The Physical and Cultural Limits to Economic Growth. Instructional Activities Series.

National Council for Geographic Education.

IA/E-10

75

6p.; For related documents, see ED 096 235 and SO 009 140-167

NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($0.50, elementary set $6.25)

MP-$0.83 Plus Postage. HC Not Available from EDRS.

*Agricultural Occupations; *Economic Education; Elementary Education; Field Studies; Geography; *Geography Instruction; Inquiry Training; Intermediate Grades; *Learning Activities; Maps; Social Studies; Teacher Developed Materials

**ABSTRACT**

This unit, one in a set of elementary teacher-developed geography materials, is based on "Geographic Sample Study" and "Teacher's Manual for Geographic Sample Study" from the Research and Development Center for Teacher Education, Austin, Texas. Intended for intermediate-level students, the inquiry-oriented case study unit on economic growth involves choosing between being a farmer or being a rancher. The major objectives are to stimulate inquiry processes of geographic field study and to provide an experiential framework for learning geographic concepts. A definition of the Sample Study, an overview of topics, examples of one topic, a map activity, and a chart activity are provided. See SO 009 140 for a general description and explanation of the elementary and secondary units comprising this series. (ND)
THE PHYSICAL AND CULTURAL LIMITS TO ECONOMIC GROWTH

by

Leon R. De King
Department of Education
Texas A&M University
Laredo, Texas

why be a rancher? Would you rather be a farmer or a rancher? An intermediate level class can use Geographic Sample Study materials to develop answers to these questions. Included are pages 2, 5, 26, 53, and 56 from Teacher's Manual for Geographic Sample Study and Geographic Sample Study (Sources 14 and 43) by de Leeuw, Gary J., and De King, Leon R.: The Research and Development Center for Teacher Education, 1970, Austin, Texas.

Definition of Sample Study

The sample study is an inquiry-oriented, case study technique for teaching geography of which the following is true:

1) the primary responsibilities of the teacher are to present the pupils with materials that depict a small region and to ask questions to stimulate pupil discovery.

2) the essential character of classroom materials is non-expository.

Expository materials and expository teaching strategies attempt to elucidate and interpret information for the learner. Conclusions are presented to the learner in predigested form. When exposition is at its best the writer or teacher conveys precise meanings in an efficient manner. Non-expository teaching methods and materials are constructed to maximize the extent to which the learner constructs meanings for himself.

3) the major objectives of sample study teaching are to stimulate in the classroom the inquiry processes of geographic field study, and to provide a framework of concrete experiences for geographic concepts.

In a typical sample study the teacher presents maps, photographs, charts, graphs, accounts of interviews and other geographic source materials that together depict small areas, such as mixed farms, ranches, pulp mill towns, mountain villages, or city neighborhoods. The teacher raises questions to help pupils interpret the materials, generate hypotheses, and confirm conclusions. One of the instructional goals of the
sample study technique is to help pupils generalize about human activities and physical processes in wider areas, like ranching regions or city slums. The sample study technique is to help pupils develop skills, conceptions, and values of geographic inquiry.

**Topic E**

**Overview**

This topic is addressed to the understanding that ranching is a less productive land adaptation form than farming and generally occurs in areas where one or more physical conditions effectively eliminate farming as an alternative. The activities included in this topic's three encounters use and extend pupil's hypothesizing and evaluating skills. Map, chart reading and interpreting skills are also exercised and extended.

**Encounter 1**

Objectives: Pupils will be able to:
- A. Read map symbols.
- B. Infer that mapped ranch is on rougher terrain than the farm.

Materials:
Source 14 (Map of an American Ranch and an American Farm)

**Encounter 2**

Objectives: Pupils will be able to:
- A. Interpret chart symbols.
- B. Associate ranch and farm maps to ranch and farm production charts.
- C. State that farms are more productive than ranches of comparable size.
- D. Hypothesize that most ranchers would be farmers if they could.

Materials:
Source 14 (An American Ranch and An American Farm)
Source 43 (A Comparison of One Year's Production On a Ranch and a Farm)
<table>
<thead>
<tr>
<th>TOPIC A</th>
<th>Introduction to Sample Study</th>
<th>Questions: Who are the Williams' family? Where do they live?</th>
<th>Time: 1 - 2 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three encounters involving pupil interpretation of introductory booklet</td>
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<tr>
<td>TOPIC B</td>
<td>Extending Concept of Ranching I</td>
<td>Question: How does Mr. Williams earn a living?</td>
<td>Time: 1/2 - 1 hour</td>
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<tr>
<td></td>
<td>One encounter involving pupil interpretation of photographs, maps, and charts</td>
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<tr>
<td>TOPIC C</td>
<td>Studying Ranch Resources</td>
<td>Question: What is the Williams' Ranch like?</td>
<td>Time: 3 - 4 hours</td>
</tr>
<tr>
<td></td>
<td>Three encounters involving pupil interpretation of multiple sources and construction of a display</td>
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<tr>
<td>TOPIC D</td>
<td>Locating the Sample Area</td>
<td>Question: Where in Texas is the Williams' Ranch?</td>
<td>Time: 1/2 - hour</td>
</tr>
<tr>
<td></td>
<td>One encounter involving reading and interpreting road map and small scale wall map</td>
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<tr>
<td>TOPIC E</td>
<td>Extending Concept of Ranching II</td>
<td>Question: Why is the Williams' land used for ranching?</td>
<td>Time: 1 - 2 hours</td>
</tr>
<tr>
<td></td>
<td>Three encounters involving interpretation of photographs, maps, and charts</td>
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<tr>
<td>TOPIC F</td>
<td>Studying Impact of Modern Technology</td>
<td>Question: What is work on the ranch like?</td>
<td>Time: 2 - 3 hours</td>
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<tr>
<td></td>
<td>Three encounters involving interpretation of photographic slides and movies</td>
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<tr>
<td>TOPIC G</td>
<td>Studying Changing Ranch Resources</td>
<td>Question: How has the ranch changed?</td>
<td>Time: 1 hour</td>
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<tr>
<td></td>
<td>One encounter involving interpretation of photographs and maps</td>
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<tr>
<td>TOPIC H</td>
<td>Extending Concept of Resource Conservation</td>
<td>Question: How are ranch resources conserved?</td>
<td>Time: 1 - 2 hours</td>
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<td></td>
<td>Three encounters involving interpretation of tape recording and photographs</td>
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<tr>
<td>TOPIC I</td>
<td>Studying Future Land Use</td>
<td>Question: What might the Williams' ranch be like in the future?</td>
<td>Time: 1 - 2 hours</td>
</tr>
<tr>
<td></td>
<td>Two encounters involving interpretation of maps, photographs and tape recordings</td>
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</tbody>
</table>
Source 14

The uppermost of these two maps shows a grain and cattle farm in North Dakota. The lower map shows a cattle ranch in Colorado.

Questions:
1) Which is larger in area, the farm or the ranch?
2) Which one appears to be located on rough land?
3) Which probably receives the most precipitation (rain, sleet, snow)?
4) Which is mostly cultivated land?
5) Make an hypothesis to suggest which would produce the most food.

Source 43

The chart on this source compares the amount and kinds of food produced by a ranch and a farm in one year.

Questions:
1) Which produces more food in one year, the ranch or the farm?
2) If each truckload of grain will bring more money than several cattle, which produces more income, the farm or the ranch?
3) Which produces more food per acre, the farm or the ranch?
4) Suggest what might happen to many ranches if it somehow became possible to farm the ranch land.
A COMPARISON: ONE YEAR'S PRODUCTS ON A FARM AND A RANCH

<table>
<thead>
<tr>
<th>Farm</th>
<th>Ranch</th>
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<tbody>
<tr>
<td><strong>cattle</strong></td>
<td><strong>cattle</strong></td>
</tr>
<tr>
<td><img src="image1" alt="cattle" /> <img src="image2" alt="cattle" /> <img src="image3" alt="cattle" /> <img src="image4" alt="cattle" /> <img src="image5" alt="cattle" /> <img src="image6" alt="cattle" /> <img src="image7" alt="cattle" /> <img src="image8" alt="cattle" /> <img src="image9" alt="cattle" /> <img src="image10" alt="cattle" /></td>
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<tr>
<td><img src="image21" alt="grain" /> <img src="image22" alt="grain" /> <img src="image23" alt="grain" /> <img src="image24" alt="grain" /> <img src="image25" alt="grain" /> <img src="image26" alt="grain" /> <img src="image27" alt="grain" /> <img src="image28" alt="grain" /> <img src="image29" alt="grain" /> <img src="image30" alt="grain" /></td>
<td><img src="image31" alt="grain" /> <img src="image32" alt="grain" /> <img src="image33" alt="grain" /> <img src="image34" alt="grain" /> <img src="image35" alt="grain" /> <img src="image36" alt="grain" /> <img src="image37" alt="grain" /> <img src="image38" alt="grain" /> <img src="image39" alt="grain" /> <img src="image40" alt="grain" /></td>
</tr>
</tbody>
</table>

- **Farm**
  - 10 head of cattle.

- **Ranch**
  - 10 truckloads of grain.