Appendix A

Key Nutrients in each food group in *Canada's Food Guide*

Vegetables and Fruit +	Grain Products +	Milk & Alternatives +	Meat & Alternatives =	The Food Guide
	protein	protein	protein	protein
		fat	fat	fat
carbohydrate	carbohydrate			carbohydrate
fibre	fibre			fibre
thiamin	thiamin		thiamin	thiamin
	riboflavin	riboflavin	riboflavin	riboflavin
	niacin		niacin	niacin
folacin	folacin		folacin	folacin
		vitamin B_{12}	vitamin B_{12}	vitamin B_{12}
vitamin C				vitamin C
vitamin A		vitamin A		vitamin A
		vitamin D		vitamin D
		calcium		calcium
iron	iron		iron	iron
	zinc	zinc	zinc	zinc
	magnesium			magnesium
Each food group is essential because it provides its own set of nutrients.				

Not all the nutrients are represented here, since we need more than 50 every day. But this shows that all food groups are important to provide all the nutrients we need. (Source: Health Canada, *"Food Guide Facts – Background for Educators and Communicators,"* 1992)

THE BIG SIX AND WHAT THEY DO FOR US:

Energy Only three nutrients provide us with energy and calories. These are proteins, fats and carbohydrates.

Carbohydrates are a source of calories that fuel our muscles and brain. When we exercise hard, carbohydrates are the primary source of energy. We need a lot of carbohydrates in our diet and they come mainly from the Grain Products group and the Vegetables & Fruit group. Those two food groups are not only rich in carbohydrates, but they also contain fibre. Fibre from whole grains, vegetables and fruits is important for good functioning of the intestine.

Proteins give us calories, but their major role is not in providing energy to the body. Protein is used mostly for development during growth, and maintenance of tissue (such as skin, blood cells, muscles, etc.) in adulthood.

Fats are a source of stored energy (calories). They are intended to be used mostly as a reserve of calories to be burned during low-level activity, such as sleeping. We need to eat some fat to be healthy. Fats provide us with much-needed essential fatty acids. Fat contributes to the maintenance of body cells, the hormonal system, and much more. Fats also help the transport of fat-soluble vitamins throughout our body, including vitamins A, D, E and K. Another very important role of fats is to help our taste buds taste the foods we eat.

Fluids such as water, milk and fruit juices are important to keep us hydrated. Drinking four to eight glasses (one to two litres) of fluid per day is recommended. Needs increase with strenuous activity, particularly in a hot environment.

Vitamins and minerals are important nutrients in foods and play a major role in body functions. The following chart gives a brief summary of some vitamins and minerals and their role in health.

Vitamin or Mineral	Major Body Functions	Primary Food Sources
Vitamin A	• maintains health of skin • role in vision, bone growth and reproduction	liver, dark green leafy vegetables, yellow vegetables, milk, cheese, butter, eggs, apricots, cantalopes
Vitamin B1 (Thiamin)	• role in production of energy in body cells • aids in normal growth and appetite	lean meats, including pork and poultry, whole grain breads and cereals, legumes
Vitamin B2 (Riboflavin)	• maintains healthy skin and eyes • releases energy within cells	milk and milk products, eggs, lean meats, organ meats, dark leafy greens, enriched breads and cereals
Folic Acid	• aids in the formation of white and red blood cells	green leafy vegetables, lean beef, wheat, eggs, dry beans and lentils, asparagus
Vitamin C	• needed for healthy connective tissue, cartilage, bones, teeth blood vessels • promotes wound healing	citrus fruits, tomatoes, melons, strawberries, peppers, potatoes, cabbage, broccoli
Calcium	• necessary for bone and tooth growth and maintenance • role in transmission of nerve impulses, proper hormone function, blood clotting and muscle contraction	milk and milk products, sardines, kale, broccoli, mustard greens
Iron	• component of hemoglobin, the red blood cell constituent important in oxygen transport • involved in energy release within cells	liver, lean meats, egg yolks, legumes, whole grains, dark green vegetables, dark molasses, shrimp, oysters
Magnesium	• aids in formation of strong bones and teeth • needed for tissue formation and energy release within cells	whole grains, green leafy vegetables, nuts, legumes, meat, milk
Phosphorous	• aids in the formation of strong bones and teeth	milk and milk products, fish, poultry, whole grains, legumes, nuts, egg yolks
Zinc	• aids in energy release and tissue formation	milk, liver, shellfish, herring, wheat, bran