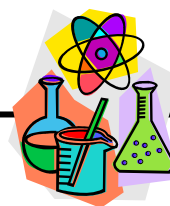


Grade 9 Unit C: Environmental Chemistry



Chemicals and Diet



Did You Know? The human body is full of chemicals, and chemical reactions are taking place in our bodies all the time.

For work in this unit, use these suggested resources.

- *Canada's Food Guide to Healthy Eating*
Copies are available from Provincial Health Regions or from the Health Canada Web site at:
http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html
- FoodFocus Nutrition Analysis Software for Education (LRC#480070)
- *Mission Nutrition Student Challenge* on:
http://www.missionnutrition.ca/english/students/students_home.asp
- Food Labels
www.healthyeatingisinstore.ca
- <http://www.dietitians.ca/>
Nutrition Challenge on <http://www.dietitians.ca/english/frames.html>
Nutrition Profile at http://www.dietitians.ca/cgi-bin/p_personal.cgi

Essential nutrients for life include:

- carbohydrates
- proteins
- vitamins
- minerals
- fats.

These nutrients are chemical compounds made up of hydrogen, oxygen, carbon and nitrogen. Chemical reactions take place in our bodies to break down these compounds.



Ingestion: The act of taking in food or eating.

Absorption: Disappearing by becoming part of something else.

1. Investigate other essential nutrients our bodies need, such as vitamins, minerals and water, and how our bodies ingest and absorb them. Create a diagram that shows how nutrients are ingested and absorbed by our bodies.
2. Investigate and describe how animals and plants ingest or absorb their food. Choose an animal and a plant to use as an example. Fill out the following organizer with the information you found.

Animal: _____

What kinds of materials do they eat?	
How do the materials enter the body?	
How are the materials absorbed into their systems?	

Plant: _____

What kinds of materials do they eat?	
How do the materials enter the plant?	
How are the materials absorbed into their systems?	

3. With a group, investigate the processes by which chemicals are introduced (the source) and spread in the environment. Think about:
- how water can spread chemicals (e.g., by rain, streams, rivers, groundwater, ocean currents)
 - how chemicals can be absorbed and passed along through the materials we eat



Create a diagram that illustrates these processes. Include the sources of the chemicals and how they are spread around.

4. With a group, discuss and identify organic and inorganic substances that are essential to the health and growth of humans and other living things. Fill out the chart below with information from your group discussion.



Use Tool [Discussion Notes](#).

Substance	How it helps living things:
<i>calcium</i>	<i>Is important for building bones</i>

5. Create a meal plan and shopping list for a week's worth of meals based on information from *Canada's Food Guide to Healthy Eating*. Share and compare your plan and list with others in the class.



Discuss with the class:

Why is a balanced diet healthier?

6. Compare the diet of a traditional Aboriginal society to that of North American society today. Which is healthier? Why?



Traditional Aboriginal Diet	North American Diet Today