Name: _____ Date: _____ Class: _____

Backgrounder Assignment Topic 3: Public Health and Disease Prevention

Use the websites below to research food irradiation, food safety and food-borne illnesses. Your group will pay special attention to the **public health and disease prevention** aspects of these three topics. Based on your research, your group is to work together to create a single-page (maximum of 250 words) backgrounder which will be used to help your classmates understand this aspect of this issue (see the **Food Irradiation Individual Writing Assignment BLM** for more information).

Below are some questions to help guide your research.

- How many cases of food-borne illness are there in Canada each year?
- What is so serious about bacterial infections?
- What may happen to people who experience food-borne illnesses?
- How could food irradiation prevent food-borne illnesses?
- Does food irradiation make food radioactive?
- Does irradiation affect the nutritional values of the foods?
- What research has been done into the safety of consuming irradiated food?
- What foods are currently irradiated in Canada? Are meats among them?
- How does irradiation compare to other food preservation techniques?
- Does irradiation or any other method of food preservation guarantee food safety?

Web links
(Retrieved Aug. 1, 2019)

- **Food Irradiation – Canadian Nuclear Association**
  A look at how food irradiation works, it's benefits, safety practices and where it's happening around the world.

- **Causes of Food Poisoning – Canadian Food Inspection Agency, Government of Canada**
  Links to information about common causes of food poisoning, including listeria.

- **Food Irradiation – Canadian Food Inspection Agency, Government of Canada**
  Food irradiation, labelling, types of foods irradiated in Canada and food safety.

- **Irradiated foods – Canadian Food Inspection Agency, Government of Canada**
  Requirements and controls for handling and labelling irradiated foods in Canada.

- **Food Irradiation – Health Canada, Government of Canada**
  Information on foods that are currently irradiated in Canada and answers to frequently asked questions.

- **Food-Related Illnesses – Health Canada, Government of Canada**
  A look at common causes of food-related illnesses including infant botulism, listeriosis and salmonellosis.

- **Policy on Listeria monocytogenes in Ready-to-Eat Foods – Health Canada, Government of Canada**
  This policy outlines the roles and responsibilities of government, industry and consumers in regard to listeria and food safety.

- **Listeriosis (Listeria) – Health Canada, Government of Canada**
  Causes, symptoms, risks, treatment, prevention, surveillance information and guidance for health professionals.

- **Lessons Learned: Public Health Agency of Canada's Response to the 2008 Listeriosis Outbreak – Public Health Agency of Canada, Government of Canada**
  Release of the Lessons Learned Report in the 2008 listeriosis outbreak (archived).

Backgrounder Assignment Topic 3: Public Health and Disease Prevention – Suggested Responses

Below are suggested answers for the guiding questions.

- How many cases of food-borne illness are there in Canada each year?
  - *In Canada, it is estimated that more than 2,000,000 cases of food-borne illness occur each year.*

- What is so serious about bacterial infections?
  - *Bacterial infection can cause food to spoil, make us sick and even lead to death.*

- What may happen to people who experience food-borne illnesses?
  - *People may have to miss work, spend time in the hospital and, if the illness is serious enough, even die.*

- How could food irradiation prevent food-borne illnesses?
  - *Food irradiation is a process that helps to preserve food by killing bacteria, fungi, parasites and insects through the use of ionizing radiation. These organisms can cause food-borne illnesses.*

- Does food irradiation make food radioactive?
  - *No. Just as a dental x-ray does not make you radioactive, irradiated food is not radioactive.*

- Does irradiation affect the nutritional values of the foods?
  - *No. Research has shown that the nutritional value of irradiated food was found to be as good as food treated by other processes.*

- What research has been done into the safety of consuming irradiated food?
  - *Food irradiation has been studied and tested more extensively than any other food preparation or preservation process. Decades of testing using the most modern*

methods in toxicology have proven that foods treated with appropriate levels of ionizing radiation do not have adverse effects on the consumer.

- What foods are currently irradiated in Canada? Are meats among them?
  - *At the present time (2019), food irradiation is permitted on potatoes and onions, on wheat, flour, whole wheat flour, whole or ground spices and dehydrated seasoning preparations, as well as fresh and frozen ground beef.*

- How does irradiation compare to other food preservation techniques?
  - *Methods such as refrigeration and freezing can slow the growth of bacteria, but not kill them outright. Other processes, such as cooking in acids, sugars or alcohol, can kill bacteria but also alter the texture and consistency of fresh foods.*

- Does irradiation or any other method of food preservation guarantee food safety?
  - *Nothing can guarantee food safety, but food irradiation reduces the bacteria and other microorganisms that may be present on food. Like other foods, irradiated food must be handled properly to prevent re-contamination from bacteria or other organisms.*