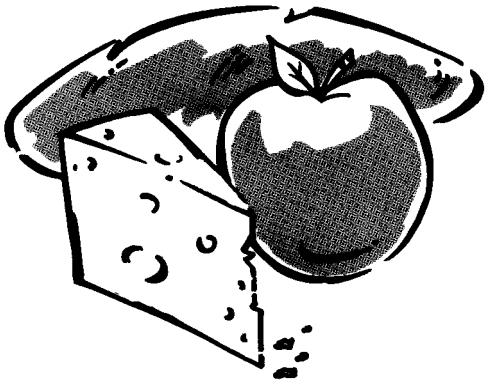
SCIENCE ACROSS EUROPE

BP Amoco



What did you eat...?
Was hast Du gegessen...?
Qué es lo que comes...?
Qu'avez vous mangé...?
Che cosa hai mangiato...?
O que é que comemos...?

13-16 **English**

What did you eat...?

This unit may be used to complement work on health and nutrition.

The unit focuses on the nutritional aspects of food and looks at links between diet and health.

Students start by surveying what they eat for breakfast and during the school day. This information is collated by the class and exchanged with schools in other countries. The information collected should enable students to make comparisons and hence reflect upon their own diet.

The work is suitable for lessons in chemistry, biology and home economics. It may be extended to link with studies in foreign languages.

This unit is in six parts

Part 1 Why food?

A review of the nutritional and social aspects of food.

Part 2 What are your eating habits?

Students survey their eating habits and food intake.

Part 3 Diet and health

Discussion of the results of part 2.

Part 4 What do students eat across Europe?

Collation of class information, collection of food labels and exchange of information with other schools.

Part 5 Eating habits – a comparison

Discussion of the information collected.

Part 6 Information section

Information and data on diet and disease; nutritional values of common breakfast foods.

The aims of the unit ar e

- ❑ to revise and extend work on diet and nutrition;
- ❑ to enable students to reflect upon their own diets by comparing them with those of students in other countries;
- ❑ to create awareness of the links between diet and good health;
- ❑ to raise students' awareness of the lifestyle and traditions of people in other European countries;
- ❑ to raise students' confidence in using a variety of European languages.

Prior knowledge and skills

The material is intended for students aged 13 to 17.

Students should understand how proteins, fats, carbohydrates, vitamins and minerals contribute to a balanced diet and their importance for growth and good health. They should be able to identify the nutrients in common foods and recognise those rich in dietary fibre.

Instructions for teachers

Requirements

Before beginning the lesson:

- ❑ copy the student pages for the class;
- ❑ make a few copies of the Exchange Form. A transparency for overhead projection would be useful for part 4;
- ❑ collect labels from foods and drinks, especially those that can be bought elsewhere in Europe – for example, milk, bread, flour, margarine, cooking oil, jam, Coca Cola, Fanta etc., as well as foods typical of your region.

When you have received Exchange Forms from other schools:

- ❑ copy the Exchange Forms you received and the class' own Exchange Form for analysis;
- ❑ copy the map of Europe if required.

Teaching notes

Part 1 Why food?

This introduces the topic with a review of the nutrients in food.

The data on ice cream consumption is interesting and should signal to students the differences in eating habits between regions or countries. If the figure do indeed show a pattern, it seems that countries with cold climates consume more.

Part 2 What are your eating habits?

Part 2 is intended for individual work by students. Although the survey includes the whole day, the focus of the unit is on breakfast.

Encourage students to collect labels from foods. They may be used when completing the questionnaire and exchanged with schools in other countries .

Questionnaire A
This is worded so that students may insert data for 'today' or 'yesterday'. Students taking 'today' as the example, may begin to fill in the questionnaire during the lesson and then complete it at home.

Questionnaire B
This is intended as a quick dietary analysis and teachers may wish to limit the list students give to foods eaten for breakfast. The nutritional data given in part 6 is for common breakfast foods. Additional information from food labels and other food tables may be helpful.

Part 3 Diet and health

This activity follows the work done in part 2. The class may be divided into groups to discuss the questions, with a spokesperson from each group reporting the groups' answers to the class towards the end of the lesson.

Part 4 What do students eat across Europe?

This part involves exchanging information with other schools in Europe. The class will need to enter information based on the discussion questions in part 3 on the Exchange form. The information must provide an overall impression of the diets and concerns of class members. Teachers may find collating information from the whole class too time consuming and prefer to select a 'typical' student to provide his/her individual answers on the Exchange form instead.

If the class contains ethnic or religious groups with different dietary habits, you may wish to provide Exchange forms representing each group.

Part 5 Eating habits – a comparison

This discussion activity enables students to compare their eating habits with those of students in other countries and to recommend possible changes in their own diet.

Part 6 Information section

The information may be used as needed with parts 2, 3 and 5.

- ❑ Diet and disease: notes on obesity, tooth decay, heart disease, high blood pressure and cancer including cancer of the breast and of the oesophagus .
- ❑ Nutritional value of foods per 100 g: data on common foods eaten for breakfast.

Science Across the World

What did you eat...?

Date

To
(teacher's name)

School

Address

Tel: (with international dialling code)

Fax

E-mail

Web address of school

From
(teacher's name)

School

Address

Tel: (with international dialling code)

Fax

E-mail

Web address of school

A typical school day

Time of day	Activities	Meals/Snacks eaten
04.00		
05.00		
06.00		
07.00		
08.00		
09.00		
10.00		
11.00		
12.00		
13.00		
14.00		
15.00		
16.00		
17.00		
18.00		
19.00		
20.00		
21.00		
22.00		
23.00		
24.00		

Eating habits

1 Breakfast

a *For breakfast most students eat:*

b *We think that eating a good breakfast before going to school is:* ***important/not important*** *because:*

2 Eating habits

a *The sort of snacks and sweets we eat during the day are:*

b *The arrangements for meals during the school day are:*

c *The people who choose and prepare our food are:*

d *Traditional beliefs about diet in our country are:*

e *The ways in which eating habits are changing are:*

3 Diet and health

a *We think that most members of our class eat:*

❑ *a balanced diet* ❑ *enough dietary fibre* ❑ *enough fruit and vegetables*

❑ *too much salt* ❑ *too much sugar* ❑ *too much fat*

b *Suggestions for improving our diet are:*

c *Our main concerns about diet and health are:*

What did you eat ...?

Part 1 Why food?

Everybody has to eat and drink. But for most people food isn't just a matter of survival. Sharing food brings people together. Food may be the centre of a social event like a family gathering. One way or another, food is an important part of your lifestyle.

Food contains five groups of nutrients – proteins, fats, carbohydrates (starches and sugars), vitamins and minerals. Each of them is essential. The body uses the nutrients to provide itself with energy, for growth and repair and to help regulate body processes such as digestion and temperature control.

Water and dietary fibre are also important. Water is essential for health. Dietary fibre is a mixture of substances found only in plants. Some types help food pass more quickly through the intestines, some may help to lower blood cholesterol.

You need nutrients in the right amounts to grow and stay healthy. The best way to balance your diet is to eat a wide variety of foods. What you eat and when is part of the pattern of your daily life.

The average consumption of ice cream per person per year (1989)

Country	Litres
Sweden	14.9
Denmark	9.1
UK	8.4
Switzerland	8.0
Ireland	7.5
The Netherlands	6.9
Germany	6.5
Belgium	6.3
Italy	5.2
France	4.9
Austria	4.8
Spain	4.1
Greece	3.8
Portugal	2.9
USA	22.0

Figure 1 *How much ice cream do we eat?*

Discussion points

Look at the information in figure 1.

1 *Do people eat ice cream as a food or to keep cool?*

2 *Can you think of reasons for the differences between countries?*

This unit enables you to investigate how students in different countries of Europe fit eating into a busy school day. It begins by asking you to survey your own eating habits. To keep the task simple you will focus on just one day.

Part 2 What are your eating habits?

Copy questionnaire A. Fill in the columns

Activities
Fill in the time you get up, start school, have lessons, eat meals, finish school and what you do for the rest of the day.

Meals eaten
Say what sweets/snacks/meals you eat during the day.

Where you eat
Where you eat "At home", "in school dining room", "in restaurant", etc.

Who chooses your food
"You", "the school", "your Mother", etc.

Questionnaire A

Times of day	Activities	Sweets/snacks/Meals eaten	Where you ate	Who chose your food
05.00				
06.00				
07.00				
08.00				
09.00				
10				

What is the nutritional value of your food?

Copy questionnaire B.

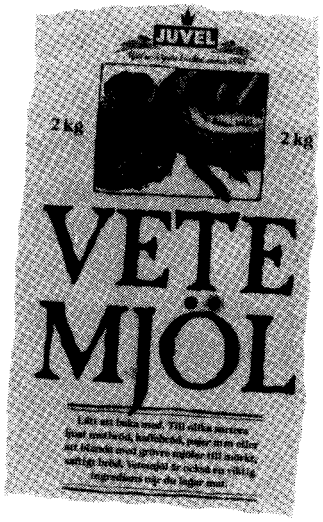
In the left column make a list of the foods you have eaten and drunk for breakfast and if possible what you ate at school, and during the rest of the day.

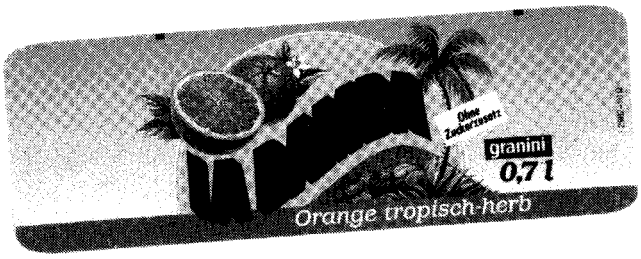
The other columns in the table list nutrients, water and dietary fibre. Tick the important components of the food you had, Do not tick more than three for each food. For example, bread is rich in starch, apples are mostly water with some dietary fibre, and cheese is rich in protein and fat.

The table on page 8 lists the nutritional values of some common breakfast foods. You may also find the nutritional information on food labels helpful.

Questionnaire B

Foods eaten	Energy	Proteins	Fats	Carbohydrate		Vitamins	Minerals	Water	Dietary Fibre
				Starch	Sugars	(state which)	(state which)		





Part 4 What do students eat across Europe?

Most people in western Europe have enough to eat and drink. Some people even eat too much. Others have 'unbalanced' diets, that often means too much fat and sugar or too little fresh fruit, vegetables and dietary fibre.

Find out how your eating habits and concerns compare with those of other students across Europe. Your teacher has a list of classes that are studying the same unit and would like to exchange information with you.

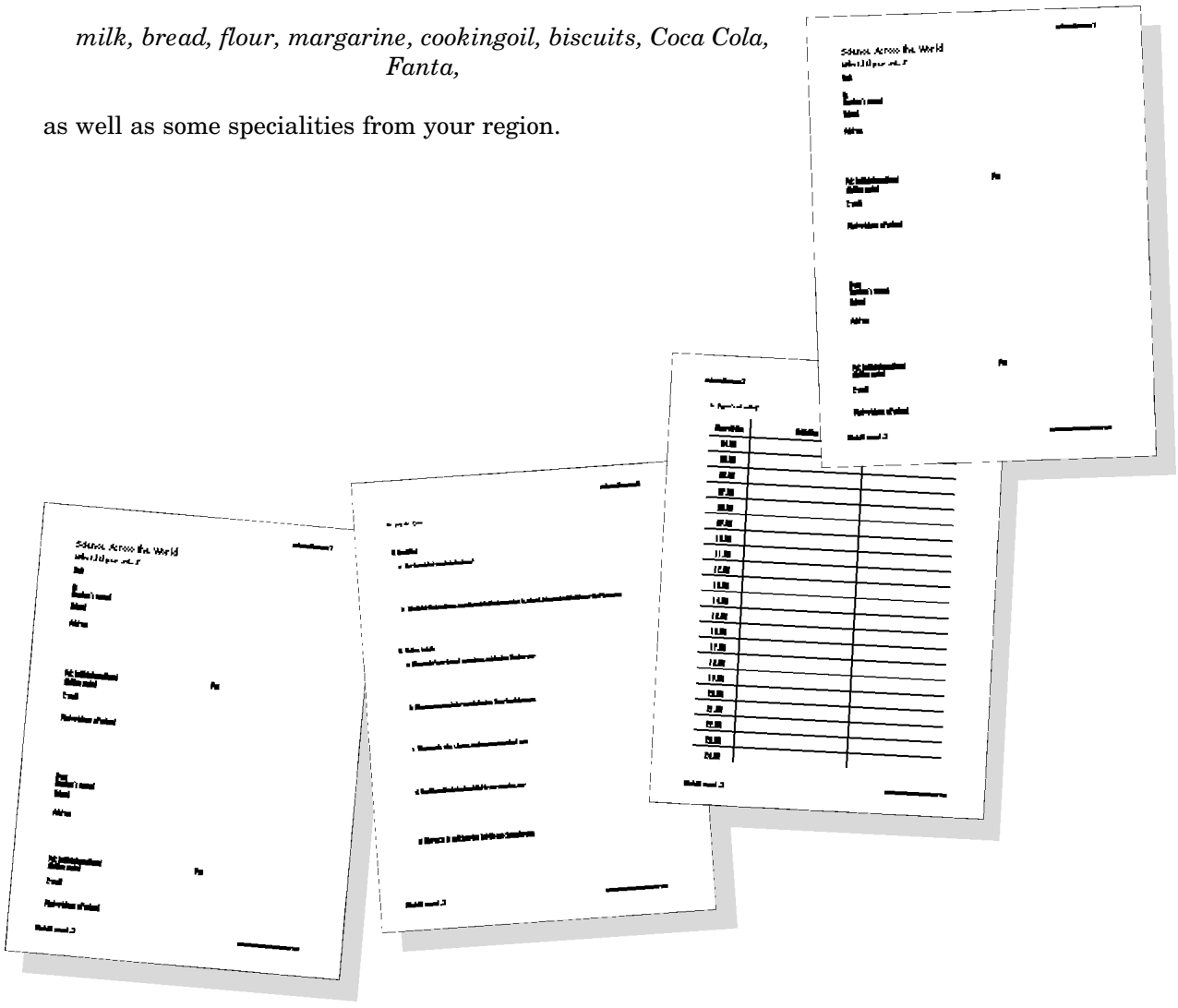
Use the Exchange Form to make the exchange of information simple. Patterns of daily life may be different in other countries, so your class will need to describe a typical school day on side 2 and give information about eating habits on sides 3 and 4.

You will need to decide how to provide this information so that it is typical of students in your class. You could decide as a class what information to provide or select a 'typical' student to give his/her answers.

It is interesting to compare food labels from your country with those from other countries. Send food labels with your exchange form and you may receive some in return. Choose labels from foods and drinks that can be bought throughout Europe such as:

milk, bread, flour, margarine, cookingoil, biscuits, Coca Cola, Fanta,

as well as some specialities from your region.



Part 5 Eating habits – a comparison

Group discussion activities

Compare the information from other European schools with that from your class.

1 Compare:
- **a** the pattern of daily life: when other students get up, start school, etc.,
- **b** who chooses and prepares the food,
- **c** what is eaten for breakfast,
- **d** snacks and sweets eaten,
- **e** arrangements for meals during the school day.

2 Do students across Europe think that eating a good breakfast is important?

3 What do you think is responsible for the similarities and differences in the foods eaten by students in different countries?

4 Did you learn of any traditional beliefs about foods? Can they be explained by science?

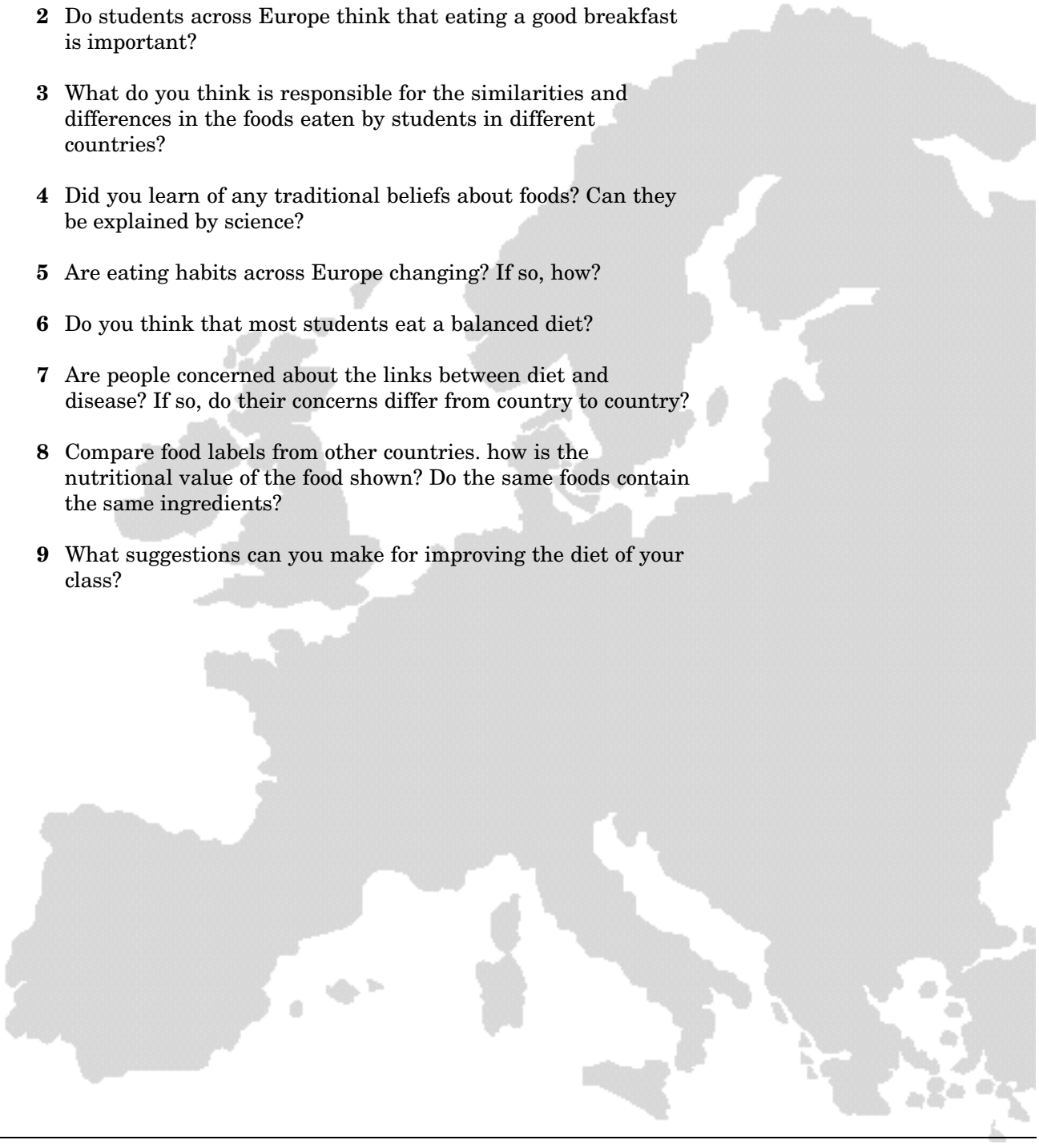
5 Are eating habits across Europe changing? If so, how?

6 Do you think that most students eat a balanced diet?

7 Are people concerned about the links between diet and disease? If so, do their concerns differ from country to country?

8 Compare food labels from other countries. how is the nutritional value of the food shown? Do the same foods contain the same ingredients?

9 What suggestions can you make for improving the diet of your class?



Part 6 Information section

Diet and disease

Certain diseases, such as coronary heart disease, breast cancer and bowel cancer are more common in some countries than in others. It is thought that some of these diseases may be linked to diet. Below is some information about them.

Obesity

People who weigh 20% more than the ideal are overweight. They have a shorter life expectancy and are more likely to suffer from diseases that include heart disease, diabetes, gallstone, high blood pressure, arthritis and varicose veins.

Some people put on weight easily. The reasons are not understood. They do not necessarily eat more than other people, but they eat more than they need and lay down the excess as fat.

Tooth decay

Tooth decay (dental caries) has been linked to diets high in sugars. Your mouth contains bacteria that break down sugars to make acids. Acids attack tooth enamel, making it more porous. Tooth decay begins as the enamel wears away.

Heart disease

Death rates from coronary heart disease are often higher in countries where people eat diets high in 'saturated' fats such as butter, red meat, milk and cheese (see figure 2). A high fat diet can raise the level of cholesterol, a fat–like substance in the blood. Your body needs cholesterol, but when it collects on the inside of blood vessels you have a greater risk of heart attacks.

High blood pressur e

High blood pressure is a condition that may lead to ill health. Doctors may advise patients to eat food without added salt, and avoid processed foods and ready meals which tend to be high in salt.

Country	Number of deaths per 100,000 population
H	621
CZ	596
PL	580
YU	553
M	490
1RL	456
SF	433
D	421
A	413
L	411
UK	389
P	387
GR	376
S	372
DK	365
N	351
B	342*
I	324
IS	324
E	323*
NL	302
CH	296
F	224

** 1984*

Figure 2 *Deaths from heart and circulation diseases per 100 000 population (1988)*

Cancer

People in different countries tend to suffer from different types of cancer. Scientists think that diet could be a major factor. It is difficult to be sure, because countries collect their statistics in different ways, so that the figures given here may not represent exactly the same thing. New studies should give more reliable statistics by the mid–19OOs.

Breast cancer is increasing in many countries. Its cause is not known, but in figure 3 cancer rates are compared with how much fat people eat in different countries.

Some scientists suspect that many people could avoid getting stomach cancer if they ate fruit and vegetables every day. Cancer of the bowel may also be linked to a diet high in fat. Eating enough dietary fibre may help to reduce the risk of bowel cancer.

Alcoholic drinks may be linked to cancers of the mouth and gullet (oesophagus) as well as to cirrhosis of the liver and high blood pressure.

Figure 4 shows the death rates for cancer of the oesophagus in different parts of Europe.

Figure 3 *Deaths from breast cancer per 100,000 people plotted against fat in the diet (1980s)*

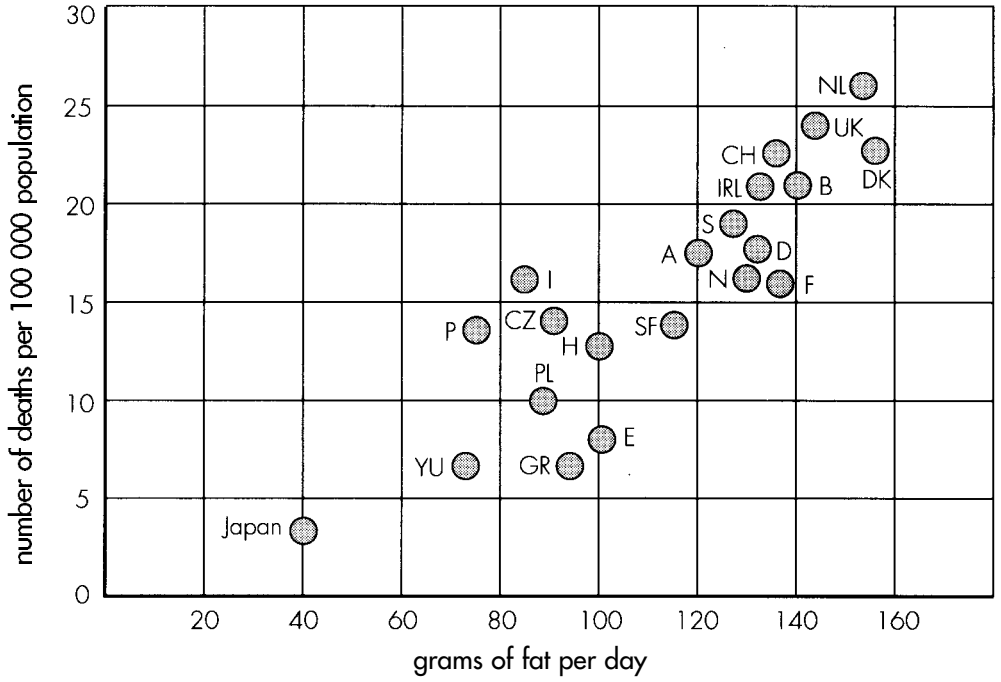


Figure 4 *Death rates from cancers of the gullet (oesophagus) in men (1970s)*

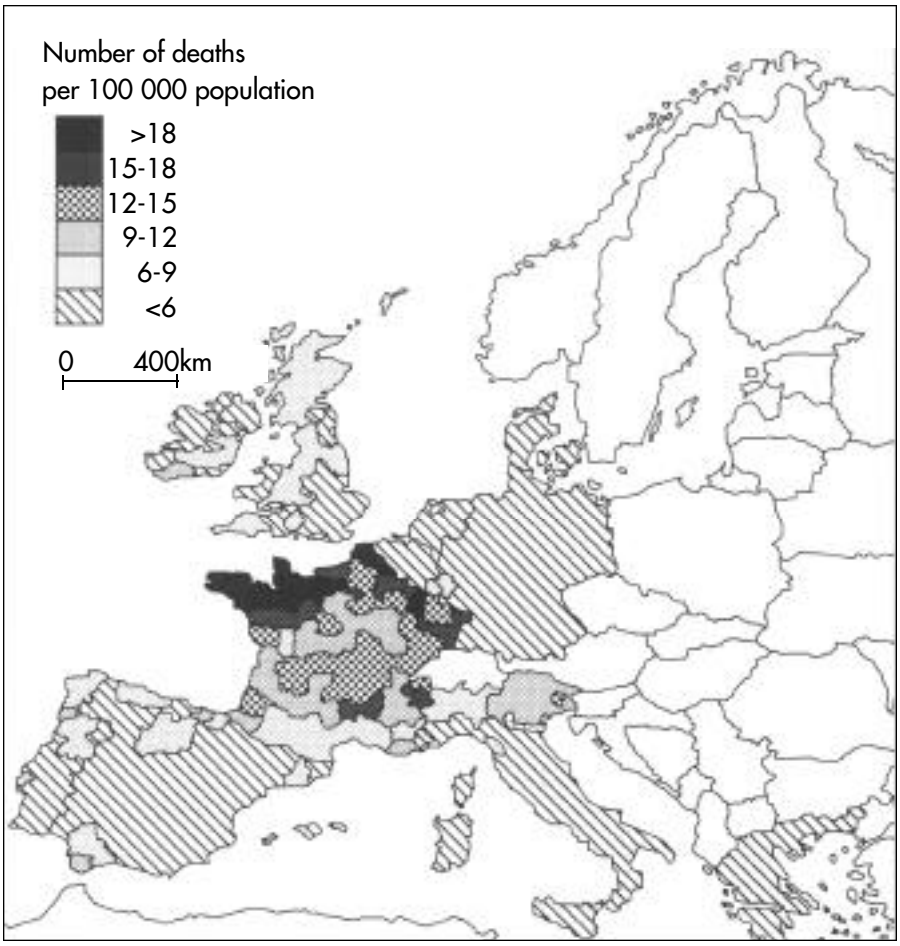


Table 1 *Nutritional values of some foods per 100g edible portion*

	Protein/ g	Fat/ g	Carbohydrates/ g	Energy/ kj
Orange juice	0.6	0.0	9.4	161
Apples	0.3	0.0	12.0	197
Bananas	1.1	0.0	19.2	326
Oranges	0.8	0.0	8.5	150
Tomatoes (fresh)	0.8	0.0	2.4	52
Cornflakes	7.4	0.4	85.4	1507
Muesli	10.5	8.1	67.1	1552
Bread (wholemeal)	9.2	2.5	41.6	914
Bread (white)	8.0	1.7	54.3	1068
Rye/black bread	6.4	1.0	52.7	950
Crisp bread	10.1	1.4	79.0	1461
Plain cake	6.0	24.0	49.7	1785
Mill (full fat)	3.3	3.8	4.8	274
Skimmed milk	3.5	0.1	4.8	142
Low fat curd cheese	17.2	0.6	1.8	142
Cream cheese	14.6	30.5	1.9	1415
Yoghurt (natural)	5.0	1.0	6.4	224
Eggs (chicken)	12.3	10.9	0.0	612
Butter	0.5	81.0	0.0	3006
Margarine	0.2	81.5	0.0	3019
Low fat spread	5.8	40.5	0.5	1605
Vegetable oil	0.0	99.9	0.0	3697
Ham (cooked)	24.7	18.9	0.0	1119
Salami	19.3	45.2	1.9	2031
Beef	18.1	17.1	0.0	940
Chicken	20.6	5.6	0.0	578
Pork	16.4	25.0	0.0	1218
Herring	17.3	18.8	0.0	1017
Jam	0.5	0.0	69.2	1116
Honey	0.4	0.0	76.4	1229
Sugar (white)	0.0	0.0	99.5	1680
Coffee (without milk)	0.3	0.1	0.8	21
Tea (without milk)	0.1	0.0	0.4	8
Coca Cola	0.0	0.0	10.5	168
Chocolate	19.2	24.5	43.6	1252
Ice cream	3.6	9.8	24.4	814
Milkshake	2.9	3.2	13.2	379
Mars bar	5.3	18.9	66.5	1853
French fries (chipped potatoes)	3.3	15.5	34.0	1174
Potato crisps	5.0	37.6	49.3	2275
Pizza (cheese and tomato)	9.0	11.8	24.8	984
Beefburger	20.4	17.3	7.0	1099