meet the needs of the hen, adjusting ingredients as necessary to ensure proper nutrition. As the hen develops from pullet to laying hen, the nutritional offerings to the bird must also be modified to meet the requirements of its current stage of development. For instance, young pullets require a modified nutrient profile compared to adult laying hens to ensure optimal development and disease prevention. Farmers work closely with poultry nutritionists to ensure their hens are always receiving a nutritionally balanced diet. In addition to this, environmental conditions and geographic regions can also dictate additional requirements the farmer may need to provide such as increased ventilation or lighting.


Caring for Hens, EFO

To determine the needs of individual birds the farmer must monitor them closely to observe changes in behaviour as well as conditions that may require veterinary intervention. Farmers visually monitor their hens several times a day in addition to using cameras and other technology allowing them to check conditions in the barn (such as temperature, air quality and humidity). Modern technology allows the farmer to monitor both water and feed consumption, as well as barn conditions, helping to identify and address any issues immediately, ensuring the needs of the pullet or hen are always met.

Farmers and other industry stakeholders are well trained in the care and handling of pullets and laying hens. Frequent inspections, audits and training courses govern the industry, ensuring guidelines are followed through the industry's *Start Clean-Stay Clean*™ and *Animal Care* programs. Many farmers are university educated and frequently participate in training courses, conferences, workshops and other industry events to maintain the most recent and highest standards of animal care and welfare available allowing for the production of high-quality, safe eggs throughout the province.

EGG COLLECTION

Eggs are collected and packed every day, then loaded onto flats and stored in a cooling room until a truck arrives to pick them up and transport them to the grading station. Many egg farms have automated the collection process where eggs are collected on conveyor belts and then travel from the housing barn to an external room where they are automatically packed gently onto the flats.


Egg Collection, EFO

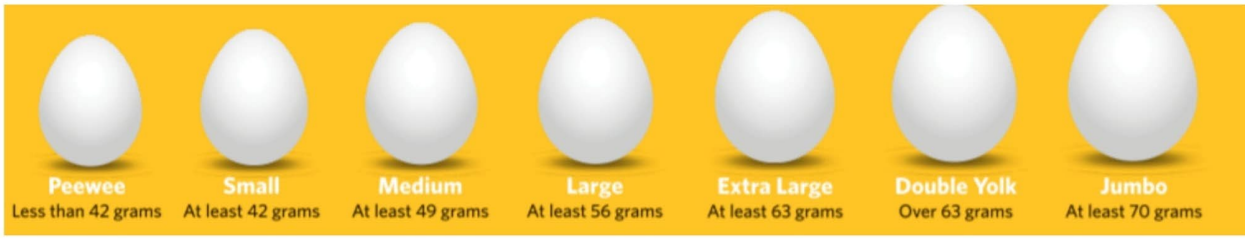
EGG GRADING

Canadian food safety regulations require eggs to be washed and graded if they are to be sold at an off-the-farm location (e.g., grocery store or market). This regulation is enforced by the Canadian Food Inspection Agency (CFIA). Eggs bought directly on-farm or "at the farm gate" are not required to be washed or graded prior to sale.

At the grading station, eggs are washed according to CFIA regulations. Due to the washing process, the protective layer, called the bloom, that keeps oxygen in and bacteria out, is removed from the eggs' outer shells. This is the reason why eggs in Canada must be refrigerated, whereas in other places (like Europe), eggs can be left out on the counter, since they are not washed at the grading station. [5]

After washing, the eggs are passed over a strong light during what is called candling. The purpose of the candling process is to ensure the shell is clean and without cracks, the egg white is thick and the yolk well-centered.

Eggs are then separated by weight using the following CFIA standards:



Canadian Food Inspection Agency - Egg Grading, EFO

Eggs are then packed into cartons and transported in a refrigerated truck to the grocery stores and markets where they can be bought by consumers.

Farm to Table: https://www.youtube.com/watch?v=tnjU_LaPJ9Q
At the Grading Station: https://www.youtube.com/watch?v=g4JKrhWnApA

MARKET

At the grocery store, egg cartons are removed from the refrigerated truck and then kept cool in large, refrigerated units. As consumers buy the product, the clerks will rotate the eggs with earlier expiration dates to the front of the refrigeration units and restock the eggs with later best before dates. This process is important to ensure that eggs are bought prior to the best before dates, removing the potential chance of eggs being wasted.

QUALITY ASSURANCE

The Canadian egg industry has recently launched the *Egg Quality Assurance Program*™ (EQA). This is an industry-wide initiative that certifies Canadian eggs are produced according to strict food safety and animal welfare standards.

Egg Quality Assurance

All EQA-certified eggs have met the highest standards of Egg Farmers of Canada's *Start Clean-Stay Clean*™ and *Animal Care* Programs. No matter what type of egg you choose, EQA certification ensures Canadians get fresh, local, high-quality eggs produced by Canadian farmers.

The EQA program involves the entire Canadian egg industry – from egg farmers and graders to processors and retailers.

Egg Quality Assurance™: https://eggquality.ca/
Egg Quality Assurance Program™: https://www.youtube.com/watch?v=5JB-MyYeS2o

OTHER USES FOR EGGS

Not all eggs end up at the grocery store in egg cartons. Eggs that do not meet the Grade A criteria at the grading station will be used in other food products. Those eggs are sent from the grading station to an egg-breaking facility where they will be cleaned and pasteurized to be sold in bulk as liquid egg product or used in further processing.

Inside a Canadian Egg Breaking Facility: https://www.youtube.com/watch?v=RL6nwcczmH0

WHAT CHALLENGES DO ONTARIO EGG FARMERS FACE?

ENVIRONMENT

As with most socially responsible companies, sustainability is a top priority for egg farmers. Farmers in the industry consider it a responsibility to make changes that will ensure long-term benefits to the climate and environment.

Over the past 50 years, the egg farming industry's environmental impact has been reduced by an incredible 50%. The industry itself recognizes there is ongoing work to be done and the focus has shifted to exploring how egg farming can become a fully, environmentally friendly industry.

One such example previously mentioned is Burnbrae's solar powered farm, which reduces environmental impact by using sustainable solar energy to run the farm. Retrofitting all of these technologies may not be feasible, but all farmers are continuing to look for opportunities for improved sustainability on farm.

Sustainability Science Research: https://www.youtube.com/watch?v=ig_PHQkYpfo

BIOSECURITY

Ontario egg farms must have strict biosecurity measures to ensure the health and safety of their hens, farmers and farm workers. There is a great deal of planning and work that goes into keeping hens safe and healthy. Egg farmers do health, feed and water checks several times a day and each time they enter and exit the barn, there are strict biosecurity protocols that must be followed to avoid introducing potentially harmful pathogens into the hen population.

Egg Collection, EFO

Pathogens and disease, such as Avian Influenza, can be transmitted from other poultry farms, migratory birds and/or backyard/urban flocks.[3b] Without strict biosecurity protocols, if an egg farmer steps in infected excrement from outside the farm and brings it into the hen house, it can lead to entire hen populations being infected and culled, which ultimately will impact the supply chain as well as the economic well-being of the farm. Farmers take the health of their hens seriously from an animal welfare, environmental and economic standpoint.

Because Ontario egg farmers were already required to have stringent biosecurity protocols in place, when COVID-19 hit, they were able to adapt quickly to the increased health protocols and regulations in the agricultural and food setting.

COVID-19 & ECONOMICS

COVID-19 lead to some unique economic obstacles for Ontario egg farmers as the food supply chain adapted to the changes and needs of consumers. With the initial onset of COVID-19 in Ontario, as with many staple food items, consumers stocked up on eggs. This led to temporarily empty egg bunkers, but with retailers imposing limits and responding to increased demands, this was quickly resolved.

Volatile market conditions related to business closures and a downward trend in the processed egg market created the need for adjustments within the system. Many eggs were diverted to food banks and eggs normally destined to foodservice and processed egg markets were 'repackaged' and offered for sale in the retail market in flats.

SOCIAL

Eggs are a common staple in many homes. While eggs are an affordable, high-quality protein source, there are still some misconceptions when it comes to eggs:

Myth: Brown eggs are better than white eggs.
Truth: White eggs have the same nutritional benefit as brown eggs, with both containing 6g of protein and 13 other essential nutrients. The only difference is the colour of the shell.

Myth: Eggs contribute to increased cholesterol levels.
Truth: In the past, eggs have been seen as contributing to increased cholesterol levels. Scientific research confirms that the dietary cholesterol in eggs has very little effect on blood cholesterol levels. Very large clinical studies have shown that there is no relation between egg consumption and increased risk of heart disease or stroke. Since 2/3 of the fat found in eggs is unsaturated (the healthy kind of fat), experts agree that most people can eat an egg a day without increasing their risk of heart disease.

Myth: Free range eggs are better for you.
Truth: All eggs from Ontario egg farms contain 6g of protein and 13 other essential nutrients. The only difference is in how the hens are housed. Ontario egg farmers have responded to consumer demand by offering a choice of eggs. Farmers house their hens using a variety of methods such as free run, free range, aviary, enriched colony and conventional housing. Regardless of the housing type, the key factor for healthy birds and humane treatment is good farm management. Inspectors regularly visit farms across Ontario to ensure that codes of practice are followed and cleanliness standards are maintained regardless of the housing type.

Each type of housing has different factors and trade-offs that affect egg production costs through different hen mortality levels, risk of disease, hen aggression levels and many others. For example, hens kept in large groups on barn floors or outdoors - characteristics of free run and free range egg production - have more direct exposure to their manure, experience higher hen mortality, higher disease risk and increased negative hen behaviours (such as aggression), all translating into higher egg costs. Some consumers accept these higher costs because they prefer this type of housing for hens. Some would view the higher mortality and higher disease risk as less acceptable when considering the welfare of the hens.

WHO IS INVOLVED IN THE EGG SUPPLY CHAIN?

Egg Farming Family, EFO

From the egg farmer to the consumer, there are many people involved in bringing a nutritious egg to your table. Along with all three levels of

government, there are graders, processors, transportation operators, wholesalers/brokers, tradespeople, retailers and more who are involved every step of the way.

Here are just a few of the key roles in bringing eggs from farm to table in Ontario:

Egg Collection, EFO

FARMERS

Egg 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 flock, following biosecurity practices and much more.

Meet the Bos Family:
https://www.getcracking.ca/our-farmers/bos-family

Meet the Mulder Family:
https://www.youtube.com/watch?v=qyJI9O_hclA

Meet Megan Veldman, Egg Farmer:
https://www.youtube.com/watch?v=TggTLMiU7Fs&list=PLT9iLj3VngaEE9dCz2yd7ogFKWt7wZvOF&index=12

POULTRY VETERINARIANS & ANIMAL NUTRITIONISTS

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

What are Hens Fed?: https://www.youtube.com/watch?v=NUzeOyWJX8A

Meet Dr. Michelle, National Animal Care Specialist, Burnbrae Farms:
https://www.youtube.com/watch?app=desktop&v=btQMOHeCKCQ

Careers at a Canadian Feed Mill: https://www.youtube.com/watch?v=KYDpkE2xVyw

REGISTERED DIETITIANS & NUTRITIONISTS

Registered dietitians and nutritionists have specialized training in understanding the nutritional components of food and how nutrients work in the human body. These 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:
Veggies Love Eggs: https://www.youtube.com/watch?v=4mSGmLO96ls
Eggs are Healthy: https://www.youtube.com/watch?v=OGmZbqzjirM

ECOLOGISTS/RESEARCHERS/UNIVERSITIES

While egg 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, Egg Farmers of Canada provided grant funding to Dr. Hincke, a professor at the University of Ottawa, who is researching how eggshell particles might be suitable as bone regenerative material.

Meet Dr. Maxwell Hincke, Professor at University of Ottawa, Dept of Cellular and Molecular Medicine: https://www.youtube.com/watch?v=rW6D8IuIn94

FOODSERVICE & CONSUMERS

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

Meet Chef Lynn Crawford, Delicious Egg Recipes: https://www.youtube.com/watch?v=Kk-hmGzKdb4

TRY COOKING WITH EGGS!

BREAKFAST

Strawberry Banana French Toast:
French toast with strawberries and bananas! This is a beautiful and tasty way to get some fruit in the morning.
https://www.getcracking.ca/recipes/strawberry-banana-french-toast

English Muffin Breakfast Pizza:
Pizza for breakfast! Everyone can create their own breakfast pizza masterpiece with these easy-to-customize egg-based breakfast pizzas!

https://www.getcracking.ca/recipes/english-muffin-breakfast-pizza

Churro French Toast Roll Ups:
Delicious cinnamon butter makes for a sweet surprise in the centre of these delicious rolls which are dipped in egg, fried in a pan and sprinkled with cinnamon and sugar!

https://www.getcracking.ca/recipes/churro-french-toast-roll-ups

LUNCH/DINNER

Easy Scrambled Egg Tacos:
A fun twist on tacos using eggs as the main protein!

https://www.getcracking.ca/recipes/egg-tacos-kids

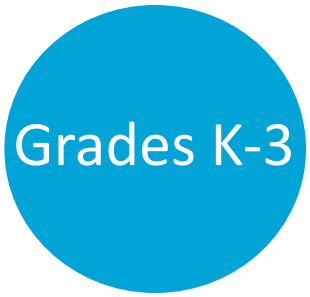
Veggie & Egg Fried Rice:
Take your leftover rice and turn it into a delicious meal in just 30 minutes!

https://www.getcracking.ca/recipes/veggie-egg-fried-rice

Baked Egg Taquitos:
Delicious tortilla deep fried or baked roll-ups are a great side, appetizer or light meal!

https://www.getcracking.ca/recipes/baked-egg-taquitos

LESSON PLAN:
Be An Egg Farmer!



ABOUT THIS LESSON

This lesson gives students the opportunity to explore the entire farm-to-table process of egg farming using a variety of interactive, engaging activities. The activities can be modified easily into single classroom activities, set up as stations, done over several days as an exploration unit or adapted for online instruction.

MATERIALS NEEDED

Station #1 Materials:

- **Appendix 1.1a: Eggs of All Sizes 1**
- **Appendix 1.1b: Eggs of All Sizes 2**
- **Appendix 1.2: Egg Grading in Canada**
- **Appendix 1.3: Just Like An Egg!**
- **Glue Sticks**
- **Scissors**
- **Variety of classroom items for comparison (blocks, beads, balls, etc.)**
- ***Eggs (various sized ones – medium, large, etc. - based on availability)*** **optional**
- ***Egg Carton (to examine where the grading information is located)*** **optional**

Station #2 Materials:

- **Appendix 1.4a: The Journey of an Egg (with captions)**
- **Appendix 1.4b: The Journey of an Egg (without captions)**
- **Appendix 1.4c: The Journey of an Egg (blank template)**
- **Glue Sticks**
- **Scissors**

Station #3 Materials:

- **White or Brown Paper Plates**
- **Googly Eyes**
- **Pipe Cleaners**
- **Yellow/Orange and Red Construction Paper or Felt**
- **Assorted Feathers (white/brown for realistic hens, or rainbow for fun ones)**
- **Glue Sticks/Tape**
- **Scissors**

Station #4 Materials:

- **Bins/Boxes or Baskets**
- **Bedding for Nesting Boxes**
- **Egg Collecting Baskets and Empty Egg Cartons**
- **Wooden or Plastic Eggs**
- **Broom and Dustpan**
- **Laying Hen Crafts from Station #3**

Station #5 Materials:

- **Recipe from Teacher's Guide**
- **Ingredients for Recipe**
- **Bakeware/Pans**
- **Kitchen Utensils**
- **Kitchen Cloths/Paper Towels**
- **Aprons**

CURRICULUM EXPECTATIONS

KINDERGARTEN LEARNING FRAMEWORK

BC – Belonging & Contributing
SRWB – Self-Regulation and Wellbeing
DLMB – Demonstrating Literacy & Mathematics Behaviours
PSI – Problem Solving & Innovating

4. *demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts*. **BC, SRWB, PSI**

10. *demonstrate literacy behaviours that lead beginning writers to communicate with others*. **DLMB, PSI**

13. *use the processes and skills of an inquiry stance (ie. questioning, planning, predicting, observing, and communicating)* **PSI**

16. *measure, using non-standard units of the same size, and compare objects, materials, and spaces in terms of their length, mass, capacity, area, and temperature, and explore ways of measuring the passage of time, through inquiry and play-based learning.* **DLMB**

17. *describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects, through investigation*. **DLMB**

29. *demonstrate an understanding of the natural world and the need to care for and respect the environment.* **BC**

HEALTH & PHYSICAL EDUCATION

- **Grade 1**
  - **D1. Understanding Health Concepts**
    By the end of Grade 1, students will:
    - **D1.1** explain why people need food to have healthy bodies and minds.
  - **D2. Making Healthy Choices**
    By the end of Grade 1, students will:
    - **D2.1** describe how Canada's Food Guide can help them develop healthy eating habits.

- **Grade 2**
  - **D2. Making Healthy Choices**
    By the end of Grade 2, students will:
    - **D2.1** use Canada's Food Guide to identify food and beverage choices that contribute to healthy eating patterns.

- **Grade 3**
  - **D1. Understanding Health Concepts**
    By the end of Grade 3, students will:
    - **D1.1** demonstrate an understanding of how the origins of food (e.g., where the food is grown, harvested, trapped, fished, or hunted; whether and how it is processed or prepared) affect its nutritional value and how those factors and others (e.g., the way we consume and dispose of food) can affect the environment.
  - **D3. Making Connections for Healthy Living**
    By the end of Grade 3, students will:
    - **D3.1** explain how local foods and foods from various cultures can be used to expand their range of healthy eating choices.

SCIENCE

- **Grade 1 – Needs & Characteristics of Living Things**
  - **Relating Science & Technology to Society & the Environment**
    By the end of Grade 1, students will:
    - **1.1** identify personal action that they themselves can take to help maintain a healthy environment for living things, including humans.
    - **1.2** describe changes or problems that could result from the loss of some kinds of living things that are part of everyday life (e.g., if we lost all the cows, all the insects, all the bats, all the trees, all the grasses), taking different points of view into consideration.
  - **Developing Investigation & Communication Skills**
    By the end of Grade 1, students will:
    - **2.2** investigate and compare the basic needs of humans and other living things, including the need for air, water, food, warmth, and space, using a variety of methods and resources.
    - **2.3** investigate and compare the physical characteristics of a variety of plants and animals, including humans.
  - **Understanding Basic Concepts**
    By the end of Grade 1, students will:
    - **3.1** identify environment as the area in which something/someone exists/lives.
    - **3.2** identify the physical characteristics (e.g., size, shape, colour, common parts) of a variety of plants and animals.
    - **3.4** describe the characteristics of a healthy environment, including clean air and water and nutritious food, and explain why it is important for all living things to have a healthy environment.
    - **3.5** describe how showing care and respect for all living things helps to maintain a healthy environment.
    - **3.6** identify what living things provide for other living things.

- **Grade 2 – Growth & Changes in Animals**
  - **Relating to Science & Technology to Society & the Environment**
    By the end of Grade 2, students will:
    - **1.1** identify positive and negative impacts that animals have on humans (society) and the environment, form an opinion about one of them, and suggest ways in which the impact can be minimized or enhanced.
    - **1.2** identify positive and negative impacts that different kinds of human activity have on animals and where they live, form an opinion about one of them, and suggest ways in which the impact can be minimized or enhanced.

- **Developing Investigation & Communication Skills**
  By the end of Grade 2, students will:
  - **2.2** observe and compare the physical characteristics (e.g., fur or feathers; two legs or no legs) and the behavioural characteristics (e.g., predator or prey) of a variety of animals, including insects, using student-generated questions and a variety of methods and resources.
  - **2.3** investigate the life cycle of a variety of animals (e.g., butterflies, frogs, chickens), using a variety of methods and resources.
- **Understanding Basic Concepts**
  By the end of Grade 2, students will:
  - **3.1** identify and describe major physical characteristics of different types of animals.
  - **3.2** describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment.

SOCIAL STUDIES

- **Grade 1 – People & Environments: The Local Community**
  - **B1. Application: Interrelationships within the Community**
    By the end of Grade 1, students will:
    - **B1.1** describe some of the ways in which people make use of natural and built features of, and human services in, the local community to meet their needs, and what might happen if these features/services did not exist.
    - **B.1.2** identify some services and service-related occupations in their community and describe how they meet people's needs, including their own needs.

- **Grade 2 – People & Environments: Global Communities**
  - **B1. Application: Variations in Global Communities**
    By the end of Grade 2, students will:
    - **B1.2** describe some of the ways in which two or more distinct communities have adapted to their location, climate, and physical features.
  - **B3. Understanding Context: Physical Features & Communities**
    By the end of Grade 2, students will:
    - **B3.6** identify basic human needs and describe some ways in which people in communities around the world meet these needs.

- **Grade 3 – People & Environments: Living & Working in Ontario**
  - **B1. Application: Land Use & the Environment**
    By the end of Grade 3, students will:
    - **B1.1** describe some major connections between features of the natural environment of a region and the type of land use and/or the type of community that is established in that region.
    - **B1.2** describe some major connections between features of the natural environment and the type of employment that is available in a region, with reference to two or more municipal regions in Ontario.
  - **B3. Application: Understanding Context: Regions and Land Use in Ontario**
    By the end of Grade 3, students will:
    - **B3.5** describe major types of land and how they address human needs/wants.

THE ARTS

- **Grade 1 – Drama**
  - **D1. Creating & Presenting**

    By the end of Grade 1, students will:
    - **B1.1** engage in dramatic play and role play, with a focus on exploring a variety of sources from diverse communities, times, and places.

- **Grade 1 – Visual Arts**
  - **D1. Creating & Presenting**

    By the end of Grade 1, students will:
    - **D1.1** create two- and three-dimensional works of art that express feelings and ideas inspired by personal experiences.
    - **D1.2** demonstrate an understanding of composition, using principles of design to create narrative art works or art works on a theme or topic.
    - **D1.3** use elements of design in art works to communicate ideas, messages, and personal understandings.

- **Grade 2 – Drama**
  - **D1. Creating & Presenting**

    By the end of Grade 2, students will:
    - **B1.1** engage in dramatic play and role play, with a focus on exploring main ideas and central characters in stories from diverse communities, times, and places.

- **Grade 2 – Visual Arts**
  - **D1. Creating & Presenting**

    By the end of Grade 2, students will:
    - **D1.1** create two- and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature.
    - **D1.2** demonstrate an understanding of composition, using principles of design to create narrative art works or art works on a theme or topic.
    - **D1.3** use elements of design in art works to communicate ideas, messages, and personal understandings.

- **Grade 3 – Drama**
  - **D1. Creating & Presenting**

    By the end of Grade 3, students will:
    - **B1.1** engage in dramatic play and role play, with a focus on exploring themes, ideas, characters, and issues from imagination or in stories from diverse communities, times, and places.

- **Grade 3 – Visual Arts**
  - **D1. Creating & Presenting**

    By the end of Grade 3, students will:
    - **D1.1** create two- and three-dimensional works of art that express personal feelings and ideas inspired by the environment or that have the community as their subject.
    - **D1.2** demonstrate an understanding of composition, using principles of design to create narrative art works or art works on a theme or topic.
    - **D1.3** use elements of design in art works to communicate ideas, messages, and personal understandings.

LANGUAGE ARTS

- **Grade 1 – Reading**
  - **Reading for Meaning**

    By the end of Grade 1, students will:
    - **1.4** demonstrate understanding of a text by retelling the story or restating information from the text, including the main idea.
    - **1.6** extend understanding of texts by connecting the ideas in them to their own knowledge/experience, to other familiar texts, and/or the world around them.

- **Grade 1 – Writing**
  - **Developing and Organizing Content**

    By the end of Grade 1, students will:
    - **1.5** identify and order main ideas and supporting details, initially with support and direction, using simple graphic organizers (e.g., a story ladder, sequence chart) and simple organizational patterns.

- **Grade 1 – Media Literacy**
  - **Creating Media Texts**

    By the end of Grade 1, students will:
    - **3.4** produce some short media texts for specific purposes and audiences, using a few simple media forms and appropriate conventions and techniques.

- **Grade 2 – Reading**
  - **Reading for Meaning**

    By the end of Grade 2, students will:
    - **1.4** demonstrate understanding of a text by retelling the story or restating information from the text, with the inclusion of a few interesting details.
    - **1.6** extend understanding of texts by connecting the ideas in them to their own knowledge/experience, to other familiar texts, and to the world around them.

- **Grade 2 – Writing**
  - **Developing and Organizing Content**

    By the end of Grade 2, students will:
    - **1.5** identify and order main ideas and supporting details, using graphic organizers (e.g., a story grammar: characters, setting, problem, solution; a sequential chart: first, then, next, finally) and organizational patterns.

- **Grade 2 – Media Literacy**
  - **Creating Media Texts**

    By the end of Grade 2, students will:
    - **3.4** produce some short media texts for specific purposes and audiences, using a few simple media forms and appropriate conventions and techniques.

- **Grade 3 – Reading**
  - **Reading for Meaning**

    By the end of Grade 3, students will:
    - **1.4** demonstrate understanding of a variety of texts by identifying important ideas and some supporting details.
    - **1.6** extend understanding of texts by connecting the ideas in them to their own knowledge/experience, to other familiar texts, and to the world around them.

- **Grade 3 – Writing**
  - **Developing and Organizing Content**
    By the end of Grade 3, students will:
    - **1.5** identify and order main ideas and supporting details into units that could be used to develop a short, simple paragraph, using graphic organizers (e.g., a story grammar, a T-chart, a paragraph frame) and organizational patterns.

- **Grade 3 – Media Literacy**
  - **Creating Media Texts**
    By the end of Grade 3, students will:
    - **3.4** produce some short media texts for specific purposes and audiences, using a few simple media forms and appropriate conventions and techniques.

TEACHING & LEARNING STRATEGIES

STATION #1: Eggs by Size & Weight (Teacher-Directed)

1. **Watch: All About Egg Grading**: https://www.youtube.com/watch?v=tnjU_LaPJ9Q

2. **Table Talk**: Before the eggs are packed, they are weighed and organized into their various sizes. In this activity, you are going to pretend ***you*** are in charge of sorting the eggs! Using various example manipulatives from the classroom (blocks, beads, balls, etc.), discuss and demonstrate the concept of "big, bigger, biggest" and "small, smaller, smallest" with the students. Give them the opportunity to demonstrate their understanding using the manipulatives.

3. Give students **Appendix 1.1a: Eggs of All Sizes 1**

4. Invite students to cut the various eggs out and glue them on **Appendix 1.1b: Eggs of All Sizes 2** by size visually (smallest > largest or largest > smallest).

   Students can also use a variety of sizes of plastic eggs to order them in the same way. (See photo →)

   To add a writing-practice component, students can also label the eggs with the appropriate sizing name used by the Canadian Food Inspection Agency:

   (From Smallest → **Peewee, Small, Medium, Large, Extra Large, Jumbo** ← to Largest)

5. **Dig Deeper**: How much does each egg size weigh? Using a small kitchen scale, find several small items in the classroom and weigh them. Compare and categorize the items according to **Appendix 1.2: Egg Grading in Canada**:

Peewee Eggs	=	less than 42g
Small Eggs	=	42g – 48g
Medium Eggs	=	49g – 55g
Large Eggs	=	56g – 63g
Extra Large Eggs	=	64g – 69g
Jumbo Eggs	=	70g or larger

6. Give students **Appendix 1.3: Just Like An Egg!** and have them fill in the number of items that weigh the same as the various egg sizes.

7. **Try This:** Bring in a few REAL eggs of different sizes and have students weigh them and determine what size these eggs would be packaged into before being sold at the grocery store. Show them the labels on the cartons so they know where to find the information on the packaging. Ask students what else they notice on the label? Is there any indication of where these eggs came from or how the hens were cared for? Invite questions and discussion.

STATION #2: The Journey of an Egg (Teacher-Directed)

1. **Table Talk**: *Ask the students: What do you think goes on at an egg farm? What things does an egg farmer do each day? How do you think an egg farmer cares for the hens that lay the eggs? What do you think the hens need to grow strong?* Write down students' answers and ideas on a white board.

2. **Watch**: Show students this video of how the Mulder Family provides the best care for their hens: https://www.youtube.com/watch?v=qyJI9O_hclA

3. **Table Talk:** *What else did the students notice in the video about how the farmers care for their hens and collect their eggs? Where do the eggs go after they leave the farm?* Add students ideas to the white board.

4. **Watch: Farm & Food Care- Farm Fresh Eggs to Your Kitchen Table**: https://www.youtube.com/watch?v=vGX-tRxbILg

5. Give students **Appendix 1.4a: The Journey of an Egg**

6. Invite students to colour each of the 6 scenes, then cut the blocks out and put the story in order, showing the journey of eggs from farm to table. Students can glue the story onto a piece of construction paper or staple them into a flip booklet.

7. **Try This:** Use this version of **Appendix 1.4b: The Journey of an Egg** with blank captions and have the students re-tell the story of the journey of eggs from farm to table in their own words.

   Try This: Use this version of **Appendix 1.4c: The Journey of an Egg** with blank image blocks and blank captions. Have the students draw their own pictures and re-tell the story of the journey of eggs from farm to table in their own words.

STATION #3: Laying Hen Craft (Teacher and/or Student-Directed)

1. **Station Preparation:**
   On the table, have the following craft supplies:
   - white or brown paper plates (or brown paint)
   - googly eyes
   - yellow and red construction paper or felt
   - assorted feathers (white/brown for realistic hens, or rainbow for fun ones)
   - glue sticks and/or tape
   - scissors

2. Students will create their very own “laying hen” craft that can be used in **Station #4: Egg Farming Pretend Play.**

3. **Table Talk*:** Egg farmers make sure their hens are really well-cared for by working with professionals like *poultry veterinarians* and *nutritionists*. Hens are checked often to ensure they are healthy and their needs are met. Hen housing is well-lit and well-ventilated and gives birds the space and enrichment to encourage natural behaviours like perching and scratching. Hens prefer laying their eggs in private, so many styles of hen housing in Ontario give them private nesting boxes that are generally kept clean and free from debris so the eggs can roll safely onto the egg belt. Hens are fed a balanced diet of grains, vitamins and minerals to ensure strong, healthy birds and high-quality eggs. Hens lay an average of 340 eggs per year – almost one egg per day!

   **See the section on Hen Care in the Teacher’s Guide and Enrichment Links below to answer student questions and supplement this discussion.*

4. Laying Hen Craft Steps:
   - Fold paper plate in half so it stands on its rims. If desired, paint each side.
   - Cut a half-circle or cone-shaped beak from yellow construction paper or felt, fold and glue or tape to the underside of the top fold of the paper plate so it sticks out.
   - Cut out a red “comb” and “wattle” (as seen in the picture) and glue or tape to the appropriate locations above and below the beak.
   - Add a tail with paper or a piece of another paper plate or by adding feathers. If desired, wing pieces, similar to the tail, can be glued or taped to the sides. Feathers can be glued to the sides/wings and/or tail as well.
   - Make sure students’ names are on the inside of their laying hen and, once all the glue is dry, the hens can be placed at Station #4 to become part of the make-believe fun!

STATION #4: Egg Farmer Pretend Play (Student-Directed)

1. **Station Preparation:**
   - a row of bins, cardboard boxes and/or baskets with materials such as paper straw or wood shavings to resemble nesting boxes.
   - egg collecting baskets
   - wooden or plastic eggs
   - empty egg cartons for packaging
   - broom and dustpan (for cleaning up stray paper straw)
   - laying hen crafts from **Station #3**

2. Dedicate an area of the classroom to set up the following “egg barn” area where the students can use their imaginations to pretend to be an egg farmer and practice all that they’ve learned about the journey eggs take from farm to table (**Station #2**) and how eggs are gathered, sorted and packaged (**Station #1**). Using their laying hen crafts (**Station #3**), students will be able to practice caring for hens and collecting their eggs.

3. **Try This:** Add a small scale to the area and fill plastic eggs with a variety of different objects to give them different weights so the students can grade the eggs as learned in **Station #1** and

package them accordingly.

4. **Try This:** Give each student their own box or basket and have them come up with a name for their farm and label their nesting box. They can visit their own hen in the play area or keep their hen near their desk where they can practice caring for it each day throughout the unit.

STATION #5: Cooking with Eggs (Teacher-Directed)

1. **Station Preparation:**
   - recipe ingredients
   - necessary bakeware/pans
   - necessary kitchen utensils
   - kitchen cloth/paper towels
   - aprons

2. **Table Talk:** What do foods give our bodies to help keep us healthy and strong (*vitamins, nutrients, etc.)?* Eggs contain a wide variety of nutrients that our bodies need to be healthy *(see table on page 6 of this Teacher's Guide for more detailed descriptions and talking points).*

Iron	**Helps our muscles stay strong!**
Vitamin A	**Keeps our skin and eyes healthy!**
Vitamin D	**Helps strengthen our bones and teeth!**
Vitamin E	**A tool to help our body fight illness!**
Vitamin B12	**Helps keep our heart healthy!**
Folate	**Helps our body produce healthy cells!**
Protein	**Gives us energy and helps our whole body stay strong and healthy!**
Selenium	**Works with Vitamin E to help our body fight illness!**
Lutein & Zeaxanthin	**Helps keep our eyes healthy and our vision strong!**
Choline	**Helps keep our brain healthy!**

3. Go to page 15 in this Teacher's Guide or visit: https://www.getcracking.ca/recipes/ to explore recipes that showcase eggs! Select a recipe, gather the ingredients and spend some time chatting about all of the great ways eggs can be used while you whip up a yummy treat together! Have students share their favourite ways to enjoy eggs!

ASSESSMENT & EVALUATION

Formative Assessment: Through discussions, question/answer and participation in the various activities, teachers can collect valuable anecdotal information to assess students' growth and learning.

Summative Assessment: The completed handouts (Appendices 1.1, 1.2, 1.3, 1.4) as well as the resulting laying hen craft and student participation and skill demonstration in the pretend play station, teachers can effectively assess understanding against curriculum expectations.

ENRICHMENT

Sensory Bins:

- Fill bin with paper straw or wood shavings and a variety of wooden and/or plastic eggs of varying colours and sizes and little baskets. Students can sort by colour or size and collect the eggs in the baskets.
- Fill bin with rolled oats, corn and/or seeds or grains (food farm animals eat) and a variety of farm animal figurines and small containers.

Storybooks & Songs:

- Set up a **Classroom Library** full of fiction and non-fiction books about life on the farm, caring for farm animals, eggs, nutrition, etc., for the students to explore and deepen their understanding and experience of this unit.
- Find fun farm and egg-related **Action Songs** on YouTube or from a school song book and teach a few **Singalong Songs** to the class to expand their engagement and enjoyment of this unit.

Dive Deeper into the Daily Work of Egg Farmers:
See Teacher's Guide for more videos and links to specific content to encourage discussion and understanding of life on an egg farm.

Egg Farming Videos:

- **EFO Enriched Colony Hen Housing:** https://www.youtube.com/watch?v=NQpNeIP_8o8&feature=emb_logo
- **EFO Free Range Hen Housing:** https://www.youtube.com/watch?v=5C09uvh4g9E&feature=emb_logo
- **EFO Free Run Hen Housing:** https://www.youtube.com/watch?v=omCaw4z_tyQ&feature=emb_logo
- **EFO Aviary Hen Housing:** https://www.youtube.com/watch?v=SrVwaWUQi7A&feature=emb_logo

Caring For Hens:

- **The Laviolette Family: Proud to be Egg Farmers:** https://www.youtube.com/watch?v=yFrQ6vnyMk8
- **Farm & Food Care – Daily Routine on a Free Range Egg Farm:** https://www.youtube.com/watch?v=Abs7wDP7B50
- **Farm & Food Care – The Egg Farmers' Daily Routine:** https://www.youtube.com/watch?v=jkE1I2flhLk
- **What do Chickens Eat?:** https://www.youtube.com/watch?v=1Isux-hCgoE
- **How do you Keep the Hens Comfortable During the Different Seasons?:** https://www.youtube.com/watch?v=t0hgcy-LIHE
- **Farm & Food Care – Caring For Birds:** https://www.youtube.com/watch?v=oIOJ2KKhID8

Collecting & Packaging Eggs:

- **Farm & Food Care – Inside a Canadian Egg Breaking Facility:** https://www.youtube.com/watch?v=RL6nwcczmH0
- **Farm & Food Care – Farm Fresh Eggs to Your Kitchen Table:** https://www.youtube.com/watch?v=vGX-tRxbILg

Classroom Research Project:
Explore egg farming across Canada. Look at landscape and soil types, urban vs. rural populations and where egg farms are located.

- Do egg farms need the same things as other kinds of farms?
    - Landscape, facilities, access to certain amenities, etc.

    - Consider hen care, feed/nutrition, transportation, etc.
- How does egg farming in Ontario compare to other provinces?
- How does egg farming in Ontario compare to other countries in the world?

LESSON PLAN:
Nutrition Detectives

ABOUT THIS LESSON

This lesson encourages students to become “nutrition detectives” where they will, via an engaging decoding activity, reveal a series of important nutrients. From there, they will select one of the nutrients to research and share with the class. They will be led to discovering THE EGG and then discuss and explore all of the wonderful ways eggs can be used to help contribute to a healthy diet.

MATERIALS NEEDED

Materials:

- **Appendix 2.1: Crack the Code!**
- **Appendix 2.2: Nutrient Clue Sheets x 10**
  - **2.2a: Protein**
  - **2.2b: Choline**
  - **2.2c: Iron**
  - **2.2d: Vitamin D**
  - **2.2e: Vitamin E**
  - **2.2f: Vitamin A**
  - **2.2g: Lutein**
  - **2.2h: Selenium**
  - **2.2i: Riboflavin**
  - **2.2j: Niacin**
- **Appendix 2.3: Evidence Report**

CURRICULUM EXPECTATIONS

HEALTH & PHYSICAL EDUCATION

- **Grade 4**
  - **D1. Understanding Health Concepts**
    By the end of Grade 4, students will:
    - **D1.1** identify the key nutrients provided by foods and beverages, and describe their importance for growth, mental and physical health, learning, and physical performance.
  - **D2. Making Healthy Choices**
    By the end of Grade 4, students will:
    - **D2.1** identify personal eating habits through self-monitoring over time, and set a goal for developing healthier eating habits, on the basis of the recommendations and guidelines in Canada’s Food Guide.

- **Grade 5**
  - **D2. Making Healthy Choices**

    By the end of Grade 5, students will:
    - **D2.1** explain how to use nutrition fact tables and ingredient lists on food labels to make informed choices about healthy and safe foods.

- **Grade 6**
  - **D2. Making Connections for Healthy Living**

    By the end of Grade 6, students will:
    - **D3.1** explain how healthy eating and active living work together to improve a person's overall physical and mental health and well-being and how the benefits of both can be promoted to others.

MATHEMATICS

- **Grade 4 – B: Numbers**
  - **B2: Operations**

    By the end of Grade 4, students will:
    - **2.1** use the properties of operations, and the relationships between addition, subtraction, multiplication, and division, to solve problems involving whole numbers, including those requiring more than one operation, and check calculations.
    - **2.2** recall and demonstrate multiplication facts for 1 × 1 to 10 × 10, and related division facts.
    - **2.4** represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 10 000 and of decimal tenths, using appropriate tools and strategies, including algorithms.
    - **2.6** represent and solve problems involving the division of two- or three-digit whole numbers by one-digit whole numbers, expressing any remainder as a fraction when appropriate, using appropriate tools, including arrays.

- **Grade 4 – C: Algebra**
  - **C3: Coding**

    By the end of Grade 4, students will:
    - **3.1** solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential, concurrent, repeating and nested events.
    - **3.2** read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes.

- **Grade 5 – B: Numbers**
  - **B2: Operations**

    By the end of Grade 5, students will:
    - **2.1** use the properties of operations, and the relationships between operations, to solve problems involving whole numbers and decimal numbers, including those requiring more than one operation, and check calculations.
    - **2.2** recall and demonstrate multiplication facts from 0 × 0 to 12 × 12, and related division facts.
    - **2.4** represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 100 000 and of decimal numbers up to hundredths, using appropriate tools, strategies, and algorithms.

- **2.6** represent and solve problems involving the multiplication of two-digit whole numbers by two-digit whole numbers using the area model and using algorithms and make connections between the two methods.

- **Grade 5 – C: Algebra**
  - **C3: Coding**

    By the end of Grade 5, students will:
    - **3.1** solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structures.
    - **3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes.

- **Grade 6 – B: Numbers**
  - **B2: Operations**

    By the end of Grade 6, students will:
    - **2.1** use the properties of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and whole number percentages, including those requiring multiple steps or multiple operations.
    - **2.2** understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10.
    - **2.4** represent and solve problems involving the addition and subtraction of whole numbers and decimal numbers, using estimation and algorithms.
    - **2.7** represent and solve problems involving the multiplication of three-digit whole numbers by decimal tenths, using algorithms.

- **Grade 6 – C: Algebra**
  - **C3: Coding**

    By the end of Grade 6, students will:
    - **3.1** solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves conditional statements and other control structures.
    - **3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code.

LANGUAGE ARTS

- **Grade 4 – Reading**
  - **Reading for Meaning**

    By the end of Grade 4, students will:
    - **1.1** read a variety of texts from diverse cultures, including literary texts, graphic texts and informational texts.
    - **1.2** identify a variety of purposes for reading and choose reading materials appropriate for those purposes.
    - **1.4** demonstrate understanding of a variety of texts by summarizing important ideas and citing supporting details.
    - **1.6** extend understanding of texts by connecting the ideas in them to their own knowledge/experience/insights, to other familiar texts and the world around them.

- **Grade 4 – Writing**
  - **Developing and Organizing Content**

    By the end of Grade 4, students will:
    - **1.5** identify and order main ideas and supporting details and group them into units that could be used to develop a summary, using a variety of graphic organizers and organizational patterns.

- **Grade 5 – Reading**
  - **Reading for Meaning**

    By the end of Grade 5, students will:
    - **1.1** read a variety of texts from diverse cultures, including literary texts, graphic texts and informational texts.
    - **1.2** identify a variety of purposes for reading and choose reading materials appropriate for those purposes.
    - **1.4** demonstrate understanding of a variety of texts by summarizing important ideas and citing supporting details.
    - **1.6** extend understanding of texts by connecting the ideas in them to their own knowledge, experience, and insights, to other familiar texts, and to the world around them.

- **Grade 5 – Writing**
  - **Developing and Organizing Content**

    By the end of Grade 5, students will:
    - **1.5** identify and order main ideas and supporting details and group them into units that could be used to develop several linked paragraphs, using a variety of strategies.

- **Grade 6 – Reading**
  - **Reading for Meaning**

    By the end of Grade 6, students will:
    - **1.1** read a variety of texts from diverse cultures, including literary texts, graphic texts and informational texts.
    - **1.2** identify a variety of purposes for reading and choose reading materials appropriate for those purposes.
    - **1.4** demonstrate understanding of a variety of texts by summarizing important ideas and citing relevant supporting details.
    - **1.6** extend understanding of texts by connecting, comparing, and contrasting the ideas in them to their own knowledge, experience, and insights, to other familiar texts, and to the world around them.

- **Grade 6 – Writing**
  - **Developing and Organizing Content**

    By the end of Grade 6, students will:
    - **1.5** identify and order main ideas and supporting details and group them into units that could be used to develop a structured, multi-paragraph piece of writing, using a variety of strategies and organizational patterns.

TEACHING & LEARNING STRATEGIES

1. **Introduce the Mystery**: Humans need a wide variety of nutrients to help keep our bodies strong and healthy. In this activity, we will follow the clues that lead to a specific nutrient-dense food that is easy to access, affordable, delicious and FUN to cook with!

   Students will:
   - i. Decode the list of nutrients found in this food.
   - ii. Research **one** of the nutrients to uncover how it helps the body and explore a variety of foods that contain it.
   - iii. Gallery Walk with the class to explore where all these nutrients overlap with each other and make an **educated guess** about what key food they think they've been researching.
   - iv. Discover the **common food** and discuss its role in Canada's Food Guide and share some ideas for incorporating it into their diet.

2. Give students **Appendix 2.1: Crack the Code!** and have them solve simple math equations to crack the code that will be used in the sheets in **Appendix 2.2**.

3. Divide the list of nutrients (each handout is one nutrient) so that each is assigned to one or more of the students. Give students **Appendix 2.2a-2.2j: Nutrient Clue Sheets** and **Appendix 2.3: Evidence Reports** and have them research their selected nutrient and fill in the Evidence Report. Hang evidence sheets up on the classroom wall (or post in a digital space like Padlet or an equivalent platform) so students can compare and contrast each nutrient and make final guesses about what the mystery food is that contains ALL of these important nutrients. The teacher can lead them in the right direction if they need help. *Note: The graphics and food lists in each clue sheet all include eggs.*

4. Once the students agree that the mystery food is an EGG, spend some time exploring the EGG and all its amazing nutritional qualities (see the Teacher's Guide Overview for support material).

   a. Discuss: Canada's Food Guide: https://food-guide.canada.ca/en/
      - i. **Q:** Where in the guide are eggs found? **A.** *protein section*
      - ii. **Q:** Why might it be important to vary our protein sources? **A.** t*o get all the amino acids our bodies need, to get more enjoyment from our food, etc.*
      - iii. Explore the Food Guide Snapshot and discuss: https://food-guide.canada.ca/en/food-guide-snapshot/
        Key Talking Points: *the importance of selecting nutrient-dense foods, cooking your own meals, eating meals with others and enjoying your food.*

   b. Watch some video clips that explore the nutrition in Canadian eggs:
      Power Your Muscles with Eggs: https://www.youtube.com/watch?v=hBe3_T6FvBs
      Don't Skip the Yolks!: https://www.youtube.com/watch?v=Z0F_6pnQSf4
      What Makes Eggs so Amazing?: https://www.youtube.com/watch?v=YJ98wx12H6U

   c. Discuss some favourite ways to cook with eggs!
      Ask: What are some of your favourite ways to cook with and enjoy eggs?
      Give students a copy of the sheet "Try Cooking With Eggs!" on page 15 of this Teacher's Guide or send them to https://www.getcracking.ca/recipes and encourage them to try a new recipe, prepare one of their family's favourite meals using eggs at home, and/or take pictures and share with the class. Or, as a class, select a recipe and cook it together.

ASSESSMENT & EVALUATION

Formative Assessment: Through discussions, question/answer and participation in the various activities, teachers can collect valuable anecdotal information and notes to assess students' growth and learning.

Summative Assessment: The completed handouts (**Appendixes 2.1 & 2.4**) as well as any presentations (of evidence sheet and/or recipe) and student participation, teachers can effectively assess understanding against curriculum expectations.

ENRICHMENT

Presentation:

- Have students present their findings to the class by having them prepare a short oral presentation to go along with their **Appendix 2.3: Evidence Report**.

Family Food Festival:

- Have students research their own family's recipe box and have them create a procedural presentation (video, slide show, written document, etc.).
- Criteria for this project could include using/showcasing eggs and/or finding a recipe that contains the nutrient from their **Evidence Report from Appendix 2.3**. See page 15 of this teacher's guide for a list of suggested recipes or visit www.getcracking.ca/recipes for more ideas.

Family Meal Planning Practice:

- Using Egg Farmers of Ontario's **Meal Plan Like a Pro** resource, have students explore the value of using the family schedule, food preferences and eating in-season to help make meal planning a healthy and beneficial practice.
    - **Meal Plan Like a Pro:** https://www.getcracking.ca/sites/default/files/inline-files/Meal-Plan-Like-a-Pro.pdf

Dive Deeper into Life on an Egg Farm:

- Use resources and links from this Teacher's Guide to help students explore the roles and responsibilities of the various positions on an egg farm, how hens are cared for, how eggs are processed and packaged, etc.

Career Exploration:

- Use resources from the Teacher's Guide as well as the following websites to have students explore the wide variety of career opportunities related to egg farming!
    - https://www.getcracking.ca/
    - https://www.farmfoodcareon.org/
    - https://www.agcareers.com
    - https://thinkag.ca/en-ca/

LESSON PLAN:
Egg Entrepreneurs

ABOUT THIS LESSON

In this lesson, students will set up their own egg grading station start-up business. In groups or individually, students will put together a business plan for their egg grading station. This business plan will include a marketing strategy and an organizational hiring plan that includes budgeting for employees with key skills to fill important roles at the egg grading station. Students will present their business proposal to the class and offer peer reviews of each other's presentations that explores the effectiveness of the marketing materials.

MATERIALS NEEDED

Station #1 Materials:

- **Appendix 3.1: Entrepreneur Checklist**
- **Appendix 3.2: Marketing Plan Peer Review**

CURRICULUM EXPECTATIONS

GEOGRAPHY

- **Grade 7**
  - **B1. Application: Natural Resources & Sustainability**
    By the end of Grade 7, students will:
    - **B1.1** analyze interrelationships between the location/accessibility, mode of extraction/harvesting, and use of various natural resources.

  - **B3. Understanding Geographic Context: Using Natural Resources**
    By the end of Grade 7, students will:
    - **B3.2** describe ways in which people use the natural environment, including specific elements within it, to meet their needs and wants.

- **Grade 8**
  - **B3. Application: Natural Resources & Sustainability**
    By the end of Grade 8, students will:
    - **B3.6** identify different types of economic systems and describe their characteristics.
    - **B3.7** explain how the four main economic sectors (primary, secondary, tertiary, and quaternary) are related to global development.
    - **B3.8** identify and describe various factors that can contribute to economic development.

MATHEMATICS

- **Grade 7 – F: Financial Literacy**
  - **Financial Management**

    By the end of Grade 7, students will:
    - **1.2** identify and describe various reliable sources of information that can help with planning for and reaching a financial goal.
    - **1.3** create, track, and adjust sample budgets designed to meet longer-term financial goals for various scenarios.
    - **1.4** identify various social and personal factors that may influence financial decision making, and describe the effects that each might have.

- **Grade 8 – F: Financial Literacy**
  - **Financial Management**

    By the end of Grade 8, students will:
    - **1.2** create a financial plan to reach a long-term financial goal, accounting for income, expenses, and tax implications.
    - **1.3** identify different ways to maintain a balanced budget, and use appropriate tools to track all income and spending, for several different scenarios.

THE ARTS

- **Grade 7 – Drama**
  - **Creating & Presenting**

    By the end of Grade 7, students will:
    - **1.1** engage actively in drama exploration and role play, with a focus on examining multiple perspectives related to current issues, themes, and relationships from a wide variety of sources and diverse communities.
    - **1.3** plan and shape the direction of the drama by working with others, both in and out of role, to generate ideas and explore multiple perspectives.

- **Grade 8 – Drama**
  - **Creating & Presenting**

    By the end of Grade 8, students will:
    - **1.1** engage actively in drama exploration and role play, with a focus on examining multiple perspectives and possible outcomes related to complex issues, themes, and relationships from a wide variety of sources and diverse communities.
    - **1.3** plan and shape the direction of the drama by negotiating ideas and perspectives with others, both in and out of role.

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.

- **Grade 7 – Media Literacy**
  - **Understanding Media Texts**
    By the end of Grade 7, students will:
    - **1.1** explain how various media texts address their intended purpose and audience.
    - **1.3** evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts.
    - **1.4** explain why different audiences might have different responses to a variety of media texts.

  - **Understanding Media Forms, Conventions & Techniques**
    By the end of Grade 7, students will:
    - **2.1** explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning.
    - **2.2** identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience.

- **Creating Media Texts**
  By the end of Grade 7, students will:
  - **3.1** explain why they have chosen the topic for a media text they plan to create and identify challenges they may face in engaging and/or influencing their audience.
  - **3.2** identify an appropriate form to suit the specific purpose and audience for a media text they plan to create and explain why it is an appropriate choice.
  - **3.4** produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques.

- **Reflecting on Media Literacy Skills & Strategies**
  By the end of Grade 7, students will:
  - **4.1** identify what strategies they found most helpful in making sense of and creating media texts, and explain how these and other strategies can help them improve as media viewers/ listeners/producers.

- **Grade 8 – Media Literacy**
  - **Understanding Media Texts**
    By the end of Grade 8, students will:
    - **1.1** explain how various media texts address their intended purpose and audience.
    - **1.3** evaluate the effectiveness of the presentation and treatment of ideas, information, themes, opinions, issues, and/or experiences in media texts.
    - **1.4** explain why different audiences might have different responses to a variety of media texts.

  - **Understanding Media Forms, Conventions & Techniques**
    By the end of Grade 8, students will:
    - **2.1** explain how individual elements of various media forms combine to create, reinforce, and/or enhance meaning.
    - **2.2** identify the conventions and techniques used in a variety of media forms and explain how they help convey meaning and influence or engage the audience.

  - **Creating Media Texts**
    By the end of Grade 8, students will:
    - **3.1** explain why they have chosen the topic for a media text they plan to create and identify challenges they may face in engaging and/or influencing their audience.
    - **3.2** identify an appropriate form to suit the specific purpose and audience for a media text they plan to create and explain why it is an appropriate choice.
    - **3.4** produce a variety of media texts of some technical complexity for specific purposes and audiences, using appropriate forms, conventions, and techniques.

  - **Reflecting on Media Literacy Skills & Strategies**
    By the end of Grade 8, students will:
    - **4.1** identify what strategies they found most helpful in making sense of and creating media texts and explain how these and other strategies can help them improve as media viewers/ listeners/producers.

TEACHING & LEARNING STRATEGIES

1. **Introduce the Scenario**: Congratulations! You are the owners of a new start-up agricultural business that grades and packages eggs for sale to grocery stores. You have almost set up your new enterprise, but there are a few key things that still need to be finalized. Your job today is to establish key roles (skills) that need to be filled at your grading station, and establish a plan (and budget) to fill these roles.

   Use resources from the Teacher's Guide as well as the following websites to have students explore the wide variety of careers related to egg farming:

   - https://www.getcracking.ca/
   - https://www.farmfoodcareon.org/
   - https://www.agcareers.com
   - https://thinkag.ca/en-ca/

   Have students watch the following videos to gain a deeper understanding of the role of the grading station in the journey of an egg from farm to table:

   - **Why are Eggs Graded?:** https://www.youtube.com/watch?v=9R4Vk-w_I2k&t=12s
   - **Farm Fresh Eggs to Your Kitchen Table:** https://www.youtube.com/watch?v=vGX-tRxbILg
   - **A Better Life: Living and Working in Canada:** https://www.youtube.com/watch?v=hrUN8TIZOwo&t=158s

   Use **Appendix 3.1: Entrepreneur Checklist** to help keep students on target:

   a. Operational Plan (to be submitted to the teacher):
      i. **Research the top 5 most important jobs you'll need to fill:**
         A. Describe each job, including their roles and responsibilities and required skills. Why are they critical to the operation of your egg grading station?
         B. What education is needed for each?
         C. Rank each job from 1 (being least important) to 5 (being most important) to your business.
      ii. **Set up a payroll budget to ensure your new employees are being paid a fair, competitive yearly salary (research competitive wages for comparable jobs in the industry).**
         A. What are fair, competitive wages for each of the jobs you've chosen?
         B. How much money will your business need to allocate to pay each employee for the year's worth of work?
         C. How much money will you need to bring in to pay employees, yourself and turn a profit for the business?
         D. Reflection – What surprises you about the costs associated with staffing a business?

   b. Marketing Plan (to be presented to the class):
      i. **Business Name**
      ii. **Business Logo**
      iii. **Slogan/Tag Line**
      iv. **Select 3 Key Advertising Strategies to use in your plan**

v. **Develop a Social Media Ad Campaign – Graphic & Written Caption**
vi. **Develop a TV/YouTube Commercial (Video or Skit)**

Use https://influencermarketinghub.com/marketing-strategy-examples/ to make a list on a classroom whiteboard of key advertising strategies for the students to choose from when putting their social media ad and commercial together.

2. **Prepare a Presentation**: Have students assemble their Marketing Plan and prepare a presentation to share with the class:
    i. **Introduce your Business**
    ii. **Present your Marketing Plan**
    iii. **Perform your Commercial (Skit)**

3. **Peer Review:** Using **Appendix 3.2: Marketing Plan Peer Review,** students will fill out a peer review form for each class presentation to explore the effectiveness of the Marketing Plans.

ASSESSMENT & EVALUATION

Formative Assessment: Through interactions and using **Appendix 3.1: Entrepreneur Checklist**, teachers can collect valuable anecdotal information to assess students' growth and learning.

Summative Assessment: The completed Operational & Marketing Plans, the oral presentation and commercial, as well as the completed **Appendix 3.2: Marketing Plan Peer Review** all give the teacher solid content for a summative evaluation.

ENRICHMENT

Alternative Activity: Design Your Own Egg Farm
Have students design their own egg farm using information, videos and links from the Teacher's Guide. They can put their project together in a very similar way to the lesson above (operational, staffing etc.)

Questions for consideration of the barn set-up:

- How many hens are you planning for?
- What type of housing system will you be using?
- Will you need help (staff) to run your farm?
- What do you need to keep your hens healthy?
- How do you ensure hens get proper nutrition/food/water?
- How will you clean out the manure and where will you store it?

Questions for consideration of the egg packing room set-up:

- How many eggs will you need to pack each day?
- What type of system will you use?
- Where will you place the egg cooler?
- How will the grading station truck pick up my eggs? (Hint: Your design will need a loading dock.)

CITATIONS

[1] **Egg Farmers of Ontario** – *The Egg Eggs-perience*:
https://www.getcracking.ca/sites/default/files/media/document/Eggs-perience.pdf

[2] **UnlockFood.ca** – *Understanding Eggs and Cholesterol*:
https://www.unlockfood.ca/en/Articles/Heart-Health/Understanding-Eggs-and-Cholesterol.aspx

[3a,b] **Public Health Ontario** – *Reducing health risks associated with backyard chickens:*
https://www.publichealthontario.ca/-/media/documents/e/2017/eb-backyard-chickens.pdf?la=en

[4] **Food & Agriculture Organization of the United Nations (FAO) -**
Eggs: harnessing their power for the fight against hunger and malnutrition:
http://www.fao.org/3/ca3569en/CA3569EN.pdf

[5] **Reader's Digest** – *Why Europeans Don't Refrigerate Eggs:*
https://www.readersdigest.ca/food/healthy-food/why-europeans-dont-refrigerate-eggs/

LINKS

EGG FARMERS OF ONTARIO

The *Egg Eggs-perience*:
https://www.getcracking.ca/sites/default/files/media/document/Eggs-perience.pdf

What Makes Eggs So Amazing?: https://www.youtube.com/watch?v=YJ98wx12H6U

Nutrients in an Egg:
https://www.getcracking.ca/sites/default/files/media/document/Good-For-The-Body.pdf

Protein-packed Snacking to Beat the Afternoon Energy Crash:
https://www.youtube.com/watch?v=BtPpeDKz384

Types of Hen-Housing: https://www.getcracking.ca/hen-housing

Enriched Colony Housing: https://www.getcracking.ca/enriched-colony

Enriched Colony Hen Housing: https://www.youtube.com/watch?v=NQpNelP_8o8&feature=emb_logo

Veldman's Enriched Colony Barn: https://www.youtube.com/watch?v=DUXq9fpC9K0

Free Run Housing: https://www.getcracking.ca/free-run

Free Run Hen Housing: https://www.youtube.com/watch?v=omCaw4z_tyQ&feature=emb_logo

Ottens Family's Free Run Barn: https://www.youtube.com/watch?v=CmPS-j8GzSE

Free Range Housing: https://www.getcracking.ca/free-range

Free Range Hen Housing: https://www.youtube.com/watch?v=5C09uvh4g9E&feature=emb_logo

Ottens Family's Free Range Barn: https://www.youtube.com/watch?v=nM-Crp4Lt10

Aviary Housing: https://www.getcracking.ca/aviary

Aviary Hen Housing: https://www.youtube.com/watch?v=SrVwaWUQi7A&feature=emb_logo

Ottens Family's Aviary Barn: https://www.youtube.com/watch?v=ogOzGcBEG9Y

Conventional Housing: https://www.getcracking.ca/conventional

What are Hens Fed?: https://www.youtube.com/watch?v=NUzeOyWJX8A

Veggies Love Eggs: https://www.youtube.com/watch?v=4mSGmLO96ls

Eggs are Healthy: https://www.youtube.com/watch?v=OGmZbqzjirM

Strawberry Banana French Toast: https://www.getcracking.ca/recipes/strawberry-banana-french-toast

English Muffin Breakfast Pizza: https://www.getcracking.ca/recipes/english-muffin-breakfast-pizza

Churro French Toast Roll Ups: https://www.getcracking.ca/recipes/churro-french-toast-roll-ups

Easy Scrambled Egg Tacos: https://www.getcracking.ca/recipes/egg-tacos-kids

Veggie & Egg Fried Rice: https://www.getcracking.ca/recipes/veggie-egg-fried-rice

Baked Egg Taquitos: https://www.getcracking.ca/recipes/baked-egg-taquitos

All About Egg Grading: https://www.youtube.com/watch?v=GJWgQp8o-zM

Hen Care with The Mulder Family: https://www.youtube.com/watch?v=qyJI9O_hclA

Meet the Bos Family: https://www.getcracking.ca/our-farmers/bos-family

The Laviolette Family: Proud to be Egg Farmers: https://www.youtube.com/watch?v=yFrQ6vnyMk8

What do Chickens Eat?: https://www.youtube.com/watch?v=1Isux-hCgoE

How do you Keep the Hens Comfortable During the Different Seasons?:
https://www.youtube.com/watch?v=t0hgcy-LIHE

Power your Muscles with Eggs: https://www.youtube.com/watch?v=hBe3_T6FvBs

Don't Skip the Yolks!: https://www.youtube.com/watch?v=Z0F_6pnQSf4

What Makes Eggs so Amazing?: https://www.youtube.com/watch?v=YJ98wx12H6U

Why are Eggs Graded?: https://www.youtube.com/watch?v=9R4Vk-w_I2k&t=12s

EGG FARMERS OF CANADA

Egg Farmers of Canada – Sustainable Development Goals**:**
https://www.eggfarmers.ca/2018/12/un-sustainable-development-goals/

Egg Farmers of Canada's Sustainability Story:
http://www.eggfarmers.ca/wp-content/uploads/2018/02/2018_Egg-Farmers-of-Canada_Sustainability-Story.pdf

Sustainability Science Research: https://www.youtube.com/watch?v=ig_PHQkYpfo

Dr. Maxwell Hincke, Professor at University of Ottawa, Dept of Cellular and Molecular Medicine:
https://www.youtube.com/watch?v=rW6D8IuIn94

Egg Farmers of Canada Annual Report:
https://www.eggfarmers.ca/wp-content/uploads/2020/03/2019_Egg-Farmers-of-Canada-Annual-Report.pdf

Stats Canada – Poultry & Egg Statistics**:**
https://www150.statcan.gc.ca/n1/daily-quotidien/200527/dq200527e-eng.htm

Agriculture & Agri-Food Canada - Provincial Poultry Facts**:**
https://www.agr.gc.ca/eng/canadas-agriculture-sectors/animal-industry/poultry-and-egg-market-information/industry-profile/provincial-poultry-facts/?id=1416334346829#details-panel5

Ontario Ministry of Agriculture, Farming & Rural Affairs (OMAFRA) – Poultry Statistics**:**
http://www.omafra.gov.on.ca/english/stats/livestock/index.html

The Globe & Mail – Canadian Egg Farmers Provide Food for Our Future**:**
https://www.theglobeandmail.com/business/adv/article-canadian-egg-farmers-provide-food-for-our-future/

FARM & FOOD CARE

Egg Farming Off the Grid: https://www.youtube.com/watch?v=tQsc9vN5r90

Inside a Canadian Egg Breaking Facility: https://www.youtube.com/watch?v=RL6nwcczmH0

Meet Janelle Caldwell, An Expert in Egg Farming:
https://www.youtube.com/watch?v=65KaDYjTvhs&list=PLxl8ycqu125d4uj_YqmzMd53luu_ON-xt&index=2

Meet Dr. Michelle, National Animal Care Specialist, Burnbrae Farms:
https://www.youtube.com/watch?app=desktop&v=btQMOHeCKCQ

Careers at a Canadian Feed Mill: https://www.youtube.com/watch?v=KYDpkE2xVyw

Farm Fresh Eggs to Your Kitchen Table: https://www.youtube.com/watch?v=vGX-tRxbILg

Daily Routine on a Free Range Egg Farm: https://www.youtube.com/watch?v=Abs7wDP7B50

The Egg Farmers' Daily Routine: https://www.youtube.com/watch?v=jkE1l2flhLk

Caring For Birds: https://www.youtube.com/watch?v=oIOJ2KKhID8

A Better Life: Living and Working in Canada:
https://www.youtube.com/watch?v=hrUN8TIZOwo&t=158s

AGSCAPE

Meet Megan Veldman, Egg Farmer:
https://www.youtube.com/watch?v=TggTLMiU7Fs&list=PLT9iLj3VngaEE9dCz2yd7ogFKWt7wZvOF&index=12

OTHER LINKS

Egg Quality Assurance™: https://eggquality.ca/

Egg Quality Assurance Program™: https://www.youtube.com/watch?v=5JB-MyYeS2o

Chef Lynn Crawford, Delicious Egg Recipes: https://www.youtube.com/watch?v=Kk-hmGzKdb4

Canada's Food Guide Snapshot: https://food-guide.canada.ca/en/food-guide-snapshot/

Influencer Marketing Hub: https://influencermarketinghub.com/marketing-strategy-examples/

FAO: Egg Facts: https://www.fao.org/resources/infographics/infographics-details/en/c/284410/

ADDITIONAL RESOURCES

Egg Farmers of Ontario ..... https://www.getcracking.ca

Egg Farmers of Canada ..... https://www.eggs.ca/

AgScape ..... https://www.agscape.ca/

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

Canada's Food Guide ..... https://food-guide.canada.ca/en/

Farm Food 360º https://www.farmfood360.ca/

The Real Dirt on Farming ..... https://www.realdirtonfarming.ca/

Agriculture and Agri-Food Canada..... https://www.agr.gc.ca/

Foodland Ontario..... https://www.ontario.ca/foodland-ontario

Health Canada ..... https://www.hc-sc.gc.ca/

Ontario Ministry of Agriculture, Food and Rural Affairs..... https://www.omafra.gov.on.ca/

Careers in Food ..... https://www.careersinfood.com/

AgCareers ..... https://www.agcareers.com/

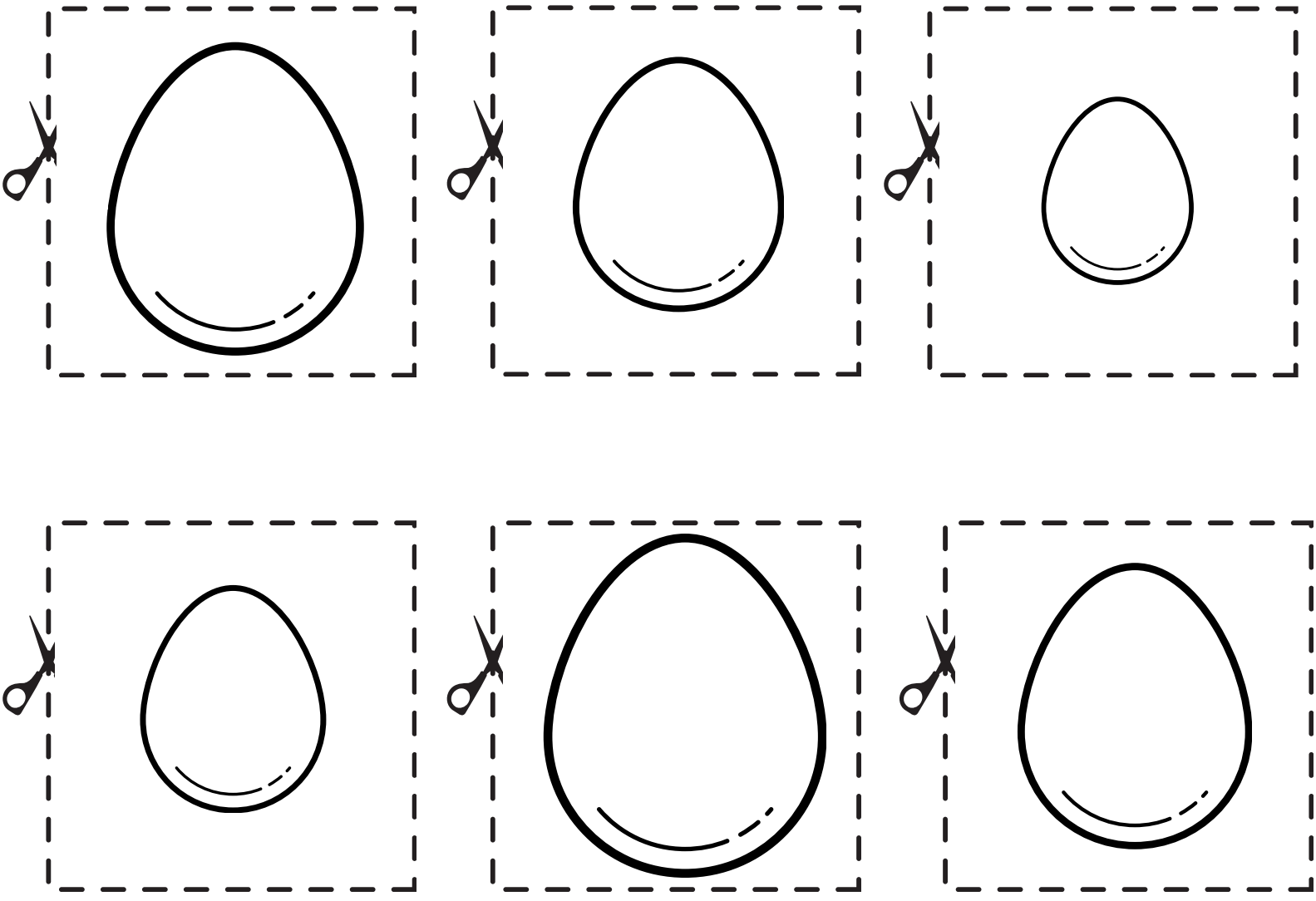
Agricultural Employment ..... https://www.agemploy.com/

Ontario Agricultural College ..... https://www.uoguelph.ca/oac

NAME: DATE:

Eggs of All Sizes (1)

Cut ✂ - - - - - each egg out and glue them onto **Appendix 1.1b: Eggs of All Sizes (2)**.



NAME: DATE:

Eggs of All Sizes (2)

Paste each egg from **Appendix 1.1a: Eggs of All Sizes (1)** in order by their size on this handout from smallest (peewee) to largest (jumbo).

LESS THAN 42g	42g - 48g	49g - 55g
PEEWEE (smallest)	**SMALL**	**MEDIUM**
56g - 63g	64g - 69g	70g OR LARGER
LARGE	**EXTRA LARGE**	**JUMBO (largest)**

NAME: DATE:

Egg Grading in Canada

Using a classroom scale, find several small items around the classroom and weigh them. Compare and categorize them according to the Canadian Food Inspection Agency's (CFIA) Egg Grading System.

CFIA EGG GRADING SYSTEM	ITEMS FROM THE CLASSROOM THAT WEIGH THE SAME AS THE EGGS
PEEWEE EGGS = LESS THAN 42g	
SMALL EGGS = 42g - 48g	
MEDIUM EGGS = 49g - 55g	
LARGE EGGS = 56g - 63g	
EXTRA LARGE EGGS = 64g - 69g	
JUMBO EGGS = 70g OR LARGER	

NAME: _____ DATE: _____

Just Like An Egg!

Using a classroom scale and classroom manipulatives (beads, beans, coins, blocks etc.), list how many of each item it takes to weigh the same as the eggs according to the Canadian Food Inspection Agency's (CFIA) Egg Grading System.

CFIA EGG GRADING SYSTEM	ITEM #1 _____	ITEM #2 _____
PEEWEE EGGS = LESS THAN 42g	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____
SMALL EGGS = 42g - 48g	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____
MEDIUM EGGS = 49g - 55g	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____
LARGE EGGS = 56g - 63g	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____
EXTRA LARGE EGGS = 64g - 69g	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____
JUMBO EGGS = 70g OR LARGER	# of ITEMS: _____ TOTAL WEIGHT: _____	# of ITEMS: _____ TOTAL WEIGHT: _____

NAME: _____ DATE: _____

The Journey of an Egg

Colour each of the 6 scenes below. Cut them out and put the story in order to show the journey of an egg from farm to table. Glue the story onto construction paper.

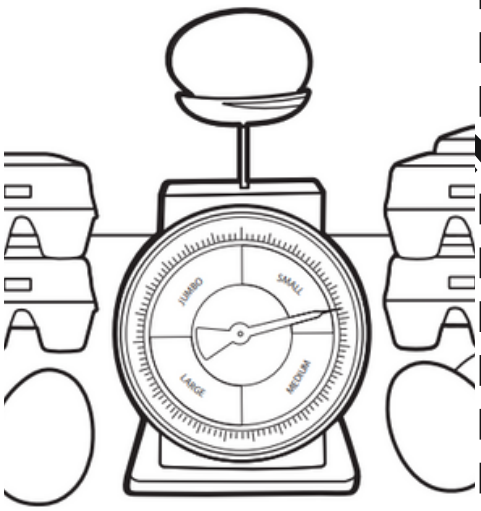
The eggs are checked and washed.

The eggs are sold at the grocery store to customers.

The eggs are packed onto large trays and kept cool.

The farmer makes sure the hens have food and water.

The eggs are packed by the dozen.

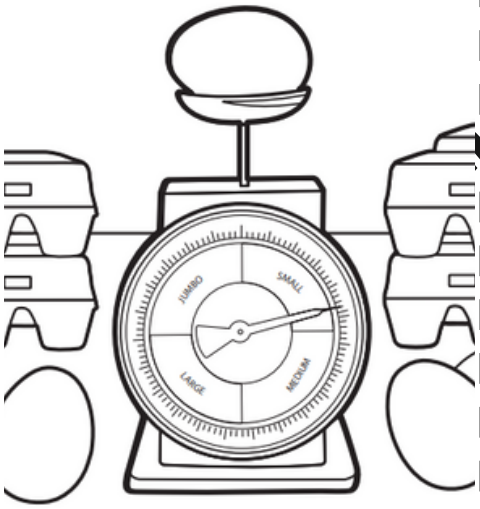


The eggs are weighed and graded.

NAME: _____ DATE: _____

The Journey of an Egg

Colour each of the 6 scenes below. Add your own captions to tell the story. Cut them out and put the story in order to show the journey of an egg from farm to table. Glue the story onto construction paper.



NAME: DATE:

The Journey of an Egg

Design your own 6-frame comic that tells the story of eggs - from the hens that lay them all the way to the grocery store. Add your own captions to tell the story.

NAME: _____ DATE: _____

Crack the Code!

Solve the equations to reveal the code!

K. 12 +17 -----	**H.** 4 x 5 -----	**Y.** 53 - 42 -----	**F.** 9 x 4 -----	**E.** 21 - 17 -----	**L.** 85 - 66 -----
P. 16 + 7 -----	**G.** 7 x 3 -----	**D.** 13 + 2 -----	**J.** 72 - 22 -----	**B.** 8 x 4 -----	**I.** 35 - 28 -----
O. 11 +11 -----	**N.** 7 x 2 -----	**A.** 68 - 65 -----	**R.** 7 + 9 -----	**Q.** 6 x 3 -----	**C.** 6 + 7 -----
U. 15 +18 -----	**S.** 3 x 9 -----	**M.** 8 - 6 -----	**W.** 9 x 8 -----	**T.** 77 - 11 -----	**V.** 55 + 44 -----

Use the corresponding **LETTER** of each equation above to solve the TITLES of the CLUE SHEETS (**Appendices 2.3a - 2.3j**). Then examine all 10 clue sheets to find the one thing in common to determine the topic of our lesson!

NAME: _____ DATE: _____

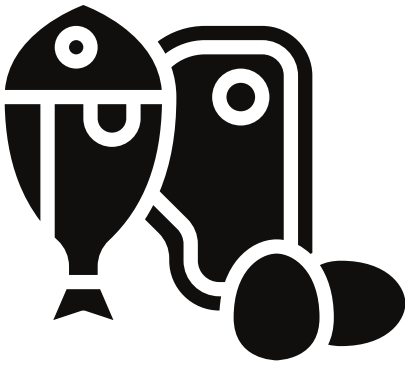
Crack the Cod e!

CLUE SHEET

Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

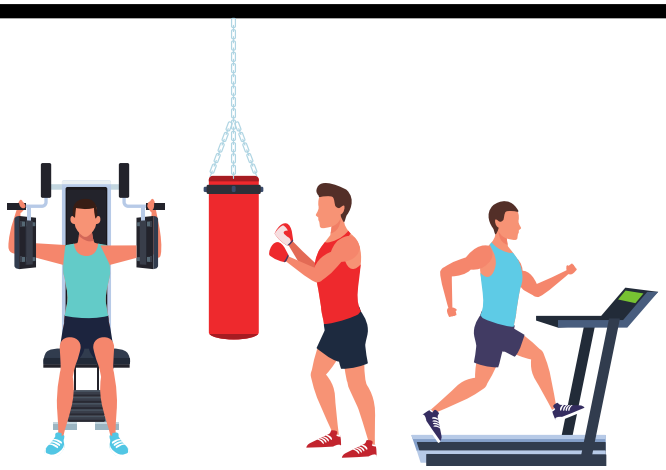
23	16	22	66	4	7	14

_____ is a macronutrient that is made up of chemical 'building blocks' called amino acids. Your body uses amino acids to build and repair muscles and bones and to make hormones and enzymes. They can also be used as an energy source.



_____ is commonly found in animal products, but can also be found in a wide variety of other food sources.

_____ participates in practically every process of a cell. It plays a part in metabolic reactions, immune response, provides a source of energy, assists in cellular repair, forms blood cells and more!



_____ is so important that Canada's Food Guide has an entire section dedicated to it! *Chicken*, *beef*, *pork*, dairy products, *eggs* and *legumes* are just some of the food sources that can give our bodies this important nutrient!

NAME: _____ DATE: _____

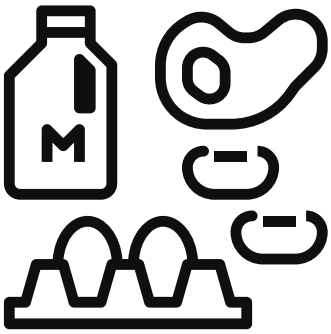
Crack the Cod e!

CLUE SHEET

Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

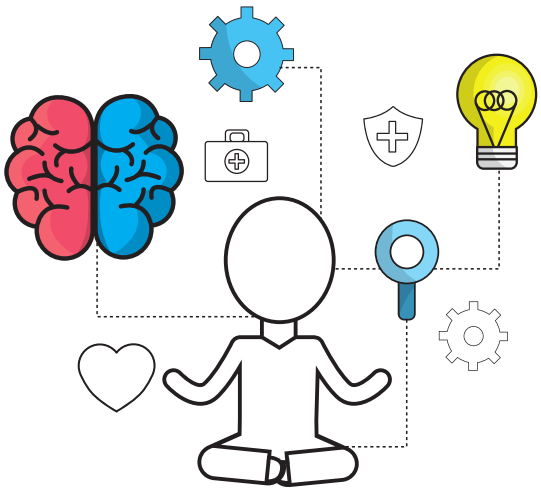
13	20	22	19	7	14	4

_____ is a nutrient that supports various bodily functions, including cellular growth and metabolism. The body makes some through the liver, but the majority needs to come from the food we eat.



_____ is an **essential nutrient** which means it is required for normal bodily function and human health.

_____ helps maintain a healthy nervous system and improve memory and cognition. It protects heart health, boosts the metabolism and helps make fats that support cell structure.



_____ can be found in a variety of foods including *chicken* and *beef liver*, *eggs*, *fresh cod*, *shrimp*, *salmon, cauliflower, broccoli* and *low-fat milk*.

NAME: _____ DATE: _____

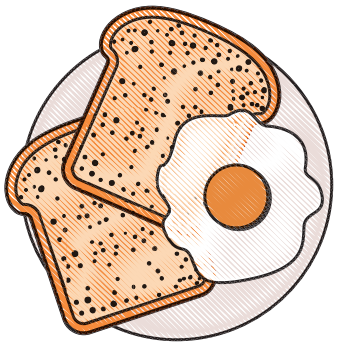
Crack the Cod e!

CLUE SHEET

Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

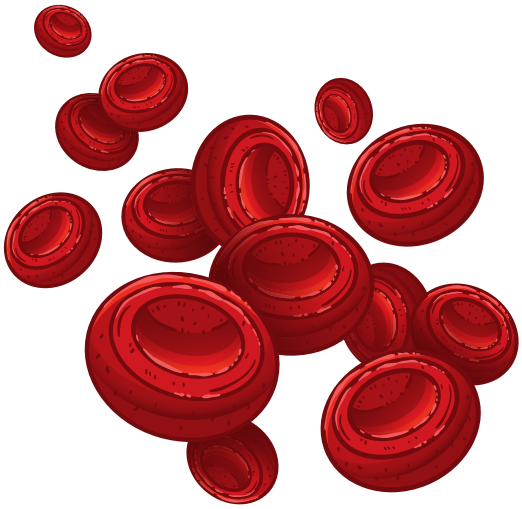
7	16	22	14

_____ is a mineral that human bodies need for growth and development. It helps preserve vital functions in the body including general energy, gastrointestinal processes and the immune system.



The human body uses _____ to make hemoglobin, a protein in red blood cells that carries oxygen from the lungs to all parts of the body, and myoglobin, a protein that provides oxygen to muscles.

The benefits of _____ often go unnoticed until a person is not getting enough of it. _____ Deficiency Anemia can cause fatigue, heart palpitations, pale skin and breathlessness.



_____ can be found in a variety of foods including *poultry*, *red meat*, *beans*, *spinach*, *fortified cereals*, *breads*, *pastas*, *eggs* and *peas*.

NAME: _____ DATE: _____

Crack the Cod e!

CLUE SHEET

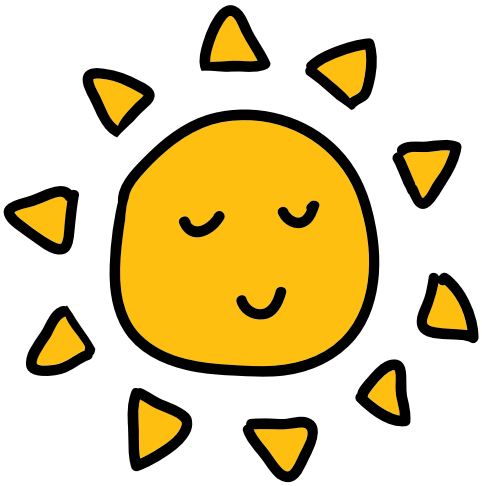
Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

99	7	66	3	2	7	14	15

_____ is both a nutrient that we eat and a hormone our bodies make. It helps the body absorb and retain calcium and phosphorous which are both critical for making bone. It helps control infections and reduce inflammation.

_____ is so important that human bodies make it by itself, but only after skin has been directly exposed to sufficient sunlight!

By regulating the amount of calcium and phosphate in the body, _____ helps keep bones, teeth and muscles healthy. It also helps regulate the immune and neuromuscular systems.



It can be tricky for Canadians to get enough sunlight throughout the year so it is good to get additional _____ from foods like *oily fish*, *liver*, *eggs*, *mushrooms*, *fortified foods* (*milk, etc.*) and *red meat*.

AgScape®

NAME: _____ DATE: _____

Crack the Cod e!

CLUE SHEET

Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

99	7	66	3	2	7	14	4

_____ is a nutrient that is important to vision, reproduction and the health of blood, brain and skin. It protects the outer membrane of every cell in the human body.

Because _____ helps maintain skin health, it is often referred to as the "beauty vitamin".

The body needs _____ to boost the immune system so it can fight off invading bacteria and viruses. It helps widen blood vessels and keep blood from clotting within them.

_____ can be found in several of the foods we eat, including *wheat germ oil, sunflower, safflower* and *soybean oil, sunflower seeds, almonds, peanuts* and *peanut butter, eggs, collard greens* and *pumpkin.*

Registered Charitable #13237 2285 RR0001

NAME: _____ DATE: _____

Crack the Cod e!

CLUE SHEET

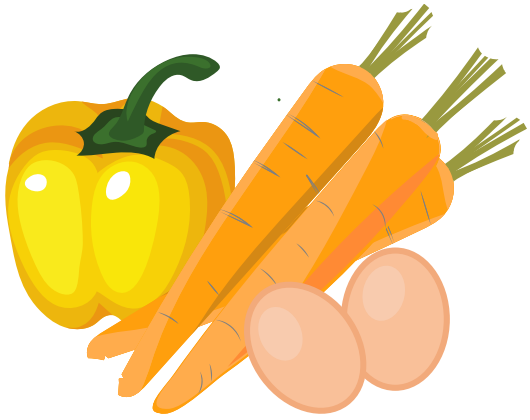
Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

99	7	66	3	2	7	14	3

_____, also known as retinol/retinoic acid, is a nutrient important for vision, growth, cell division, reproduction and immunity. It also helps the heart, lungs, kidneys and other organs work properly.

_____ is also known as retinol because it helps produce the pigments in the retina of the eye and promotes good eyesight.

There are two different types of _____: preformed and provitamin. Preformed _____ is found in meats and dairy products while provitamin _____ is found in plant-based products.



_____ can be found in several of the foods we eat, including *orange* and *yellow vegetables, eggs, dairy products,* some kinds of *fish* and *beef organ meats.*

NAME: _____ DATE: _____

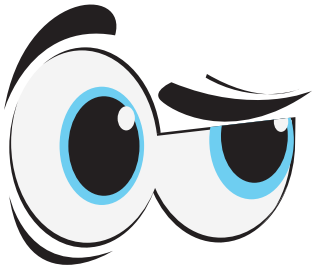
Crack the Cod e!

CLUE SHEET

Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

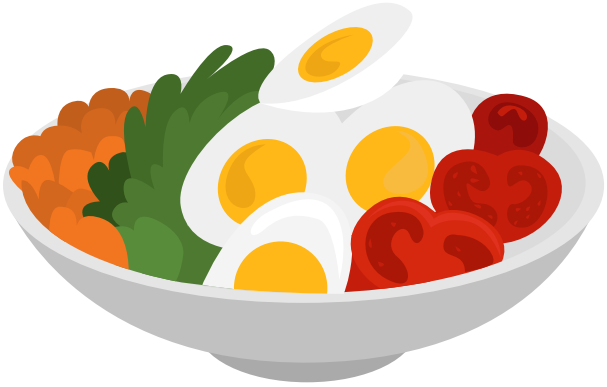
19	33	66	4	7	14

_____ is a deep yellow pigment of the xanthophyll class. It is found in the leaves of plants, in egg yolks and in the corpus luteum (cells that help with hormone regulation in the female reproductive system).



Research has shown that _____ may help enhance the sharpness of vision, protect eye health from sunlight damage, protect against blue light damage and more!

_____ is a carotenoid and is responsible for the vibrant colours seen in many plants such as the dark green, bright red, orange and yellow hues of various fruits and vegetables.



_____ can be found in some of our brightest, most colourful foods, such as *eggs*, *kale*, *spinach*, *peppers*, *tomatoes*, *grapes* and more!

NAME: _____ DATE: _____

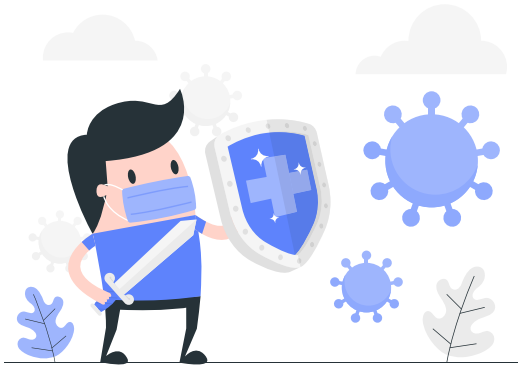
Crack the Cod e!

CLUE SHEET

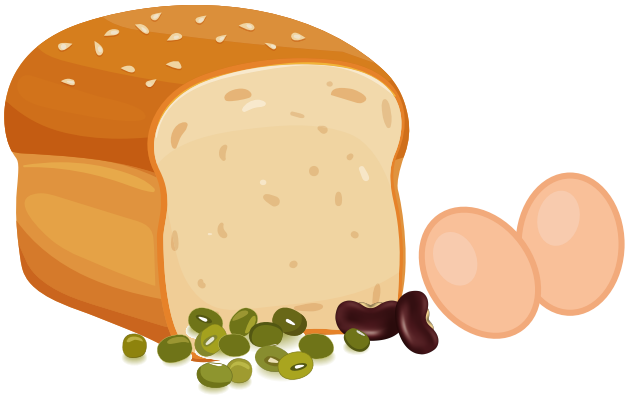
Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

27	4	19	4	14	7	33	2

_____ is a mineral found in the soil. It naturally appears in water and in some foods. While people only need a small amount, it plays a key role in metabolism and immune system function.



_____ helps lower oxidative stress in the body which reduces inflammation and enhances immunity. Studies have shown that increased blood levels of _____ are associated with an enhanced immune response.



_____ can be found in traditional Indigenous foods (*marine mammals*), *brazil nuts*, *whole wheat bread*, *lentils*, *beans*, *eggs* and more!

NAME: _____ DATE: _____

Crack the Cod e!

CLUE SHEET

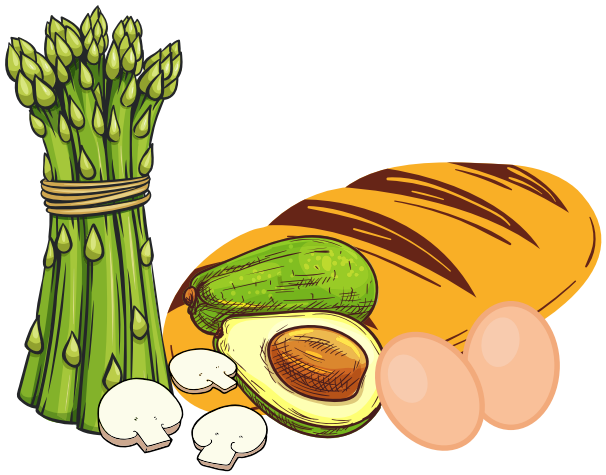
Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

16	7	32	22	36	19	3	99	7	14

_____ is a yellow vitamin of the B complex which is essential for metabolic energy production. Also known as Vitamin B2, it helps the body convert food into fuel which is used to produce energy.

_____ is excreted from the body while only 15% of it is absorbed. Carbohydrates received from food convert to ATP, which is then used to produce energy. It is essential to consume it every day.

_____ is needed to help break down carbohydrates, proteins and fats. It also makes it possible for oxygen to be used by the body.



_____ can be found in *eggs, asparagus, tofu, avocados, mushrooms, organ meats (liver/kidneys)* and *grain products.*

NAME: _____ DATE: _____

Crack the Cod e!

CLUE SHEET

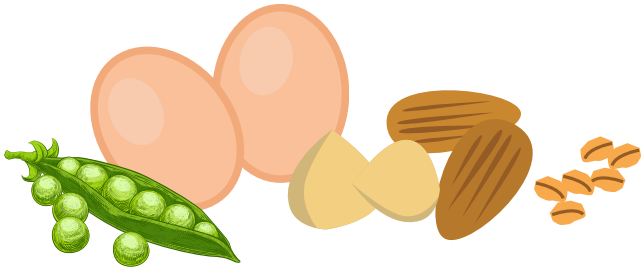
Using the cipher from **Appendix 2.1**, crack the code and discover which nutrient this sheet is about. Then compare to the other clues to determine the topic of today's lesson!

14	7	3	13	7	14

_____ is a B vitamin (also known as Vitamin B3) that is made and used by your body to turn food into energy.

Human bodies do not store _____. It excretes the amount it does not use which is why it is important for people to consume it in the foods they eat every day.

_____ helps the body utilize fats and proteins and are needed to maintain a healthy liver, healthy skin, hair and eyes and to help the nervous system function properly.



_____ can be found in *liver, chicken breast, tuna, anchovies, ground beef, eggs, nuts/seeds, peas* and *beans.*

NAME: _____ DATE: _____

Crack the Code!

EVIDENCE REPORT

Use your **CLUE SHEET** to fill in the information on your **EVIDENCE SHEET**. This will help you organize your clues and combine them with the clues from the rest of the class to help you determine what today's lesson is all about!

What is the **NAME** of your **NUTRIENT CLUE**?

Why is your **NUTRIENT CLUE** needed by the human body?

What do you find unique or interesting about your **NUTRIENT CLUE**?

What foods can your **NUTRIENT CLUE** be found in?

NAME: _____ DATE: _____

ENTREPRENEUR CHECKLIST

Use the following checklists to help you organize your Operational and Marketing Plans.

OPERATIONAL PLAN CHECKLIST

- ☐ Select 5 important jobs you'll need to fill for your business.
- ☐ Describe roles/responsibilities and required skills for each job.
- ☐ What education and/or training is required for each of the 5 jobs?
- ☐ What are fair, competitive wages for each of the jobs you've chosen?
- ☐ How much money will your business need to allocate to pay these employees for a year's worth of work?
- ☐ How much profit will your business need to bring in to pay your employees, yourself and turn a profit for the business?
- ☐ What surprises you about the costs associated with staffing this kind of business?
- ☐ What other costs might be associated with running this kind of business?

MARKETING PLAN CHECKLIST

- ☐ Select a business name.
- ☐ Create a logo for your business.
- ☐ Write a slogan/tag line for your business.
- ☐ Select Key Marketing Strategy #1
- ☐ Select Key Marketing Strategy #2
- ☐ Select Key Marketing Strategy #3
- ☐ Design a SOCIAL MEDIA advertisement that includes graphic and written content.
- ☐ Prepare a COMMERCIAL (video or skit) to present to the class.
- ☐ Make sure your SOCIAL MEDIA AD and COMMERCIAL both utilize your Key Marketing Strategies.

NAME: _____ DATE: _____

MARKETING PLAN

PEER REVIEW

Put yourselves in the shoes of the consumer!
Share your thoughts below about the Marketing Plan Presentation of one of your peers.

Whose Marketing Plan are you reviewing? _____

What is the name of their Egg Grading Station? _____

What strategies did the student use in their marketing plan to try and convince you of the quality or superiority of their business?
(ex. catchy colours or language, etc.)

What did the marketing plan and/or commercial say that would make you or a potential customer want to support this business?
(How did it connect emotionally with customers?)

What did you most enjoy about this marketing plan presentation?