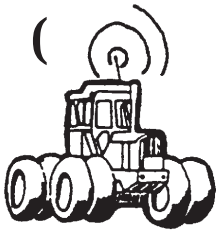
Activity 5



The Human Incinerator

Activity: Students identify all of the food and non-food substances that they ingest in a week and trace them back to their original sources. They then develop a web to display these results.

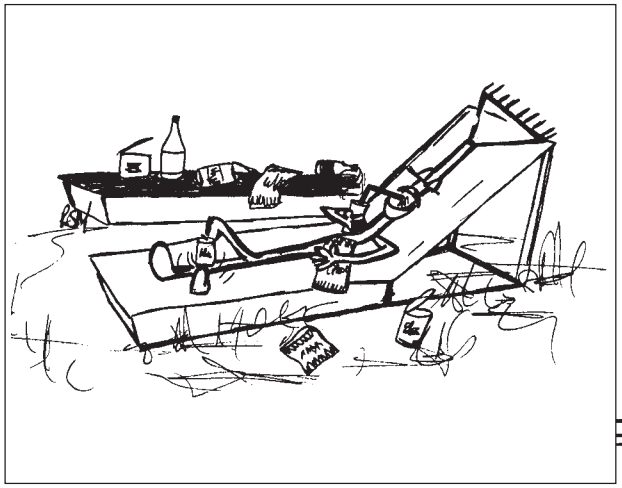
Curriculum Fit: **Grade Eight - Science**
- Topic 3: Consumer Product Testing
- Consumer product characteristics and composition
- Researching skills

Agriculture Concepts: Technology and capital intensity
Production, processing and marketing systems

Cognitive Level: Analysis

Materials Required: - Large copy of the Human Incinerator Ingestion Web

Time Required: 1 - 2 periods

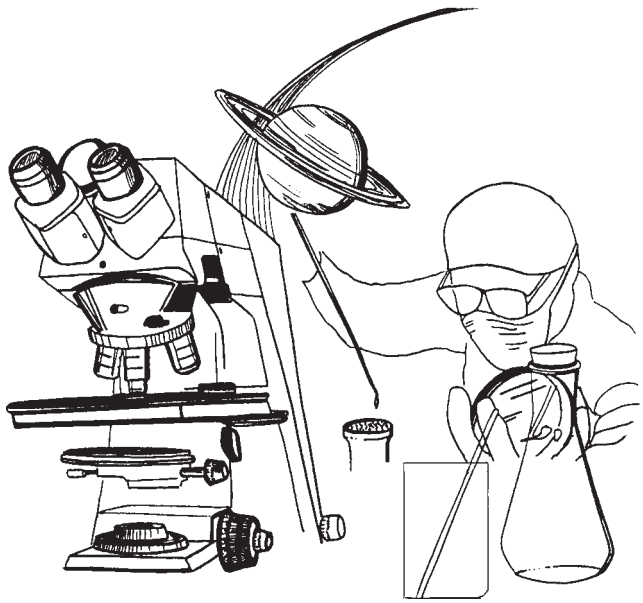


Background — For the Teacher

Many food items are processed before being sold to us. Processed foods can be broadly defined as those foods that have been modified in some way after being produced or harvested. For instance, food may be enriched by the addition of nutrients (like vitamins or amino acids). Additives, such as preservatives and artificial colors, may also be put into foods. Some examples of processed foods include pasteurized milk, cured meat and canned fruits. To the food market, processed food means better looking, smelling and tasting food, and a longer shelf life — all of which means greater profitability. To the consumer, processed food offers convenience and speed in preparation.

Modern science is also capable of producing synthetic foods, which resemble natural foods, and of remaking natural substances into an entirely different form. These products are known as fabricated foods. An example is the creation of vegetable protein meat analogues as a substitute for meat cuts.

Throughout their work on this lesson, students will first come to recognize the variety of things that they ingest. As they continue, they will see the sources of these substances and the processes by which the substances reach them.



Procedure

Preparation

1. One week prior to this lesson, hand out a copy of the Human Incinerator Ingestion Web and have each student fill out the branches with all that they ingest throughout the week.

Introduction

2. Using the overhead projector or workboard, draw a composite Ingestion Web, filling out the branches using food and non-food substances the students have ingested over the past week.

The Activity

3. Classify a few substances according to the four basic food groups: milk and milk products; breads and cereals; fruits and vegetables; and, meat, fish and poultry. Some substances will not fit in any of the food groups. Leave these substances for the students to research on their own later.
4. Identify the ingredients in a few substances ingested. This again will involve research for the more difficult substances and students will do this later.
5. Identify the origin (land, sea, laboratory, etc.) of a few substances and categorize them as unprocessed foods, processed foods or non-foods. Processed foods can be further categorized as being fabricated, being enriched or having additives. Use the background information and glossary to define each of these categories for the students. They will use the definitions to classify a substance they choose from the classroom web.
6. Have the students choose one substance from the classroom web which has not been classified and create a chain for it showing the steps involved from its origin to its ultimate processor . . . themselves. They might have to use the library at this point.
7. Have the students chart their findings in a format along the lines of the attached Human Incinerator Table.

Conclusion

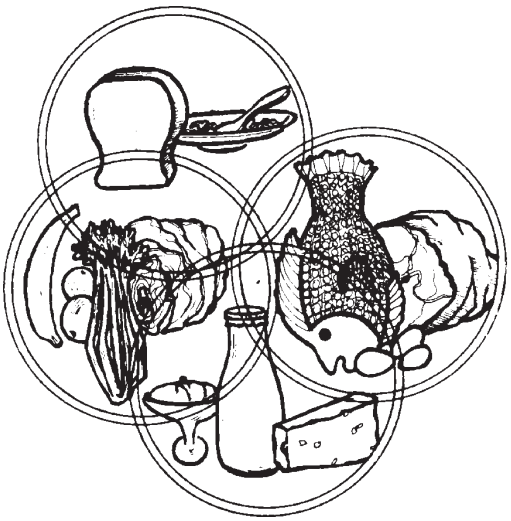
8. Using the overhead projector or blackboard, complete the Human Incinerator Table using the food and non-food substances your students chose in step 6.

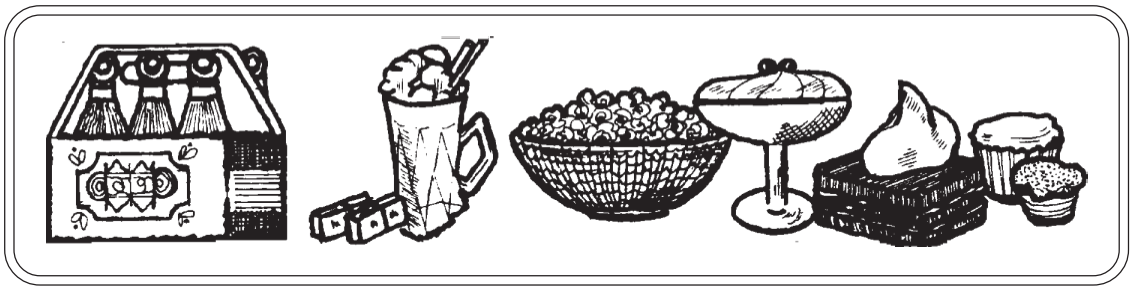
Discussion Questions

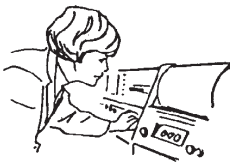
1. What is the original source of the substance (i.e. land, ocean, lab)?
2. If land is a primary source, did the item come from a domesticated plant/animal or a wild plant/animal?
3. What are some of the consequences of domestication (eg. on prices, energy use, plant and animals, environment)?
4. How many steps did the item undergo before reaching your mouth?
5. Did the item come from Alberta? Canada? Outside of Canada?
6. If the item came from Alberta, is it grown locally?
7. What item cost more? One from the land, ocean or lab? Why?
8. Did the item come directly from a plant or an animal? If not, then where did it come from?
9. What is the purpose of food processing?
10. What is the difference between food additives and food enrichment?
11. Should food be processed? What are the pros/cons?

Related Activities

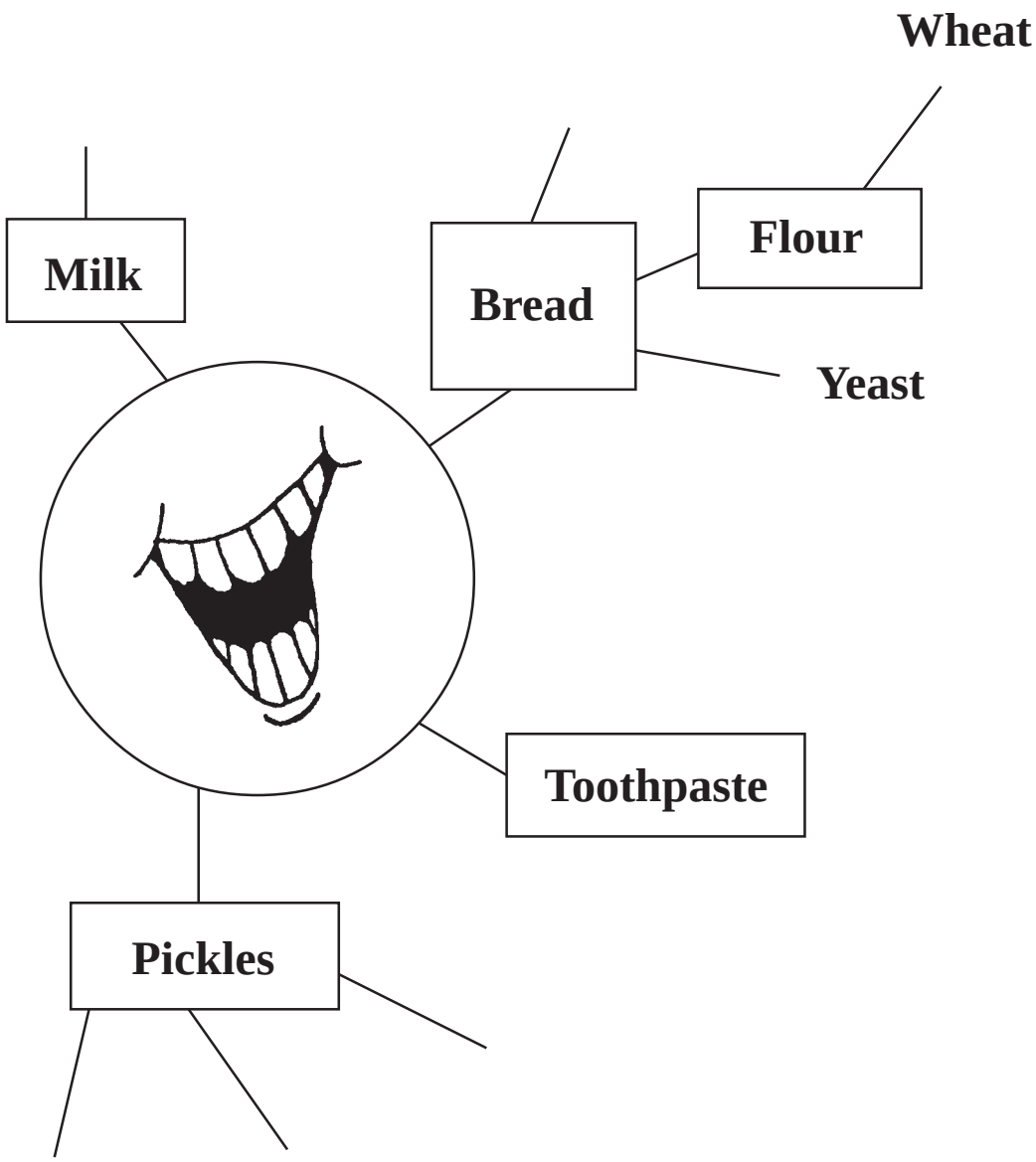
1. Have students bring food labels and list some additives in common foods. Most prepackaged food products sold in Canada must carry a list of ingredients in descending order of proportion. Additives, if there are any, are generally found at the end of the list. The Health Protection Branch of Health and Welfare Canada controls the use of food additives. There are about 350 or so food additives on the market. As part of this assignment, students can try to obtain additional food additive information from Health and Welfare Canada.



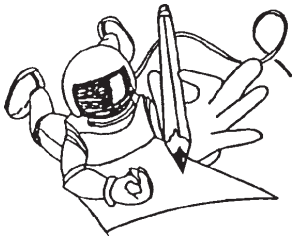


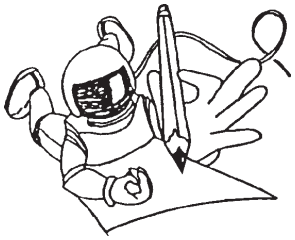


Example of Human Incinerator Ingestion Web



Human Incinerator Ingestion Web





Human Incinerator Table

Substance	Basic Food Group	Ingredients	Origin	Category	# of Steps Involved