THE DOMESDAY PROJECT

ENVIRONMENTAL EDUCATION

The BBC Domesday Discs Resource Booklet for

Environmental Education

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PREFACE

The BBC launched the Domesday Discs and the Advanced Interactive Video·System in November 1986 to celebrate the 900th anniversary of the original Domesday Book, commissioned by William the Conqueror.

These two videodiscs, the result of a project co-ordinated by the BBC in 1985 and 1986, present a portrait of Britain in the 1980s. Well over a million people in the UK were involved in creating this massive database, an interactive resource for education, industry, government and the information services. Information suppliers have included university and government statistical data banks, photo and print agencies, and nationally recognised experts in specialist subjects. However, the largest number of contributors has been the school children of the United Kingdom who surveyed their local areas in the Summer Term of 1985, supervised and assisted by their teachers and members of the local community.

This booklet, along with the others in the series, carries the Domesday Project one step further by illustrating how the Domesday Discs provide an invaluable educational resource. The BBC once again gratefully acknowledges this project work generously supported by the listed LEAs and institutions, produced by practising teachers, and trialled by young people in schools during the Spring and Summer Terms of 1987. These first steps in exploring the Domesday Discs are offered as a source of ideas to encourage others.

Booklets in this series

Curricular area	LEA/Institution
Projects and Topics	N. Ireland Education and Library Boards, Bulmershe College, Reading, Berkshire and Hampshire LEAs
Mathematics	School of Education, University of Exeter
Social Sciences	Gwent LEA and Gwent Institute of Higher Education
Art; Craft, Design and Technology	Gateshead LEA, North Eastern ELB, N. Ireland
Environmental Education	Moray House College of Education, Edinburgh and Scottish LEAs
Geography	University of Loughborough
In-Service	Christ Church College, Canterbury
	Phyllis Gove **Series Editor**

THE SEASHORE

Introduction

The basis of environmental studies is firmly in the children's first hand experience of the environment. The primary resource must be outside the school. However, good quality artefacts, reference materials and good visual sources for further research and interpretation within the classroom are always needed. The Domesday System offers an excellent classroom resource for environmental studies in its potential to supply copious amounts of information very readily.

Children must be encouraged to seek out information in a range of ways. However, immediate classroom access is satisfying and stimulating. At a general educational level the National Disc is excellent for route plotting/finding activities. In particular the picture sets and, to a lesser extent, the data sets allow of such activities as comparison of weather which would be extremely time consuming, if at all possible, if tackled in another fashion. On the Community Disc information of particular benefit in the field of comparative studies is readily available. The text on the Community Disc is also very readable and its organisation allows browsing and viewing of related pictures and maps.

Although methods of retrieving information from the Domesday System are individually fairly simple there is such a wealth of different kinds of information, and of ways into

that information, that it can take some time to master the processes. What follows is an account of an attempt to plunder the discs for all the information they contain on the topic of the seashore. The account exemplifies the many and varied facilities available and is followed by a section suggesting possible strategies for the use of material selected from the trawl. We suggest that following our path through the options available would be useful to a teacher entering the Domesday System for the first time, with the intention of assembling resources.

Seashore

This is a topic based on the natural environment and would be part of an environmental studies programmme for a school on or near the coast. Schools far from the coast might want to visit a beach in order to expose children to different environments for both educational and social reasons. In this case the emphasis would be more on experiential and expressive activities. As this section was devised in a school on the coast of East Lothian we decided to base our local investigations around the school. Although the material identified would on the whole be of use at any stage in the primary school, our strategies are aimed at Primary 4/5 and Primary 7/Secondary 1, ie ages 8/9 and 12/13.

Aims

to allow pupils the opportunity to study an environment at first hand

to explore ways in which skills, knowledge, concepts and attitudes may be developed through a study of the environment

to adopt a multi-disciplinary approach to widen the scope of opportunities a study of the seashore represents

to provide opportunities for small group investigations into various aspects of the topic thus promoting the communication aspect of the children's work

to provide contexts for meaningful comparisons with other environments

to use a wide range of appropriate resources as a stimulus for investigative practice

Objectives

By the end of the topic study pupils in Primary 4 should:

have a knowledge of the seashore as a natural environment

have explored the flora and fauna at the seashore and be aware of how these have adapted to their habitat

have investigated in small groups related aspects of life around the seashore

be able to apply skills in research, recording, presentation and display to carry out their investigation and to report their findings to others

be aware of the seashore as a valuable part of their environment which provides pleasure and needs looking after

Pupils in Primary 5 should:

have a knowledge of the seashore as a natural environment

be aware of the communication links vital to island communities

understand the reasons, both physical and economic, for the siting of ports and harbours

have had the opportunity to study island life and the effect it has on its community

be able to apply skills in research, recording, the making of hypotheses, interpretation of information and the communication of ideas and findings to others

make valid comparisons between their own community and an island community and also between different island communities

Pupils in Primary 7 and Secondary 1 should:

have an understanding of the social reasons for the growth of seaside resorts

be able to evaluate the pros and cons of residing in a seaside resort

have studied holiday trends in Britain today and be able to draw conclusions and make positive comment on British tourism in general

have developed skills appropriate to the study, particularly in collecting and analysing data and in the drawing of conclusions

have studied one particular resort in detail, in terms of the social aspects

be aware of the problems of decline on the physical and social structure of the community

be able to discern why some resorts have continued to boom

have explored the marketing aspect of tourism and be able to apply these principles to a dying resort

Possible starting points - Primary 4 and 5

THE SEASHORE

Preliminary discussion - how often do children go down to the beach? What do they think of this beach? There should be a maximum of sixteen pupils in a group on the beach.

Visit to the beach, possible activities are:

    recording of weather

    use of the senses to get the 'feel' of being by the sea

investigation of patterns through studying sand

investigation of shape, marking and texture through studying rocks and stones

collection of samples

investigation of rock pools

Classroom activities:

written reports - factual and poetry sketches

the build-up of vocabulary associated with the seashore

identification and further research into shells and wildlife

descriptions of the 'ideal' beach

illustrations of beaches

discussion around the question : Are all beaches the same?

Use should be made of visual material and the children's own knowledge and experience to establish ideas of coastline and different kinds of beaches. The work of the sea on the coastline should be examined and the effect that the nature of different kinds of beaches has on wildlife, usage, and on enjoyment by people.

Group investigations: to involve an appropriate visit or visitor to the school.

Fish as a food

>discussion of different types of fish

>survey for the most popular fish

>visit to fish shop and smoking shed

>ways of preparing fish

>cooking and tasting sessions

>health content of fish dishes, study of menus

>how fish are caught (including historical and cultural aspects)

>effects of weather

>fish and chip shops

>prices, choices, experiences

Boats and boat building

>science activities on buoyancy

>visit to a boatyard/marina

>interview with sailor, fisherman, lifeboatman

>boat construction, models

>visitor to talk on Scottish fishing boats, old and new

>visit to fishing harbour

Lighthouses

> discussion of the dangers of the sea
>
> identification of need for warning systems for sailing
> craft
>
> visit to lighthouse
>
> interview with lighthouse keeper
>
> working model of lighthouse
>
> visit to lifeboat station

Use of the beach

> survey of how beach is used in area
>
> use of visual material to establish wider range of uses
>
> investigation into different uses at different times of
> year

Reporting back and displays

> set up display of objects found, photographs and pieces
> of writing
>
> identification of objects using resource materials and
> finding out more about them
>
> objects used in artwork
>
> objects supplemented from home

The use of language, music, songs, stories and poems should
permeate the topic.

There are opportunities throughout for:

Language work, the use of stories and poems, interviews, creative writing;

Mathematics and Science, graph work, shape, the properties of salt water, buoyancy, use of keys for identification;

Art, line, texture, shape and pattern;

Music, sea shanties, percussion for mood setting;

Drama, role play, work through puppets;

Conservation would also be a thread running through everything, discussion of attitudes, local Ranger visits .

National Disc using FIND option

Select FIND, ACTION and type HABITATS: COASTAL in the highlighted box, ACTION.

Select Item 6, a picture set, 'Habitats: Coastal', ACTION. Select INDEX, ACTION to produce a list of the 39 photographs in the set. Select Item 17 MOBILE SAND DUNES, ACTION. Carry on looking through the photographs to identify different types of coastal habitats.

Select MAIN, ACTION and type in MARINE LIFE.

Select the picture sets:

2 Marine Life
17 Marine Fish
29 Seabirds

Small group studies

We selected material for four small group aspects of the study by typing in the following keywords:

LIGHTHOUSES; SEA AREAS

Note that the text 'Lighthouse and Navigation Aids' contains three figures on page 2. Obtain the figure by putting the arrow on to the number between brackets, ACTION. To return to the text, select MAIN, ACTION. The text 'Shipping Forecast Sea Areas' contains maps showing the sea areas used for weather forecasts for shipping.

FISHING INDUSTRY

The keywords-FISH, SHELLS, and BOATS were used and the following pictures selected:

FISH
42 Marine Fish
43 pictures 2-7 Billingsgate
87 The Fishing Industry

SHELLS
38 Fish for Food

BOATS
4 Water in the Landscape, picture 12

BOATS AND BOATBUILDING

The keywords HARBOUR and BOATS were used.
HARBOUR produced option 47, from which many
photographs were chosen:

BOATS produced option 5, 'Messing about with Boats'
and option 17, 'Water Transport'.

USE OF THE BEACH

The keywords LEISURE and SEASIDE were used.

LEISURE produced a picture set, 'Children at Play'
from which many items were chosen.

This set of pictures , excellent for expressive work and
language, gives a wide range of different kinds of
beach, different times of year, and a variety of
activities.

Community Disc

ISLANDS

Pupils moving on to the island option should have, at an earlier stage, covered the physical aspects of the seashore. We now turned to the Community Disc. ISLANDS on the northern side produced 125 matches. Each item chosen led to other appropriate items from the options available. It was therefore possible to choose from a large number of visual and textual items which were all related. There were 88 matches on the southern side.

The Community Disc has much more accessible information through which the primary pupil can browse. A wide range of text and photographs connected with the sea, in particular harbours, ports and islands, proved to be excellent for comparative studies. Pupils can choose an island or seaside town by name or can home in from their general exposure to aspects of island or harbour life.

The keywords which provided most material were ISLAND, on the northern and southern sides, HARBOURS on the northern side and PORTS on the southern side.

There is ample material available on a variety of islands dealing with such aspects of the life of the islanders as housing, employment, education, communications, local places of interest and leisure.

The pupils should start by considering coastlines in detail, studying tides and coastal zones and identifying ports and harbours around the UK. A good starting point would be a visit to a small harbour or larger port, noting position, function and links to other places.

GROUP INVESTIGATIONS

A choice of islands for more detailed study should be made. The following aspects of island life should be considered: location, links with the mainland, housing, employment, education, communication, places of interest, leisure and traditions.

This should be followed by reporting back, wall displays, and sharing of findings to allow comparison with the local environment and between island communities.

Opportunities exist within the group investigations for the introduction of certain issues within a role-play situation e.g. the building of holiday flats in an area of natural beauty and the social impact of cuts in ferry services. Such activities offer good opportunities to the teacher of assessing the pupils' grasp of underlying concepts. The topic provides many opportunities for cross-curricular activities, the use of children's fiction and the resources of fantasy and imagination.

Primary 7 and Secondary 1

By the time the children reach this stage of their school career they will have had many and varied opportunities to study the physical and social environment. They will be familiar with the different aspects of their own immediate location and have carried out comparative studies with more distant environments. At this stage they should be more aware of the key concepts underlying environmental studies and be able to analyse material and consider the reasons for particular trends. The material on the Community Disc is particularly useful for comparative studies and was therefore used for the purposes of this study.

In relation to the seashore topic at this stage the pupils would perhaps be concerned with the following aspects: the reasons why places became resorts; the effects of being a seaside resort; the tourism aspect of holidays at a British resort compared to holidays abroad; the attractions of these resorts, particularly the amusement arcades ; the conservation aspects connected to the decline of resorts.

Community Disc - northern side

The keyword SEASHORE was used. The northern side produced 151 matches. The following were chosen:

> 9 & 10 Beach amenities survey - text
> 46 Entertainment for Children - text
> 60 Holiday fun - text
> 72 Lunan Bay, tourism - text
> 80 Our Shoreline - text

The above is one selection of the available material; many are possible. Although text was generally chosen, the options of location map, photographs and more detailed text about daily life were available. For example one of the options was the town of Clashnessie. Choosing Clashnessie Bay produced three photographs, one page of text and a map at scale 1:10.000. Zooming out showed Clashnessie to be in north-west Scotland, on the Minch. For the teacher this approach provides considerable scope but is time consuming. It was decided that for the children the use of the map by place name would be less laborious. Therefore a number of names of coastal areas were tried and the following chosen from the northern side of the Community Disc.

Clashnessie
Broughty Ferry
Girvin
Solway Firth

Community Disc - southern side

The southern side produced 277 matches of which the following were chosen:

3 A day in my holiday - text
5 A family day out - text
6 A local issue - text

Selection from these will give pupils an overview of life in a seaside resort and many opportunities to discuss benefits and disadvantages of living in one. General discussion should be followed by detailed investigation, in small groups, of particular resorts using the materials available. Choice may be based on knowledge of a particular resort and acessed using the 'MAP BY PLACE NAME' facility or by exploring an area chosen at random from the general introduction.

This material on the Community Disc allows genuine comparison to be made and offers opportunities for a wide range of cross-curricular activities such as:

Collection and analysis of publicity material relating to selling the resorts.

Examination of the historical rise of resorts during industrialisation because of the need to get away from the smoke and bustle of towns.

Location of resorts, consideration of climate and study of weather statistics.

Study of statistics on the National Disc relating to holidays and interpretation of trends.

What it is like to be a resident of a seaside resort.

Study of problems of British Tourism and possible solutions.

Study of a declining resort eg. New Brighton.

Group investigations

We extended the study of a seaside resort by considering location, population, employment, amenities, leisure patterns, social provisions, and residents' views. We made a comparative study with our own locality.

The Domesday Discs provided a welcome addition to our exploration of the local environment, enabling the pupils to widen the scope of their surveys and to make comparisons with other areas of the United Kingdom.

POLLUTION

Introduction

This unit uses the National Disc of the Domesday System as the source of a variety of information on the topic of pollution. Designed as a 'chain' of questions of varying levels of difficulty, it requires pupils to find answers by using the system at increasing levels of sophistication. It is a 'dual purpose' unit. While designed for pupils in the 14-16 range, as a study unit on pollution, it is also intended to provide teachers and pupils with a means of familiarising themselves with the Domesday System itself. However, it is recommended that teachers will have become familiar with the Domesday System by working through the In-Service Resource Booklet in this series.

The main aims of the unit are designed to accord broadly with the assessable elements of Scottish Standard Grade courses in Social Subjects.

Understanding

To develop pupils' knowledge and understanding of the main sources of pollution in Britain today and the effects of pollution on a range of environments.

Handling information

To use the Domesday System to locate, obtain and record information and to use the system to conduct an investigation of a topic.

Objectives.

In relation to the topic of pollution students should be able to:

> know four elements of the environment affected by pollution
>
> know the main causes of pollution in each of these elements and their effects
>
> understand the side effects of pollution on local economy, quality of life, etc
>
> understand the implications of oil and sewage pollution in terms of health hazard, environmental damage and financial cost
>
> know the geographical distribution of oil pollution
>
> locate information on a topic from the GALLERY, CONTENTS or FIND routines
>
> handle data displays in a variety of ways
>
> choose and research a topic using the various aspects of the Domesday System.

The unit includes no proposals for the assessment of pupil performance on the basis of these objectives because detailed performance criteria for the Social Subjects at Standard Grade were not available at the time of writing. The flow diagram, figure 1, provides a set of possible routes through the unit appropriate to pupils of different levels of ability. A 'core' of work for the less able, or Foundation Level pupils, can be identified which requires only the use of the environment picture set and a piece of text on sewage pollution. This is extended for pupils of progressively greater ability, or General Level, through a further text exercise, and

subsequently a data handling exercise to be attempted by the most able, or Credit Level, pupils. An extension exercise for all pupils would be to use the system to find information on a chosen topic and present their findings in the form of an essay or a report.

This unit uses only information from the National Disc. In researching their chosen topic pupils might also wish to use the Community Disc. However the amount of information available for some areas of the country, for the 4 x 3 km blocks and for particular topics, may be limited. It is important that pupils are directed to the TEXT and PHOTOs relating to the 40 x 30 km map areas. The text, written by members of The Geographical Association or The Automobile Assocation, provides an overview in terms of geographical features, industry and other topics. The photographs include satellite images and aerial views from within the 40 x 30 km block. Teachers should attempt to become familiar with this disc before pupils begin to make use of it. The In-Service Resource Booklet provides teachers with more examples of using both the Community and National Discs, as do the other booklets in this series.

'HELP' facility

At any stage when using the disc(s) you may select HELP, ACTION and then select HELP TEXT or DEMO, ACTION for either a text or video explanation of how to use the facilities on the Domesday System.

Figure 1. Pollution: pupils' routes.

A. Foundation Level pupils: B. General Level pupils: C. Credit Level pupils:

Pupils' notes

Select the National Disc, read the instructions at the beginning of the Domesday Video Disc User Guide and 'boot up' the system. You have now entered the Gallery.

The Gallery

To see where you are in the Gallery move the arrow to PLAN or PLAN/HELP, on the menu bar, ACTION.

To escape from PLAN move arrow to MAIN, ACTION.

To move right, move the arrow to the right of the screen, CHANGE.

To move left move the arrow to the left of the screen, CHANGE.

To move forward move the arrow to the middle of the screen, CHANGE.

To select extra moves, select MOVE on the menu bar, ACTION. You will now be presented with the choice of moving left, right, forward or back. Select the direction you prefer, ACTION. Sometimes only a limited number of directions are available from the menu bar.

To see where you are in the Gallery, select PLAN on the menu bar, ACTION . The blue arrow shows that you are in the 'Popular Arts and Crafts' section; it also shows you the direction you are facing.

In which room do you think you would find the topic 'pollution'?

Plan your moves to enter this room.

Escape from the PLAN and return to the Gallery.

Move to the room which you have chosen.

Check that you have entered the correct room by selecting PLAN, ACTION.

To return to the GALLERY select MAIN, ACTION.

Use the trackerball to find a picture of pollution by moving forward, and then to the right.

Picture set on pollution

Once you have found the picture of a dinosaur sculpture and cooling towers belching out smoke, place the arrow in the bottom left corner of that picture, ACTION. The title page will appear on screen.

The 42 photographs will show examples of four parts of the environment which pollution can affect. List them.

Points to remember in a picture set

To bring up the first picture, move the arrow to the right of the screen, CHANGE.

To page backwards through the pictures move the arrow to the left of the screen, CHANGE.

Functions on the menu bar

Select DESCRIPTION, ACTION. This will put a descriptive caption on to the photograph. To return to the caption select CAPTION, ACTION.

To see a list of the pictures in the set select INDEX, ACTION. A list of 22 photographs will appear on the screen. To see the next 20 photographs move the arrow to the right of the screen, CHANGE. You can select any picture by highlighting the number, ACTION.

To see the photograph with its short caption select CAPTION, ACTION. To remove the caption from the screen select CLEAR, ACTION. To remove the menu bar from the screen place the arrow on the triangle to the left of the menu bar, ACTION. To bring back the menu bar repeat the process. Pictures are normally shown with their short caption.

To return to the Gallery select MAIN, ACTION.

Environmental Pollution

Use the 42 photographs on Environmental Pollution to answer the following questions. (Remember to use the DESCRIPTION facility).

> 1 List the main causes of pollution on Britain's coasts.
> 2 List seven things which create air pollution.
> 3 List the four species killed or dying from the effects of pollution.
> 4 Name the two types of pollution an aeroplane can cause.
> 5 Which photograph do you think shows the worst pollution? Give reasons for your answer.

Select INDEX, ACTION. Locate picture number 31.

> 6 Imagine you live in the house in picture number 31. Describe what it is like to live so close to a source of air pollution.
> 7 Using INDEX locate the four pictures which deal with a cleaning up operation. What are the men clearing from the beaches?

To leave the picture set select MAIN, ACTION.

Pollution of water

You are now going to use the Domesday System to look at three causes of pollution on Britain's beaches: sewage, oil slicks and nuclear waste.

Pollution caused by sewage

Follow the steps below to find two pieces of text and one data set on sewage pollution.

Select CONTENTS, ACTION.
Select item 4 ENVIRONMENT, ACTION.
Select item 4 ENVIRONMENTAL POLLUTION, ACTION
Select item 3 MARINE POLLUTION, ACTION.
Select item 1 SEWAGE POLLUTION, ACTION.
Select item 1 DISGUSTING STATE OF BEACHES 85, ACTION.

REMEMBER: to read through the pages of text move the arrow to the right of the screen, CHANGE. To see a previous page move to the left , CHANGE.

Read the eight pages of the article and then answer the following questions. If a printer is connected print out the article for your own individual study.

8 What is the greatest pollutant of our coastal waters?

9 What sea life has dwindled in numbers because of this pollution? In terms of employment, which occupational group does the above decline in numbers affect?

10 Polluted beaches could mean a drop in holiday-makers. How will that effect the economy of our seaside towns? Give an example of a seaside town whose holiday trade has declined because of the sewage on the beaches.

11 Name three diseases which you could catch from sewage polluted waters.

To leave the text on sewage select MAIN, ACTION. Select UP, ACTION until the title is 'Marine Pollution Level 4'.

Pollution caused by oil spills

Select item 3 Oil Pollution, ACTION.
Select item 7 Data: 'Oil Spills: by size and clean up', ACTION.

On screen a chart will appear showing OIL SPILLS : BY SIZE AND CLEAN UP NEEDED.

REMEMBER: If you run into problems with this exercise select MAIN, ACTION. This will return you to the oil pollution index and you can start again. Answer the following questions using these data.

12 The first task is to find out what years the chart represents.
Move the arrow to the large box on the right.
Move the arrow to the word ALL under YEAR, CHANGE.
When 1981 appears, CHANGE .
What year now appears?
Press CHANGE again. What year now appears?
Press CHANGE again. What year now appears?

Therefore ALL equals the cumulative total of the above three years added together.

Before you move to the next question check that you have returned to ALL. You will notice at the top left the box REPLOT. Select REPLOT, ACTION to continue.

13 On the screen immediately above the menu bar you will read that A = NORTH EAST OF ENGLAND. To find out what B, C and D etc. represent, move the arrow on top of A = NORTH OF ENGLAND, CHANGE.

What letter represents:

Essex and Kent?
West of Scotland?
Offshore North Sea?

14 If you want to know the number of spills which occurred in the North of England, move the arrow into the A column on the chart, ACTION. The answer will appear at the top of the page e.g. '36 number of spills'.

List the number of spills which occurred in:

East of England
Irish Sea
East Scotland
Offshore North Sea.

15 The chart on the screen shows the total number of spills. To produce a chart showing the number of spills over 100 gallons, move the arrow to the box on the right and place it on ALL, under NATURE OF, CHANGE.   ALL changes to_____?

Select REPLOT from the menu bar, ACTION. The chart will change to reveal the number of spills over 100 gallons in each area.

Which area had the most spills over 100 gallons?

How many spills over 100 gallons did it have?

Which two areas appear to have had no spills over 100 gallons?

Check the number of spills in the above two areas by the procedure described above.

Which area had the least number of spills?

How many did it have?

16 You now want to look at the number of spills requiring clean up. Move to the variable box on the right, move to OVER 100 under NATURE OF, CHANGE. When REQUIRING appears, ACTION.

What is the full title?

Select REPLOT from the menu bar, ACTION.

Which area had the most spills requiring clean up?
How many did it have?
Which area had the least? How many did it have?

Leave the database by selecting MAIN, ACTION.

Select FIND and type in exactly, "OIL SPILLS: COST OF CLEAN UP" in the highlighted box.

17 Check what ALL represents in this database.

List the years

What year will you have to omit to make it comparable with the Database on OIL: SPILLS BY SIZE AND CLEAN UP?

To omit this year move arrow to REGROUP, ACTION. Message appears at the top of the screen :

Select variable to regroup

What variable do you want to regroup?

Area or Year?

Move arrow to the variable you want to regroup, ACTION. Select CONTINUE until 'Select Group to omit' appears at the top of the screen.

Which year do you want to omit?
Move the arrow to that year, ACTION.
Move the arrow to REPLOT, ACTION. Check that ALL represents 1981, 1982 and 1983. Before you continue check ALL has returned to the screen.

Select REPLOT from the menu bar, ACTION.

18 How many pounds were spent in:

North Sea
Essex and Kent

19 Which area spent the most money on clean up?

How much did it spend?

20 List the areas which would be effected by oil spills in the North Sea. Check with the Community Disc if necessary.

21 Use the above answer to suggest why there was no money spent on cleaning up oil spills in the North Sea.

To escape from the data set, select MAIN, ACTION.

Select FIND and type in exactly "ENQUIRY CALL OVER SPILLAGE"

22 From which newspaper is this article taken?
What is the date?
Off which county did the spillage take place?

23 How many sea birds are estimated to have been killed?

24 What bird is mentioned by name?
Find a picture of the above bird and either draw or describe it.

HINT. Select MAIN, ACTION. Select FIND, ACTION. Type in SEABIRDS (one word) in the light blue box, ACTION.

REMEMBER to use the index facilities.

You can leave the photograh by pressing ESCAPE. This will take you (after a confirmation prompt) back to the GALLERY and reset the system to its starting condition.

Extension activities

Look at the following information by typing in the following file names in FIND:

"DISGUSTING STATE OF BEACHES"
"INDUSTRIAL WASTE DUMPED AT SEA"
"THE SEAS IN THE 1980s"
"WATER POLLUTION KILLING FISH"
"WATER POLLUTION: FARM WASTE"

Environmental pollution in the 1980s

AIM:

> to increase student awareness of pollution in the 1980s.

OBJECTIVES:

> to note the effect that the burning of fossil fuels in industry has on the environment

> to assess the advantages and disadvantages of pesticides

> to appreciate problems such as metal toxicity associated with sewage disposal

> to be aware of the problems associated with the disposal of hazardous waste

> to realise that nuclear power brings its own pollution problems

It is assumed that pupils are already aware of the meaning of terms such as resources, environment and pollutants. It is also assumed that students are already familiar with the Domesday System, in particular the use of chart data and mappable data sets. These are covered in the In-service Booklet and in Chapters 17 and 18 of the Domesday Video Disc User Guide.

The topic is aimed at pupils of average and above average ability in the 14 to 16 age range

To begin:

1 Select FIND from the menu bar, ACTION.

2 Type Environmental Pollution in the 'What do you want to know about?' box.

3 Select item 21 Text ENVIRONMENTAL POLLUTION, ACTION. Read the General Introduction. (It would be useful to take a print-out of this so that pupils can study it away from the computer.)

Atmospheric pollution

Read the section on atmospheric gases then answer the following questions.

> How is the increase in the concentrations of ozone and carbon dioxide contributing to a general increase in the earth's temperature?

> List the other gases contributing to this effect and state their origins.

> Why would stopping the use of aerosols and chemical refrigerants not bring about an immediate easing of the problem?

> What are the long term implications of a continuing increase in atmospheric gas pollution?

Select MAIN, ACTION to return to the menu.

Select item 46 Text AIR POLLUTION: CAUSES AND CONTROL, ACTION. Read, or print out, the article.

Select MAIN, ACTION. Return to FIND and type in exactly "SMOKE POLLUTION FROM COAL". Select TEXT from the menu bar, ACTION to find the source of this data set.

Using the information in the data set answer the following questions.

> Has the amount of pollution from coal combustion increased or decreased since 1965?

> What are the reasons for this increase/decrease?

Return to the menu by selecting MAIN, ACTION.

Type in exactly "AIR POLLUTION- COMPLAINTS".

In the box 'Type of Area' enter COUNTRY.

In the box 'Name of Area' enter ENGLAND.

Examine the map that is plotted.

Suggest reasons for the distribution of the areas with high levels of complaints.

Further work on atmospheric pollution could include:

"LEAD EMISSIONS FROM VEHICLES" (data)

"MOTORWAY TRAFFIC" (several data sets.)

"POLLUTANTS: ROAD VEHICLES"

Water pollution, including seas

In FIND type ENVIRONMENTAL POLLUTION,ACTION.
Select item 21, a text item on environmental pollution, and read the section on hazardous waste.
Return to the menu by selecting MAIN, ACTION.
Select item 10 Data CHEMICALS CARRIED BY RIVERS, ACTION. Examine the data set.

Return to the menu. Select item 22 Text FACTORY POLLUTES THE HUMBER, ACTION.

Do you think it is possible to stop the pollution and still keep the jobs provided by these factories?

Acid Rain

In item 21, ENVIRONMENTAL POLLUTION, read the section on acid rain.

> What are the main fuels used in Britain's power stations?
> What are the two main acids present in acid rain?
> What is the source of these acids?
> List the harmful effects of acid rain.
> Why are rivers and lakes in areas with thin soil covering most at risk?
> How can the problem of acid rain be controlled?

Select MAIN, ACTION to return to the menu. Read item 1 Text ACID RAINFALL ON UK WOODLANDS.

Return to the menu and select item 48 Data AVERAGE SULPHUR DIOXIDE LEVELS.

Noise pollution

From the menu select item 32 Map NOISE CONTROL : COMPLAINTS.

The 'Type of Area' is COUNTRY and the 'Name of Area' is ENGLAND.

> In which part of England were there most complaints?
> Can you think of a reason for this?

Return to the menu.

Select item 180 Data UK AIRCRAFT KILOMETRES FLOWN.

Replot from 1974 to 1984.

Does this help to explain increased noise pollution ?

Nuclear waste

Item 21 Text ENVIRONMENTAL POLLUTION read the section on nuclear waste.

To what extent is nuclear waste a major source of pollution?

Why is the re-processing of spent nuclear fuel not a total answer to nuclear pollution?

List the methods used for the disposal of nuclear waste.

Return to the menu by selecting MAIN, ACTION.

Examine items 146 to 152 Data RADIOACTIVITY and items 170 and 171 Data RADIOACTIVE WASTE.

What has happened to the SO_2 levels in the years between 1974 and 1981?

What would account for these changes?

Other topics which could be covered under the same heading include pesticides, metal toxicity and hazardous waste other than nuclear waste.

WEATHER

These lessons use the Domesday System as part of a topic on 'weather'. The duration of the topic would be up to the teacher to decide but the following aims, objectives, skills and concepts would be covered to some degree.

AIMS

to broaden pupils' understanding of different weather conditions

to develop an awareness of methods used to record weather conditions

to gain an understanding of the impact of extremes in weather conditions

to appreciate the importance of different weather conditions

to increase keyboard skills and machine familiarity

OBJECTIVES

After using the Domesday System for the topic on weather, pupils should:

know the effects of rain on people and the environment

be able to locate named areas on maps

be able to interpret text, diagrams, charts and maps

be able to record information in a systematic and logical manner

SKILLS

The following skills should be developed to some extent:

spoken language: through discussion and reporting to class or groups

written language: functional and personal

reading: structured analysis, context clues, comprehension, research and reference

map and graph work: reading graphs and maps, forming graphs and using scales

CONCEPTS

The basic concepts developed related to weather should be:

cause and consequence: effects of flooding on crops and housing

conservation: importance and distribution of rain

location: location of towns on maps

relationships: between rainfall and area

evidence: from photographs, interviews and text

PREPARATION

Class or group discussion could focus on the following topics for exploration:

why do areas of Britain have different amounts of rainfall?

why is rainfall not evenly divided over the twelve months of the year?

why are records of rainfall kept?

how are records kept?

what are the effects of weather on different groups of people?

Lessons on rainfall using the Domesday System

It is expected that teachers will have worked through the sections on data sets in the In-Service Resource Booklet before using the National Disc with pupils.

Rainfall maps 1

Several methods are used for recording rainfall. One is the forming of 'rain maps' with coloured sections of statistical data laid over a base map.

How to bring up the map of an area with overlaid rain data.

Start up the National Disc.

Select CONTENTS from the menu bar, ACTION.

Select 4, ENVIRONMENT, ACTION.

Select 2, CLIMATE, ACTION.

Select 4, Rain & Snow, ACTION.

Select 1, Rainfall 1, ACTION.

Select 1, ACTION (a Map of Britain appears).

Type COUNTY in the 'Type of Area' box, ACTION.

Type Strathclyde in the 'Name of Area' box, ACTION

A map appears with Grid Ref. (0041 0557   0361 0777)

Then you are given the prompt 'select MAIN for data map'. Select MAIN, ACTION and the data for rainfall appear over the selected map area.

Discussion Questions

To find out what the coloured areas in the maps refer to select KEY, ACTION.

Select TEXT, ACTION to find which unit is used to measure the rainfall.

Select MAIN, ACTION to find which colour represents the highest amount of rainfall.

What colour is used to show rainfall for Edinburgh.

Select TITLE, ACTION to find what time of year this map represents.

Rainfall maps 2

We have looked at a rainfall data map of an area. Let's see if there are any other maps of the same area, but for different times of the year.

To bring up the next map, select MAIN, ACTION.

Type 'Y' for Yes in answer to the screen prompt.

A list of choices appears.

'1' gives the map you have already studied.

'2' and '3' will give the same area for different times of the year.

SCALE MAP WORK

Find out the meaning of the symbols < > at the ends of the key.

Find out how many millimetres of rainfall fell on each of these places during April–June 1978-81:

Glasgow
Dundee
Ayr
Edinburgh

Now find the rainfall for the same places during January–March 1978-81 and July–September 1978-81.

Complete the following table with your answers

	April/Jan	Jan/Mar	Jul/Sep
Glasgow			
Dundee			
Ayr			
Edinburgh			

By looking at your table determine what time of year is the wettest in each town.

AVERAGES

You will need your completed table from 'scale mapwork' to do this worksheet on averages.

Your table should show the rainfall is different for different times of the year. Imagine that all the rain was evenly divided over the year. Discuss how you could find the amount of rain which would fall in each month.

(REMEMBER that your table does not show a complete year)

Add a new column to include the average rainfall for each of the towns.

Which town would you like to stay in if you don't like rain?

Floods

From your mathematics work you will have seen that rain falls in different quantities depending on the time of year. What happens when we get unusually heavy rain for a long time?

Let's look at some pictures of the effects of very heavy rainfall.

To do this

Select the National Disc. Select FIND, ACTION.

Type FLOOD, ACTION.

Select 1, ACTION .

Select INDEX, ACTION .

A list of the pictures in this set appears.

Numbers 4 and 5 are the relevant pictures.

To see picture 4 select 4, ACTION. The picture appears.

To see picture 5 move the arrow to the right of the screen, CHANGE.

To go back to 4 move the arrow to the left, CHANGE.

What kinds of areas are shown in these pictures?

Make a list of all the problems that the people who live in these two areas will have during the flood, and also after the flood goes away.

Community Disc

A small town in England called Keynsham once had a very bad flood. After the flood was over one old lady gave an interview to some school children. Let's see her cottage and read what she had to say.

Follow these steps to bring up the picture and flood interview:

(REMEMBER to press ACTION after each instruction.)

Select the southern side of the Community Disc.

Select the south of England.

Select FIND. Highlight the box

'Map by Grid Reference'
and type in Grid Ref. 0364 0168 to bring up the map.

Select FIND. Highlight the box

 'Text and photos by Topic'

and type FLOOD. Choices appear.

Select item 1. A picture appears on screen.

Select TEXT from the menu bar.

Select item 7 to examine text on the interview with the flood victim.

Questions

What was the lady's name?

When did the floods take place?

How did the flood water go away?

Where did people go to escape the flood?

How did they clean the pound notes?

Why do you think one house was more affected than the others?

How has Keynsham changed since the flood?

Where could victims go to be safe from the water?

CREATIVE WRITING

You should now know quite a bit about rainfall and floods. You are going to get a chance to find out more about floods and how they affect peoples' lives. Let's look at the list of choices you have.

Follow these steps to obtain a list of titles about floods:

(REMEMBER to press ACTION after each instruction.)

> Select the southern side of the Community Disc.
>
> Select the south of England.
>
> Select FIND. Highlight the box
>
> 'Topic by photo or text'
>
> and type FLOOD.

Now pick one of these subjects which you think will interest you, and in your own words write out a report for your weather folder, and also for reading to the rest of your class.

TEACHERS' NOTE

At this stage the pupil will have 100 choices with only 32% of the search completed.

To look through all the choices, move the arrow to the right of the screen and press CHANGE. Do the reverse to go back through the titles.

This process gives nearly 300 choices. You may not want it to be so large, so you could restrict the choice to page 1. This exercise is devised to give the pupils a free choice to refer and report to their classmates about some aspect of flooding which they find interesting. Likewise it would give the teacher a choice of texts for making work cards to develop the pupils' skills in literal and inferential comprehension, and reference work.

SURROGATE WALKS

Item 1 A Countryside Walk

Under this title we find one of the most exciting facilities on the system, the Surrogate Walk. We have the ability to walk outside and look around. Two walks have been set out at two different levels to take the children close to nature and encourage them to OBSERVE and RECORD the environment.

WALK 1   The children are encouraged to move quickly to their destination taking in a few details as they go and referring to a plan noting their progress.

WALK 2   During this walk the children have to observe their surroundings more closely and answer questions. They are directed off the track in different directions realizing the full potential of surrogate walks.

WALK 3   A third walk without limitations should be allowed so that children have the opportunity to explore the 'countryside' as they wish.

Activity 3

Do you expect to see many houses?

How would you dress for your walk?

Looking at the opening frame describe the weather.

Do you expect to see any farms?

Do you think wild flowers would grow here?

Return to the title picture, arrow to right, CHANGE

"A Scottish Wilderness"

At this stage you will find it useful to refer to a demonstration on how to use the SURROGATE WALK.

Go to HELP on the menu bar, ACTION.

Select DEMO on the menu bar, ACTION.

During the Demo you may pause at any time by selecting PAUSE on the menu bar, ACTION.

Select EXIT to return to your walk, ACTION.

Before starting out on your walk you need the help of the plan. Select PLAN on the menu bar, ACTION.

Examine the key on the right of the plan.

The blue arrow will always show your position and the direction you are facing.

As you move its position on the plan will also change.

You can always find your location by calling up the PLAN. Your target is the loch (lake).

To return to the walk, select MAIN on the menu bar, ACTION.

Find your way to the loch collecting points as you go.
Refer to the PLAN frequently to check your position.

	TARGETS	**Points awarded (maximum 10)**
1.	Find a spyglass. Enter. Look at two pictures	
2	Turn left or right to move on to the track Select PLAN to help you	
3.	Cross bridge A. Check PLAN to ensure you cross the right bridge.	
4.	Walk through an open gate	
5.	Find some pylons	
6.	Cross bridge C. The one with stone walls.	
7	Find the loch.	
8.	Arrive at the dry stone wall.	
9.	Move to the water's edge	
10.	Return to your starting point.	

Scores: 100 points **Well done !** You have an excellent
sense of direction.
70-90 points **Quite Good.** Keep your eyes open.

0-60 points. **Never go out alone.**
You will probably get lost!

WALK 2

During this walk you have to undertake a number of activities which will familiarise you with the countryside.

Begin on the track.

Turn on the spot.

Find a spyglass among the trees.

ENTER.

Activity 1

Are the trees CONIFEROUS or DECIDUOUS?

Make a sketch of one of the branches.

Return to the track.

Activity 2

Write down 3 words to describe the WEATHER as you prepare to set out on your journey.

LET'S GO!

Walk until you arrive at the first bridge.

Before crossing look around.

Find a spyglass in the river -

ENTER.

Activity 3

From the 4 pictures suggest 2 adjectives or short phrases which describe the river at this point.

Return to the track and continue your walk.

As you walk along enter each spyglass to give you a closer look at the countryside.

STOP when the gate comes in view.

Take one step **BACK** (use Menu Bar and ACTION).

Consult your **PLAN**.

You have now reached the second Bridge.

Return to the track. Move around on this spot. Find a spyglass in the stream.

ENTER.

Now you can view 18 photographs.

The first few show you the river.

Activity 4

Name a main difference between this view and the earlier view of the river in Activity 2.

The remaining photographs take you up the hillside.

Find a photograph of a distant bridge.

Activity 5

1. Make your own map of the route to the loch.

2. Is this the first, second, or third bridge on the walk to the loch?

3. Colour in the track.

4. Find two pylons and draw them on your map.

5. Which of the two plantations is the younger?

Return to the track and continue your journey to the loch.

STOP on the third bridge and turn to the left.

Activity 6

Take a walk along the stream until you can go no further.

Turn around and walk back towards the bridge.

Sketch a side view of the bridge.

Activity 7

Back on the bridge you will find two spyglasses.

Enter each in turn.

What do you find?

Return to the track and continue your journey until you arrive at the loch and can go no further.

Activity 8

The weather has changed!

You need 3 new adjectives to describe it.

Turn left until you see the stone wall.

Go forwards until you arrive at the water's edge and can go no further.

Look around and find a spyglass.

ENTER.

Activity 9

Is this tree CONIFEROUS or DECIDUOUS?

Draw its leaf shape.

Name this tree.

Return to the track.

Begin your journey back to the starting point. Notice how the weather changes as your journey progresses.

After passing through the gates and near the end of your journey you will find a spyglass on the left of the track.

ENTER.

Activity 10

What have you found?

Draw the pattern on its back.

Later you can find out the name of this particular species.

Complete your journey.

FORESTS IN SCOTLAND

A vast amount of information can be now found relating to 'The Countryside'.

Concentrating on the planting of coniferous trees, as clearly seen in the Surrogate Walk, we can now involve the class in follow up activities.

Using FIND type

CONIFEROUS, FOREST, WOODLAND

and select

Item 1   Coniferous Trees (Picture set)

In this picture set the pupils can look at different types of coniferous trees and see if they can find out more about the Sitka or Silver Spruce which they observed on their 'WALK'. Use of the CAPTIONS and DESCRIPTIONS on the menu bar will provide valuable information.

Item 17   State of Semi Natural Woodland (Text)

From page 3 onwards we find a simplified history of woodland. The teacher may select as much or as little of the 27 pages as he/she wishes. Print-outs of the text are extremely useful so that the system is not being used by only one or two pupils for a long period of time.

Item 3   Forestry in Great Britain (Picture Set)

This set of pictures clearly depicts the life of a tree from 'Seedling to Sawmill'. It also contains many interesting points about 'tree life', outlining not only the life of a tree but also the hazards which prevent tree growth. Many of the pictures could promote interesting class discussion when directed and encouraged by the teacher.

A short quiz or worksheet would also encourage pupils to view the picture set thoughtfully.

Item 13   DATA Coniferous Forest in Scotland

In this section there is a wide variety of graphical material. This worksheet attempts to help the teacher in the use of 4 main types of charts: bar, pie, back-back and loop.

CONIFEROUS FORESTS IN SCOTLAND

Look at the BAR CHART on the screen, move arrow
to 'A = 1971 - 1980', CHANGE

Activity 1

(1) Find out what A to J stand for.

(2) What is the total sum of hectares surveyed
(see Data Sum)

Place arrow on Bar A, ACTION

Activity 2

(1) Read from the top of the screen how many
hectares are in A.

(2) How many hectares are represented in B to J?

(3) Are coniferous forests increasing or decreasing in
Scotland?

To replot the bar chart to a pie chart, move arrow on
to the words 'Bar Chart' in the key, CHANGE
Repeat until 'Pie Chart' appears.
Move arrow to REPLOT on menu bar, ACTION

Activity 3

(1) Which years are represented in white?

(2) How many hectares were planted during the years
1941 - 1950?

(arrow to D, ACTION)

You can discover different categories within the variables by placing the arrow on the word 'All' in the key, CHANGE. Repeated presses will give you all the possible categories. Now you can replot your graph as in Activity 4.

Change Chart Type to 'Bar Chart'

Activity 4

Leave OWNERSHIP at ALL

Arrow to ALL under 'Scottish R', CHANGE. Select WEST SCOT, select REPLOT, ACTION.

1 Examine the new chart carefully. You can now examine other regions. Arrow to WEST SCOT in key, CHANGE. Select NORTH SCO, select REPLOT, ACTION.

2 What obvious differences have you noted between north and west Scotland displayed on the bar charts.

Place the arrow on the vertical scale and press CHANGE for a suitable scale for north Scotland data.

You can also change the variable which is now at PLANTING YEAR along the horizontal axis.

Place arrow on SCOTTISH R. in the key, CHANGE. Select REPLOT, ACTION.

The chart is now plotted under SCOTTISH REGIONS.

Activity 5

1 What do A,B,C,D now stand for?

2 Which area has the greatest area of trees?

How many hectares?

Change the variable from SCOTTISH R to
OWNERSHIP using the same procedure.

Arrow on to OWNERSHIP, CHANGE

Activity 6

1 How many hectares are dedicated woodland?

To use back - back chart move arrow to Chart Type
and select Back - Back.

Choose two variables

1 Arrow on to SCOTTISH R, CHANGE

2 Arrow onto OWNERSHIP, CHANGE

Select REPLOT, ACTION

Activity 7

1 Who owns the most forest in each area?

2 Which region of Scotland has the fewest hectares of
coniferous woodland?

To use a Loop Bar Chart choose Loop Bar under Chart
Type.

Select 2 variables

1 Arrow to SCOTTISH R, CHANGE.

2 Arrow to PLANTING Y, CHANGE.

Select REPLOT on menu bar, ACTION.

Activity 8

Watch the charts carefully and you will see each being replotted as the years change in the key.

Any bar chart can be rescaled at any time by placing the arrow to the left of the vertical axis, CHANGE.

To return to the original index select MAIN on menu bar, ACTION.

There are many arguments for and against the planting of coniferous trees. A study of the following items will give the pupils a broader outlook on the subject and they should be encouraged to make their own comments perhaps culminating in a debate.

Type TREES, BIRDS in the 'What do you want to know about?' box.

Item 6 (Text) Trees put Rare Birds at Risk

In this item of text the case against conifer planting is very strong. Pupils should be asked to list the arguments for and against conifer planting.

Further unrestricted use of the discs can be encouraged if time permits e.g.

1 Look up the different types of birds mentioned, merlin, greenshank, widgeon, red-throated, black-throated divers etc.

Additional work can be carried out from reference books or from the disc by using FIND. Type in names of birds i.e. MERLIN, DIVERS.

2 What is the R.S.P.B.?

3 What are Natural Forests? (see item 17. from 'Coniferous, Forest, Woodland' search.)

4 Find the threatened area of Sutherland and Caithness (Scotland) on the northern side of the Community Disc.

Using FIND type the name.

The above point of view is supported further in the next extract from the National Disc.

Select FIND from menu bar, ACTION. Type MOUNTAIN, MOORLAND, CONSERVATION in the 'What do you want to know about?' box.

Item 6   (Text) **Planting Conifers and Conifers**

Read pages 2 - 4: disadvantages of planting coniferous forests.

Type CONIFERS, EAGLES, PINE FORESTS in the 'What do you want to know about?' box.

Item 10   **(Text) Conifers for Golden Eagles**
Arguments for and against conifer planting.
What are they?

The area Creag Meagaidh is on the Community Disc.

Item 12   (Text) **Felling of Ancient Pine Forests**

On page 2 we read about what is being threatened in Abernethy Forest. This forest can be found on the Community Disc.

Review the varied opinions expressed in the items above. There appears to be a conflict of interests namely:

1 Places where planting forests is opposed
2 Places where felling of forests is opposed.

The pupils with their background knowledge of the subject should be able to debate these theories.

CATTLE PRODUCTION

The United Kingdom and the other EEC countries produce large food surpluses, including those of beef and dairy products. Many believe that these surpluses should be reduced, but there is little agreement about acceptable ways of cutting down on food production. This project looks at various aspects of cattle production, from live stock and the ways they are kept, to people's opinions about farming subsidies. It uses pictures, text, mappable and chart data sets to encourage exploration of links between food production and cattle farming in this example and other topics.

To introduce the project and to highlight some of the less obvious links, students may be asked to write down all the possible linkages which they associate with the topic, before using the National Disc. They may then compare the initial linkages with ones made through their work with the National Disc.

Topic diagram

The topic diagram , figure 3, illustrates one group of links only. Students should be encouraged to explore further linkages leading in other directions. The words shown in boxes on the diagram are keywords to be used with FIND. Where quotation marks are printed, these marks and the words they enclose should be typed in exactly as they appear. This allows direct access to the item of the same name on the videodisc. The numbers on the diagram refer to the menu item number.
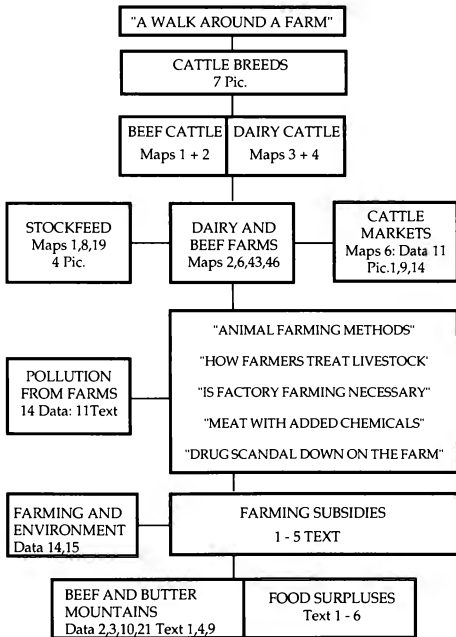
```
                    ┌─────────────────────────────┐
                    │  "A WALK AROUND A FARM"      │
                    └─────────────────────────────┘
                    ┌─────────────────────────────┐
                    │     CATTLE BREEDS            │
                    │        7 Pic.               │
                    └─────────────────────────────┘
                 ┌──────────────┬──────────────┐
                 │ BEEF CATTLE  │ DAIRY CATTLE │
                 │ Maps 1 + 2   │ Maps 3 + 4   │
                 └──────────────┴──────────────┘
```

STOCKFEED	DAIRY AND	CATTLE
Maps 1,8,19	BEEF FARMS	MARKETS
4 Pic.	Maps 2,6,43,46	Maps 6: Data 11
		Pic.1,9,14

"ANIMAL FARMING METHODS"

"HOW FARMERS TREAT LIVESTOCK'

POLLUTION   "IS FACTORY FARMING NECESSARY"
FROM FARMS
14 Data: 11Text   "MEAT WITH ADDED CHEMICALS"

"DRUG SCANDAL DOWN ON THE FARM"

FARMING AND	FARMING SUBSIDIES
ENVIRONMENT	1 - 5 TEXT
Data 14,15	

BEEF AND BUTTER	FOOD SURPLUSES
MOUNTAINS	Text 1 - 6
Data 2,3,10,21 Text 1,4,9	

Figure 3. CATTLE PRODUCTION

Techniques for accessing information on the videodiscs and manipulating mappable and chart data displays are not described in detail in this topic. These techniques are fully described elsewhere in this and other resource booklets.

A walk around a farm

Begin by accessing "A walk around a farm" using FIND. When you arrive start by reading the brief description to the left of the first picture. Then walk around the farmyard and fields making a note of the different crops, livestock and activities that can be seen. Are these the sorts of things that you expected, or are some of them different from what you thought you would find? Refer to the Scottish Wilderness Walk in this booklet for activity suggestions.

Now move back to the main farmyard and take a second walk. This time look at the cow sheds and milking parlour in detail. This farm was photographed during the summer when the cattle are mostly kept grazing in the fields. In the winter the cattle are kept almost continuously under cover in the cowsheds. Compare the work of a farmer keeping cattle between winter and summer.

As you look around the cowsheds find some of the details revealed in the magnifying glasses. List the different tasks that keeping cattle involves and the skills required for doing the various tasks.

Now move on to the other links in the diagram. Start by selecting a picture set of cattle breeds to identify the cattle breeds kept on the farm just visited. List the various beef and cattle breeds and those that are dual purpose.

Mappable data sets

Use the FIND facility and after typing in the keywords BEEF CATTLE select item 2 BEEF COWS & HEIFERS: E&W. Follow the procedure below to compare beef cattle production in 1983 with 1972.

Select an area for displaying data

Area type COUNTY, ACTION

Name DEVON, ACTION

Select MAIN, ACTION to get data plotted over the map. Select KEY, ACTION to reveal the colour coded key at the top of the screen.

Move arrow into the colour coded key at top of screen, CHANGE to give the units. Press CHANGE to get key back.

Select TEXT, ACTION. Page through using CHANGE. Select MAIN, ACTION to return to the map.

Optional activities:

Use ANALYSE to reclassify the variable class intervals.

Use MANUAL to find all the squares with values of more than x and less than y for the variable.

Use RETRIEVE, then reclassify with MANUAL to find the square(s) with the highest value for the variable.

Select COMPARE, ACTION then CORRELATE, ACTION.

Type in box at top of screen

NAME: BEEF CATTLE 1972: GB

then press ACTION.

Messages appear (Loading first data set, removing missing values, ranking first data set). Then the procedure is repeated for the second data set, a message appears 'correlating' and gives a correlation value. CORRELATION: 0.677 (395 DATA POINTS)

For an explanation of correlation refer to the Mathematics Resource Booklet. To summarise for this particular example, the correlation illustrates that areas which had high numbers of beef cattle in 1983 also had high numbers in 1972. Similarly, areas that had low numbers in 1983 also had low numbers in 1972. This suggests that the overall distribution of beef cattle has not changed significantly between 1972 and 1983. However, the actual numbers of beef cattle may have changed since the correlation only refers to a relative ranking and not total numbers.

Extension activity:

FIND

DAIRY CATTLE

4 MAPS DAIRY COWS & HEIFERS: E&W

COMPARE, ACTION

CORRELATE, ACTION

NAME: DAIRY CATTLE 1972: GB

Referring to the topic diagrams for keywords and data sets you can make comparisons between maps of beef and dairy cattle.

Find out which areas have the highest numbers of beef cattle, and which areas have the highest numbers of dairy cattle. To do this it is useful to place a sheet of tracing paper on to the monitor screen, and to draw around the outline of the main area where cattle density is high.

REMEMBER that you can use ANALYSE and CLASS to alter the class intervals displayed on the map. You may need class intervals to make sensible comparisons between different maps of distributions in the area chosen.

Additional data sets

Look at the distribution of beef and dairy farms, and of crops grown for stockfeed. There are many opportunities for further work with maps containing different information on livestock farming. The following data may be useful in opening up other directions for work on this topic. Use FIND and type in exactly, including the quote marks, each of the following file names. Press ACTION after entering each item.

"AGRICULTURAL CLASSES 1-3: GB"

"FARMS, CROPS & GRASS>20<30HA : E&W"

"FARMS, CROP & GRASS>200<300HA : E&W"

"FARMS WITH 1-99 SMDS : E&W"

"FARMS WITH 500-999 SMDS : E&W"

"AGRICULTURAL WORKERS"

"OCCUPATION GROUP : FARMERS 1"

"OCCUPATION GROUP : FARMERS 2"

A large amount of data is available on employment in agriculture and related industries.

Agricultural markets are an important part of the cattle industry. Find out where cattle markets are located in the area you are studying. You may also see what some of these markets look like in the picture set. The chart data display provides information about markets too.

Livestock and subsidies

Find out some more information about the way livestock are kept on farms. Look up text about the way farmers treat livestock, and also items on factory farming and the use of chemicals and hormones in meat production. Consider the arguments for and against keeping livestock in intensive production units.

Intensive farming methods can have various effects on the environment. One of these is pollution. Read the text items on pollution from farms and look up items showing the frequency of pollution incidents from farms, as a chart display.

British and EEC farming subsidies form part of the EEC's Common Agricultural Policy. Find out about these subsidies and their effects by reading some of the text items. Do these items suggest that farm subsidies need cutting? Obtain information about the quantities of meat and dairy products produced by livestock farming in Britain. Look up the chart displays associated with the keywords BEEF and BUTTER MOUNTAINS, text items about BEEF AND DAIRY PRODUCTION, and items on FOOD SURPLUSES.

Reducing cattle production

You have now found out some information about beef and dairy production and the problems of farming. Think about some of the issues involved in cattle farming, and prepare a debate between different positions. What are the advantages of present levels of production, and who might suggest that present levels should be maintained?

Consider the implications of reducing cattle production. Many policies for reducing food production have been proposed which include:

> reducing all herds by the same number of cattle
>
> reducing all herds by the same percentage
>
> taking some farms with small herds out of production
>
> taking some farms with large herds out of production
>
> using less intensive farming methods

For further work you may use data on the videodisc to investigate the implications of different policies to reduce production. Consider what effects these might have on the links you have examined and on employment in farming.

> Would farms be affected equally irrespective of size?
>
> How might each of the policies affect the distribution of beef and dairy cattle and farms in future years?
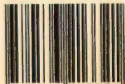
Organise a class discussion on the implications of reduced cattle production with different groups investigating the effects this might have on separate links and presenting results using diagrams and maps. The class may then be asked to link the different results together into one report.

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