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An Experiment in Fourth Grade Geography

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AN EXPERIMENT IN FOURTH GRADE GEOGRAPHY

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IDEAS of education are in the last stages of the great transition that has been in progress for a generation. We are on the threshold of "The Schools of Tomorrow" that have recently been depicted in the volume bearing this title. Geography, perhaps, more than any other subject, offers opportunity for the *natural* development of the mind, but we have been slow to recognize this. For a quarter of a century our colleges and normal schools have been creating a widespread interest in geography, but though this subject has an honored place in university faculties, and college professors have written text-books full of interesting geographical information, geography in the elementary school is still chiefly taught by memorizing instead of providing the child the chance for growth and discovery.

The following lessons represent an earnest effort in three schools to teach geography in the fourth grade according to the powers and needs of the child. These exercises have been given, not for the purpose of imparting a mass of information, but to equip the child with the tools of learning he will need in order to acquire such knowledge for himself.

The children come to the fourth grade with a general idea of the world and of the countries that furnish them with the necessities and luxuries of life. They have simple notions of the relations between climate, crops, and industries. They have been to the markets where their food is bought, and to the dock where ships from the other side of the globe come in. In the fourth grade their text-books are a good atlas and carefully chosen pictures, the sky and its phenomena, and the fields where they play. Geographical readers are their reference books. The Atlas with its colored maps and oddly ruled Index awakens the curiosity of every normal child. To use the book, however, it is necessary to learn its symbols; therefore the first of the following exercises are directed toward this end.

DIRECTION AND LOCATION

When the child first locates himself on a map or globe he asks countless questions about its various lines and symbols. Such questions determined the choice of *meridians* as the topic of the first lessons. In an outdoor lesson at noon the children compared the direction of their shadows with the compass line, and holding their rulers vertically drew on sheets of paper north-south

lines. Our local meridian was then drawn on the school room floor. The meaning of *meridian* was explained and it became the topic of an English lesson. The following sentences were dictated as a spelling lesson, after the difficult words had been studied:

DICTATION LESSON

My shadow at noon always falls on a meridian. At noon my shadow always points north. If I should walk north as far as I could I would reach the North Pole. If I should walk south as far as I could I would reach the South Pole.

After this, sun dials were made—two children working together. Four inch squares of heavy cardboard with upright pins were used in the construction, and the direction of the morning, noon, and afternoon shadows was drawn. We played simple games to test the ability of the children to face in any direction on the local meridian line.

"John may walk two steps north, two steps south, and one step east." If John performs successfully he may give a direction to another child.

GLOBE LESSON IN LONGITUDE

The naming of the local meridian led to simple lessons in longitude. The size of each (we called it its *waist measure*) was explained and the idea of *scale* and *degrees* taught from the globe. Degrees, minutes, and seconds were compared with hours, minutes, and seconds on the clock face. For purposes of rapid calculation we considered a mile as the distance of a minute of longitude. A map of New York City was placed on the floor so that two local meridians coincided, then the name of the New York meridian $73^{\circ} 59'$ was given. It interested the children to know that this line passed through our City Hall, and later, some of them, counting twenty-two blocks to a mile, estimated the exact location of the school in minutes of longitude. At this point the Atlas was presented for the first time and opened to the Mercator map. Stories of Mercator and the making of his map were told. When the meridian of Greenwich was found the children noticed how the meridians were numbered, and found where their meridian could be drawn on the map.

THE MARINER'S GAME

The next arithmetic lesson was given to the drawing of the parallels and meridians of a Mercator map. Sheets of lined paper were used, the blue lines being numbered as meridians thirty degrees apart, the edges of the sheet thus becoming 180° E. and W. The Equator and the parallels 30° and 60° N. and S. were drawn and the network called the streets and avenues of the ocean, for in the development of the idea of the division of the world in *East* and *West* we had used the plan of the naming of our own city streets for comparison. An enlarged copy of a Mercator map was drawn on the black board,

the Equator in red, the Prime Meridian in blue. A captain, first, second, and third mates were chosen, and three able-bodied seamen. The captain was provided with a paper ship drawn by one of the children.

The Play—

Captain: "First mate!"

First Mate: "Ay, ay, sir." (Gives naval salute).

Captain: "Place ship at 60 N. and 30 W." (Gives ship to mate).

If the first mate fails to place the ship quickly and correctly, he is deposed and the second mate takes his place and the game proceeds. This game was played at morning exercises arousing much interest and amusement. It can be varied as the ingenuity of the teacher and children may suggest.

MAP EXERCISES

The following exercise on the map of North America was worked out in class. Map 9 of Longman's Atlas was used and the children filled out the blanks on the mimeographed sheet.

Ex. I. *Meridians and Countries.* Map 9.

1. The one hundredth meridian passes through,
..... and
2. The eightieth meridian passes through and
.....
3. The fortieth parallel passes through
4. The sixtieth parallel passes through,
..... and
5. The meridian passes through the Panama Canal.

During these lessons easy problems were given in dividing 360 into halves and quarters and in calculating (one degree equals approximately sixty miles) the distance of places from the Equator, thus emphasizing the actual size of the earth.

Ex. II. *Meridians and Countries of North America.*

On an outline map of North America the meridians and parallels found in the first exercise were drawn in color. The name of each country crossed was also written on the map.

The Index.—The Index of Longman's Atlas is a valuable part of the book. To teach a child how to use it is to equip him with a ready means of obtaining much information for himself, and to acquaint him more thoroughly with the meaning of a map. Printed slips containing names of cities were given. These cities were chosen because of their location on or near a crossing of meridians and parallels. The children found the cities in the Index as

Ex. III. *Location of Cities—Use Index.*

In the next exercise the procedure above was reversed. These slips give the latitude and longitude of certain cities, and the pupils, turning to the map of the United States, found the cities at or near the crossings given, then wrote them on the slips, as follows:

40° 43' N.

In the next lesson the colors of the map were explained. Highland and lowland can be only relative terms to a fourth grade child, but if a beginning such as is suggested here is followed up a map will surely mean something more than a kaleidoscope of colors peppered over by dots and lines. The nearness of New York children to the shores of Long Island and New Jersey make the symbols for deep and shallow water easy to understand. For the explanation of sea-level there was our immediate environment to draw from, our own school being less than a hundred feet above that level, and the Palisades about three hundred feet. For higher regions there were many pictures and the children's own experiences to help us.

*Ex. V. *North America, Colors and Meaning.*

The ——— Ocean is shallow water.

The Atlantic Ocean is ——— water.

——— Bay is shallow water.

Gulf of ——— is deep water.

The ——— River flows through lowland.

The ——— River flows through highland.

New York City is situated on ———.

In an effort to make the meaning of a map still clearer, one or two lessons were given using large pictures of various land and water forms. These pictures (colored lithographs of the *Holzel Charakter Bilder* Series, E. Steiger and Co., New York) are a valuable aid to the teaching of geography in all grades, not only for this general work, but also for definite illustrations of well known localities and types of plant and animal life.

The first picture given to the children was that of a snow-capped mountain range. A stream with its tributary flowed down the slopes and on either side of the little river was a strip of farming land with evergreens fringing the river bank. Green meadows interspersed with rocky knolls climbed to meet the snow lines. A companion picture gave an extensive view of the Sierra Nevada Mountains, their forested slopes, a narrow stream far down in the valley, a cliff and waterfall in the foreground, a road following the stream, and various signs of habitation on the cleared slopes.

In the discussion of these pictures the following points were made: The mountains were high, the stream started far up on the mountain slopes (source), and in one case was fed by melting snows. The term *mountain range* was learned; a peak was found; the tributary traced to its mouth; the valley pointed out; a favorable site for the farmer's house selected, near enough the sheltering trees, but out of the way of spring floods. The farmer would keep cows and would make butter and cheese. In the narrow valley few people would live, there being few roads and no bridges, and very little farming land.

*See Leete's *Exercises in Geography*, Longmans Green & Co.

Then the map of the United States was examined for mountain ranges and peaks; the Sierra Nevadas were located, the source and mouth of a river, a river flowing in a narrow valley, the Colorado, a stream flowing in a broad valley, the Sacramento.

Another picture showed two mountain lakes fed by mountain streams, a lower lake being fed by the stream from the upper lake. From this picture we turned to the map again and found Lake Champlain between the mountain ranges, and the stream flowing from the lake into the St. Lawrence. We named the Great Lakes and their connecting bodies of water. Using in this way picture and map the following geographical features were discussed and their representative symbols on the map, as far as could be learned.

- A mountain range and peak
- A river, its source, mouth
- A valley, meadows where cattle can graze
- A stream fed by melting snows
- A good place for a farmer's house
- Land between two lakes
- River flowing out of a lake
- River connecting two lakes
- A narrow valley where few people live
- A broad valley where many people live
- A rocky coast, a sandy coast
- A bay, bold headlands.

Lighthouse, Capes and Peninsulas—

At this point we recalled the mariner and his Mercator map. Our sea-board children were ready with facts about the dangers to ships in approaching land in storm or fog. We searched our local map for lighthouses, light-ships, and buoys. We drew lighthouses, told stories about them, and made a collection of pictures to show how our government helps ships to keep out of danger. The map of North America was examined to find suitable places for lights and buoys. We examined folders of the Ward and Savannah S. S. Lines which show the majority of the lights on our eastern and southern coasts. Then the following exercise was given:

Ex. VI. *Lighthouse Capes.* Maps 9, 11.

<i>Cape</i>	<i>Ocean</i>	<i>Country or State</i>
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During the working out of this exercise the fact was noted that capes often mark the opening of a gulf or bay, that a river often empties into a bay, and further, that cities were frequently at or near the mouths of such rivers, or at the head of a bay. We traced many rivers from their sources to their mouths, found the symbols for the head of navigation, then made lists of rivers under the following headings:

Ex. VII. *Rivers and Bays.* Maps 11, 13.

<i>River</i>	<i>Gulf or Bay</i>	<i>City</i>	<i>Country</i>
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We did not lose track of world happenings while pursuing this scheme of work. On an outline map of the United States we colored each state that sent a food ship to Belgium, naming its seaport, if any, tracing route of ship, and locating ports at which they would touch. Then followed a few lessons which aimed to show in a simple way the influence of the surface of North America on its settlement.

HOW THE EXPLORERS ENTERED NORTH AMERICA

The following points were made, the history lessons for this grade being largely stories of the exploration and settlement of North America.

1. Hudson's expedition to the New World.

This involved the location of England, Amsterdam, Norway, Iceland, Greenland, Newfoundland, Chesapeake Bay, Delaware River, New York Bay, Hudson River, Albany, Hudson Bay.

2. De Soto's discovery of the Mississippi.

The earlier discoveries of Columbus and Vespucci were referred to, the Spanish sphere of exploration and settlement found, and De Soto's story told and his route traced.

3. The French in North America.

By means of the excellent large scale maps of north-eastern United States in the Atlas we traced the route of the French explorers and fur traders up the St. Lawrence and Great Lakes. The alluring hunt for the "Great River" was described, and the canoe trips of the French leaders from Green Bay across the portage of the Fox River to the Wisconsin and Mississippi were traced step by step on the map. The children learned that the French were not farmers and made little use of the fertile soil of the vast prairies which they discovered.

4. The pushing of the English across the Appalachians.

The settlement of the Dutch and English along the Hudson as far as the head of navigation at Albany was recalled; then we traced their path up the Mohawk along the Indian trail to Lakes Ontario and Erie. The hold of the English home-maker on the land was emphasized. This prepared the way for the study of the great farming country of the Middle West, this study beginning very properly with the activities centering about wheat.

Conclusion.—We are now in the second year of this experiment. We believe that we have broken away from a study of words to learning by doing. In English and History our pupils get most of their knowledge from the printed page, then reproduce it. Geography offers a rich opportunity to learn in a more natural way. We should be glad to know if other teachers think that the suggestions offered here hold possibilities for their pupils.