Carbohydrates: An Energy Source

Carbohydrates

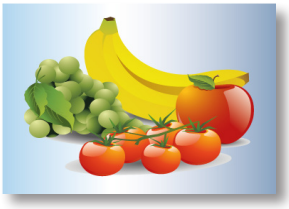
Carbohydrates are the most common foods in our diet. They can be divided into two groups – complex carbohydrates and simple carbohydrates. During digestion, most carbohydrates are broken down into simple sugars (mainly glucose) to provide energy for our cells.

Complex carbohydrates such as starch and cellulose are made up of long chains of glucose molecules. They are found in whole-grain foods, vegetables and fruit.

Cellulose is an important component in the cell walls of plants. It cannot be digested by humans; however, foods rich in cellulose provide fibre, an essential component in a healthy diet.

Starch is found in foods such as cereals or grains (e.g. oats, wheat, rice, maize, barley), pasta, green vegetables, fruits and root vegetables. Starch forms the largest component of the diet of most humans.

Foods rich in complex carbohydrates are digested slowly, providing a sustained release of glucose over time.



Simple carbohydrates or sugars are made up of di- or monosaccharaides and are found in both natural and processed (or refined) foods.

Fruits are high in simple sugars (in particular the monosaccharide fructose); the fibre found in fruits slows down digestion, prolonging the release of energy.

Foods that contain processed or **refined sugars** such as fruit-flavoured cordials, soft drinks, biscuits, sweets (candy), muesli bars and cakes are digested very rapidly, releasing large amounts of glucose in a very short period of time.

The Glycaemic Index (GI)

The glycaemic index (GI) measures how quickly or slowly carbohydrates are broken down to glucose. The faster a carbohydrate is digested, the sooner glucose will enter the blood stream. Carbohydrate rich foods are ranked on a scale from 1 (low GI) to 100 (high GI).

High GI foods are digested quickly, releasing lots of glucose into the blood stream all at once.

Low GI foods are digested slowly, gradually releasing glucose into the blood stream over a long period of time. A diet rich in low GI foods is better than a diet rich in high GI foods.

Te Maki Toto Vene (T2): E Manamanata no Toku Iti Tangata

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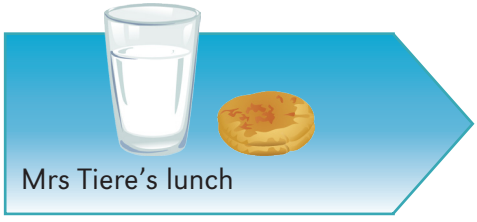
Instructions

1. The boxes contain pictures of the lunch of five staff members at 'Carbo High School'. Your job is to label the lunch in each lunch box according to the type of carbohydrates that are contained in the food items. C = complex, S = simple sugars, SF = simple sugars with fibre.
2. Once you have labelled the food items, you need to rank the overall lunch on a scale in terms of whether you think it will provide the teachers with sustained energy through the afternoon to quick release energy food. If you are aware of the importance of other food groups, you may like to mention this in your overall reasons.

	Carbohydrate label	Overall rank	Your reasons for this ranking
 Mrs Puloto's lunch			
 Mrs Tiere's lunch			
 Mr George's lunch			
 Mr Barker's lunch			
 Miss Akaruru's lunch			