

Explore 1

Teacher's Guide

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Introduction to the series

Explore is a new, up-to-date geography series for secondary classes 6–8. The series covers all the geographical topics and learning competencies from the Pakistan National Curriculum for Geography. Guided by the structure of the Curriculum, from Book 1 to Book 3 the focus gradually switches from local (including the geography of Pakistan) to global (world issues such as forest clearances, population and big city growth, and globalization). However, this is done not by simply following the exact sequence of the written curriculum, but by identifying and developing particular topics and themes in context with the world around us, in order to make the learning process more student-friendly and relevant.

Explore consists of three components: the Students' Books, Workbooks, and the Teachers' Guides. Together, the three books and their components provide a comprehensive introduction to geography for secondary classes. They meet all the main **Aims** outlined in the Introduction to the National Curriculum for Geography.

AIMS

- * To create an understanding of the Earth as a planet within the solar system—Book 1
- * To familiarize students about the environment in which people are living, by studying major land features of the Earth—Books 1 and 2
- * To provide an insight into the natural and human geography of Pakistan, and the changes taking place in its administration, population, their activities, and resources—Books 1, 2, and 3
To provide more knowledge to students about the environment in which they are living—Books 1, 2, and 3
- * To create awareness among students about the neighbouring countries—Books 1 and 3 in particular

Likewise, the full course will enable students to satisfy all the general subject **Objectives** in the National Curriculum (numbered 1–10). Although many are met throughout all three books, for some it is possible to identify particular chapters where the objective is addressed more strongly.

OBJECTIVES

1. *To impart an understanding of the Earth as a home of man with emphasis on spheres of water, land, and atmosphere.*
Earth (Book 1, Chapter 3); Atmosphere (Book 1, Chapter 4); Land and sea (Book 1, Chapter 5); Water (Book 2, Chapter 4)
2. *To get acquainted with the concept of location and its importance with regard to what, where, and how.*
Throughout all three books
3. *To understand varying environments depending on climate, fauna and flora, natural resources, and related human responses.*
Climate and human responses (Book 2, Chapter 3); Natural resources and economic activities (Book 2, Chapters 5 and 6); Fauna and flora, and human responses (Book 3, Chapters 1 and 2)
4. *To develop consciousness about man-environment relationship and environmental hazards.*
From first mention of environmental geography in Book 1, Chapter 1 and throughout all three books; Environmental hazards and people—Tectonic (Book 2, Chapters 1 and 2); Climatic (Book 2, Chapter 3); Environmental problems (Book 2, Chapters 7 and 8)
5. *To know main population characteristics and patterns of population distribution.*
Asia (Book 1, Chapter 6); Pakistan (Book 1, Chapter 7); the world (Book 3, Chapters 3 and 4)
6. *To understand nature of human dwellings: rural and urban, and knowledge of selected cities and their functions.*
Pakistan (Book 1, Chapter 7); Pakistan and the rest of the world (Book 3, Chapters 5 and 6)
7. *To get acquainted with the administrative divisions/units of Pakistan.*
(Book 1, Chapter 7)
8. *To enhance understanding of the physical and human aspects of Geography of Pakistan.*
In particular Book 1, Chapters 7 and 8; also throughout the rest of Book 1, and Books 2 and 3
9. *To acquire knowledge about major natural regions of the world.*
Especially Book 3, Chapters 1 and 2
10. *To get acquainted with Maps, Map Symbols, and Elementary Map Reading*
Specifically Book 1, Chapter 2 and then throughout the three books

Introduction to *Explore 1*

STUDENT'S BOOK

Explore Book 1 consists of eight chapters. A photograph is used on the first page of each chapter to illustrate the topic under study. Questions arranged below it are intended to encourage pupils to observe and to think about what they are going to learn under this geographical heading. Each chapter is further broken down into Sections, typically between two and four in number, for ease of study.

Activities are included both within and at the end of Sections. The majority can be answered from book content, using both text and figures, either directly or with some interpretation and thinking. A few activities require pupils to search for answers elsewhere—from an atlas, from another written source such as newspapers, from TV or the Internet, or from knowledge and investigation of the home area. In those activities where pupils are required to discover for themselves, some guidance about what to look for and what to do is usually included in the question.

From time to time, opportunities are provided for pupils to work in pairs or in small groups. Often it would be possible for the pupil to complete the same activity working alone, should that be considered more desirable. However, working with others can result in a greater number of suggestions and a wider range of points being made. Likewise, pupils exchanging work and marking another pupil's work according to a marking guide can be valuable in highlighting to them where they have done well and what is less good about their own work as compared with that of others. If successful, the technique might also be used for other activities in the textbook, according to the teacher's discretion.

WORKBOOK

The Workbook contains thirty-two pupil activities across the eight chapters. The layout of these is of particular help to lower-ability pupils compared with activities in the book, since spaces are left for completing the answers. Tables, charts, and map outlines are provided for answers. Some graphs have been started for pupils, or a graph of the same type has already been drawn, so that pupils can see what they need to do when showing different data. Certain different types of activities, such as word searches, are also included.

Some workbook activities are merely extensions of activities in the book, giving pupils extra opportunities to use practical geographical skills in

drawing maps, graphs, and diagrams. One of the features of the pupil's book are the Geographical Skills Boxes in which the techniques for completion of graphs are itemized. Pupils can refer back to these for guidance. *Explore* Book 1 contains the majority of these, although they are intended for use throughout all three years of study (and for later use as well).

TEACHER'S GUIDE

The main purpose of the Teacher's Guide is to provide a commentary to make the textbook easier to use. The main focus of the work is indicated; themes, topics, and key terms are identified. Ideas which may be useful in planning and executing lessons are included; some ways to extend the study are suggested. These can involve individual pupil investigation from other sources such as the media or the Internet, while some of the others relate to investigation of geographical characteristics in the local surroundings.

Some indication is given for what is expected from the Activities in the textbook and workbook. As appropriate, the best or expected answers to the questions are included. References to the workbook activities are inserted in the commentary after the work, to which they are related, has been covered in the main book. Occasionally it would be possible, and/or desirable, for pupils to work ahead of coverage in the text.

At the beginning of each chapter is a table which summarizes

- * learning objectives and outcomes in relation to the National Curriculum,
- * geographical skills included in the chapter,
- * new geographical terms used, and
- * workbook activities which support and extend book content and activities.

At the end of each chapter is a summary of how the learning objectives have been met, and how teachers might check the extent of pupil knowledge and understanding.

LESSON PLANS

The inclusion of teaching objectives and learning outcomes, identifying the main topics of each chapter, and the guidance and explanation preceding each section's content in the Teachers' Guides will facilitate lesson planning. A sample lesson plan outline is given below to facilitate further lesson planning.

The sections in each chapter have their concluding questions in the textbook and following activities in the workbooks, which give a framework for planning lessons, class work and homework, and assessments.

Finally, it goes without saying that a good, updated, and comprehensive atlas and a globe are indispensable components of teaching and learning geography. The *Oxford School Atlas for Pakistan* (OUP, 2008) is recommended for use along with the *Explore* series.

SAMPLE LESSON PLAN

Class: 6

Subject: Geography

Topic: Introduction to geography Pages: 1–6, Chapter 1

Additional resources: Photographs of home region of Pakistan/local area

Teaching time: (e.g. 2 periods—generally 40 minutes each)

Objective: To acquaint students with the subject of geography

Outcome: Knowledge of geography as a subject—how to observe, describe, and display what is present on the Earth’s surface.

Introduction: Begin with a photograph of the home region or use Figure 1.1. Ask students to describe what they can see—about the landscape, about the signs of human settlement. Stress the importance of observation in geography.

Lesson outline: Begin with a definition of geography.

Demonstrate geographical observation and labelling from photographs (using Figure 1.3 and Geographical Skills Box). Check results and comment on them.

Refer to other subjects which are related to geography, but emphasize how geography is different because its focus is on the Earth’s surface.

Examine the variety of topics within geography illustrated in Figures 1.4, 1.5, and 1.6.

Activities: (Classwork) Activities 1–4, page 3

Reinforcement: (Homework) Activities 1–3 on page 6. Students are given precise observational tasks with a geographical focus. They are required to use practical skills, as well as show geographical understanding.

Recap/conclusion: Check student understanding of the key geographical terms in the box on page 5.

Chapter 1 **What is geography?**

National Curriculum (NC)

Target study area in NC	Introduction to geography
Teaching Objective	An acquaintance with the subject of geography
Learning Outcome	Knowledge of geography as a subject

Geographical Skills

New practical skills—labelled sketches from photographs or own observations, pie chart, pictograph, bar graph

New geographical terms

- | | |
|---------------------------|--------------------------|
| * geography | * mountains |
| * human geography | * plateaus |
| * physical geography | * plains |
| * environmental geography | * frost shattering |
| * environment | * population |
| * cumulus clouds | * settlement |
| * sedimentary rock | * economic geography |
| * landscape | * service industries |
| * relief | * man-land relationships |
| * drainage | * wilderness areas |
| * weather | * reserves (of minerals) |
| * climate | |

SECTION 1: ALL ABOUT GEOGRAPHY (PAGES 1–6)

Stress to pupils that the *Earth's surface* is the focus of geographical study. Emphasize the importance of *observation* in geography. The Geographical Skills Box, page 2, includes guidance for geographical recording based on observation. Activities 1 and 2, page 3, give opportunities for pupils to test their observational skills, while Activities 3 and 4 give them the chance to reflect upon the quality of what they have done. Hopefully, this will get them used to using a variety of visual techniques to support written description, an important part of geographical work.

The brief reference to how geographical study is different from that in related studies such as geology, meteorology, and biology is intended to reinforce pupils' understanding that the geographical focus is upon the Earth's surface. Therefore the study of *landscapes* is important in

geography. Activities 1, 2, and 3, page 6, are designed to show this focus and highlight differences between geography and other related subjects.

SECTION 2: WHAT IS PHYSICAL GEOGRAPHY? (PAGES 6–10)

The objective is to introduce pupils to the main three areas of study included under the heading of physical geography—*natural landscapes* (including landforms), *weather and climate*, and *natural vegetation and soils*. Pupils are introduced to the differences between the Earth's three major landscape features—mountains, plateaus, and plains—illustrated by examples.

Activity 1 requires pupils to identify differences in relief between mountain and plateau. The purpose of Activity 2 is to show pupils the extreme height of the Himalayan peaks compared with mountains elsewhere in the world. Activity 3 provides an opportunity to investigate a big Asian river of their choice, as a prelude to later references in Chapter 6 about the big rivers of Asia and their associated high densities of population.

A brief introduction to the study of climate, vegetation, and soils follows. On page 9 pupils are introduced to the types of data used to summarize the climate of a place; data for Islamabad is used, which serves as an introduction to the climate of Pakistan. All this is developed further in Chapter 4. At this point, natural vegetation is given no more than an outline mention; it will receive more detailed study in *Explore 2* and *3*. Activities 2 and 3 are about soils to support the text in trying to show how a good, fertile soil for farming is different from one that is poor and infertile.

SECTION 3: HUMAN GEOGRAPHY (PAGES 11–13)

Distinguishing different study areas is not as precise for human geography as for physical. Still three topic areas, much used later throughout the three books, are identified—*population*, *settlement*, and *economy*. In particular, pupils are made aware of the variety of types of work included within the service sector, the main sector of work in urban areas. Photographs of two of the most heavily urbanized places in the world are included, Hong Kong in Figure 1.16 and New York in Figure 1.17. No physical features beyond flat land and sun shining (evidence from the shadows of traffic in Hong Kong and from buildings on the streets in Manhattan) can be seen. They provide a great contrast with the landscape

views in Figures 1.3, 1.4, and 1.9, dominated as they are by physical geography.

Activities on page 13 again focus on pupils practising their geographical skills. Activity 1 includes photographic interpretation, while Activity 2 gives pupils another chance to draw a pie chart, one of the most important of geographical graphs. This follows on from the Skills Box on page 10. It can be pointed out to pupils that the trend in employment in Pakistan over the years is the same as what has already happened to a greater extent in the UK, over a longer period of time. Activity 3 provides pupils with their first opportunity to make geographical observations in their home area. The task has been kept quite general, because of the wide variations between pupils' home areas. It can be made more precise for known home areas, but should be kept simple. The basic aim is to make pupils realize that geographical features are all around them, and that they should be observed and used whenever possible. (Refer Workbook Activity 1: Difference between physical and human geography)

SECTION 4: ENVIRONMENTAL GEOGRAPHY (PAGES 14–20)

The link here between physical and human geography gives the opportunity to mention '*man-land relationships*', an important geographical concept. The status of environmental studies in geography is increasing, given the tremendous and increasing population pressure upon the Earth's resources. Only a brief introduction is provided here, because Environmental Problems are given separate study in Book 2 and Population Growth and its consequences are examined in more detail in Book 3. The aim in the text and in Activities 1 and 2, page 16, is to increase pupils' awareness of the environmental problems that surround them. The Skills Box, page 15, and Activity 3 introduce pupils to the pictograph, a highly visual way of displaying geographical data. (Refer Workbook Activity 2: Geographical observation from photographs and Workbook Activity 3: Population growth)

To try to maintain a balanced approach, pupils are introduced to the world's *wilderness areas*, where the human imprint is much lower. Difficult physical conditions for human settlement have saved these areas from much of the environmental damage wrought elsewhere by people. But at the same time human threats to them are increasing. Pupils are then given a brief introduction to the finite nature of some of the Earth's natural resources; while plentiful supplies of many minerals are still available at the moment, this is not going to be true for ever.

A bar graph, perhaps the most flexible and widely used of geographical graphs, is added to the list of skills here. Activity 1 gives pupils a chance to draw one. The most likely choices for wilderness areas in Pakistan in Activity 2 are mountainous areas in the extreme north (pupils could refer back to the area shown in Figure 1.3) or to the desert areas of Balochistan (Figure 1.4 could be of some help). (Refer Workbook Activity 4: Wilderness areas of the world)

The world is a beautiful place: the photographs on page 19 are included to show this. Often the beauty is physical, but sometimes human structures enhance the natural scene. Answering Activity 1 well should help to confirm that pupils understand the difference between physical and human geography. Activities 2 and 3 are included to get pupils to do some research of their own and to increase awareness of major geographical features in Asia and Pakistan, ahead of references to them later in the series. By looking at class results in Activity 4, individual pupils will hopefully have their knowledge of Asia and Pakistan increased, and their geographical horizons broadened.

WORKBOOK

- | | |
|------------|---|
| Activity 1 | Difference between physical and human features in geography |
| Activity 2 | Geographical observation from photographs (A Physical geography, B Human geography) |
| Activity 3 | Population growth (A World population, B Pakistan) |
| Activity 4 | Wilderness areas of the world |

Workbook Activity 1: The nine physical features are cloud types, mountains, plains, natural vegetation, rivers, waterfalls, the weather, plateaus, and soils. The odd one out in 2(a) is the weather as the only physical feature; in (b) it is cities, the only human feature. Natural vegetation is the only non-relief feature in (c). Several answers might be possible in (d), which needs to be judged on the merits of the reason why the choice was made. The intended answer was population growth, since cities, trade, shops, and bazaars all go together well.

Workbook Activities 2 and 3 give pupils practice with geographical skills. In Activity 2, they are required to make observations of physical features from Figures 1.3 and 1.9, and human features from Figures 1.16 and 1.20. In Activity 3, population values have to be used to work out

rates of world population growth; this is followed by pupils drawing a pictograph for the past, present, and estimated future total population of Pakistan. Part A overlaps with Activity 1 in the textbook; the workbook format (because of more space available) is the more pupil-friendly, particularly for those who are less academically able.

Workbook Activity 4 extends the use of geographical skills by pupils. The overall intention is to highlight the uniqueness of Antarctica, even among the world's wilderness areas.

SUMMARY CHECK

Teaching objective: An acquaintance with the subject of geography

How it has been met:

- Definitions of geography
- How geography is different from other subjects such as geology and biology
- What is studied in physical, human, and environmental geography
- What is meant by man-land relationships

Learning outcome: Knowledge of geography as a subject

Checking that the objective has been met:

- Show pupils a new photograph; ask them to identify geographical features, then arrange them under headings (physical, human and, if relevant, environmental).
- Take pupils out-of-doors and ask them to describe the geographical features they can see.
- Look at pupil answers to Workbook Activity 4.

Chapter 2 **Geographical Skills**

National Curriculum

Target study areas in NC

Map Reading: Geographical Diagrams

Teaching Objectives

Knowledge of maps, their importance and uses, knowledge of basic components of maps

Appreciation of geographical diagrams, their use and construction

Learning Outcomes

Knows verity of maps, recognizes importance and utility of maps, able to identify directions, symbols, and distances between places
Knowledge of showing different things on diagrams and graphs

Geographical skills

New practical skills: maps (scale, distance, direction, and symbols), divided bar graph, line graph

New geographical terms

- * scale
- * distance
- * direction
- * cardinal points
- * contour line

SECTION 1: MAPS AND MAPPING (PAGES 21–23)

Stress to pupils the importance of *maps* in geography, and relate their importance back to the study of the Earth's surface. Get pupils to observe from Figure 2.1 and answer the questions. As an introduction to maps and mapping, compare detail of the Earth's surface shown in Figure 2.1 with what is shown on the aerial view in Figure 2.3 and the map in Figure 2.2.

SECTION 2: FEATURES OF A MAP (PAGES 23–30)

Begin with the 'ideal' in the Information Box, page 23, for what every map should have. Activity 1, page 23, requires pupils to think about the good points and weaknesses of the map in Figure 2.4, page 24. Then begin the explanation of scale, emphasizing the importance of the *scale* line when studying maps in atlases and books. Activities 2 and 3, page 26, require pupils to look at three maps of Pakistan at different scales and think about their uses and clarity.

When studying *compass directions*, stress the importance of **from** as the key word for giving directions. Explain why *map symbols* are needed; they are used to identify features which the map maker considers important. Given their importance, they are drawn out of scale on the map (i.e. they are much bigger than they should be for the scale of the map). Activity 1

allows pupils to suggest some of their own map symbols, bearing in mind the guidance in the text that the symbol should be as obvious as possible. (Refer Workbook Activity 1: Drawing a sketch map)

Interpretation of relief from maps that cover only small areas of land is what many pupils find more difficult. Contours are the best way of showing relief, because small variations in shape of the land and height are indicated. The photograph in Figure 2.10 is an example of an area with only small variations in relief. Figures 2.9 and 2.11 are maps of a larger area which includes the area in Figure 2.10. For many pupils, it is likely that Figure 2.9 will be the clearer representation of the area's relief, even if it does not have the detail and accuracy of Figure 2.11. Examples of contour lines can be found in Activity 7 in the workbook, where more space is available for drawing them. (Refer Workbook Activity 2: Heights on maps and Workbook Activity 3: Contour patterns and landscape features)

For most of the time in school geography lessons, pupils will see relief represented by different coloured shading, as in Figure 2.12. The purpose of Activity 1, page 30, is to make students aware of the colours traditionally used for showing relief on atlas maps, and to think about the general reasons behind the conventional use of green for lowland areas, brown for upland areas, and purple and white for very high mountain areas.

SECTION 3: GRAPHS (PAGES 31–34)

Explain the importance of *graphs* in geography. They are used to show many different kinds of geographical data; you could refer back to types of data already used in graphs in Chapter 1 (climatic, employment, population). Drawing up values in a graph makes it easier to identify the size of differences between them, as well as trends / changes over time (as was the case with the employment percentages in Pakistan and world population growth). They are a *visual* medium.

In the remainder of this section an attempt is made to demonstrate to pupils how they often have a choice of graphs for showing the same data. This is particularly true when plotting numbers or values that have been obtained by adding up and counting (such as rainfall and traffic). The pupils themselves can decide which type of graph they think will show the data best, or the type of graph they prefer to draw. This is the main purpose of Activity 1, page 33, which lends itself well to pupils working in a small group. It is impossible to do an exact count of vehicles and

types from Figure 2.16, but as long as each group agrees upon the totals to be plotted, the activity will work.

However, for certain types of data there is no choice of method; temperatures, for example, are always plotted using a line graph, because the data is continuous. Figure 2.16, page 34, drawn using data from the first column in Figure 1.11, page 9, shows this.

WORKBOOK

- | | |
|------------|---|
| Activity 1 | Drawing a sketch map—to help someone find their way |
| Activity 2 | Heights on maps |
| Activity 3 | Contour patterns and landscape features |

Workbook Activity 1 is an introduction for pupils to draw their own useful sketch map for an area which they know well and which could be useful to others. The need for symbols should focus their attention on major landmarks in the local area.

Workbook Activity 2 is the gentle introduction to how heights are shown on maps; only three of the the most straightforward relief features require recognition.

Activity 3 is targeted at more able pupils who are more likely to be able to interpret relief features from contour lines on maps. A is delta, B rounded hill, C plain, D plateau, E ridge, F scarp slope, and G valley.

SUMMARY CHECK

Teaching objectives: Knowledge of maps and appreciation of geographical diagrams

How these have been met:

- Introduction to maps of different scales and what they show
- Essential features of mapping covered such as scale, compass directions, and use of symbols
- Five different types of graphs illustrated and used (pie, pictograph, bar, divided bar, line)
- Practice with drawing geographical graphs (in book and workbook activities)

Learning outcomes: Knowledge of maps, graphs, and diagrams and their uses

Check that the objectives have been met:

- Show pupils a new map; set tasks to check knowledge and understanding of scale, direction, use of symbols, and relief.
- Give pupils a new set of data; require them to show it using a specified type of graph.
- Look at the pupils' individual and group answers to Activity 1, page 33.

Chapter 3 **Our Earth**

National Curriculum

Target study area in NC

Introduction to the Earth

Learning Objectives

Basic knowledge of movement of the Earth, understanding of days and nights and the seasons, acquaintance with lines of latitude and longitude across the globe, knowledge of the relationship between longitude and time

Teaching Outcomes

Recognition of shape and size of the Earth, understanding of axis and orbit of the Earth, knowledge of the phenomena of day and night and the seasons, knowing latitude, longitude, and time

Geographical skills

Locating places using latitude and longitude, calculating differences in time between places using longitude

New geographical terms

- * atmosphere
- * crust
- * hemisphere
- * equinox
- * season

- * solstice
- * latitude
- * longitude
- * International Date Line
- * time zone

SECTION 1: THE EARTH (PAGES 35–40)

Nothing more than a brief introduction to the Earth within the solar system is intended on page 36. The Earth's relative size compared with other planets, and relative distance from the Sun, are the two key points worthy of highlight from Figure 3.2. Facts about the Earth are summarized in the Information Box on page 37. Pupils need to be made aware of the thinness of the Earth's crust below the surface (which is of great significance in the study of tectonic activity in Book 2). How the *rotation* of the Earth causes day and night is the main theme in the text on page 38. It is worth stressing that places in the east see the rising sun and experience daylight before places in the west everywhere in the world, irrespective of whether they are north or south of the Equator.

The *revolution* of the Earth causing the seasons is tackled on page 39. It will be more difficult for all but the more able pupils to understand this thoroughly and well. It might be useful to adopt the approach used in Activity 1, page 40, and begin from today's date and position of the Earth relative to the Sun. In Activity 2, the first two statements are true, but the next two (iii) and (iv) are false. Because the statement in (v) is also true, pupils are restricted in answering part (b) to statements (iii) and (iv).

SECTION 2: LATITUDE AND LONGITUDE (PAGES 41–46)

The theme of page 41 is differences between *latitude* and *longitude*, which are then summarized in the Information Box. Latitude values for the two tropics and Antarctic and Arctic circles can be related back to the angle of tilt of the Earth's axis that is responsible for causing the seasons. Although not mentioned here, differences in latitude are most significant for variations in temperature and differences in climate. (These will be referred to again in *Explore 2*.) Differences in longitude are important because they control differences in time between and within countries. The purpose of Activity 1 is to establish that pupils have grasped the essential differences between lines of latitude and longitude. Activity 2 starts locally, with practice in using latitude and longitude to find locations of places in Pakistan. (Refer Workbook Activity 1: Using latitude and longitude to find locations, and Workbook Activity 2: Find the top 13 cities using latitude and longitude)

'One hour time difference for every 15 degrees of longitude' is the key message in the sub-section on longitude and time on pages 43 and 44. For the purposes of setting the world clocks, the *Greenwich Meridian* and

International Date Line split the world into two halves. This, however, is man-made (as opposed to the Equator which is the natural divide for the hemispheres). Any line of longitude could have been chosen as 0 degrees. GMT is now accepted as the starting point for the world's time zones. This point was selected in 1884, for 0 degrees because it is at the Royal Observatory in London where longitudinal concepts were worked in the 18th century.

Highlight to pupils the position of Pakistan on the world map of time zones in Figure 3.12. Begin with the time now, and then time and date, and ask them to work out times in different parts of the world. One simple exercise is for them to draw clock faces showing different times in cities around the world (as are sometimes displayed behind the reception desks in big international hotels or at airports). Pupils can be asked to imagine what it would be like if all places in the world kept to their local time (i.e. 12 noon when the Sun is at the highest point in the sky at that place). If they have relatives overseas, they can be asked when are the good and bad times for calling them by phone. Activities 1–3 on page 46 give pupils practice in using the world time zone map in Figure 3.12. (Refer Workbook Activity 3: Times zones and times for watching cricket)

WORKBOOK

- Activity 1 Using latitude and longitude to find locations
- Activity 2 Find the world's top 13 cities in 2005 using latitude and longitude
- Activity 3 Time zones and times for watching cricket

Workbook Activity 1 goes global with the same type of task as in Activity 2, to identify the names of the world's extreme physical features (highest mountain, longest river, largest river, largest island, driest desert, and largest desert). Since the names of two or three of these are likely to be known by pupils, it should ease them into accurate use of latitudes and longitudes. The word search in B can be used to check that answers in A were correct.

G	R	E	E	N	L	A	N	D	Q
B	R	Z	I	L	I	R	A	E	U
T	I	U	L	A	Z	L	G	W	O
S	H	L	S	U	V	E	E	B	Y
E	V	A	A	T	A	C	A	M	A
R	I	N	M	A	K	J	U	S	R
E	D	H	A	G	A	T	P	E	A
V	E	N	Z	O	Z	O	C	S	H
E	K	U	O	N	O	M	T	M	A
C	F	E	N	P	A	Y	H	I	S

Workbook Activity 2 extends the same task to discovering the names of the world's 13 biggest cities (according to the list published for 2005) including Pakistan's largest city. The cities are numbered according to size on the map, and listed in order of size in the table for pupils to fill in. Such a large number of these are located in Asia that, hopefully, there are plenty of familiar names among them.

Workbook Activity 3 is an extension activity to try to get pupils to recognize and think about some of the practical difficulties having different time zones, in this era of international activities and travel. Those who are interested in cricket may have already encountered some of the problems associated with times for watching their team when it is playing overseas.

SUMMARY CHECK

Teaching objectives: Knowledge of movements of the Earth, day and night, the seasons, latitude, longitude, and time

How these have been met:

- Studies of the Earth's rotation and revolution around the Sun
- Explanation of how the Earth's rotation causes day and night
- Information given about the equinoxes and solstices, and related seasons
- Characteristics of latitude and longitude, and differences between them, stated and illustrated
- World time zones shown on a map and explained in terms of longitude

Learning outcomes: Knowledge and understanding of the shape and size of the earth, axis and orbit of the Earth, day and night, the seasons, latitude, longitude, and time

Check that the objectives have been met:

- Ask pupils to relate today's date to the season, first in Pakistan and then to a named place in the southern hemisphere.
- Give pupils the latitudes and longitudes for places around the world (e.g. sports venues, countries currently in the news, overseas places with significant populations of Pakistani origin) to discover using an atlas.
- Look at the accuracy of pupils' answers to Activities 1–3 on page 46.

Chapter 4 **Atmosphere and weather**

National Curriculum

Target study area in NC

Weather

Teaching Objectives

Knowledge of elements of the weather, knowing of the relationship between elements of weather

Learning Outcomes

Understanding of different weather elements, and knowledge of the relationship between them

Geographical skills

How to measure elements of the weather—air pressure, temperature, precipitation, wind speed and direction, sunshine

How to draw a climate graph (in the Workbook)

New geographical terms

- * cyclone
- * meteorologist
- * weather forecast
- * weather station
- * air pressure
- * precipitation
- * monsoon

SECTION 1: ATMOSPHERE AND WEATHER (PAGES 47–53)

At first the text focus is upon the great importance of the Earth's atmosphere, despite its being such a thin layer of gases. The text box labelled A refers to the two main gases; a summary of the composition of the atmosphere is shown in the pie chart in Figure 4.3. Box B explains the vital role of the atmosphere in moderating surface temperatures and allowing life on Earth to exist. Certain gases present in very small percentages are of great importance. The content on page 49 is devoted to three of these gases, namely carbon dioxide, water vapour, and high-level ozone, and their importance. The main aim of the text on page 50 is to make pupils more aware of the normally invisible atmosphere that is all around them, and of the occasions when they do become more aware, such as with clouds, pollution, and living at high levels in mountain areas. The two activities on page 50 are a summary of this work. (Refer Workbook Activity 1: Importance of carbon dioxide in the atmosphere)

From page 51 the focus switches to weather, and why geographers regard its study as so important. The spider diagrams in Figure 4.5 are an attempt to highlight some of the geographical effects of weather, both physical and human. Pupils should be encouraged to give examples from their own experiences. While many elements of the weather are measured, some can only be observed. Clouds (amount and type) are an example. Pupils can be asked to identify the types of cloud shown in Figure 4.7 with the help of the cloud types named in Figure 4.8. The purpose of Activities 1 and 2 is to increase the profile of weather in the minds of pupils; young people often seem to take less notice of the weather than adults, probably because they are less directly affected by it. The focus in Activity 3 is upon clouds which produce rain. (Refer Workbook Activity 2: Cloud types)

SECTION 2: MEASURING THE WEATHER (PAGES 53–60)

Pupils need to know how the weather elements are measured in order to appreciate fully the day to day variations in the weather. If you are

fortunate enough to have a weather station nearby (whether official or otherwise), it will help in the study of this section of the work.

Before reaching the sub-section about weather forecasts on page 54, pupils can be asked to listen to the radio or find out from other sources (newspaper, TV, the Internet) the weather forecast for the day. They can then be quizzed about how they think the weather forecast was made—who did it, where was it made, what information was used? Pupils can also be asked to give their opinions about the accuracy of weather forecasts before studying Figure 4.12. It is important to stress that the accuracy of weather forecasts has greatly improved, as a result of better coverage over the oceans and seas from satellites and airplanes. At the same time, stress that weather can be very local, especially in mountain or coastal areas, which is a problem for weather forecasters. (Refer Workbook Activity 3: Daily weather diary)

Air pressure is the first of the weather elements to be studied, principally because the level air pressure, high or low, is the factor which most affects the likelihood of rain. The problem for the study of air pressure is that variations between very high and very low are not great enough to be felt by the humans, so that pupils are unaware of changes. Some might have seen aneroid barometers, although they probably took little notice of them! Figure 4.13 is an important diagram because it tries to explain why wet weather is associated with low pressure while dry, sunny weather and high pressure often go together.

How maximum and minimum thermometers work needs more careful explanation. There are two basic rules.

1. The alcohol and mercury in both tubes will always show the same temperature—the present temperature at the time of observation.
2. The *bottom* of the metal indicator is where the readings for both maximum and minimum temperatures are taken.

The rain gauge is more straightforward. What is most important about this instrument is careful siting placement for accurate measurement. Activity 1, page 58, is about the Stevenson's Screen, the most easily identifiable feature in any weather station. Activity 2 requires pupils to use the weather readings in Figure 4.11. The answers to (a) for 5th January are 17 and 11.5°C, and for 8th January are 9 and 10.5°C. The lower maximum on the 8th is due to the greater amount of cloud cover and rain (b). In part (c) for 12th January, the daily range is given to pupils because of the negative minimum temperature, which means that the

range is worked out by adding instead of subtracting. For (d) frost is much more likely than snow given the high pressure, lack of cloud, and absence of recorded rainfall.

Both wind speed and wind direction are measured at a weather station. Wind direction is of great importance in Asia, as the following section on the Asiatic Monsoon shows. For centuries, the wind speed was estimated not measured, mainly by sailors for whom winds were of overriding importance because of their sailing ships. The examples of how to estimate wind speed, given in Figure 4.19, represent a later adaptation of the Beaufort scale for use on land. Pupils can be asked to estimate today's wind speed by looking at telltale signs outside. Wind matters a lot to people and their activities, which is why the four activities on page 60 are devoted to it. Activity 4 can be undertaken (if preferred) as a small group activity, with some pupils concentrating on the advantages of strong winds for people, and others the disadvantages. One 'relatively new' advantage of strong winds is how effective they are at clearing the pollution from enclosed traffic-filled streets. Also in settlements built in areas surrounded by hills or mountains, such as Quetta, any pollutant in the air remains suspended longer than in places located on open plains or coastal regions.

The final instrument is the sunshine recorder. Measuring sunshine hours is most significant for holiday destinations which live by attracting visitors from the 'sun-starved' parts of the world, like north-west Europe. Bar graphs are always used to show these values, as in Activity 1 on page 61.

SECTION 3: THE ASIATIC MONSOON (PAGES 61–64)

This is an introduction to the most important weather event in South Asia. Changes in air pressure lead to changes in wind direction; these cause the wet season and dry season regime in Pakistan and India. Use of the maps and diagrams in Figures 4.21 and 4.22 is essential for pupils to see how, and understand why, this happens. The Activities on page 62 cannot be answered without reference to them. The alignment of the west coast of India means that it is open to full force of the wet south-west summer monsoon winds (unlike Pakistan).

The sub-section 'Using weather data' guides pupils as to what to look for when presented with average monthly temperature and precipitation values for a place. If they follow the recommendations under A and B,

pupils will not be confused by the amount of data, and by not knowing where to begin. Activity 1 gives them the chance to identify the same key points for Peshawar as was done for Karachi. Once done, it becomes easier to identify differences in climate between the two places, as required in Activity 2. (Refer Workbook Activity 4: Comparing climates of Karachi and Peshawar and Workbook Activity 5: Pakistan's climate)

The final sub-section on page 64 returns to the effects of weather on people. Figure 4.25 is intended to show how weather forecasts do matter to many people and businesses, perhaps more and to a wider range than pupils had ever imagined. This and Activity 1 are designed to reinforce the importance of studying weather and climate in geography, one of the main messages in this chapter.

WORKBOOK

Activity 1	Importance of carbon dioxide in the atmosphere
Activity 2	Cloud types
Activity 3	Daily weather diary
Activity 4	Comparing the climates of Karachi and Peshawar
Activity 5	What is Pakistan's climate like?

Workbook Activity 1 extends (and to some extent, replaces) Activity 2 in the book. Carbon dioxide is in the news so much (often with a bad press) that it is essential that pupils should appreciate its usefulness to life on Earth. This is the main aim here. At the end of Chapter 5 and later in the series, pupils will meet carbon dioxide again in the somewhat different context of human pollution and global warming.

Workbook Activity 2 follows on from book activities; pupils are required to draw their own labelled sketches of clouds to bring out differences between them. It is hoped that by doing this, pupils will gain more confidence in suggesting names for cloud types seen in the sky.

Workbook Activity 3 is a diary sheet for pupils to fill in about weather forecasts and the actual weather, day by day, for a week. It can be used at this point, or it could be used earlier as an introduction to weather and weather forecasting.

Workbook Activity 4 partly overlaps with two activities on page 63; the layout that is possible in the workbook but not in the main text should make it easier for less able pupils to answer. However, all pupils are taken a stage further by needing to draw a climate graph, of the type which will

be used in the rest of the series. The one drawn for Karachi shows them what is needed.

Workbook Activity 5 is a gentle introduction to variations in climate within Pakistan. The summary data within the boxes for the four cities is sufficient to show up some of the national variations—a decrease in temperature from south to north in winter, an increase in temperature from coast to interior in summer, and a decrease in rainfall from north-east to south-west.

SUMMARY CHECK

Teaching objectives: Knowledge of elements of the weather and relationships between them

How these have been met:

- Separate references to air pressure, temperature, precipitation, wind speed and direction, and sunshine—the main elements of weather
- Relationships between them such as between temperature and pressure, between pressure and winds, and between winds and precipitation
- Study of the monsoon illustrates the relationship between temperature, pressure, winds, and precipitation in South Asia
- Reference to the relationships between elements of weather and people and their activities

Learning outcomes: Understanding of different weather elements and knowledge of the relationship between them

Check that the objectives have been met:

- Show pupils a photograph or sketch diagram of a weather station; get them to identify the instruments and the weather element measured by each one.
- Provide pupils with weather data about yesterday's weather and ask them about relationships between elements such as pressure and precipitation, or temperature and cloud cover.
- Evaluate pupils' answers to Activities 1–3 on page 62.

Chapter 5 **Our World—the main features of the Earth’s surface**

National Curriculum

Target study areas in the NC	Continents and Oceans, Seas and Lakes
Teaching Objectives	Acquaintance with continents and chains of islands, understanding of major Earth features, acquaintance with oceans, seas, and lakes
Learning Outcomes	Understanding of relief features, plains, plateaus, and mountains with special reference to Pakistan, understanding of oceans, seas, and lakes and their importance
Geographical skills	Practical skills used in the activities include ranking values by size, horizontal divided bar graph, pie chart, line graph, atlas work

New geographical terms

- | | |
|---------------------|-------------------|
| * continent | * delta |
| * continental shelf | * glacier |
| * island | * gorge |
| * ocean | * physical region |
| * sea | * silt |

SECTION 1: THE DISTRIBUTION OF LAND AND SEA ON THE EARTH (PAGES 66–67)

The basic feature is the dominance of sea on the Earth’s surface, with a 70:30 ratio in favour of sea. As an introduction, pupils can be directed first to look at Figure 5.3. They can be asked whether there appears to be more land or more sea shown in Figure 5.3. The reason why sea areas are under-represented on most world maps is because the full extent of the Pacific Ocean is seldom shown. You can use a globe to show more clearly how much of the Earth’s surface is covered by the Pacific Ocean. (You can look ahead to Figure 5.5 page 68, which shows the full extent of the Pacific Ocean and to page 50 of the *Oxford School Atlas for Pakistan*. Note

also that Pacific-centred world maps are used in Book 2 in the Tectonic section.) Next, pupils can also be asked whether Figure 5.3 shows a larger area of land in the northern or southern hemisphere—before looking at the bullet points on page 67. Also on page 67, pupils are introduced to some of the variations in relief in the oceans (of which they are probably little aware) and the extreme depth of ocean trenches off East Asia. Make particular mention of *continental shelves*, the part of the oceans of greatest importance to people. Activities 1–3 on page 67 reinforce the study. (Refer Workbook Activity 1: Continents and oceans)

SECTION 2: THE OCEANS (PAGES 68–72)

Figures 5.5 and 5.6 can be used to highlight the great size of the Pacific Ocean. The rest of this section is devoted to the importance of the oceans for people. The oceans provide an international highway, avoiding travel overland through difficult terrain, as well as the hassle of having to cross borders and pass through many different countries. Where obvious sea routes were blocked by narrow necks of land, sea canals were cut, such as Suez and Panama. Additional information is given about the Suez Canal in the text and in Figure 5.8, because of its significance to South Asia for sea links to Europe. Activity 4 gives a framework for further investigation.

Over the last 50 years the movement of manufactured goods by sea has been revolutionized by the use of containers, hence the list of advantages on page 69, the photograph of a container ship in Figure 5.7, and the questions on containers in Activity 1. All the activities 1–4, pages 71 and 72, are devoted to the transport theme, with a particular focus on links to and from Pakistan.

The oceans are an important source of food in coastal communities everywhere. Pupils can be quizzed about fish in their own diets; comment can be made about its availability in local food outlets. The world distribution of fishing as a commercial activity is more restricted as it relies upon natural conditions that favour the presence of large shoals of fish. The outline of Pakistan has been added to Figure 5.10, which shows that the major fishing grounds in Asia are some distance away from the country. The majority are in ocean areas where water temperatures are lower than those off Pakistan. (Refer Workbook Activity 2: Importance of fishing in Asia)

SECTION 3: THE CONTINENTS (PAGES 72–76)

In simple terms the continents are made up of mountains, plateaus, and plains. These three relief elements dominate in the names of the major structural regions of the world shown in Figure 5.11. Differences between them are described on page 73 and they are illustrated in the photographs in Figures 5.12 and 5.13. Activity 1, page 75, aims to increase pupils' awareness of world's major structural features, with the focus on Asia.

Pakistan is an ideal example to use because of its enormous differences in relief from the world's highest mountain range in the north to one of the big river plains of Asia in the south and east and a long coastal stretch along the Arabian Sea in the south. In between are the upland areas of the west dominated by plateaus. Introduce pupils to the concept of a physical region as an area of land with similar relief features. Perhaps get them to lay tracing paper above a physical map in an atlas and ask them to pencil in lines dividing Pakistan up into physical regions, before working with Figure 5.14. Stress that relief features do not need to be identical everywhere within a region—otherwise there would be too many divisions, which would defeat the object: to make the study of areas easier.

The text on pages 74 and 75 is used to highlight significant relief features in each of the three regions and principal differences between them. Passing references are made to problems and opportunities for people. Activity 2 is a general question about this. Activity 3 gives pupils the chance to describe the physical geography in their region, and to state how its physical geography is different from that of other regions in the country. (Refer Workbook Activity 3: Physical regions of Pakistan)

Page 76 is different. The coastline where continents and oceans meet is in constant change, partly as a result of land deposition and coastal erosion (which are not mentioned here) and partly as a result of (at this moment in the Earth's history) rising sea levels. Reliable meteorological records show that the Earth is warming up, leading to melting of ice sheets on land and the increased risk of flooding in low lying coastal regions (of which there are many in the world). Increased amounts of carbon dioxide in the atmosphere from human activities is one of the possible causes. The page is included to raise pupils' awareness of this major issue, in a geographical rather than mass-media setting, ahead of fuller coverage later in the series. Bangladesh could be studied as an example of a country at much greater risk than Pakistan. The Activities

are a mixture of practical skills (drawing a pie chart and a line graph) and comment about global warming. This could lead to further class debate about the issue.

WORKBOOK

Activity 1	Continents and oceans
Activity 2	How important is fishing in Asia?
Activity 3	Physical regions of Pakistan

Workbook Activity 1 uses Figure 5.3 to ensure that pupils get to know the locations and names of the continents, oceans, and significant lines of latitude—absolute basic geographical knowledge of the world.

Workbook Activity 2 is about fishing. Question 1 is about Asia. Question 2 is about Pakistan. The graph in A shows what you might have already established from your pupils that fish is not an important part of the diet in Pakistan as a whole compared with other countries; however, the pupil's graph in B will show that locally it is important in Balochistan, closer to the source of fresh supplies. The average consumption here is not far behind that of the UK. However, there is a real decline in importance of fish in the diet from south to north in Pakistan.

Workbook Activity 3 first requires pupils to summarize the key features of each physical region, then to show that they can identify the different physical features shown in Figures 5.12 and 5.13. They will find it easier to label the sketch showing mountain and plateau; plains almost by definition are featureless. Expect many more labels on the sketch based on Figure 5.12.

SUMMARY CHECK

Teaching objectives: Acquaintance with continents, chains of islands, oceans, seas, and lakes, understanding of major Earth features

How these have been met:

- Study of the world distribution of land and sea, continents and oceans
- Separate studies of the Earth's major structural regions and large relief features (mountains, plateaus, and plains)
- Example of Pakistan to describe the large relief features more fully and to highlight differences between them

Learning outcomes: Understanding of relief features, with special reference to Pakistan and understanding of oceans, seas, and lakes and their importance.

Check that the objectives have been met:

- Look at a physical map of the world in the atlas; ask pupils to compare differences in relief between two of the continents.
- Ask pupils to compare (a) the relief of continents and oceans (b) moving goods by land and sea.
- Evaluate pupils' answers to Activities 1–3, page 75.

Chapter 6 **Asia—our region of the world**

National Curriculum

Target study area in the NC

Pakistan: Our Homeland

Teaching Objectives

Acquaintance with Pakistan's location with reference to the continent and surrounding countries

Learning Outcome

Students are expected to locate Pakistan and her neighbours on a map

Geographical skills

Practical skills used in activities include horizontal and vertical bar graphs; study of physical and political maps from atlases; drawing a sketch from a photograph with labels to match the stated purpose

New geographical terms

- * desert
- * density of population
- * average density of population
- * distribution of population

SECTION 1: ASIA—THE BIG CONTINENT (PAGES 77–80)

Following on from the study of continents in the previous chapter, the text on page 79 begins with reference to the sheer size of Asia. Using a world map, Asia's size in relation to other continents can be studied, as well as its great latitudinal and longitudinal extents. The latitudinal extent

can be taken from Figure 6.2. Pupils can be reminded that one degree of latitude is a distance of 111 kilometres (Information Box page 41); they can also be asked to look back at Figure 3.12, page 45, to discover how many different time zones are needed to cover all of Asia from west to east.

Great height is another highly distinctive physical characteristic of Asia. The text includes a cross-reference back to Figure 1.9 in Chapter 1. Asia is also the continent of big rivers and great river plains. The world's longest river may be in Africa, and the world's largest in terms of water volume is in South America, but Figure 6.3 shows that seven of the world's twelve longest (and therefore, in effect, biggest) rivers are in Asia.

Given the extent of the Asian land mass, it is not surprising that there are great differences in climate, including some of the world's extremes such as wettest place (usually agreed to be Cherrapunji in the foothills of the Himalayas in Assam) and very high annual temperature ranges (between winter and summer), like the 56°C range in Verkhoyansk, deep in Russian Siberia. This is calculated from the data in Figure 6.4.

Throughout pages 79 and 80 the text is interrupted by questions for the pupils to answer in studying Figures 6.2, 6.3, and 6.4 (all are different source types). Pupils can answer them either as the work is being covered, or all together in Activity 1. The purpose of Activity 2 is to compel pupils to focus more specifically on the physical features of their home region in South Asia. Having already studied the physical geography of Pakistan in some detail in Chapter 5, they should be well placed to make meaningful comparisons between Pakistan and its neighbours. (Refer Workbook Activity 1: Different climate in Asia)

SECTION 2: ASIA—THE CONTINENT WITH MOST PEOPLE (PAGES 81–86)

Most atlases include both physical and political maps of the continents. Figure 6.5 introduces pupils to the political map of Asia showing all the countries (although not quite the full extent). Although Russia is the giant in terms of physical size, it can be pointed out to pupils that many of the world's very large countries do contain large areas of land difficult to settle. For example, both Russia and Canada have vast expanses covered by snow and ice in winter—conditions that do not encourage settlements.

Even more significant than size in Asia is its population. Figure 6.7 shows that while Asia is comfortably the largest continent, it is far and away the most populated with well over half of the world's total population. It houses the two world population giants—China and India (Figure 6.8). Six out of the world's top ten largest countries are in Asia. This is not expected to change much by 2050 (Figure 6.9), although Japan will drop out of the list to be replaced by an African country in terms of population.

Activities 1 and 2, page 83, require pupils to display data from Figures 6.8 and 6.9 in order to highlight in a more visual manner the relative population sizes of the big Asian countries in 2001 and the forecasts for 2050. As pupils work through the questions in Activity 2, China dropping from number 1 to number 2 by 2050 and Japan falling out of the top 10 should be noticed by them. In question 2(c) the most important change is India replacing China as the world's most populous country. However, what is also highlighted is the big rise in population that is expected in Pakistan. This is an issue that you might wish to take further with pupils. (Population as a global issue is covered in Book 3.) (Refer Workbook Activity 2: South Asia and its neighbours—countries and cities)

From page 83 the focus is switched to density of population. Although some of the world's most densely populated rural and urban areas are found in Asia, there are still large empty areas as well. These are the areas with less than 10 people per square kilometre in figure 6.10. The format of asking questions in the text, to try to guide pupils into what to look for when studying the figures, is continued here. Activity 1 gives pupils the chance to pick out significant areas of different density within Asia as a summary, and then to name them.

When attempting to explain low and high densities of population, it is always recommended to begin with physical factors. Nature is the basic controller of human opportunities for making a living, particularly in rural areas. However, in industrial and urban areas human factors are much more significant for explaining high densities of population. Many of the factors affecting densities of population are listed in Figure 6.11. In Activity 2, page 85, pupils are asked to separate out physical from human factors (relating back to the work in Chapter 1), as well as those for high densities from low densities. (Refer Workbook Activity 3: South Asia and its neighbours—population density, and Workbook Activity 4: High population densities in Asia)

Finally, some applied geography: Pupils need to use five of the labels for low density from Figure 6.11 and their answer to Activity 2, page 85. In the marking scheme outlined in part 2 of the Activities box on page 86, equal weight is given to the quality of the sketch and usefulness of the labels in showing a relevant factor, applied accurately to the area shown in the sketch. Looking at and marking another pupil's work can point the way to improvement, as well as showing up what the pupil is already doing well.

WORKBOOK

- | | |
|------------|--|
| Activity 1 | Different climates in Asia |
| Activity 2 | South Asia and its neighbours—A Countries and capital cities |
| Activity 3 | South Asia and its neighbours—B Population density |
| Activity 4 | High population densities in Asia |

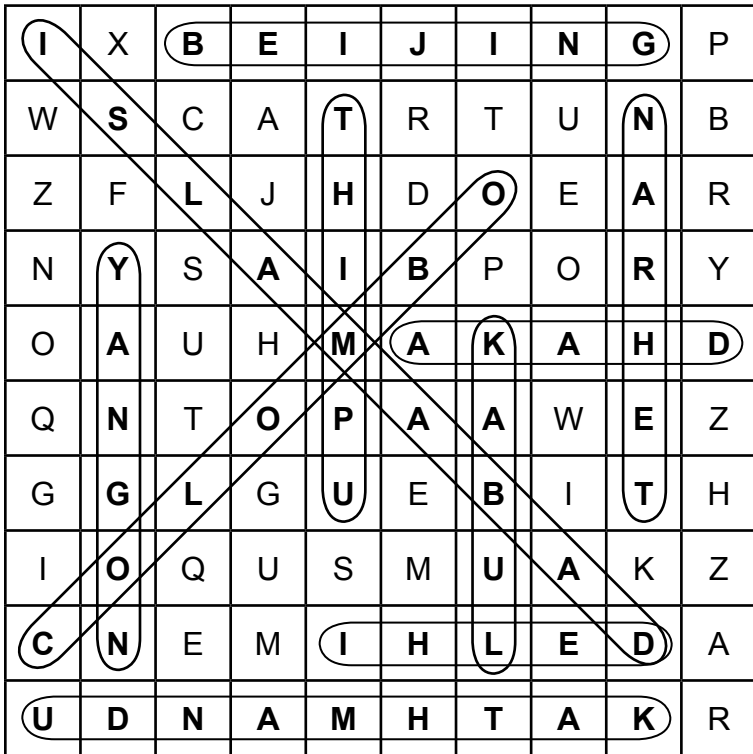
Workbook Activity 1 does the same for climates in Asia as was done for variations in climate in Pakistan in Activity 5 in Chapter 4. After pupils have identified coldest, hottest, wettest, etc. in question 1, they should be better placed to assess the worth of the summary statements about Asia's climate in Question 2.

Workbook Activity 2 is included specifically to meet the National Curriculum objective for pupils to become acquainted with Pakistan's location in relation to surrounding countries. Locations for each country's capital city are marked on Figure 6.5. Pupils can use the word search to find the ten names. They then need to arrange them in the list below by country.

In **Workbook Activity 3**, South Asia and the neighbouring countries are again the area in focus. This time pupils are required to draw a shading map on the outline to show densities of population in the ten countries. Provided that pupils have used an effective scheme of colouring or shading, it will be easier for them to assess how typical is the average density of population in Pakistan for the region in the first part of the question.

Workbook Activity 4 is a shorter activity to comment on Asia's wide trends in population density using Figure 6.10.

WORD SEARCH SOLUTION



SUMMARY CHECK

Teaching objectives: Acquaintance with Pakistan's location with reference to the continent and surrounding countries

How these have been met:

- Pakistan's location shown on various maps of Asia—physical, political
- Pakistan's location in relation to surrounding countries targeted in workbook activities—countries and capital cities, population density

Learning outcomes: Students to locate Pakistan and her neighbours on a map

Check that the objectives have been met:

- Provide pupils with an outline map of countries in and surrounding South Asia, for them to name the countries.
- Evaluate pupils' answers to Activities 1 and 2, page 80.
- Look at the quality of work in Workbook Activities 3 and 4.

Chapter 7 **Pakistan—our homeland**

National Curriculum

Target study area in the NC

Pakistan: Our Homeland, Population and Settlements in Pakistan

Teaching Objectives

Knowledge of the area and location of administrative units, and knowledge of administrative sub-units such as districts and tehsils

Familiarity with population distribution both density and rural-urban, understanding of different types of settlements both villages and towns/cities

Learning Outcomes

Identifies Pakistan's administrative units, including provinces, districts, and tehsils, recognizes factors of population distribution and density in Pakistan, describes key features of rural and urban settlements in Pakistan, knows factors affecting settlements in Pakistan

Geographical skills

Practical skills used in activities include pyramids to show hierarchies, pie graphs, flow diagram, bar graphs

New geographical terms

- | | |
|--------------------|------------------------|
| * hierarchy | * rural settlement |
| * migration | * service |
| * push factor | * settlement |
| * pull factor | * site of a settlement |
| * mega-city | * urban settlement |
| * millionaire city | |

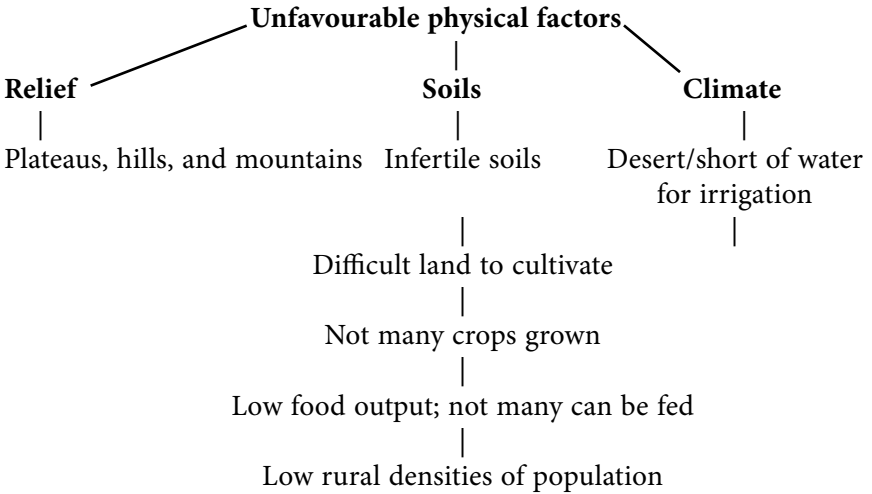
SECTION 1: HOW PAKISTAN IS DIVIDED FOR ADMINISTRATION (PAGES 88–90)

Pakistan’s administrative divisions are referred to in order of size, with further information given about the provinces and the centrally administered areas outside them. The hierarchy upwards from tehsils, districts, and provinces to federal capital are shown in the pyramid in Figure 7.4. The obvious starting point is the administrative hierarchy in the home region. It is left to pupils to draw a similar pyramid using names from their home area in Activity 1, page 90. The size and locations of the larger administrative areas are shown in Figures 7.2 and 7.5, but these mark much greater variations in numbers of people. This is why Activity 2 is included—so that pupils can compare the sizes of the administrative divisions with population totals. Pupils in the final part are asked to comment on the extremes, between well-populated Punjab and sparsely peopled Balochistan. It is a link to Section 2.

SECTION 2: WHERE PEOPLE LIVE (PAGES 90–92)

As in most countries, the distribution of population in Pakistan is *uneven*. This is the starting point for the study of where people live. Pupils never find it easy to see general patterns on density maps like the one in Figure 7.6. This is why a guide is given in the text for what to look for. It begins with the extremes of high and very low densities. In this instance, pupils are given the answers as the areas of different density are named, which means that everyone is beginning from the same point for the explanation on page 91. Because the high densities are countryside-based in Pakistan, the main reasons are physical. What is in the text is extracted and highlighted separately in the flow diagram in Figure 7.7, to help pupils’ understanding.

Activity 1 requires pupils to locate the home area and state what Figure 7.6 shows about its density of population. By definition, the majority will live within areas shown to have high densities, so that they can find in the text a reason to explain the density in their home area. To answer Activity 2, pupils need to take content from the final paragraph on page 91 and insert it into another diagram like the one used in Figure 7.7. They should come up with a flow diagram along the lines of the one shown below.



Activity 3 is a short general question about the importance of water in Pakistan; water supply for agriculture is one of the sub-sections in Farming in Pakistan in Chapter 8. (Refer Workbook Activity 1: Population density in Pakistan)

SECTION 3: CITY GROWTH (PAGES 92–95)

Begin with the study of what Figure 7.8 shows. The trend during each 20-year period was the same—declining percentage in rural areas, increasing percentage in urban areas. The content in the Information Box shows that this trend is worldwide; in fact, the pace of urbanization has been slower in Pakistan than in many other countries.

The factor responsible is rural to urban migration. Migrations everywhere, of all types, are caused by a mixture of *push* and *pull* factors, albeit with variations in relative strength between the two depending on the type of migration. With rural to urban migration it is typically a mixture of the two, with perhaps the pull factors stronger now than they have ever been, since new economic activities and modern developments are overwhelmingly concentrated in the big cities. The bigger the city, the faster the pace of change. (Big city growth is a global issue explored in Book 3.) The two photographs in Figure 7.9 illustrate well the old and new, traditional and modern, between rural and urban areas. Activity 1, page 95, is based on Figure 7.9. (Refer Workbook Activity 2: Reasons for rural to urban migration)

On page 94, outline information is given about the two largest cities: Karachi, the main commercial centre and Lahore, a much older city, and Islamabad the federal capital and a planned new city—to bring out significant differences between them. Activity 2 asks pupils to draw a bar graph to show relative sizes of the top 10 cities of Pakistan listed in Figure 7.10. Once pupils have completed the first two parts of Activity 3, the answer to part (c) will act as a link back to population density.

SECTION 4: SETTLEMENT TYPES (PAGES 96–100)

Settlements come in many different sizes. Having been introduced to the idea of a hierarchy for the administrative regions of Pakistan, the same concept is applied to settlements in Figure 7.12. The smaller rural settlements in the bottom half of the hierarchy are much more numerous than the larger urban settlements in the top half. Although size is the factor most often used to distinguish between rural and urban settlements, other factors are important as well. These are summarized in Figure 7.13. Pupils should by now be familiar with the pyramid diagram used in Figure 7.14. Check that they can still name the one mega-city and seven millionaire cities in Pakistan! Many should be able to give named local examples of cities, towns, and villages that belong to the middle layers in the diagram. Activity 1, page 99, is about this.

It is a good idea to make pupils aware that separating a large village from a small town, or a large town from a city, is not always easy; not everyone will agree. Villages become small towns by growing a little more, and by increasing the range of non-agricultural occupations. Emphasize that big urban settlements are *dynamic* places—always growing, always changing. This aspect can be commented on when comparing the two photographs in Figure 7.16. The differences that pupils are asked to identify in Activity 2 are relevant to rural to urban migration as well as to the differences between rural and urban settlements which are being studied in this section.

The final sub-section focuses on the sites / locations of settlements. What are now thriving modern settlements have usually grown from very old sites. The fact that the old sites were not abandoned indicates how carefully most old settlements were located. The main siting factors are shown in Figure 7.16. Sometimes one factor was very dominant, such as for defence; however, most settlements were sited where several favourable factors combined to make that site better than any other in the area.

The siting factors needed by a farming village and a trading town are totally different. People siting a village are only interested in making a living from the surrounding land, which makes them more interested in factors such as fertile soils and plenty of water. Whereas for a trading town to be successful, good route links with other places, some many kilometres away, are more important. Food can be brought in by traders. The more reasons there are for traders to pass through the town, such as because it is the only bridging point over a river, the more economically successful the town is likely to be. Activity 3 requires pupils to show understanding of the different siting needs of rural and urban settlements. (Refer Workbook Activity 4: Investigating your home area)

The Activities on page 100 are a final check on pupils' knowledge of the names of the main administrative regions and big cities of Pakistan.

WORKBOOK

- Activity 1 Density of population in Pakistan
- Activity 2 Why are many people migrating from rural to urban areas?
- Activity 3 The big cities of Pakistan
- Activity 4 Investigating your home area

In **Workbook Activity 1** pupils are required first to draw a simplified density map of population in Pakistan, based on data for provinces instead of all the districts. Their map gives a more easily observable summary of very high density in the Punjab, very low density in Balochistan and intermediate densities in the central band running north to south. What it will not do is identify areas within provinces with particularly high density, such as around Karachi in Sindh, as the district-based map does. Parts 2(c) and (d) merely reinforce work already covered in book activities.

Workbook Activity 2 lists (in a jumbled manner) a greater number of push and pull factors for rural to urban migration than it was possible to include in the main book. Those expressed negatively, or with a negative included, are definitely **push** factors (*no* work, *no* electricity, jobs in farming and *not* much else, *no* clinic, feeling of hopelessness—*nothing* changes). Other push factors are those indicating a difficult or unhappy situation (droughts reduce farm output, dusty dirt tracks, poor soils, long journeys to the nearest town, ponds and canals dry up in the dry season). The **pull** factors are those which indicate the presence of modern services

(safe water supply, street lights, pipes for water supply and sanitation in homes, easy to go places in buses and taxis, paved roads, hospitals, secondary schools and colleges, bazaars and modern shops), and those which suggest that opportunities exist (many different types of work, better paid jobs).

Workbook Activity 3 requires pupils to select and use information from the text on page 54. The opening statements about relative sizes of the cities in parts A, B, and C need Figure 7.10 for the answers (with or without the help of the bar graph drawn in Activity 2).

Workbook Activity 4 hopes to build on work already done in Activity 3, page 13 (Chapter 1), in the book, and in Activity 5 in the workbook. They attempted to make pupils more geographically aware of their home area—to look at it through geographical eyes. The first part of A is the lead-in; it overlaps slightly with the previous activities. The second part places the focus on local shops and services; it might be necessary to amend the distances for some pupils, according to local conditions. The third part is to discover whether regularly used services are closer to their homes than those used less frequently. Part C requires pupils to think about the merits or otherwise of the home area. Individual investigations like this will yield many different outcomes; therefore, it is the care with which the work was undertaken, and its quality that are more important than results which match geographical expectations.

SUMMARY CHECK

Teaching objectives: Knowledge of the area and location of Pakistan's administrative units, familiarity with its population distribution including density and rural-urban migration; understanding of different types of settlements both villages and towns/cities

How have these been met:

- Large and smaller administrative units of Pakistan mapped, showing location and extent
- Density of population shown on a map of Pakistan and explained
- Push and pull factors for rural-urban migration identified and used to explain increasing percentage of total population living in cities
- Hierarchy of settlement in Pakistan from farms and villages to towns and cities shown and explained
- Different characteristics of rural and urban settlements identified with examples

Learning outcomes: Identifies Pakistan’s administrative units; recognizes factors of population distribution and density in Pakistan; describes key features of rural and urban settlements in Pakistan, knows factors affecting settlements in Pakistan

Check that the objectives have been met:

- Look at the accuracy of pupils’ answers to Activity 1, page 100.
- Show pupils a different type of map showing population distribution, such as dot map, and ask them to give the different reasons for high densities and low densities.
- Ask pupils to list the key features of (a) large urban areas shown in Figures 7.1, 7.11 and 7.16 (b) rural areas shown in Figures 6.13 and 7.16, and then (c) to select the three greatest differences between them.

Chapter 8 **Pakistan—economic activities**

National Curriculum

Target study area in the NC	Means of Transportation in Pakistan
Teaching Objectives	Knowledge of major means of transport, roads, railways, airways, and water transport To enhance understanding of the human geography of Pakistan
Learning Outcomes	Appreciate various means of transportation and acknowledge usefulness of transport for the community
Geographical skills	Practical skills used in activities include labelled sketches, bar graph, line graph, spider diagrams

New geographical terms

- * cash crop
- * commercial farming
- * irrigation
- * subsistence farming
- * high yielding varieties (HYVs)

SECTION 1: FARMING (PAGES 101–106)

One way to begin is with a study of Figure 8.1. Pupils can be asked how typical of farming in Pakistan is the scene in the photograph. It can be used as the lead to subsistence farming in the first paragraph of text. How is the farming scene in Figure 8.2 different from that in Figure 8.1? The focus from page 103 is on water supply for agriculture, using both modern and traditional methods of irrigation.

Refer back to previous references about the climate of Pakistan in order to emphasize the need for, and great importance of, irrigation in all parts of Pakistan. Page 103 largely deals with modern methods; study Figure 8.4 and highlight how water storage is concentrated in the north, and ask pupils to explain why. Include a study of the Tarbela Dam shown in Figure 8.6, page 104. The rest of page 104 and all of 105 are devoted to traditional methods of irrigation.

Pupils could be divided into small groups to put together lists of the advantages and disadvantages of modern methods compared with traditional methods of farming. If necessary, they could be guided by providing them with headings, such as the amount of water, economics/cost, technology (high or low), environmental effects, suitability for use by subsistence farmers. Alternatively, as each method is studied, individual pupils can be given a checklist to mark with alternatives such as:

- * large amount of water / only a small amount of water
- * high cost / low cost
- * modern technology needed / old technology readily available
- * can damage the environment / little impact on the environment
- * subsistence farmers need outside help / easy to use by subsistence farmers

Activity 1, page 106, is included to reinforce pupils' understanding of the fundamental differences between traditional subsistence and modern commercial farming. Figures 8.1 and 8.2 are the obvious ones for pupils to use as the basis for their sketches. Activity 2 concentrates on traditional methods of irrigation. Now that pupils are towards the end of the first year's course, irrigation gives the opportunity for a more extended piece of written work. The questions are offered to provide pupils with a guided framework and to ensure meaningful coverage with reasonable breadth to it. (Refer Workbook Activity 1: Irrigation methods in Pakistan)

SECTION 2: WHERE ARE FOOD CROPS GROWN? (PAGES 106–108)

Wheat is given special mention because it is the most widespread food crop grown in Pakistan. Countries in South Asia and many other developing countries have been helped over the last twenty years by the wide-ranging use of high-yield varieties of seeds; these have fed their growing populations. The other main food crops are given a passing mention. Find out how much pupils know about the types of crops grown in their own region; among children from long established urban families, it could be surprisingly little. When studying the map of cultivated areas in Figure 8.10, pupils could be asked to compare it with some earlier maps, particularly Figure 7.6 on page 91 showing density of population. Activity 1, page 108, is repeated as Workbook Activity 2; in the workbook it is possible for pupils to draw the chart to complete it. The purpose of Activity 2 is to give an international perspective on wheat output. While the values suggest that Pakistan ‘could do better’, perhaps with more investment in farming, they could also be a reflection of more difficult physical conditions than in many other countries. Activity 3 is to get pupils to ‘think local’ again. (Refer Workbook Activity 2: Types of food and where it comes from and Workbook Activity 3: Main crop-growing areas in Pakistan)

SECTION 3: INDUSTRY (PAGES 108–111)

The basic point is that Pakistan is not a manufacturing/industrial country in the way that many other Asian countries are, particularly those in East Asia. However, the one industry that is important both internationally and domestically is cotton textiles. The Information Box is included to highlight the long history of cotton in Pakistan. In Figure 8.12 the main centres for making cotton textiles are superimposed on the shading map showing cotton-growing regions. In the text, pupils are asked to compare the two, guided by the the commentary. Another suggestion that is not in the text might be put to pupils—that the distribution of cotton making centres reflects the distribution of people. This would make sense for such a basic industry which serves everyone’s needs.

Otherwise too many industries in Pakistan depend on raw materials from agriculture; this is illustrated in Figure 8.14. Special mention is made of Karachi, the largest industrial centre; being a port, it is best placed to receive imported raw materials and fuels which are in short supply in Pakistan: these tend to be bulky and costly to transport in raw form. The

final sub-section is devoted to heavy industries. Stress their importance for producing goods needed in construction, transport, and a wide range of useful agricultural and household products. (Refer Workbook Activity 4: Pakistan's trade in 2005)

SECTION 4: TRANSPORT (PAGES 111–115)

A familiar worldwide story is decline of railways and growth of road transport. Pakistan is no exception. The graphs in Figure 8.16 are a visual representation of railways' decline. Pupils can be asked when they think the 'era of road transport' began in Pakistan. Figure 8.19 is an attempt to show visually why most companies prefer to send their goods by road—no breaks of transport and further loading and unloading are needed until the goods reach their destination.

This can also be linked back to the containers in Chapter 5, page 69: if the truck in Figure 8.19 had been shown loaded with a container, how far could the container have travelled without needing to be opened and the goods emptied and reloaded? The *flexibility* of road transport (different types of vehicles, go anywhere i.e. beyond the paved roads, available at the times when it is needed /when wanted) is its big advantage over rail. Another is *cost*. Looking at the photograph in Figure 8.17 pupils can be asked about the costs of track construction, and why road building is much cheaper everywhere, but especially in areas with the type of terrain shown in Figure 8.17.

The map in Figure 8.20 shows the main road and rail routes in Pakistan. Again pupils can be referred back to the map of population density in Chapter 7 and asked to compare patterns. The line graph that pupils will draw when answering Activity 1, page 115, shows the opposite story for road to that of rail in Figure 8.16. Activity 2 can be done individually, or by pupils working in pairs or even small groups. The more advantages and disadvantages of road transport pupils come up with, the better it will be. (Refer Workbook Activity 5: Main road and rail transport corridor in Pakistan)

Activity 3, page 115, is a local fieldwork investigation of traffic. What to do and how to do it is shown in greater detail in Workbook Activity 6. This includes the results of a traffic survey in Karachi, which can be used for drawing the graphs (useful for pupils unable to undertake their own traffic survey).

WORKBOOK

- | | |
|------------|---|
| Activity 1 | Methods of irrigation in Pakistan |
| Activity 2 | What food do you eat? Does it all come from Pakistan? |
| Activity 3 | Where are the main crop growing areas in Pakistan? |
| Activity 4 | Pakistan's trade in 2005 |
| Activity 5 | Where is the main transport corridor for road and rail in Pakistan? |
| Activity 6 | Doing a traffic survey |

The layout of **Workbook Activity 1** about irrigation methods is intended to help less able pupils. It is essentially a replacement for the textbook Activity 2.

Workbook Activity 2 is Activity 1 from the book, but with all the spaces for answering, which will benefit less able pupils.

Workbook Activity 3 makes fuller use of Figure 8.10. Notice that in Question 1 the focus is again upon the extremes of high and low percentages, because these are always easiest for pupils to understand. Question 2 is about the general pattern shown, often not easy for pupils to recognize. Option A is the best choice (and it matches well the overall pattern of population density in Figure 7.6, which fits since Pakistan remains a predominantly agricultural country, with a higher percentage of people still living in rural areas). However, it will be possible for pupils to make some progress with reasons if they choose one of the other two options, but it will be less easy for them.

Workbook Activity 4 focuses on the overseas trade of Pakistan. Exports reflect domestic economic activities. The divided bar graph of exports shows the dominance of agriculture-related goods. Whereas the imports are dominated partly by oil and other fuels, the majority by value are manufactured goods. Unfortunately, agriculture-based goods tend to be of lower value than manufactured goods. In 2005, the trade gap was US\$4.5 billion (17.9–13.4); this means Pakistan was spending more than it earns in visible overseas trade. The trade data clearly shows the great importance of cotton and cotton goods, which justifies their special mention in the book.

Workbook Activity 5 makes further use of Figure 8.20; the summary should lead pupils to highlight the vital north-south corridor of movement, linking south and north in Pakistan, following the line of the

Indus Valley (easy movement without major relief barriers, linking the big cities, passing through the most densely populated part of the country, linking the chief port to other parts of the country, the economic heartland of Pakistan). It also acts as a summary for the human geography of Pakistan. When answering the different parts of question 2, able pupils can draw upon work covered in earlier chapters.

Workbook Activity 6 expands on Activity 3 on page 115 of the textbook. Here student guidance is provided—about choosing a good location, picking the best time to undertake the survey, recording the traffic counts and showing the results. The results of a traffic survey by students on two roads in Karachi are included so that students, who are unable to undertake their own local fieldwork investigation, can still complete the process by drawing graphs to display the results.

SUMMARY CHECK

Teaching objectives: To give knowledge of major means of transport; to enhance understanding of the human geography of Pakistan

How have these been met:

- Summary map of the main roads and railways in Pakistan is included, with commentary in the text and related activities both in the book and workbook
- Explanation given for the growth of roads and decline of railways
- Study of the distributions and importance of other economic activities in Pakistan, especially agriculture and industry, which need the transport links

Learning outcomes: Appreciation of various means of transportation and acknowledge usefulness of transport for the community

Check that the objectives have been met:

- Look at the quality of pupils' answers to Activities 1 and 2, page 115, to check their understanding of the overwhelming dominance of road transport in Pakistan and the reasons for it.
- Show pupils a map of regular air routes in Pakistan; ask them to describe and explain the pattern (in relation to aspects of the geography of Pakistan studied in the book, such as population distribution, locations of top 10 cities, centres of industry).