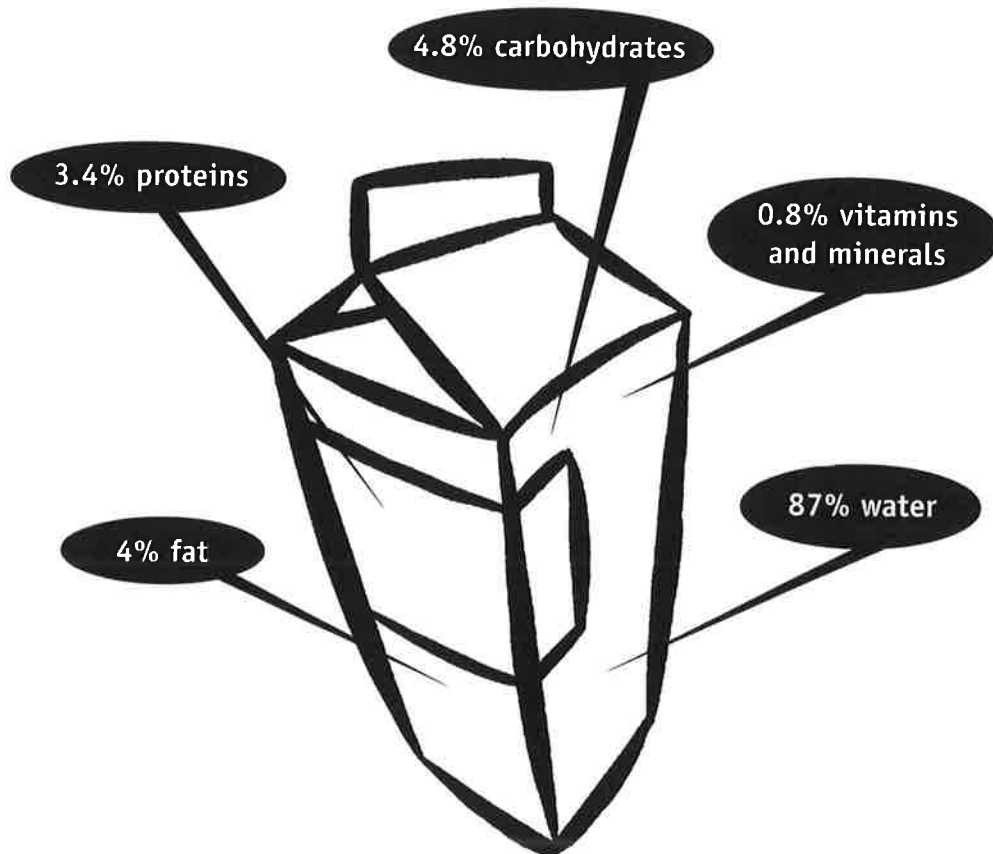


## Designer Milk

Milk and dairy products are essential in a balanced diet, being one of the four main food groups. There are lots of different varieties of milk available these days. With the flick of a dial, manufacturers can alter levels of nutrients in milk to design a product that has special properties for people with different nutritional needs.



Milk consists of the following nutrients:

- Water. Milk is nearly 90 percent water. One litre of milk contains nearly 900 millilitres of water.
- Protein. Protein in milk includes casein, albumen, and globulin.
- Fat.
- Carbohydrate. The main carbohydrate in milk is lactose (milk sugar).
- Vitamins. Milk contains vitamins A, B2, B3, and niacin.
- Minerals. The minerals in milk include calcium, magnesium, phosphorus, potassium, and sodium.

Name:

Room Number:



## Supermarket scoping activity

You may want to work in pairs for this activity.

1. Go to your local store or supermarket and record all the different varieties of milk you can find. (Don't forget the varieties of milk that don't need to be kept in the refrigerator.)
2. Compare several varieties for calcium, protein, carbohydrate, phosphorus, and fat content and record your findings on a chart like the one below.

Variety of milk	Protein (per 100 gms)	Fat (per 100 gms)	Carbohydrate (per 100 gms)	Calcium (per 100 gms)	Phosphorus (per 100 gms)

3. Think of a group of people who might benefit from each milk variety you investigated.
4. Do you think the difference in the varieties of milk would affect products you make using milk? To test out your theory, make a dairy product in pairs or in a group of four. Examples could be a milkshake, white sauce, or custard. Choose two varieties of milk from your chart that you would like to experiment with. One pair makes the product with one variety of milk, and the other pair uses the second variety of milk.
5. Make up an evaluation sheet for the final product. Compare the end products from the two different varieties of milk.  
Your evaluation could include:
  - taste
  - thickness
  - smoothness
  - appearance.
6. Is there any noticeable difference in the two end products? If so, comment on the difference and say what you think is causing it.
7. Use your results to make three recommendations for people who might want to make the product in the future.