



6 Mappe, tabelle, grafici e diagrammi

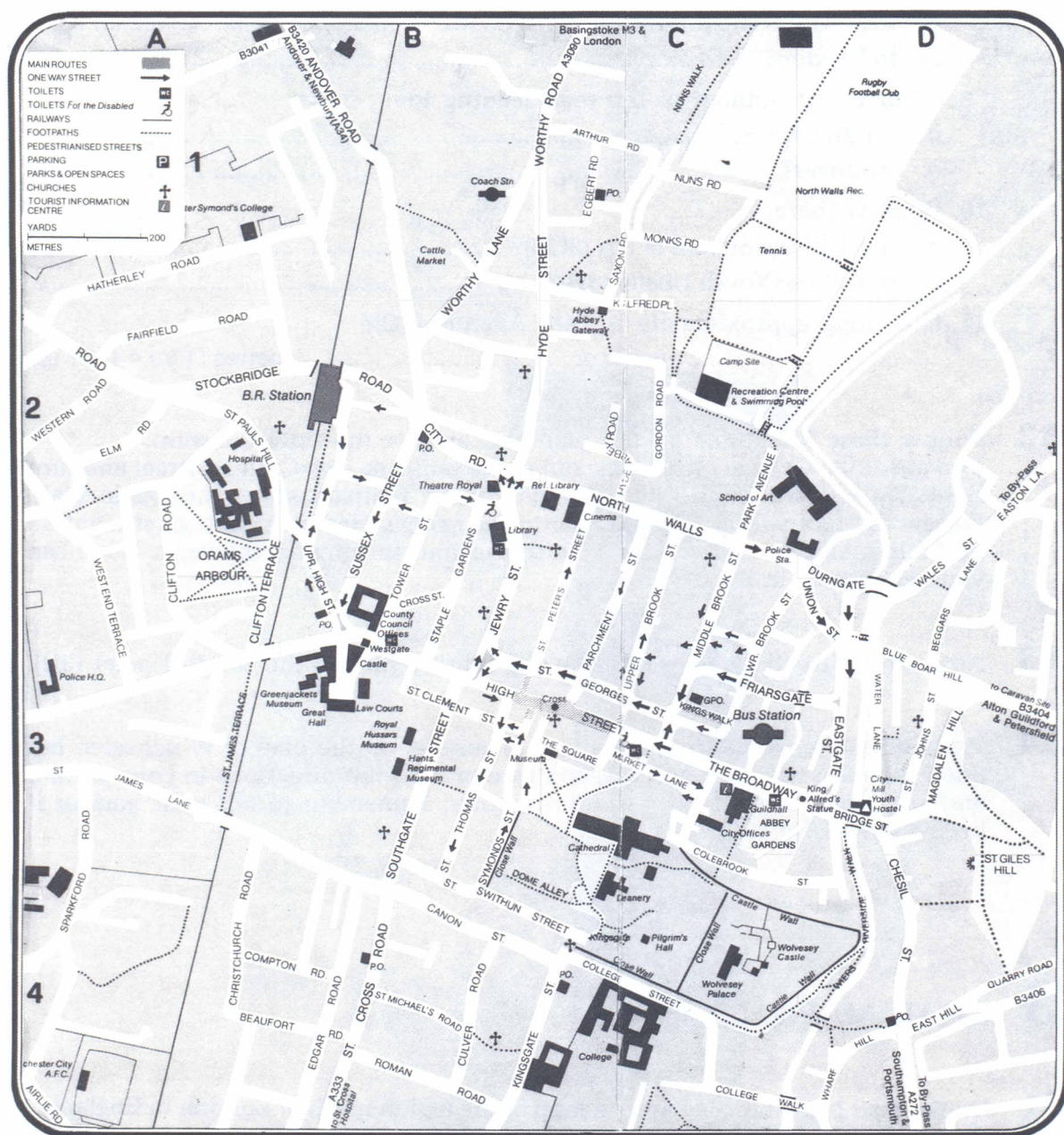
Mappe, tabelle, grafici e diagrammi sono usati con sempre maggiore frequenza non solo in libri, giornali e riviste, ma anche dai più recenti mezzi di informazione e comunicazione (cinema, televisione, computers ...). Grafici e diagrammi visualizzano infatti in modo semplice e chiaro dati e informazioni che spesso sarebbero più difficili da spiegare a parole.

In questo capitolo ci eserciteremo sia ad *interpretare* correttamente che a *costruire* noi stessi questo tipo di strumenti.

A CITY PLANS

A1 On the next page there is a plan of the centre of *Winchester*, a famous historical city in the south of England. Look at it carefully and answer the following questions.

1. Which symbol is used in this plan to show
 - a. a footpath?
 - b. a one-way street?
2. What is the meaning of these symbols?
 - a. 
 - b. 
3. To find places quickly, the plan is divided into *squares* identified by a *number* and a *letter* (e.g. 1A, 3D, etc.). In which square do you find
 - a. the Cathedral?
 - b. the B.R. (= British Railway) Station?
4. Name one public building you can find
 - a. in square 1B
 - b. in square 3D
 - c. across squares 2CD
5. Can you drive
 - a. along the High Street (3BC)?
 - b. from the Post Office (P.O.) (2B) to the Police Station (2CD)?



(da: English Tourist Board).

- c. from the B.R. Station (2B) to the Post Office (3B) down the Upper High Street?
6. If you are driving down St. George's Street (3C), can you turn right into Parchment Street?
7. Does the railway line run *above* or *below*
- Stockbridge Road?
 - Andover Road?
8. Which road leads out of town
- to the Caravan Site?

- b. to St. Cross Hospital?
- c. to London?
9. What is the number of the road leading to
- a. Southampton?
- b. Andover?
10. What is there
- a. north of the School of Art (2CD)?
- b. east of the Youth Hostel (3D)?
11. How long approximately is Park Avenue (2C)?
- yards or metres (1 yd = 0.91 m)

A2 Follow these directions on the plan and answer the final question:
 You are at the College (4C). Come out of the building into College Street and turn right. Walk down College Street and take the footpath along the Castle Wall. Follow the footpath until you come to the bridge. Here turn left, go straight on past King Alfred's Statue, and take the second turning on the right. What can you see just in front of you?

A3 Now write directions to walk from the Library (2B) to the Youth Hostel (3D).

A4 Write directions to go from one place to another on the plan of Winchester, but don't mention the destination. Then give or read the directions to your partner and ask him/her to identify the destination. Remember to tell your partner if he/she's *walking* or *driving*!

B ROAD MAPS

B1 On the next page there is part of a map of the region north of London in England. First look carefully at the «Reference» table on page 106 and answer these questions:

- What symbol is used in the map to show:
 - a castle?
 - a viewpoint?
 - a House or Garden open to the public?
 - a service area on a motorway?
- What do the following symbols stand for?
 - ====
 - ▲
 -
 -

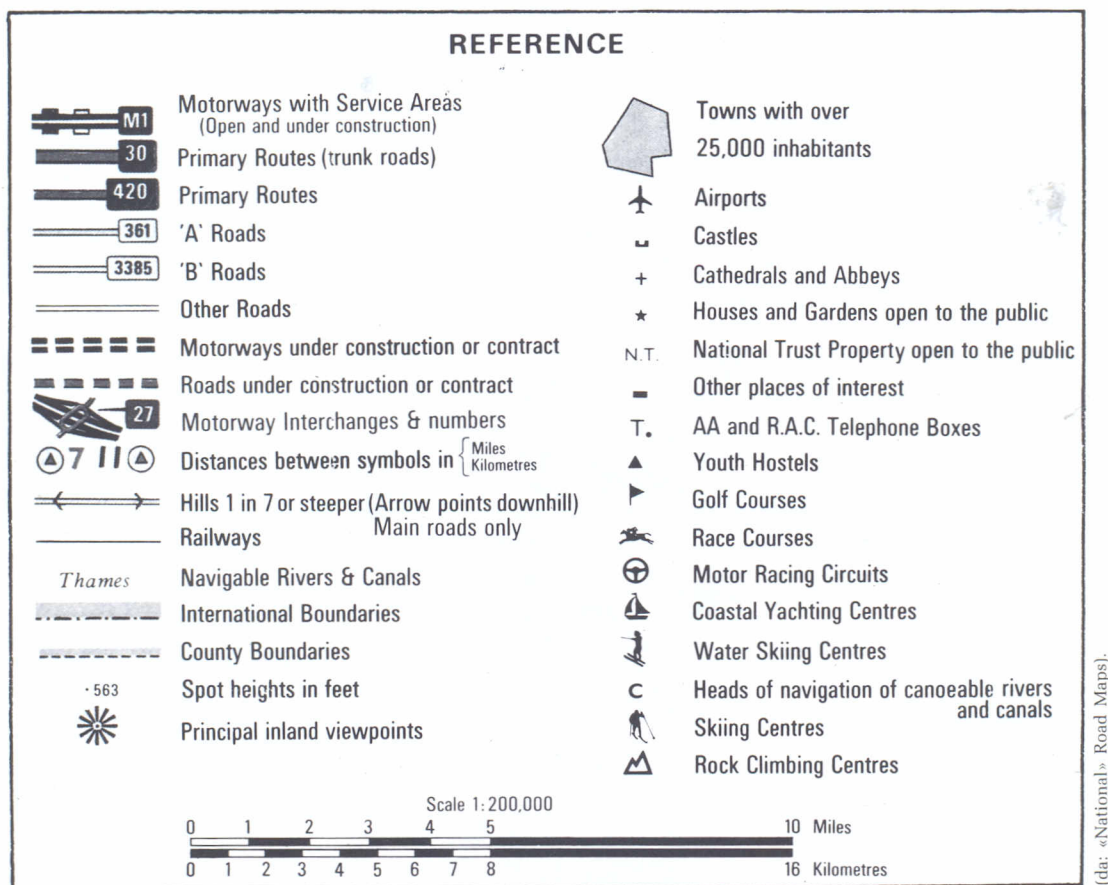


3. Which sports are mentioned in the table?

- a. b. c.
 d. e. f.
 g. h.

4. What do the following numbers represent?

- a. •647 (1 ft = 30.4 cm)
 b. Ⓐ18Ⓐ
 c. Ⓐ29Ⓐ
 d. —3
 e. M6



5. These symbols < > are used to show steep roads (with a minimum incline of 1 in 7, or approx. 15%).

- a. Is this kind of information provided for *all* roads in the map?
- b. Look at this example:



- i.) Is Lew *higher* or *lower* than Farmoor?
- ii.) Is Lew *higher* or *lower* than Sutton?
6. a. What is the *scale* of this map?
- b. This means that 1 cm is equal to cm (i.e. km).
- c. 1 mile is equal to km.

B2 Now look at the map in Section B1 and answer the following questions using the «Reference» table:

1. Name four *airports* in this area:
- a. b. c. d.
2. Name the *eight* towns with over 25,000 inhabitants shown on the map:
- a. b. c. d.
- e. f. g. h.

3. In which of these eight towns is there a *youth hostel*?
4. What interesting things *to see* or *do* are there:
- a. at Luton Hoo?
- b. in the centre of St. Albans?
- c. near the railway at Berkhamsted?
- d. just south of Stevenage? i.)
ii.)
5. Name *three* ways (shown on the map) to travel from Berkhamsted to Hemel Hempstead:
- a. *by* b. *by* c. *by*
6. Is there a railway line between Harpenden and Hemel Hempstead?
7. Which *numbered* roads lead *from the centre* of St. Albans, and where do they lead to? Complete the table below:

Road No.	Direction (N - E - S - W)	Leading to
A6	NE	Harpenden
.....
.....
.....
.....

8. Where can you stop at a *service area* on the M1?
9. Which M1 *interchange* would you choose to reach:
- a. Hemel Hempstead? b. Toddington? c. Redbourn?
10. How high is *Galley Hill* on the A6 north of Luton?
11. Where can you find an AA (*Automobile Association*) or a RAC (*Royal Automobile Club*) telephone box:
- a. on the A505 between Luton and Hitchin?
- b. on the B656 between Hitchin and Welwyn?
12. How far is Luton from St. Albans via the A6? miles or km.
13. What do the numbers 13 and 21 near Hitchin stand for?
.....
14. Calculate the approximate distance between the M1 interchanges No. 8 and No. 10:
..... miles or kilometres.

B3 Follow these directions on the map and answer the final question:

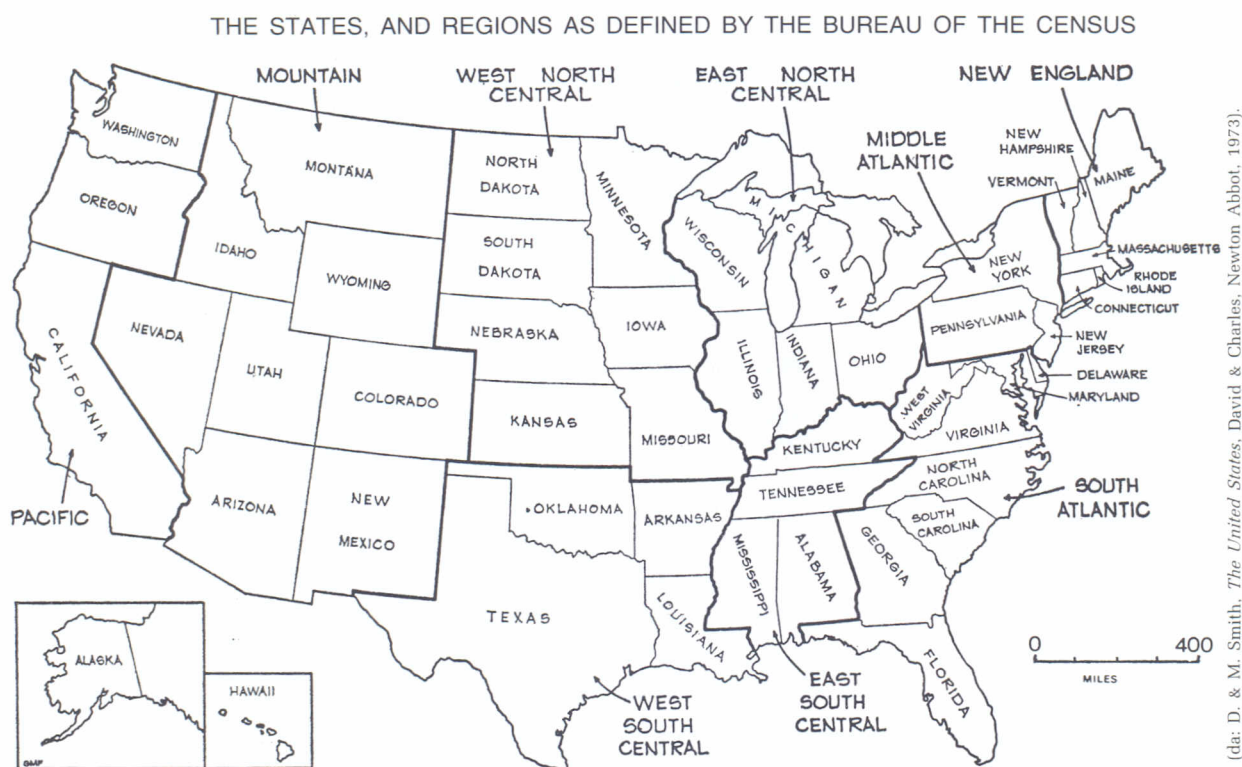
From the centre of Dunstable take the A5 southbound. Go past the M1 interchange No. 9. When you reach Redbourn, turn left and follow the road until you meet the A6. Take this road northbound and turn right at Harpenden. Follow the road until you get to the junction with the A6129. Here turn left and then go straight ahead. What is the first village that you will meet?

B4 Now write directions to go from Wheathampstead (near Harpenden) to Holwell (north of Hitchin).

B5 Write directions to go from one place to another on the map, but don't mention the destination. Then give or read the directions to your partner and ask him/her to identify the destination.

C GEOGRAPHICAL MAPS (1)

Look at the map of the U.S.A. and complete the following statements.



- The States have been grouped into *nine* regions:

a.	b.	c.
d.	e.	f.
g.	h.	i.
- The States comprised in the «New England» region are:

a.	b.	c.
d.	e.	f.
- a. *Delaware* belongs to the region.

b. *New Jersey* belongs to the region.
- Two states do *not* belong to the nine regions shown: and

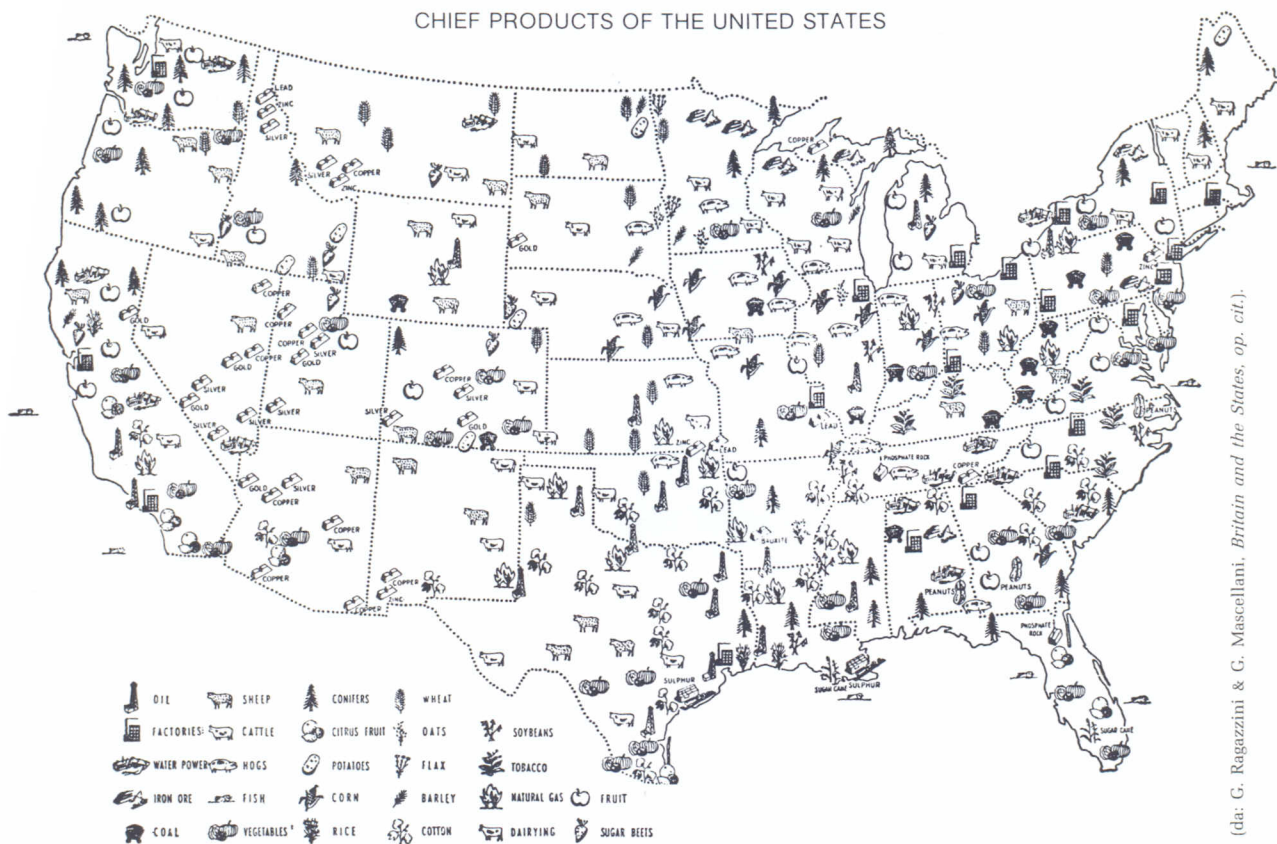
Using the scale given in the map, work out:

- the approximate distance between the East Coast and the West Coast of the U.S.A.: miles or kilometres.
- the approximate distance between the North Dakota boundary with Canada and the southernmost point in Texas: miles or kilometres.
- The approximate area of Colorado: square miles or square kilometres.

GEOGRAPHICAL MAPS (2)

Look at the map showing the «Chief Products of the U.S.A.».

- A. Check if you know the words in the map. Can you guess their meaning using the symbols? If you can't, look the words up in a dictionary.



- B. Referring also to the map of the *nine regions* of the U.S.A. in Section C, answer these questions:

- What are the main products of
 - South Dakota*?
 - West Virginia*?
- Is *Pennsylvania* mainly agricultural or industrial?
- What about *Oregon*?

4. In which part of the country (N, E, S, W)
 - a. are *factories* mainly located?
 - b. are *tobacco, cotton* and *sugarcane* mainly grown?
5. Which of the nine *regions*
 - a. has most *oil*-producing wells?
 - b. is richest in *gold, silver* and *copper*?
6. The area with the highest production of *corn* in the U.S.A. has been called the «Corn Belt». Which are the five states which belong to this area?
 - a. b. c.
 - d. e.
7. In which states is *coal* mostly mined?

.....

D2 Read the following description of the extractive industries in Britain, invent a *symbol* for each mineral and, using your symbols, show *where* these industries are located on the blank map on the right.

Coal is one of the most important sources of energy in the United Kingdom. Although coalfields are distributed all over the country, the main areas which supply most of the output include South Wales, the Midlands, the centre-north of England (Liverpool, Manchester, Leeds, Sheffield), North-east England and the Midland Valley of Scotland (the Edinburgh-Glasgow area).

As for *iron*, production has been falling in recent years. Iron ore is mainly located in North-west England (along the Scottish border), in the centre-east (Grimbsy, Lincoln, Nottingham), in the Midlands, and in South Wales.

Oil production has increased rapidly in the last few years, mainly owing to the discovery of oil fields in the North Sea, off the Scottish coast (offshore oil). Onshore oil is mainly produced in the area west of Southampton in the south of England, and in the East Midlands.

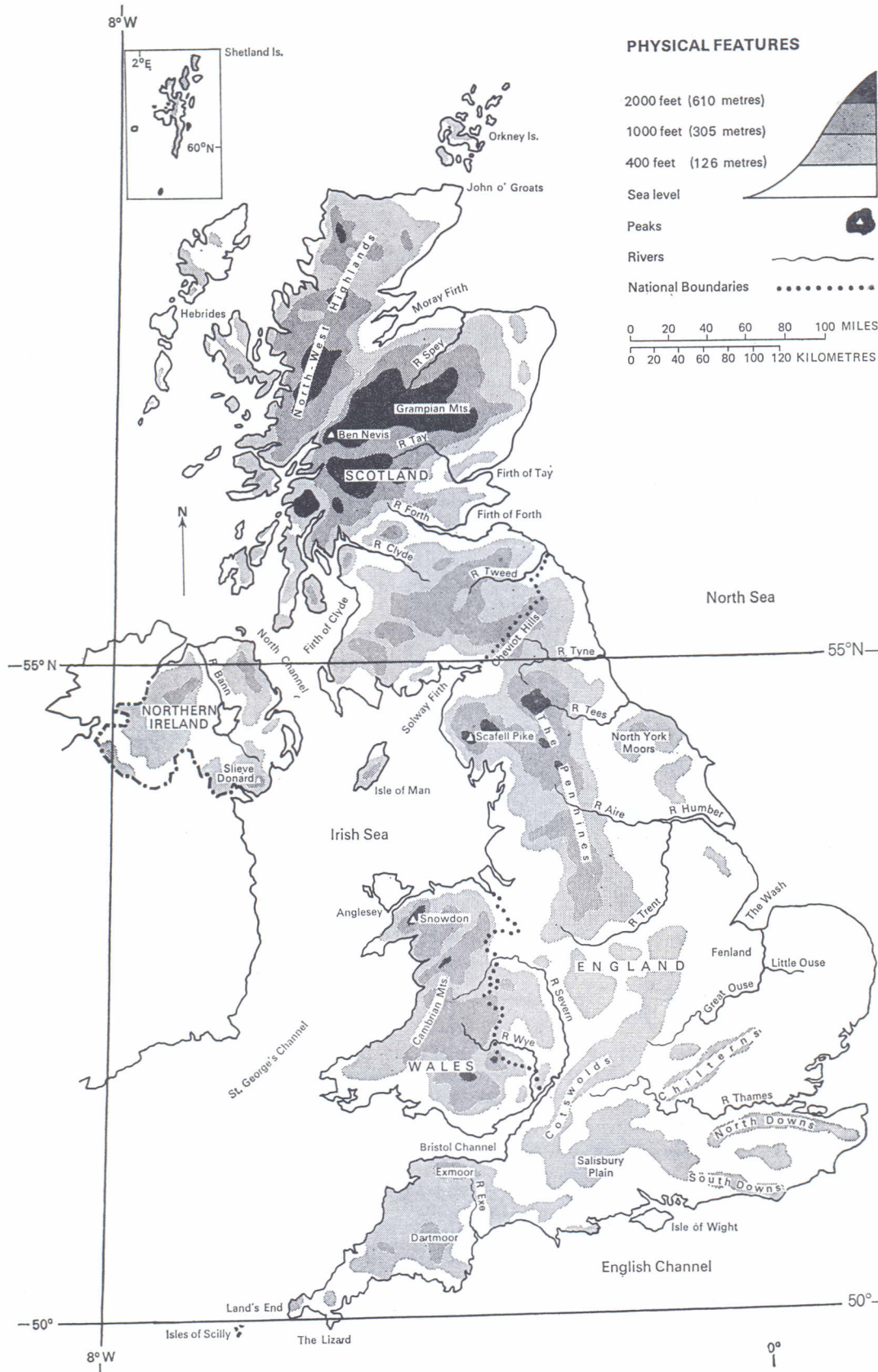
Natural gas was also discovered in the North Sea in the late 1960s. Some fields are in operation not far from the Shetland Islands, but the major ones are situated off the eastern coast of England (East Anglia), in the southern part of the North Sea.



(da: G. Ragazzini & G. Mascellani, *Britain and the States, op. cit.*)

D3 Now refer to the map showing the «Chief Products of the U.S.A.» in Section D1 and write a short description of the products of the three states (Washington, Oregon and California) which make up the «Pacific» region.

E GEOGRAPHICAL MAPS (3)



Look at the map of the United Kingdom and fill in the blanks in the following text:

This map shows the whole of the United Kingdom, which is comprised between the latitude of (1).....° and the latitude of (2).....° North (including the Shetland Islands), and between the longitude of (3).....° West and the longitude of (4).....° East (still including the Shetlands).

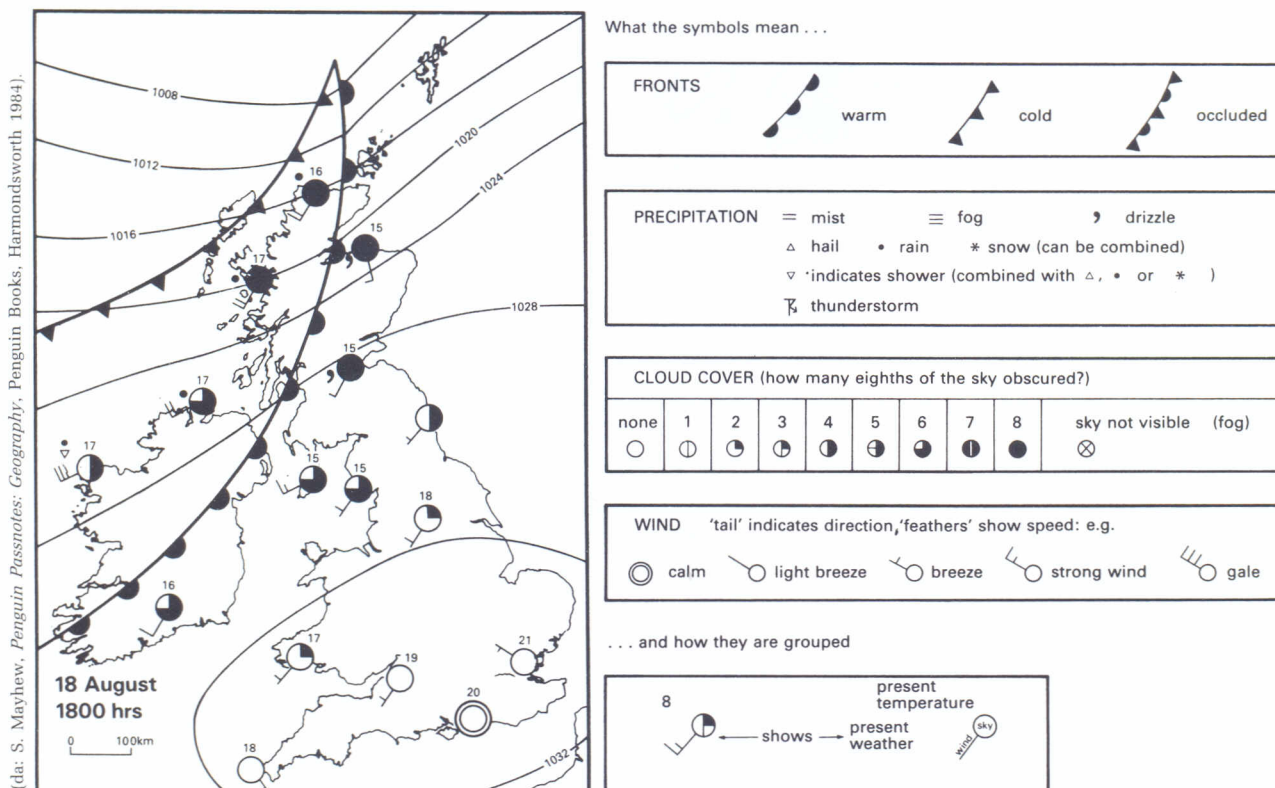
The symbol (5)..... shows the *national* boundaries *within* the U.K., i.e. between (6)..... and (7)....., and between (8)..... and (9)..... The symbol (10)....., on the other hand, shows the *international* boundary between (11)..... and (12).....

Most of the land at sea level lies in the (13)..... and (14)..... of England. Areas at 1,000 feet include, among others, (15)..... and (16)..... in the south-west of England, the (17)..... Mountains in Central Wales, the (18)..... in the north of England, and the (19)..... along the Scottish border. Areas at 2,000 feet are found mainly in (20).....





The maps also shows some of the highest peaks: (21)..... in Scotland, (22)..... in England, (23)..... in Wales, and (24)..... in Northern Ireland.

F WEATHER MAPS AND CHARTS

F1 This map of the British Isles shows the weather conditions at 6 o'clock on August 18th. Examine it carefully and carry out the following tasks.



1. Check if you know the words in the «symbols» box. Can you guess their meaning using the symbols? Look up the words you can't understand in a dictionary.

2. This symbol  means «*rather cloudy, with strong winds coming from the north*». Work out the meaning of the following symbols:
- 
 - 
 - 
3. Refer to the weather map and complete this table with the missing information:

Place	Sky	Wind		Temperature	Precipitation (if any)
		Speed	Direction		
1. London	clear	breeze	North-west	21	—
2. England/ North-east	rather cloudy			?	
3. Scotland/ North	overcast			16	
4. Ireland/ North-west					
5.		calm	—		
6			South-west		drizzle

4. Draw the symbols corresponding to the following descriptions:
- generally overcast, with winds from the north-west reaching gale force:
 - a clear day, with light breezes coming from the south-west:
 - very cloudy, with strong northerly winds:

F2 Read the following weather forecast and draw the corresponding weather map, using the blank map of the British Isles provided on the right.

A cold front will move slowly from the south-west over Southern Ireland, Wales and Southern England. Another cold front from the Atlantic is expected to reach Western Scotland later in the day.

South-west England and South Wales will have very cloudy weather, with thunderstorms, strong south-westerly winds and temperatures reaching 6 °C (43 °F). The London area will start off bright and clear, with breezes from the south and temperatures around 9 °C (48 °F).

Central and North Wales and the Midlands will have sunny intervals with scattered showers. Breezes from the west, maximum temperature 11 °C (52 °F).



Northern Ireland and Northern England: mainly a clear, dry day with light breezes coming from the west and temperatures around 5 °C (41 °F).

Scotland will become progressively overcast with rain in the south and snow or hail in the north. Winds reaching gale force will blow from the north-west, bringing temperatures down to 3 °C (37 °F).

F3 Now write a weather forecast based on the weather map in Section F1.

G CLIMATIC MAPS AND TABLES

G1 Table A

Climatic Region	Temperature			Rainfall total	Example Locations
	summer	winter	range		
COLD CLIMATES					
I Tundra	mild	extremely cold	extreme	light	northern U.S.S.R., Greenland Coasts I
II Cold Temperate	warm	very cold	extreme	moderate	north central U.S.S.R. II
TEMPERATE CLIMATES					
III Continental	very warm	very cold	extreme	moderate	Russian steppes, S. African Veld III
IV Temperate West Coast	warm	cold	moderate	moderate	British Columbia, southern Chile, New Zealand IV
Va Temperate East Coast	very warm	cold	moderate	moderate	
Vb Warm Temperate East Coast (as above, but warmer, wetter)	hot	cold	moderate	heavy	
VI Mediterranean	hot	mild	moderate	moderate	
					N.E. U.S.A., Va N. China
					S.E. U.S.A., Vb S. China
					southern California, central Chile, southern tips Africa and Australia VI
TROPICAL CLIMATES					
VII Tropical Maritime	hot	warm	small	moderate	east coast Africa VII
VIII Tropical Wet-Dry	very hot	very warm	small	moderate	central Brazil VIII
IX Tropical Monsoon	very warm	very warm	small	heavy	N. Indonesia, N. Australia IX
X EQUATORIAL	hot	hot	small	heavy	Amazon, New Guinea X

(da: S. Mayhew, *op. cit.*).

Table B

Temperatures	extremely cold	below -10°C
	very cold	-10°C
	cold	$0-5^{\circ}\text{C}$
	cool	$5-10^{\circ}\text{C}$
	mild	$10-15^{\circ}\text{C}$
	warm	$15-20^{\circ}\text{C}$
	very warm	$20-25^{\circ}\text{C}$
	hot	$25-30^{\circ}\text{C}$
	very hot	over 30°C
Temperature Range		
small	moderate	extreme
0–10 deg.	10–20 deg.	over 20 deg.
Rainfall: Totals		
heavy over 1,500 mm	moderate 500 – 1,500 mm	light under 500 mm

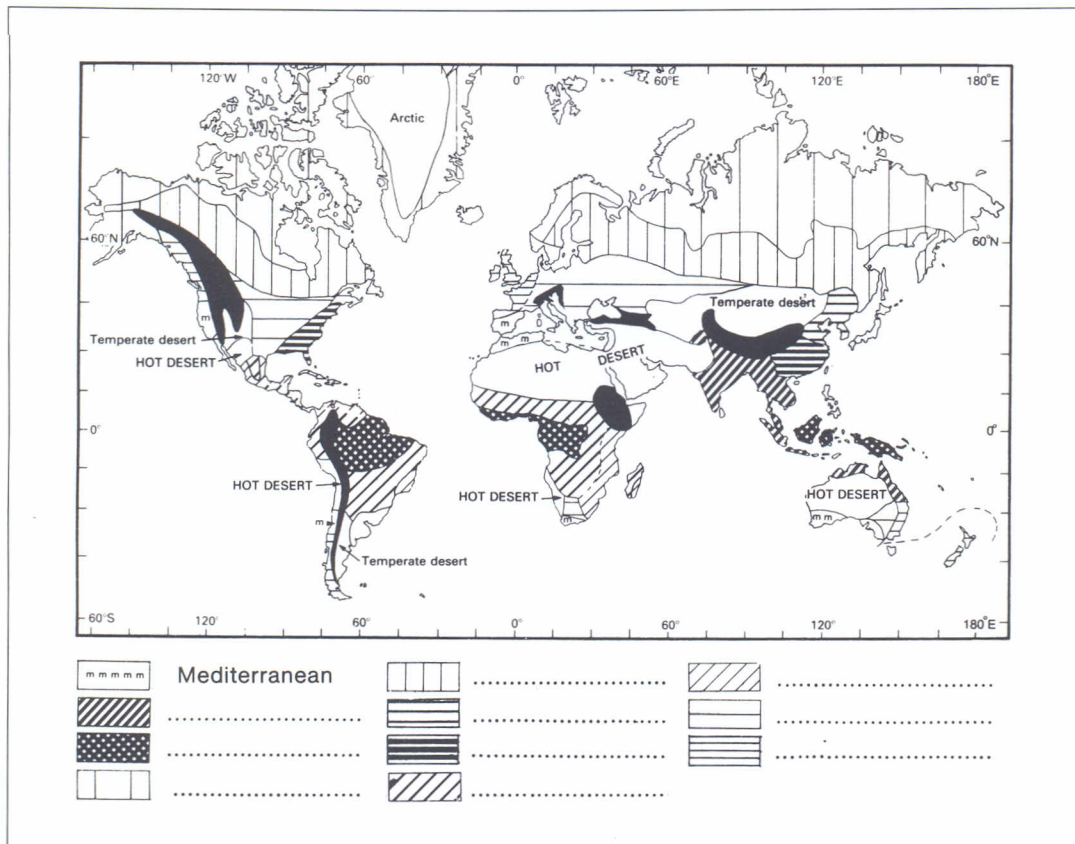
Table A on page 114 summarizes the main climatic regions of the world. The meaning of the terms describing the temperature and the rainfall are given in Table B on the left.

Study both tables carefully, then say which climatic region each of the following places belongs to:

City	Country	Temperature			Rainfall Total	Climatic region
		Summer	Winter	Range		
a. Oxford	U.K.	18°C	0°C	18	630 mm	
b. Calcutta	India	25°C	21°C	4	1,600 mm	
c. Denver	U.S.A.	24°C	-5°C	29	510 mm	
d. Marseilles	France	26°C	10°C	16	580 mm	
e. Winnipeg	Canada	18°C	-15°C	33	530 mm	

(da: S. Mayhew, *op. cit.*)

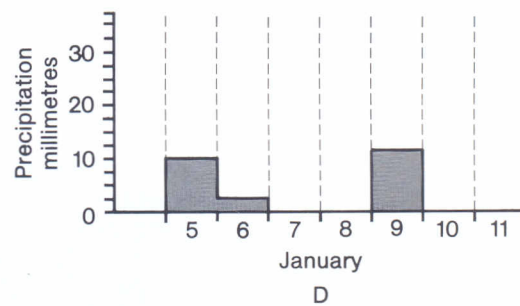
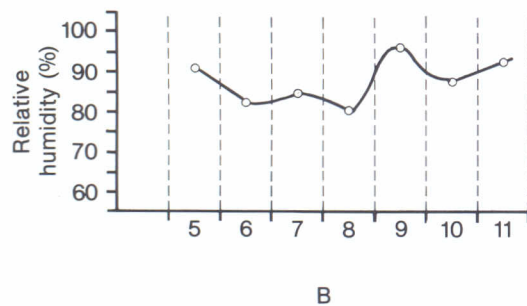
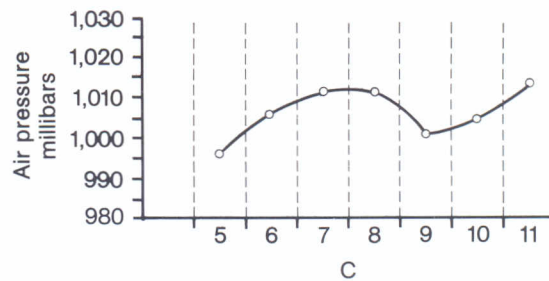
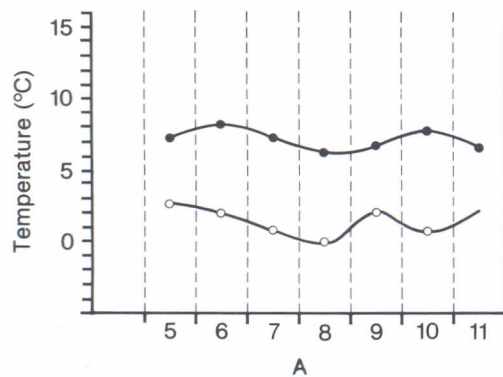
G2

(da: S. Mayhew, *op. cit.*)

Using your own knowledge of geography and the examples of locations given in Table A, can you now say which climatic region each symbol represents in the map above? To help you, Region VI (Mediterranean) has already been matched with its symbol.

H WEATHER GRAPHS

H1 The four graphs below show four different kinds of weather information during a week in January. Study them carefully and then carry out the following tasks.






(da: S. Mayhew, *op. cit.*) (Adapted).

- Find
 - the maximum temperature on Jan. 6th
 - the relative humidity on Jan. 11th
 - the air pressure on Jan. 9th
 - the precipitation on Jan. 6th
- Find the day on which
 - the pressure was lowest
 - the relative humidity was highest
 - the temperature was lowest
- Complete this table with the missing information:

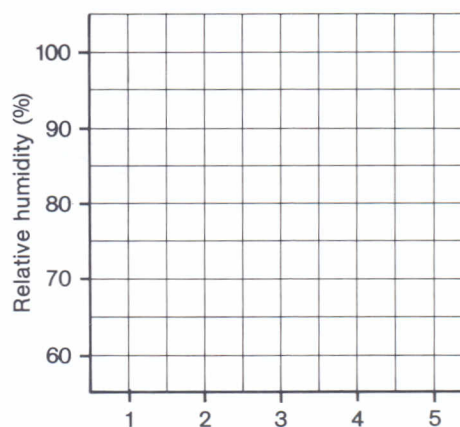
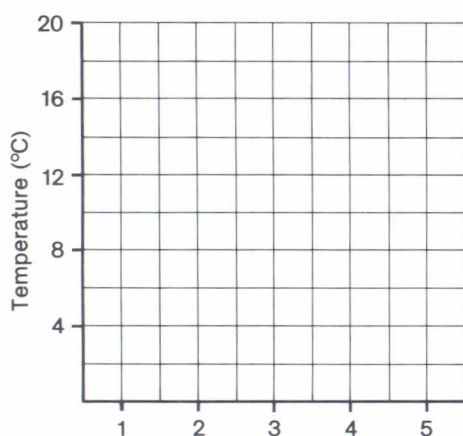
Day	Kind of information	Figures
Jan. 5th	precipitation	
		3 °C
		1,010 millibars
Jan. 8th	max. temperature	
		80%
		2.5 mm

4. a. The temperature *range* (i.e. the difference between the maximum and the minimum temperatures) on Jan. 10th was°C
 b. the lowest temperature *range* was°C on
5. Find the periods during which
 a. there was a continuous decrease in temperature
 b. there was a sudden increase in relative humidity
6. Between Jan and Jan the pressure fell, the relative humidity and the minimum temperature went up, and the maximum temperature rose slightly.

H2 A. Read the following passage and complete the two graphs below. Pay particular attention to the words *in italics*.

Symbols:
 = Maximum temperature
 = Minimum temperature
 = Relative humidity

On March 1st the min. temperature was 10 °C and the max. 15 °C; there was a relative humidity of 85%. The following day temperatures *decreased* to 8 °C (min.) and 12 °C (max.), while the relative humidity *increased* to 90%. On March 3rd, with a relative humidity still at 90%, there was a new *fall* in temperatures — to a minimum of 7 °C and a maximum of 10 °C. The next day, there was a sudden *decrease* in relative humidity (now at 75%) and an *increase* in minimum temperature, which *rose* to 9 °C, with the maximum still at 10 °C. The relative humidity *fell* again to 70% on March 5th, while there was a slight *rise* in temperatures (11 °C min. and 13 °C max.).



B. The words *in italics* signal a *change*. Summarize them in the following tables:

Verbs	
down ↓	↑ up
.....
.....

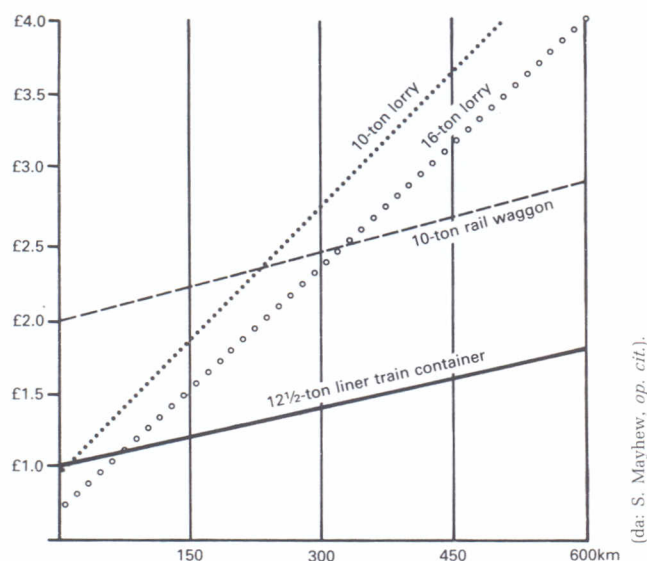
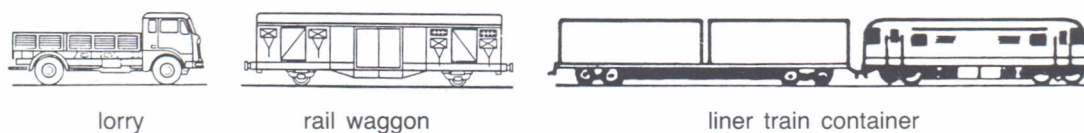
Nouns	
down ↓	↑ up
.....
.....

H3 With reference to the weather graphs in section H1, describe the change in weather conditions

- between Jan. 5th and Jan. 6th;
- between Jan. 9th and Jan. 10th.

I MORE GRAPHS

The graph below shows the relationship between *costs* and *distance* for a few types of *road* and *rail* transport in Britain, i.e.



Study the graph carefully and say whether the following statements are *true* or *false*:

- For distances of approximately 300 km, transport by rail waggon is cheaper than transport by 10-ton lorry.
- For distances of 150 km, 16-ton lorries are more expensive than 10-ton lorries.
- Transport by rail waggon costs the same as transport by 16-ton lorry for distances of approximately 350 km.
- 10-ton lorries are the most expensive form of transport for distances of 450 km.
- Liner trains are always the cheapest form of transport.
- For distances between 150 and 300 km, the increase in cost is sharper (i.e. more noticeable) for liner trains than for lorries.
- The costs of transport by liner train and by rail waggon increase in approximately the same proportion.
- Rail transport is cheaper than road transport above 400 km.

J STATISTICAL TABLES, CHARTS AND GRAPHS

J1 Look at this *table* and answer the questions below.

School population in Italy 1951-1985 ($\times 1,000$)					
School year	Types of school				All schools
	Nursery	Primary	Middle	Secondary	
1951-52	990	4,443	796	416	6,645
1961-62	1,195	4,421	1,539	838	7,993
1971-72	1,620	4,926	2,287	1,732	10,565
1980-81	1,870	4,423	2,885	2,423	11,601
1981-82	1,805	4,433	2,856	2,444	11,538
1982-83	1,757	4,204	2,850	2,470	11,281
1983-84	1,680	4,068	2,822	2,508	11,078
1984-85	1,639	3,909	2,798	2,547	10,893

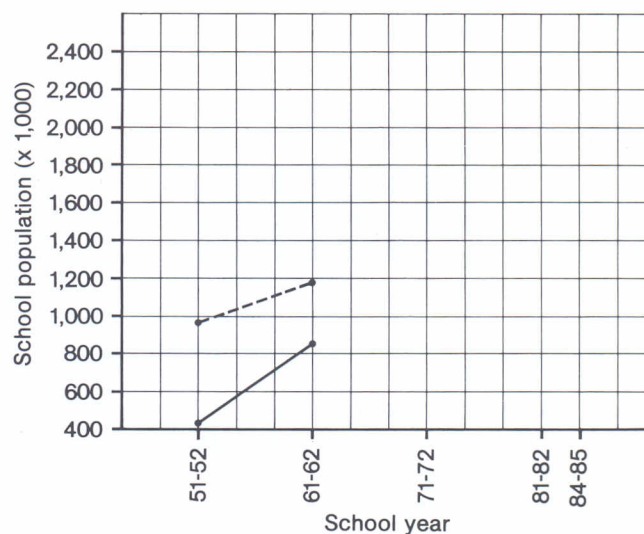
(da: *La popolazione scolastica italiana nell'anno 1984/85*, Notiziario dell'Istituto Centrale di Statistica, Roma, Marzo 1985 [translated from Italian]).

- Where do these data come from?
- How many pupils attended
 - nursery schools in 1971-72?
 - middle schools in 1984-85?
- Which schools
 - have always had the *highest* number of pupils?
 - had the lowest number of pupils
 - in 1961-62?
 - in 1983-84?
 - have always *increased* in population?
- In which school year did
 - nursery schools
 - primary schools
 - middle schools
 - secondary schools
 have the *highest* number of pupils?
- In which school year was the school population in Italy *highest*?

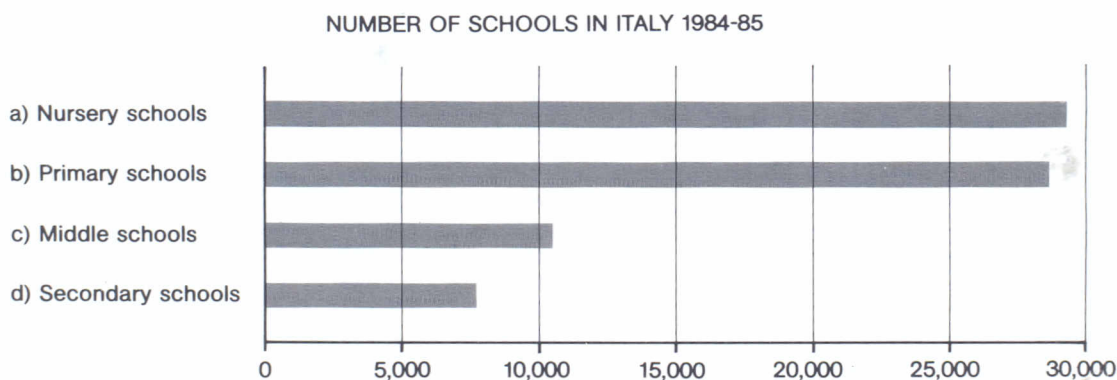
J2 Plot a *graph* of the population of nursery and secondary schools against the school years. A start is made for you.

----- = nursery schools
 ————— = secondary schools

What do these figures tell you? Can you think of any reasons for the changes shown in the graph? Discuss.



J3 Look at this *bar chart*:



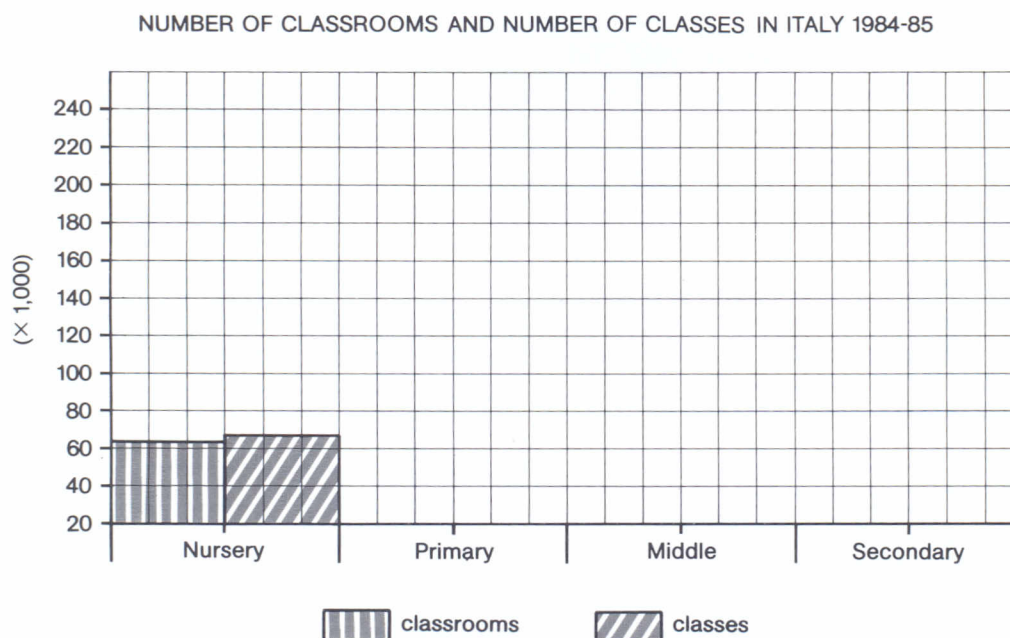
- Which school year do these data refer to?
- Approximately how many schools were there in Italy at that time?
 a. b. c. d.

J4 The following table compares the number of *classrooms* with the number of *classes* (i.e. groups of students using classrooms).

Number of classrooms and number of classes in Italy 1984-85

Types of school	Classrooms	Classes
a. Nursery	64,873	65,438
b. Primary	213,970	239,180
c. Middle	128,842	131,192
d. Secondary	100,946	108,890

Complete the following bar chart using the above data. A start is made for you.



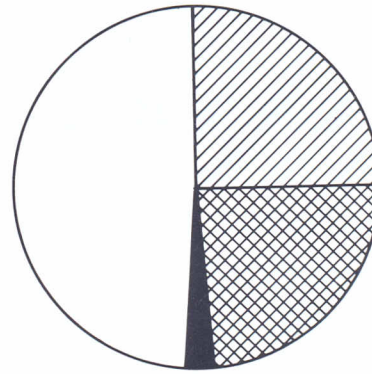
What do these figures tell you about the relationship between *number of classrooms* and *number of classes*? (If there are more groups of students than actual classrooms, then ...). In which type of school is this problem most serious? Discuss.





- J5** Both the table below and the *pie chart* (or *circle graph*) on the right show the same data, but in different forms. Can you say which type of school is represented by each sector of the circle graph?

Number of students in different types of secondary school in Italy 1984-85

Types of secondary school	Number of students	% of total number
Professional	503,589	20
Technical	1,156,221	45
Teacher training * «Licei»	210,600 676,092	8 27
All schools	2,546.772	100

* (i.e. Scuole ed Istituti Magistrali)

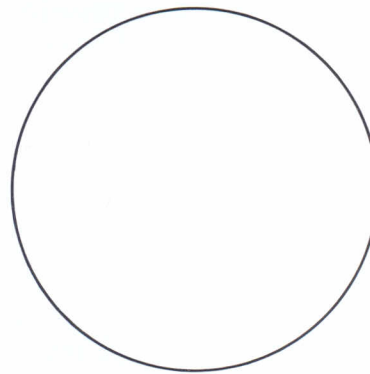


- a)  =
- b)  =
- c)  =
- d)  =







- J6** Now complete the pie chart below using the data in the table.

Number of university students in Italy 1984-85

Subject	Number of students	% of total number
Science	84,500	11
Medicine and Health	111,852	15
Engineering, technology and architecture	118,019	15
Social, administrative and business studies	264,509	34
Languages, philosophy and educational	143,975	19
Other	50,556	6
All subjects	773,411	100



Key

-  = Science
-  = Medicine and Health
-  = Engineering, etc.
-  = Social, etc.
-  = Language, etc.
-  = Other