7. The 3N's-F

Primary School, Cycle 3
Duration: 60 min.

Do you know the 3N's-F: Non-Packaged, Not Far, Natural and Fair? These four important principles can help us make better food choices, which sometimes seems very complicated. Using a quiz and a food analysis system, the students will examine the nature, packaging, origin and production line related to some popular food items and will identify a few ways of making healthier, more ecological and solidarity-based food choices.

Learning Objectives

Have students:

- Understand some of the social and environmental issues associated with food and become familiar with the 3N's-F approach (Non-Packaged, Not Far, Natural and Fair).
- Become aware of the material and human resources needed to produce a food item, the diversity of food products available on the market, and their impact on human health and the planet.
- Be able to make smart food choices.

Areas of Learning

English, science and technology, as well as geography, history and citizenship education.

Materials

- Overhead projector, computer, PowerPoint Quiz presentation OR the printed paper version in large format (Dossier D).
- A copy of the quiz answer sheet (Appendix 1).
- 8 photocopies of "The 3N's-F in Action" (Appendix 3).
- A copy of the What to Recycle document (See PDF document, File D).
- 2 photocopies of each of the "Foods to Analyze" data sheets (Appendix 2).
- 8 photocopies of the Foods Analysis Chart (Appendix 4).

Did you know?

- Non-Packaged (no or little packaging): In 2006, Quebecers generated more than 24 tonnes of household waste daily - the equivalent of 3 million bags of garbage.
- Not Far: Food eaten in Quebec travels on average from 2,400 to 4,000 km to get from the fields to our plates.
- Natural: The food we eat, mainly due to the pesticide residues the food contains, is responsible for 85% to 90% of our exposure to chemicals.
- Fair: From 1977 to 1998, the price of a box of Corn Flakes rose by $2.44, while the price paid to farmers for the corn content of a box rose by only $0.03.

Preparation

- Cut out the "Foods to Analyze" data sheets (Appendix 2).*
- Read ahead of time (optional, and see References section):
  - The article on the 3N's-F principles.
  - The book *L'envers de l'assiette et quelques idées pour la remettre à l'endroit* by Laure Waridel.
- Set up the quiz presentation with the overhead projector.
- Put the Recyc-Québec information sheet up on the wall (near the garbage pail or recycling bin).

Presentation

Ask the students if they know where the food they eat comes from, where they buy it, how it is transported, who produced it, and if it's good for their health and the health of planet.

Main Activity

- Divide the class into eight teams. Explain the activity to the class. Tell them that they will be doing a quiz to learn about the 3N's-F and that the teams will take turns answering a question and will have a maximum of 45 seconds to respond. For an incorrect answer, the right of reply will be granted to the team raising their arms the fastest. One point shall be given for each correct answer.
- Start the quiz (see Dossier D or the PowerPoint presentation) to help conduct the quiz).
- When the quiz is finished, review the 3N's-F principles with the group.
- To practice using this new knowledge, explain the next activity, which is using the 3N's-F to analyze some foods that are often found in lunch boxes and determine which are the best for your health and the environment (those with the highest score).
- Give each team a copy of Appendix 3 and Appendix 4 and two "Foods to Analyze" sheets, making sure that:
  - two teams analyze the drinks
  - two teams analyze the fruits
  - two teams analyze the prepared dishes
  - two teams analyze the deserts

Integration

- Ask the students to present and justify their results. Which aspects received the most/least points? Why? Was it difficult to answer the questions and to find the information? **Are they able to name food items that could be used as alternatives for those analyzed, and which would receive a higher score** (for example, home-made pasta in reusable containers, local organic fruit rather than tropical fruit, healthier desert and snack choices, etc.)?

***Comment:** It might be useful and fun to ask the students to bring a food item in its original packaging in order to analyze it in class.

- End the discussion by reminding the students that **the best way to follow the 3N's-F is to always choose foods that are fresh, that have undergone little or no processing and that are cooked at home! And if possible, we should buy local organic produce directly from farmers and other producers (CSA network, farmers markets, etc.)!**

Enrichment

- For their homework or the next class, ask the students to analyze their favourite snacks or even all the contents of their lunch boxes! Time permitting, this step could even be integrated into the main activity.
- Visit www.poubelle.org and do some virtual online shopping. It's fun and surprising!

Take Action!

To encourage the students and their families to examine where their food comes from and promote local agriculture, suggest that they:

- Discover some agri-tourism circuits (food fairs and festivals, farm visits, pick-your own activities, economuseums, etc.) http://www.equiterre.qc.ca/agriculture/alimentation/agrotourisme.php
- Visit farmers markets and try a new in-season food item every week that is grown in Quebec: sunchoke, parsnip, kohlrabi, etc.
- Ask their grocer to clearly indicate the source of food products, and to give preference to products from Quebec (e.g., a petition, etc.).

References

- Laure Waridel, *L'envers de l'assiette et quelques idées pour la remettre à l'endroit*, Écosociété (2005), 173 pages.
- Article on the 3N's-F: http://www.heritagestbernard.qc.ca/CommuniqueLaure%20Waridel130206.pdf

Appendix 1 • Answers to 3N's-F Quiz

1. It could be the small juice boxes or the **small apple sauces pots**. While these containers are partially made from recycled material, they are individual portions that require a lot of packaging and therefore more energy use, and they are even more expensive! The large applesauce jar is not only easy to recycle, but it can also be reused! And, because the apple is completely non-packaged, there is no packaging to pollute the environment with (on the other hand, we need to examine later where it comes from and whether any chemicals were used to produce it)!

2. Container No. 3.

- Number 1 is a reusable container.
- Numbers 2 and 4 can be reused and are also recyclable.
- Number 3, made from styrofoam, cannot be recycled and damages the Earth's ozone layer during its long degradation process. In Quebec, every plastic container has a number inside the recycling logo. Of the numbers 1 to 7, only number 6 is not recyclable (styrofoam is a form of plastic 6). The other plastics can be put in the recycling bin, but often have to be shipped to Ontario or the U.S. to be recycled because we do not have the energy intensive facilities required to recycle this type of plastic.
- **Using the "What to Recycle" sheet in the appendixes, discuss how recycling should be done.**

3. The following logo:

Remind the students that only plastics with this logo and one of the following numbers inside the logo (1,2 3, 4, 5, 7, but not 6) are recyclable in Quebec.

4. Blueberries from Chilli: 10,108 km

- Chicken from Washington: 3,053 km
- The tomato from Mexico: 4,692 km
- Cheese from New Zealand: 13,164 km

So the New Zealand cheese is the food item that has travelled the greatest number of kilometres! It should be noted that all of these foods are also produced in Quebec.

Appendix 1 • Answers to 3N's-F Quiz

5. The airplane, because it emits the most greenhouse gas! When food products come from other countries their transportation often causes a lot of pollution!
$C0^2$ gas emissions per tonne per kilometre travelled:

- Boat: 15 to 30 g
- Train: 30 g
- Truck: 207 to 1,030 g
- Airplane: up to 1,580 g

6. **1.b, 2.a, 3.d, 4.c**
These ingredients are found in a wide range of food products. In addition to being potentially harmful to our health, they require a large amount of energy to produce. None are indispensable, and the majority are completely unnecessary and only change a food's appearance (e.g., giving an orange colour to dried apricots)! By doing our own cooking with foods that are easy to prepare, we can radically reduce the list of these ingredients.

7. **e.** Yes, indeed! Coca-Cola was discovered accidentally and put on the market by a pharmacist who was trying to invent a cocaine-based medicine for nervous system disorders. Even though the cocaine has been replaced by another stimulant (caffeine), Coca-Cola continues to have harmful effects on the health of our youth: a level of acidity and sugar that destroys tooth enamel and causes cavities, a higher risk of obesity and type 2 diabetes, behavioural problems, irritability, and dependency, etc.

8. **True.** An experience at the Copenhagen zoo clearly demonstrated this. If apes systematically prefer organic bananas and they never eat the skins of conventional bananas, we have every right to question the presence of pesticide residues on our fruit. The use of pesticides, however, is not simply a personal health issue, but also a serious environmental issue. Pesticides destroy all living organisms, pollute our rivers and groundwater, make our farmland sterile, weaken the natural defences of plants and increase resistance among plant pests. If we want to preserve our planet, we must opt for more sustainable farming. At present, the organic farming model is the only one that guarantees food for consumers that is pesticide-free and that doesn't harm the ecosystem. To identify organic foods, look for the logos shown in "The 3N's-F in Action" information sheet (Appendix 3).

Appendix 1 • Answers to 3N's-F Quiz

9. Less than $0.01! Conversely, the seller will receive $0.18, or 18 times more than the producer (farmer, etc.)! Is this fair? A food item may go through more than twenty intermediaries and travel thousands of kilometres before reaching the consumer. When each party takes its share, there's little left over for the producer (farmer)! As an example, in the U.S., the Altria Group (Kraft and other companies) receives 10 cents for every dollar spent on food in the United States. That's more than the total share received by all American farmers combined! To redistribute some of this wealth, fair trade aims to reduce the number of intermediaries and to pay farmers a fairer price for their produce, all the while having as little impact as possible on the price consumers pay!

But above all, the solution consists in consumers buying directly from the producers. In Quebec, farmers often sell their seasonal products at farmers markets. Not only can we learn more about what we eat by buying our food directly from the farmers, but we can also help ensure a fairer redistribution of the wealth. Last, it is also possible to buy fresh, local and organic produce by participating in the Community Supported Agricultural program. See the Équiterre website at: http://www.equiterre.org/agriculture/paniersBios/index.php

Appendix 2 • Foods to Analyze

Apple Juice

Container:

- Plastic 2 + paper
- Size 1.89 L

What the product claims: "Apple juice, fresh pressed", "original taste", Product of Quebec".

Ingredients: apples, potassium sorbate

Additional Information: *Tradition* is a Quebec company.

Citrus Fruit Drink

Container:

- Tetra Pak (cardboard-like) and plastic with no number
- Size: 10 x 220 ml

What the product claims: "real fruit drink", "no colouring or artificial flavour added".

Ingredients: water, 45% fruit juice, sugar, citric acid, natural flavours, Vitamin C.

Additional Information: *Deli-cinq (Five Alive)* is a *Coca-Cola Inc.* registered trademark.

Tropical Fruit Salad

Container:

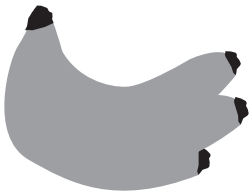
- Plastic 1, plastic with no number, paper, size 4 x 107 ml

What the Product Claims: "tropical fruit in fruit juice"

Ingredients: citric and ascorbic acid additives, natural flavour and beta-carotene, banana purée.

Équicosta Fresh Bananas

What the Product Claims: Certified organic and fair trade



ÉQUICOSTA

FAIR TRADE CERTIFIED

CERTIFIÉ ÉQUITABLE

Appendix 2 • Foods to Analyze

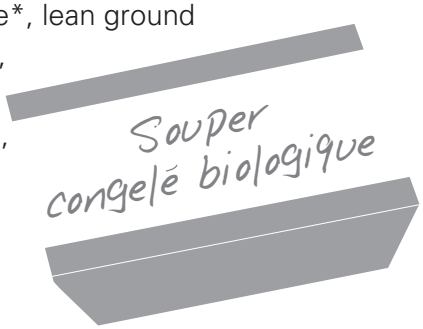
Prepared Organic Lasagna

Container:

- Plastic 5, plastic with no number, cardboard
- Size 340 g (1 portion)

What the Product Claims:
"Product of Canada"

Ingredients: cooked pasta*, water, cheeses* (ricotta, cheddar, mozzarella [milk*, whey*, bacterial culture, sea salt, microbial enzymes]), tomatoes*, (tomatoes*, tomato juice*, sea salt, calcium chloride, citric acid), tomato paste*, lean ground beef*, milk*, onions*, wheat flour*, sugar*, sea salt, canola oil*, fine herbs*, garlic*, white wine vinegar*, butter*, parsley*, spices.
*= organic



Milk Chocolate

Container: paper, plastic with no number

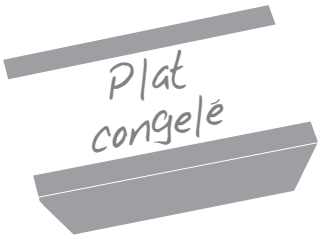
What the Product Claims: "fair treatment for farmers", "100% organic".

Organic Ingredients: powdered whole milk, Syramena raw cane sugar, cocoa butter, cocoa liquor, sucanat non-refined cane sugar, ground hazelnuts, powdered vanilla, 38% cocoa (produced by Concado, a small farm cooperative in the Dominican Republic).

Prepared Frozen Pasta

Container:

- waxed cardboard
- size: 241 g (1 portion)



What the Product Claims:
"Product of the U.S.A.", "authentic recipe".

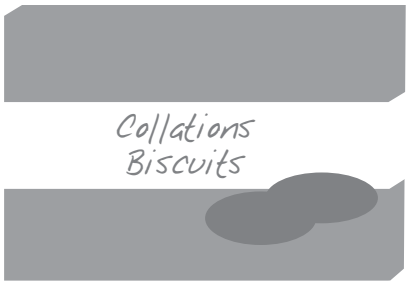
Ingredients: cooked pasta (containing enriched wheat flour), tomatoes (containing salt, calcium chloride, citric acid), water, onions, sugar, garlic, celery, olive oil, salt, maltodextrin, vegetable oil margarine (soy), spice, modified cornstarch, parsley flakes, xanthan gum.

Commercial Cookies

Container: cardboard box, plastic with no number, 283 g, individually wrapped.

What the Product Claims: "natural and artificial flavours", " Made in Canada".

Ingredients: sugar, enriched wheat flour, vegetable oil (containing palm oil and modified palm kernel oil), hydrogenated palm kernel oil, mixture of eggs, water, glucose, cocoa, milk ingredients, modified starches, salt, glycerine, baking powder, soy protein, mono and diglycerides, modified cellulose, sorbitan monostearate, sodium bicarbonate, polysorbate 60, potassium sorbate, acidic sodium pyrophospha cornstarch, soy lecithin, xanthan gum and guar gum, artificial flavour, colouring (containing tartrazine).



Appendix 3 • The 3N's-F in Action

To take care of our health and the well being of the planet, it would be a very good idea for all of us to start using the 3N's-F principles when making our food choices. Here are few guidelines to assist us in choosing food that is healthier, more environment-friendly and fairer for the farmers.

Choose Foods that are NON-PACKAGED:

- I buy food items that have little or no packaging.
- I choose packaging that is reusable or recyclable (cardboard, glass, plastic, metal).

To find out if plastic is recyclable, I look for the following logo with a number in the middle: 1, 2, 3, 4, 5, or 7 (but not 6).

Choose Foods that are NOT FAR:

- I shop at farmers markets and I also buy directly from farms.
- I buy produce that is grown (and processed, as need be) in Quebec, by looking for the following logo:

Choose Foods that are NATURAL:

- I look for fresh food items that have undergone little or no processing (then I make meals with my family!).
- I avoid foods whose list of ingredients starts with "sugar" or "butter, etc., because this means that it's a main ingredient of those food items.
- I give preference to foods that are grown in an environmentally-friendly way, such as organic produce grown in Quebec, which I recognized through the following logos:

Choose Foods that are FAIR:

- I shop at farmers markets and I also buy directly from farms.
- I buy directly from farmers in the Community Supported Agricultural network.
- I look for fair trade products, which I recognize by the following logo:

Appendix 4 • Foods Analysis Chart

NON-PACKAGED	Product 1	Product 2
Does the product: • Have no packaging? (5) • Have a little packaging? (2) • Have excessive packaging (0)		
Does the product: • Have no packaging? (5) • Have a little packaging? (2) • Have excessive packaging (0)		
NON-PACKED TOTAL		

*You can use the *What to Recycle* sheet for assistance.

NOT FAR	Product 1	Product 2
How many kilometres did the food item travel (see table 1)? • Over 1,000 km (0) • 500 km to 999 km (1) • Less than 500 km (3)		
NOT FAR TOTAL		

Table 1: Distance Travelled by Food from Field to Consumer

Origin	Distance Travelled
Washington, D.C.	3,053 km
Australia	10,937 km
Thailand	13,163 km
Ne-Zealand	13,164 km
Quebec	350 km
Belgium	8,582 km
China	12,392 km
Rest of Canada	695 km
Mexico	4,692 km
California	3,665 km
Chili	10,108 km

Appendix 4 • Foods Analysis Chart

NATURAL	Product 1	Product 2
Was the food produced ecologically? • Yes, it's certified organic • Impossible to know, no information is available (0)		
Was the food item processed? • No, it's a fresh food item (4) • Yes, but it contains no additives (100% pure juice) (2) • Yes, and it contains one of the following ingredients: added sugar, salt or fat, food additives, etc. (1) • Yes, and it contains several of the following ingredients: added sugar, salt, fat or food additives, etc. (0)		
NATURAL TOTAL		

FAIR	Product 1	Product 2
Did the producer (farmer, etc.) receive a fair price? • Yes, it's a local product sold directly by the producer or with few intermediaries (4) • Yes, it's a certified fair trade product (3) • Maybe not. It's a local product, but one that went through many intermediaries (often the case for processed food) (1) • Probably not. It's an imported product that has gone through many intermediaries (0)		
FAIR TOTAL		

3N's-F	Product 1	Product 2
Now calculate the total ecological footprint of your food items: NON-PACKAGED score _____ + NOT FAR _____ + NATURAL _____ + FAIR _____ = Fooprint _____ The higher the score, the better the food item is for the environment, health and solidarity.		
3N's-F GRAND TOTAL		