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The construction and validation of a social studies skills test for grade seven.

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BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Thesis

THE CONSTRUCTION AND VALIDATION OF A SOCIAL
STUDIES SKILLS TEST FOR GRADE SEVEN

Submitted by

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(B.S.Ed., Boston University School of Education, 1935)

In partial fulfillment of requirements for the
degree of Master of Education

1948

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CHAPTER I
THE PROBLEM

Definition of the problem.-- This study aims to construct and validate a test to measure skills in social studies at the seventh grade level. This particular grade level is an advantageous point for diagnosis since it is at the transition from the elementary grades to junior high school.

Justification of the problem.-- In the development of any social study program of understandings it is necessary to include tools for gathering facts. Wilson says,^{1/}

From one point of view the most important contribution that social studies instruction can make to civic competence lies not in the area of socially useful information per se, but in the area of concepts and ideas and understandings. It is assumed that such understandings, which arise primarily from the interpretation of 'raw information,' are useful to pupils as elements of good thinking and as criteria to be used in the analysis and evaluation of the social activities of existence.

The social studies attempt to give a picture of the initiation and development of the human activities of society. The study of geography is closely allied with

^{1/} Howard E. Wilson, Education for Citizenship. (New York: McGraw-Hill Book Company, 1938), p. 49.

that of social studies in that it supplies the framework for classifying and understanding the social world. Ability to use the geographic tools connected with all social studies should become one of the arts of an educated person. There is general recommendation for increased use, at all grade levels, for globes, maps of all kinds, and geographical charts and graphs with the related development of skills.^{1/}

Analysis of the problem.-- The results of the Iowa testing programs have shown conclusively that study skills are neglected in the present teaching instruction. Many schools wrongly assume that ability to understand terms and develop concepts may be acquired incidentally by the pupil. Other schools use one textbook for social studies and thus give pupils little opportunity to use indexes and tables of content, or to get practice in using encyclopedias and other references.^{2/}

Procedure of the problem.-- The first scientific procedure at the junior high school level is to find the

1/ National Council for the Social Studies, "The Social Studies Look Beyond the War," prepared by an Advisory Commission. National Council for the Social Studies, Washington, 1944, p. 26.

2/ Manual of General Information of Iowa Every Pupil Tests of Basic Skills, Boston: Houghton Mifflin Company, 1947, p. 4.

pupil's stock of skills. In this study the diagnosis consists of the writer's specialized tests in:

1. Terms and Concepts.
2. Reference Material.
3. Interpretations of Charts, Graphs and Tables.

Terms.-- Throughout this study "term" will refer to a word or expression used in a definite geographic or social study sense. In relation to the use of the word "concept" Bagley^{1/} states: "A concept, for our purposes, is simply a meaning. It may be general or particular in its reference..."

Stephenson^{2/} says:

Since obtaining a body of useful information is included among the major objectives of teaching the social studies, the pupil will need to cultivate skill in the use of most, if not all, of the special library aids which have been devised to facilitate the task of locating information.

Charts, graphs, and tables will refer respectively to maps, symbolic representations of geographic data and condensed summaries of facts.

Validation criteria in this study consist of the Iowa Every Pupil Test of Basic Skills, Advanced Battery, Form L,

^{1/} William Chandler Bagley, Educational Values, New York: The Macmillan Company, 1911, p. 35.

^{2/} Orlando W. Stephenson, "Implications of Individual Differences in Social Study Teaching," Social Education November, 1947, p. 299.

Grades 6-8 and Intelligence scores from the National Intelligence Test and the Otis Classification Part I. The data from the above tests were used in a correlation study to "furnish expressions of amount for the relationships of the variables, or factors found operating in the field of inquiry."¹/₂

It is the objective of this research to build an educational measuring instrument which will be valid and reliable for use at the seventh grade level. This measuring instrument is both achievement and inventory as to type. The writer hopes that it will provide definite standards of attainment and furnish bases for comparison in the area of social studies skills.

¹/₂ Frederick L. Whitney, The Elements of Research (New York: Prentice Hall, 1946) p. 390.

CHAPTER II
REVIEW OF RESEARCH

The results of recent research indicate that more scientific teaching of skills should be encouraged in the field of social studies. There is justification for this at all grade levels. A brief summary of that concerned with the junior high school level will be given.

Literature on social studies skills.-- Wrightstone and Campbell^{1/} consider

The years between the ages of seven and fifteen (elementary and junior high school) is the period during which the basic concepts in the social studies are most easily acquired. As experience accumulates, language develops, and mental age increases, the number and richness of concepts increase correspondingly.

Meltzer^{2/} found that the social concepts which appeared most frequently in books and periodical literature are poorly understood, not only in the elementary school but in high school as well.

^{1/} J. Wayne Wrightstone and Doak S. Campbell, Social Studies and the American Way of Life (New York: Row, Peterson and Company, 1942), p. 58.

^{2/} Hyman Meltzer, Children's Social Concepts: A Study of Their Nature and Development (New York: Bureau of Publications, Teachers College, Columbia University, 1925), p. 87.

Generally speaking, he found a steady development in children's conceptions from grade to grade.

Thorp^{1/} conducted an experimental study on the interpretative knowledge of pupils in grades four through eight in selected Rhode Island schools. She found a pronounced weakness of ability to do deductive reasoning from map study. Her experimental group made constant high scores thus showing that the skills related to map interpretations can be mastered.

Stapleton^{2/} compiled some 500 different map terms used in eight fifth grade geography tests. From her survey she deduced that 400 terms needed to be mastered by the elementary school pupil before maps could be correctly interpreted. From Stapleton's study one may deduct that an equally large number of map terms are a necessary prerequisite for junior high school pupils.

Forsyth has summarized the concensus of geographers' opinions when she says that^{3/}

Schools are failing to teach pupils certain fundamental skills. In one of these skills, map

1/Mary T. Thorp, Objective Studies Showing Need for Giving Instruction in Use of Geography Tools, unpublished Master's Thesis, Boston University (1932).

2/Mary Ellen Stapleton, Map Terms Used in Eight Fifth Grade Geography Texts, unpublished Master's Thesis, Boston University (1946).

3/Elaine Forsyth "Map Reading," Journal of Geography 42:249-257 October, 1944.

reading, achievement is far below what might reasonably be expected. These are three elements common to all maps: scale or the ratio which indicates the size of the map compared with the earth it represents; network, or the system of lines on which the map is laid out; and symbols, or those devices which are used to show distribution of natural or human features.

She has published a series of nine lessons for teaching simple concepts of map reading to children at the junior high school level. These lessons are based on scale, network, and symbols which are emphasized in the previous reference.^{1/}

Brooks^{2/} has prepared a workbook to give practice in reading and interpreting common map symbols through short graded drills. She has expertly developed the use of the flat map for developing concepts and relationships.

Thirty-seven different types of exercises are presented to help pupils grasp the mechanics of map reading and acquire the habit of map interpretation.

Dr. W. Linwood Chase^{3/} emphasizes the importance of understanding map symbols.

^{1/} Ibid., pp. 249-257.

^{2/} Winifred Brooks, Exercises in Map Interpretation, Service Paper, Boston University, (1946).

^{3/} W. Linwood Chase, "Wartime Social Studies in the Elementary Schools," National Council for the Social Studies, Curriculum Series, No. 3, Washington, (1943) p. 46.

In order to understand symbols children must realize that the map itself is not a real picture of the earth in miniature but a sort of glorified graph, greatly conventionalized, drawn upon a mathematical base, and that the map is made up entirely of symbols. The following are among the more important symbols:

- Boundary lines and coast lines.
 - Ocean usually blue.
 - Equator.
 - Railroads.
 - Dots for Cities.
 - Special symbols for capitals and sometimes seaports.
 - Shades of color for altitude.
 - Lines for parallels and meridians.
- Teachers should study the maps used by children to determine what other symbols should be taught.

Anderson^{1/} lists the necessary understandings for the pupil of social studies as follows:

1. Understanding the special vocabulary of the subject.
2. Understanding chronological relationships.
3. Understanding maps.
4. Understanding graphs and tables.

Literature on tests related to social studies skills.

-- The Iowa Every-Pupil Tests of Basic Skills, Advanced Battery,^{2/} were designed for grades six, seven, and eight and attempt to measure the pupil's ability in map reading, use of references, indexes, dictionaries and the interpretation of graphs, charts, and tables.

^{1/} Howard R. Anderson, (Editor); "The Measurement of Understanding in the Social Studies," Forty-Fifth Yearbook Part I, Bloomington, Illinois: The National Society for the Study of Education, (1946), p. 72.

^{2/} H.F. Spitzer, The Iowa Every-Pupil Tests of Basic Skills Work-Study Skills, Advanced Battery, Form L, Grades 6-8. (Boston: Houghton Mifflin Company, 1940).

This is a test of multiple-choice items and is comprehensive and applicable to social study skills.

Townsend and Willis^{1/} have formulated a test for social studies to measure (1) Facts, skills and applications, (2) Terms and concepts, (3) Comprehension and interpretation.

This test is well compiled and validated. It might not however, fit a specific course of study or test for a knowledge of particular skills as the writer wishes to do.

Kelty and Moore^{2/} devised a test to measure the understanding of concepts in the social studies. The concepts tested were presumably developed by elementary grade courses.

Tyler and Kimber^{3/} have compiled a Study-Skills Test of eight parts to measure the pupil's ability to look up references, recognize common abbreviations, interpret maps and graphs, and recognize the material available in modern periodicals.

1/ Agatha Townsend and Mary Willis, Cooperative Social Studies Test for Grades Seven, Eight, and Nine, (New York: Cooperative Test Service, 1941).

2/ Mary G. Kelty and Nelle E. Moore, Test of Concepts in the Social Studies, (New York: Charles Scribner and Sons, 1934).

3/ Henry T. Tyler and George C. Kimber, Tyler-Kimber Study Skills Test, (California, Stanford University Press, Stanford University, 1937).

The test is presumably designed to measure pupils in grades 9 through 16. In Test IV - a matching test for abbreviations - the items are fairly easy and might well be used below grade 9 level. Such items are "pl" for "plural," "par" for "paragraph," "vol" for "volume," "ch." for "chapter," and other similar items.

Wiedefeld and Walther^{1/} Geography Test for grades 4-8, Part I, subtest 3 - purport to measure study skills in the reading and interpreting of maps and graphs. The test covers most of the major geographic skills. This test might be given at the beginning of the year if the teacher wished to use a general test for finding pupils' abilities in this area. The writer advocates that a test designed by the teacher to fit classroom needs is the desirable achievement.

Summary.-- From the review of research in this chapter, there is a serious need for better understanding of:

1. Terms and Concepts.
2. Use of reference books.
3. Interpretations of charts, graphs and maps.

^{1/} N. Theresa Wiedefeld and E. Curt Walther, Wiedefeld-Walther Geography Test, Grades 4-8 (New York: World Book Company, 1931).

With this in mind the writer attempted to design a test to measure those skills. The test is primarily useful at the seventh grade level.

CHAPTER III

PROCEDURE OF THE STUDY

Research revealed that no test adequately fitted the writer's teaching needs, hence the purpose of building one. The pencil and paper test presented in this thesis aims to measure definite working skills which the pupil has presumably gained from varied social study stimuli. All terms and concepts have geographic or social study connections.

The planning of the study.-- After the need for a skill's test had been realized the first step was a review of literature pertinent to the subject. The second step involved the identification of the skills to be measured. In the Social Studies Skills Test there are:

Part I - Terms and Concepts

Part II - Use of Reference Books

Part III - Interpretations of Charts, Graphs, and
Maps.

The third step involved the editing of the items. After a careful review of research literature it was decided to use a variety of items. Part I contains 86 true-false items. Part II contains 32 multiple-choice items.

Part III contains 12 completion and 20 multiple-choice items, thus making a total of 150 items.

The test was then taken by ten teachers in the field; eight on the junior high level, one sixth grade teacher and one tenth grade teacher. Over a 90 per cent agreement was realized on all answers to the test. Eight items were re-edited to conform with suggestions made by the teachers. The fourth step involved the administration of the tests and their statistical treatment.

Basis for editing items.-- The selection and order of the test items are based upon the deductions and opinions of important researchers in the field of social studies. In order to round out material previously offered in the elementary grades and to lead up to the senior high school program it seemed desirable to depart from the traditional program and place specific emphasis on the development of skills.

The terms used in the test were based upon the writer's knowledge of terms necessary in coping with junior high school social study material as well as other prescribed terms such as those suggested by Phillips^{1/} in her course in global geography. They are as follows:

1/ Mary Viola Phillips "For Course in Global Geography Offered at the New Kensington High School"; Unit I, The Journal of Geography, 44:324-332, November, 1945.

- | | |
|--------------------|-----------------------------|
| 1. universe | 18. solar |
| 2. environment | 19. latitude |
| 3. geography | 20. longitude |
| 4. global | 21. gnomonic |
| 5. sphere | 22. mercator |
| 6. spheroid | 23. polyconic |
| 7. hemisphere | 24. orbit |
| 8. planet | 25. nautical |
| 9. diameter | 26. projection |
| 10. circumference | 27. conformal |
| 11. magnetic | 28. International Date Line |
| 12. axis | 29. Tropic of Cancer |
| 13. topography | 30. Tropic of Capricorn |
| 14. meridian | 31. Contour |
| 15. prime meridian | 32. Arctic Circle |
| 16. parallel | 33. Antarctic Circle |
| 17. equator | 34. degree |

Renner^{1/} developed some nine basic concepts or basic ideas as follows:

1. A concept of the world.
2. A concept of place.
3. A concept of position.
4. A concept of situation.
5. A concept of location or space relation.
6. A concept of environment.

^{1/} George T. Renner, "Human Geography in the Air Age," Air-Age Education Series, New York: The Macmillian Company, 1942, p. 27.

7. A concept of geographical adjustment.
8. A concept of region.
9. A concept of place continuity.

There is a general agreement among educational researchers that a specialized vocabulary of terms be mastered and that concepts be developed. With this as a foundation the eighty-six true-false items in Part I of the test were formulated.

Stewart^{1/} emphasizes the importance of skill in using reference material as follows:

Equally important is the ability to use the table of contents and the index. Not only should definite topics be looked up, but instruction should be given so that the child may be able to look up topics under headings other than the one given him - that is under related headings.

Part II contains 32 items on use of reference books and dictionary.

Part III of the test contains samples of a numerical table such as might be found in a World Almanac. Other exercises, circle, bar and picture graphs as well as pattern maps are based on material found in junior high school social study and geographic material.

After the test was assembled in completed form it was read by three seventh grade English teachers for the

1/ Dorothy H. Stewart, "Social Studies and Reading,"
Social Education 10:117-118, March, 1946.

interest element. It was suggested by them that the test was long but compared favorably in design with commercial tests of today.

The population sample for the experiment.-- The test was administered to 150 of the writer's own seventh grade pupils. These pupils came from a suburban town adjacent to Boston, composed largely of typical American stock of the upper brackets. Another 100 of the test were administered to a mixed population of predominantly Grecian and French pupils of grade seven. The parents of the second group are industrial workers with a few in the upper income brackets. A group of 25 pupils in another suburban town, similar to the first group, were given the test.

The sample thus contained 275 pupils representing a cross section of New England school population.

Administration of the test.-- With the cooperation of school officials the test was administered by experienced teachers to the entire sample. There was no time limit on the writer's test but each pupil was asked to attempt all the items. Intelligence scores were recorded by the teachers of the pupils concerned.

For use in validating the writer's test the Iowa Every Pupil Tests of Basic Skills, Advanced Battery, Form L was administered by the same teachers to the same pupils.

The writer corrected and scored all tests.

SOCIAL STUDIES SKILLS

Name.....Date.....

Division.....Home Room.....

DIRECTIONS

The purpose of this test is to find how well you are able to handle the written materials, such as textbooks, reference books, maps, graphs, and symbols, that are found in Social Studies work. With each exercise are directions. Read those directions very carefully before starting to answer the questions, or otherwise show the correct answer. You will have the remainder of the period in which to do the test.

PART I. TERMS AND CONCEPTS

PART II. USE OF REFERENCE BOOKS

PART III. INTERPRETATIONS

WORKING SKILLS TEST IN SOCIAL STUDIES





PART I. - TERMS AND CONCEPTS

Directions

Read each statement carefully. If you believe the statement is true, place a / sign in front of it. If the statement is false, place a - sign in front of it.

- 1. The title page of a book contains the name of the book, author, and publisher.
- 2. The table of contents refers to the author's remarks about the book.
- 3. The sign pp., means the beginning of a new paragraph.
- 4. Paragraph titles are for the purpose of catching the attention of the reader.
- 5. The diameter of the earth is a distance 30 degrees south of the equator.
- 6. To summarize means to state briefly.
- 7. Equator is an imaginary circle on the earth, everywhere equally distant from the poles.
- 8. The sign ¶ means to refer to a footnote, with the same matching sign ¶ .
- 9. The items of the index are arranged in order of importance.
- 10. The circumference of the earth is approximately three times greater than the diameter.
- 11. To interpret a sentence means to read it out loud.
- 12. Outlining what you have read is the same as comparing it with what you read on the subject in a different book.
- 13. A part of a whole population of people may be shown by means of per cent.
- 14. Pictographs are used to show different land levels.
- 15. People of New York City lead urban lives.
- 16. A fact is something accepted as true.
- 17. Whenever i.e., appears in a social studies book, it means imaginary east.
- 18. To conclude an oral topic means to bring it to an end.
- 19. The site of a city means its nearness to the ocean.

- 20. Your opinion of a movie you saw recently is what you personally believe about it.
- 21. There is close relationship between Bostonians and Eskimos.
- 22. Tropic of Capricorn is an island near the equator.
- 23. The north pole is one of the extreme ends of the earth's axis.
- 24. A chart is a method used to record temperatures.
- 25. Isthmus of Panama is the water connecting the Atlantic and Pacific oceans.
- 26. A decrease in population means less people.
- 27. The state of Florida is a peninsula.
- 28. The Mississippi delta is a part of the Gulf of Mexico.
- 29. To go up means to go away from the center of the earth.
- 30. The revolution of the earth is the turning of the earth around the sun.
- 31. The rotation of the earth is its position in relation to other planets.
- 32. The state of Arkansas is farther North than the state of Massachusetts.
- 33. The symbol cf., means to compare.
- 34. We are now living in the nineteenth century.
- 35. To arrange alphabetically, means to select the most important items and arrange them according to the alphabet a, b, c, and so on.
- 36. Parallels of latitude are east-west lines on the globe.
- 37. Facts and news are the same.
- 38. The Panama Canal is the same kind of land formation as the Grand Canyon of the Colorado River.
- 39. Massachusetts is in the Temperate Zone.
- 40. Alaska exceeds the United States in the production of wheat.
- 41. Newspaper editorials are written by cartoonists of the newspaper staff.
- 42. North and West on the map of China are opposite each other.
- 43. Exports of a country are sent from that country to another.
- 44. The mouth of a river is its beginning.

- 45. The word tributary should remind one of tracts of land.
- 46. Manufacturing originally meant making things by hand.
- 47. There are snow-capped mountain peaks on the equator.
- 48. The symbol ff., means following or folios.
- 49. The prime meridian refers to the beginning meridian.
- 50. A map legend is found at one of the extreme corners of the map.
- 51. There is a direct east-west ocean current between the United States and Europe.
- 52. Railroads are commonly shown on maps by the following symbol .
- 53. The number of directions which a map maker should know are six.
- 54. Mountain ranges influence climate on either side.
- 55. To find quickly whether a detail of some subject is discussed in a book, you would use the index.
- 56. The Kiel Canal would be shown by a symbol like this .
- 57. Heights of mountains are measured by the level of land nearby.
- 58. A capital city is shown on maps by the following symbol .
- 59. This symbol is used to show mountains on maps .
- 60. Half-way between high tide and low tide is called sea level.
- 61. A political map of a country shows the products that the country produces.
- 62. One of the raw materials of the United States is iron ore.
- 63. Men build dams across big rivers so that water may be stored for later use.
- 64. A gulf is the part of an ocean or sea that reaches into the land.
- 65. A strait is a narrow strip of land between two larger bodies of land.
- 66. The western hemisphere refers to the half of the globe on which is North and South America.
- 67. The word "equinox" means equal night.
- 68. June 21 is known as the summer solstice in the northern hemisphere.
- 69. The parallel of latitude marked 1° is nearly 70 miles from the equator.

- 70. The goal in map reading is to visualize the real places in the world for which the symbols stand.
- 71. In the United States there are three time belts.
- 72. Precipitation is the melting of snow on the earth's surface.
- 73. In traveling from New York to San Francisco it is necessary to set your watch back three hours.
- 74. The true distance between meridians of longitude is the same at the poles as it is at the equator.
- 75. 15° of longitude represents one hour of time.
- 76. A map projection is a way of laying out a map.
- 77. The Mercator projection is the same as the globe itself.
- 78. To study air distance one must think of the earth as a cylinder.
- 79. On a map the Nile River flows North and down to the Mediterranean Sea.
- 80. International Date Line and the 180th meridian are the same.
- 81. Equal Area Projection maps are likely to be used to compare a distribution of population, coal production, number of telephones and the like.
- 82. The most recent information on populations of cities would be found in the World Almanac.
- 83. Most of the earth's land masses lie South of the equator.
- 84. The shortest distance between Seattle, Washington, and Moscow, Russia, passes near the North Pole.
- 85. The world's resources are not divided so that each nation shares equally.
- 86. All maps in a single book have the same scale.

PART II - USE OF REFERENCE BOOKS

How well you can use reference books is shown in part by the books you select to look up certain information. Below are two lists. One is a list of informations you might wish to find. The other is a list of general reference books. Place the letter of the reference book (A, B, C, etc.) in which you would find the information in front of the number of the information asked for.

- 1. To find how to pronounce a certain word.
- 2. To find what air line carried the most freight during 1938.
- 3. To locate the Bay of Biscay.
- 4. To find the altitude of the highest part of Massachusetts.
- 5. To look up the important facts in the life of Thomas A. Edison.
- 6. To find out what has been written recently about the uses of atomic energy.
- 7. To obtain information on a well-known living American writer.
- 8. To find material on the rights and obligations of American citizenship.
- 9. To look up the Gold Rush of 1849.
- 10. To find some easy material on life of Hammurabi.
- 11. To look up recent magazine articles about activities of Mrs. Eleanor Roosevelt.
- 12. To find what positions a man in public life has held.
- 13. To look up information on Roman emperors before the birth of Christ.
- 14. To find how many immigrants came to the United States last year.
- 15. To find the value of exports and imports of the port of Boston for the year 1945.
- 16. To find out about the home life of early Egyptians.
- 17. To find the number of students in American universities.
- 18. To look up the meaning of a word.
- 19. To find a products' map of Brazil.
- 20. To get information on the life of Henry Ford.

REFERENCE BOOKS

- | | |
|-------------------------|--|
| A. Atlas | E. Reader's Guide to Periodical Literature |
| B. The World Almanac | F. An American History Book |
| C. Encyclopedia | G. A Civics Book |
| D. Who's Who in America | H. Dictionary |
| | I. A Geography Book |

Below is a sample of an index such as you might find in a geography or social studies book. Following the index are statements with four possible answers to each. Decide which answer is correct and place an X on the line in front of it. The letter m before a number or numbers means that those pages have maps.

- Abilene (ab' i lēn'), 300; m. 238
- Baltimore (bōl' ti mōr) 25, 35-36, 183, 184, 192; m. 10, 16-17, 29, 80
- Cabrillo (kā brēl' yo) 347
- Dalles (dalz) 286, 312; m. 294
- East Indies (ēst in' dēz) 13; m. 374, 387
- Fall Line, 34-35, 115; cities, 35-36, 115-116
- Gary (gār' i) 138, 223; m. 16-17, 133, 186-187
- Habana (ä bā' nä) (Havana), 121, 425; m. 10, 414, 457
- Independence, 320; m. 186-187
- Jackson, Andrew, 119, 184-185, 321.
- Kennebec River (ken' i bēk') 48, 49; m. 54
- La Paz (lä pās') 443; m. 430, 457
- Mackinac, Straits of (Mak' i nak) 125; m. 133, 186-187
- Nashville, (nash' vil), 169, 174, m. 16-17, 169, 238
- Oahu (ō ä' hū), 385; m. 384
- Paiti (pī' tā), 439; m. 430
- Quebec (kwībec') City, 103, 125, 132, 141, 182, 408; m. 10, 16-17, 54, 402
Province, 407-408, m. 16-17, 402
- Rainier, Mount (rān ēr'), 367-368; m. 294
- Salem, 292, 311; m. 16-17, 294
- Tahoe, Lake (tä' hō), 330, 334; m. 294
- Utah (u' täh), 314, 324, 326, 332, 333, 337, 346; m. 16-17, 235, 294
- Vicksburg (viks' bērg) 251-252; m. 16-17, 2, 238
- Wake Island, 375; m. 387
- Yukon River, 397; m. 10, 394, 402
- Zinc, 172, 219, 266, 303, 333, 340, 346, 359

21. The last syllable of Abilene should rhyme with
_____ a. town
_____ b. seen
_____ c. ten
_____ d. wane
22. To find the location of Wake Island on a map look on
_____ a. page 375
_____ b. pages 375 and 387
_____ c. anywhere before page 375
_____ d. page 387
23. Oahu is accented on
_____ a. second syllable
_____ b. all syllables have equal value
_____ c. first syllable
_____ d. no accent marks are shown
24. Information about the Kennebec River would be found on page
_____ a. 48
_____ b. 49
_____ c. 50
_____ d. 54
25. To find if there is information on industries of Baltimore consult
_____ a. all the pages
_____ b. 10 through 80
_____ c. page 10 only
_____ d. 25 through 192
26. For help in pronouncing the words
_____ a. use the index and pronouncing list
_____ b. pronounce the way they are spelled
_____ c. look on the page followed by letter m
_____ d. consult the word nearest it
27. With which of the following does the second syllable of Tahoe rhyme?
_____ a. toe
_____ b. fore
_____ c. say
_____ d. far
28. A map of La Paz is on page
_____ a. 430 only
_____ b. 457 only
_____ c. 430 and 457
_____ d. 443 and 457
29. Havana appears in parentheses after Habana to show that
_____ a. two different cities are shown on the following pages
_____ b. Havana is the English spelling
_____ c. Habana is a city and Havana is its port
_____ d. Havana is a river port

30. Pages showing maps of Utah would probably be
- a. all political maps
 - b. four political and three products maps
 - c. different kinds of maps
 - d. political and physical maps
31. Page 408 should have information on
- a. the province and city of Quebec
 - b. the province only
 - c. the city only
 - d. the county of Quebec
32. A map of the Yukon River is shown on
- a. two pages
 - b. one page
 - c. four pages
 - d. two pages

WORKING SKILLS TEST IN SOCIAL STUDIES

PART III.

(Interpretations)

DIRECTIONS

1. Study the following table carefully. The table shows what per cent of their income families of different incomes spent on the items in the left-hand column. Fill in the blanks as the directions tell you at the bottom of the table.

Average Per Cents of Family Income Spent for Certain Items

Item	Per Cents Spent by Families of Given Total Incomes (Based on 100%)					
	\$1800 Income	\$2500 Income	\$3000 Income	\$3500 Income	\$5000 Income	\$6000 Income
Food	40	35	30	27	22	19
Shelter	25	25	25	25	23	20
Clothing	13	14	15	15	15	15
Operating	7	9	11	12	14	16
Insurance	7	7	8	8	8	8
Luxuries	5	6	7	9	11	12
Savings	3	4	4	4	7	10

Complete each of the following by writing "increases" or "decreases" or "stays about the same":

As a family's income increases, the per cent spent for

- | | |
|---------------------|---------------------|
| (a) food _____ | (e) insurance _____ |
| (b) shelter _____ | (f) luxuries _____ |
| (c) clothing _____ | (g) savings _____ |
| (d) operating _____ | |

2. On a map of Asia is printed:

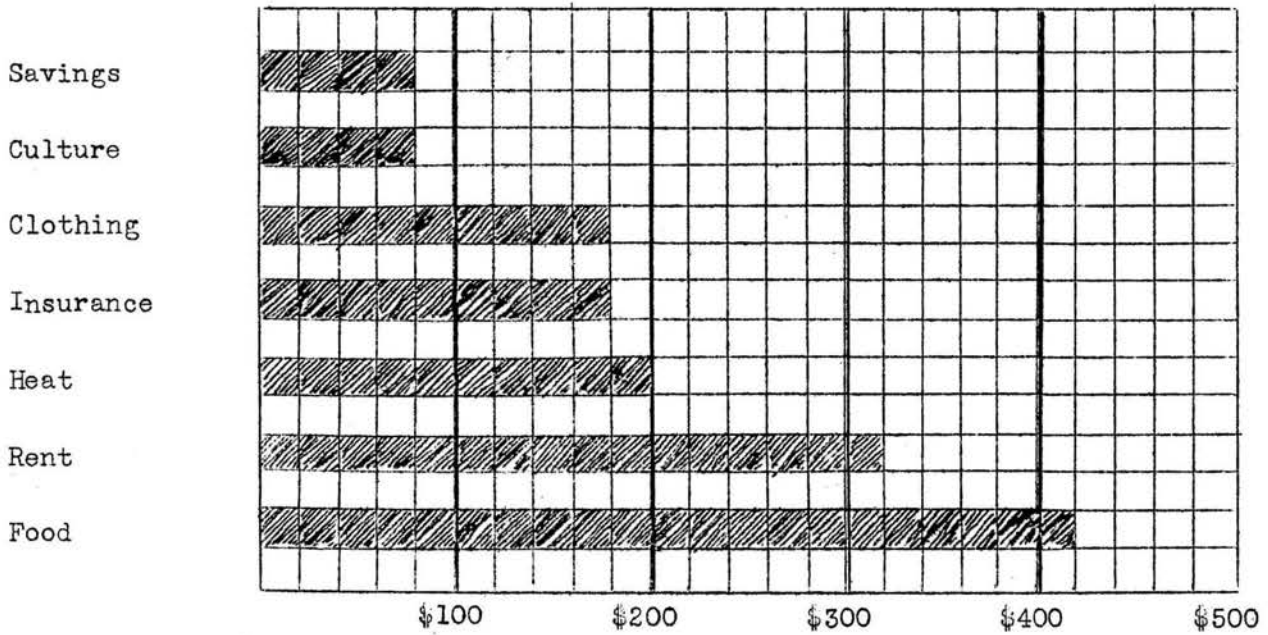
Scale of Miles:

0 500 1000 1500

- Complete: On that map a line $\frac{3}{4}$ inch long represents (a) _____ miles;
- (b) a line _____ inch long represents 1000 miles;
- (c) a line $\frac{1}{2}$ inch long represents _____ miles;
- (d) a line _____ inch long represents 750 miles;
- (e) a line $1\frac{1}{2}$ inches long represents _____ miles.

Directions: For each question in No. 3, decide which answer is correct and put an X in front of it.

Family Expenses



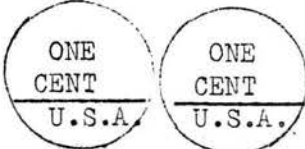

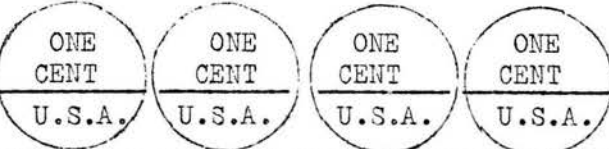

Scale: 1 space \$20

3. The amount spent for food is
 - a. about five times the amount saved
 - b. 100% more than the amount saved
 - c. no noticeable amount greater than the amount saved
 - d. 50% less than the amount saved

4. According to this graph the two items that cost most are:
 - a. rent and clothing
 - b. heat and food
 - c. food and rent
 - d. food and clothing

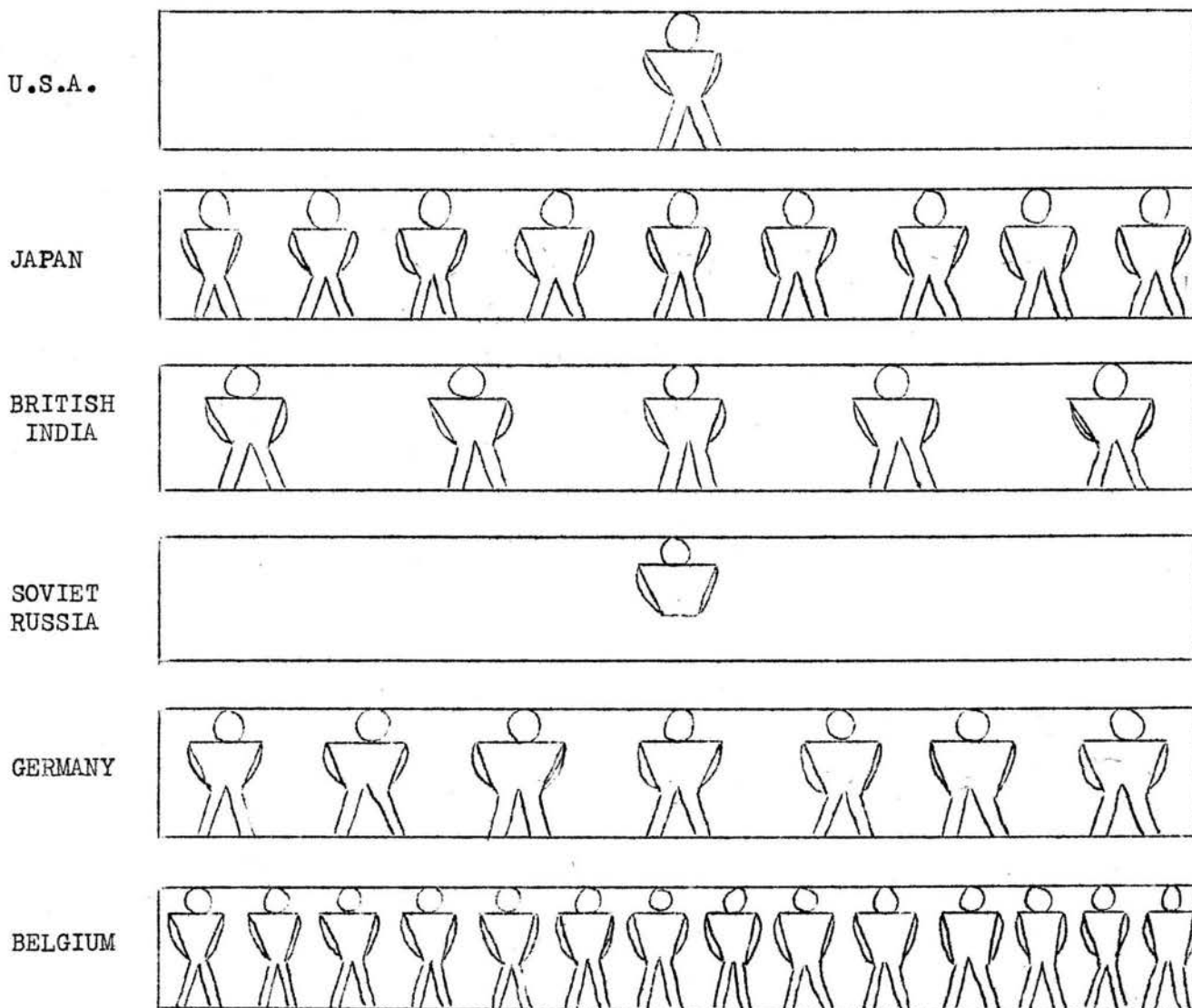
5. The total amount spent for insurance and clothing is the same as the total for
 - a. food and heat
 - b. rent and culture
 - c. heat, savings and culture
 - d. food and culture

The Cost Per Mile For Transportation for One Person

Means of Transportation	Cost Per Mile in Cents				
Railroad Coach					
First Class Car					
Automobile					
Airplane					

6. Airplane transportation cost compared with railroad coach is:
- a. five times greater
 - b. 100% greater
 - c. $2\frac{1}{2}$ times greater
 - d. 3 times greater
7. On a 200-mile trip the difference between automobile and first class car would be:
- a. \$1.50
 - b. \$3.00
 - c. \$2.00
 - d. \$6.00
8. On a 100-mile trip the number of persons necessary in an automobile to make the cost less for each than in a railroad coach is:
- a. two
 - b. three
 - c. one
 - d. the same

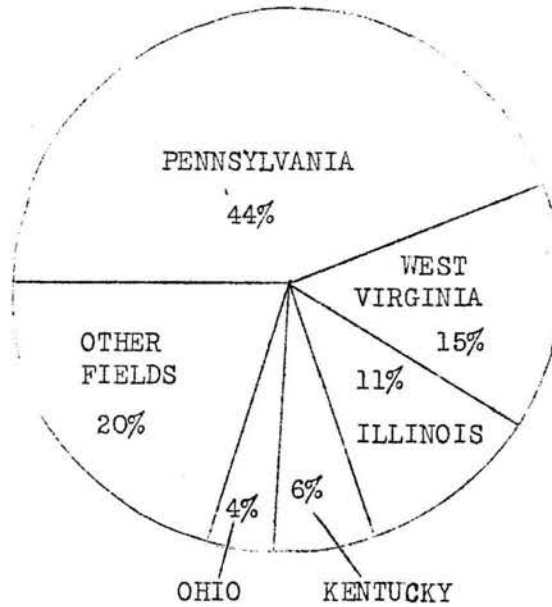
DENSITY OF POPULATION



9. The country that faces the greatest problem in relation to dense population is:
- a. U.S.A.
 - b. Japan
 - c. Belgium
 - d. Germany
10. The countries that are nearest in the number of people per square mile are
- a. Germany and Japan
 - b. British India and Belgium
 - c. Soviet Russia and U.S.A.
 - d. Japan and U.S.A.

11. The U. S. A. and Soviet Russia have less people per square mile due to the fact that
- a. the cities of U.S.A. and Soviet Russia have all been built since 1847 and are spread out more.
 - b. the land areas of both countries are greater.
 - c. the governments of both countries require their people to leave the country when the quota of 50 men per square mile is reached.
 - d. both countries have colonies on other continents.

COAL FIELDS OF THE U. S.

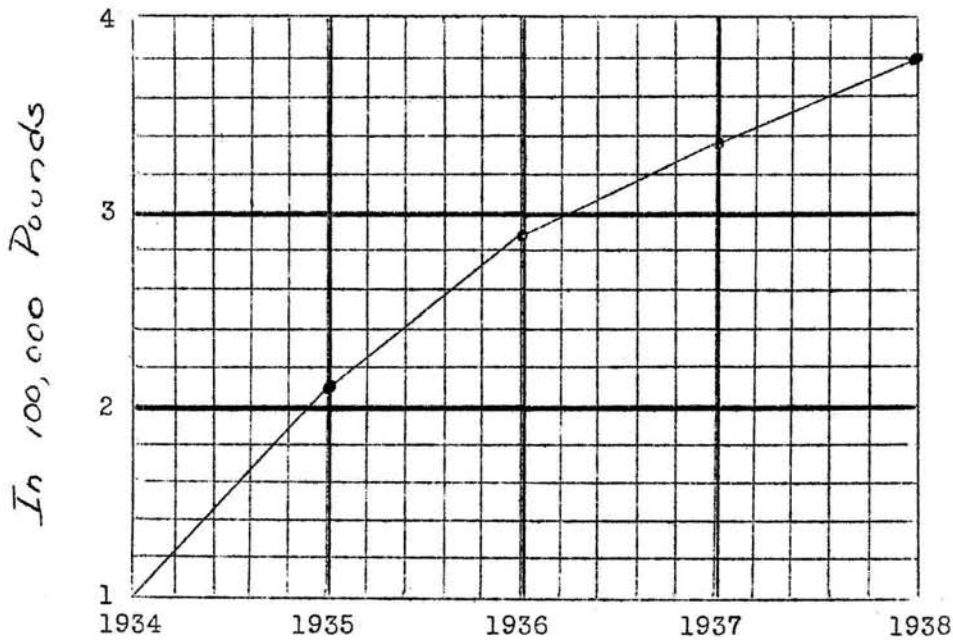


12. The state that produces most coal is:
- a. Pennsylvania
 - b. West Virginia
 - c. Illinois
 - d. Kentucky
13. What two single states make up exactly $\frac{1}{2}$ of the coal fields of the U.S.?
- a. West Virginia and Ohio
 - b. Illinois and Pennsylvania
 - c. Pennsylvania and Kentucky
 - d. Ohio and Kentucky

14. Pennsylvania produces

- a. 10% more than West Virginia and 40% more than Ohio
- b. 24% more than other fields and 33% more than Illinois
- c. 40% more than Ohio and ~~88%~~ more than Kentucky
- d. 24% more than Other Fields and 50% more than Ohio

PLANNED RUBBER PRODUCTION



15. The planned rubber production chart shows that:

- a. a steady rise in business was expected.
- b. a sharp decrease between 1936 and 1937 was expected.
- c. The sharpest increase would be from 1938 to 1939.
- d. the same production was expected for 1937 and 1938.

16. The increase planned between 1934 and 1938 was:

- a. 300,000 pounds
- b. 280,000 pounds
- c. 1,380,000 pounds
- d. 500,000 pounds

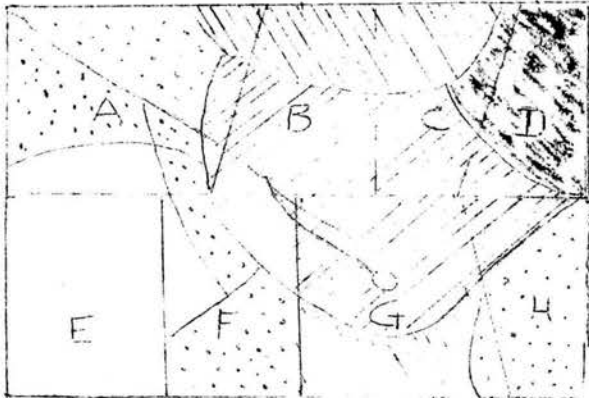
17. The year that corresponds to 380,000 lbs. is:

 a. 1935

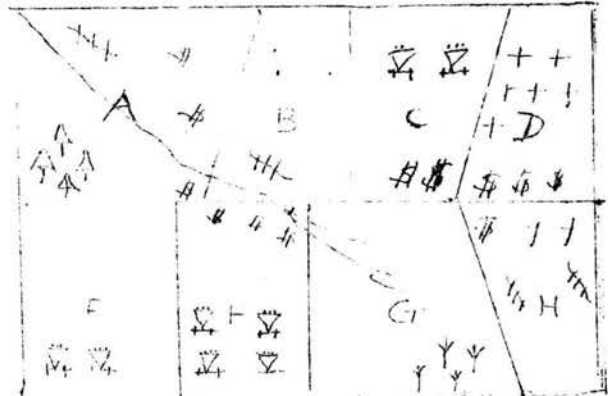
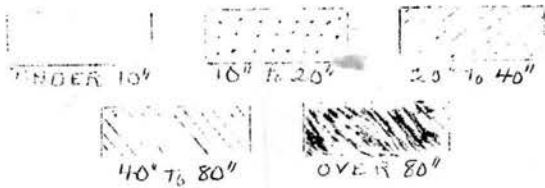
 c. 1937

 b. 1938

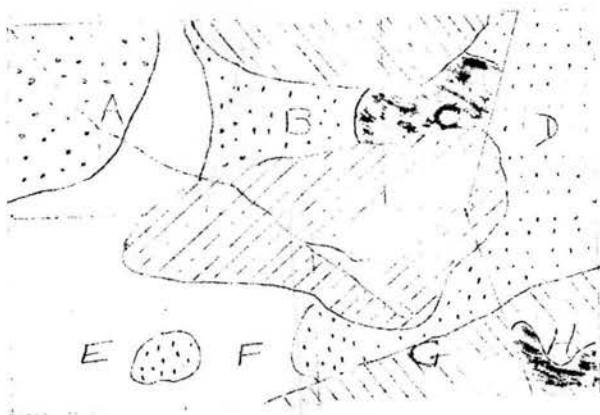
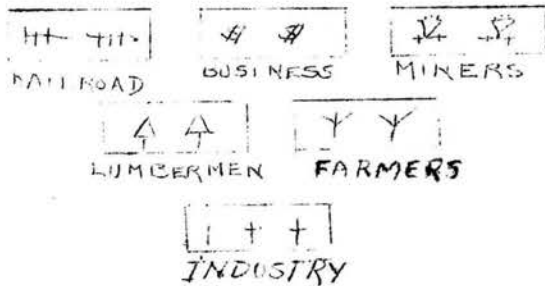
 d. 1934



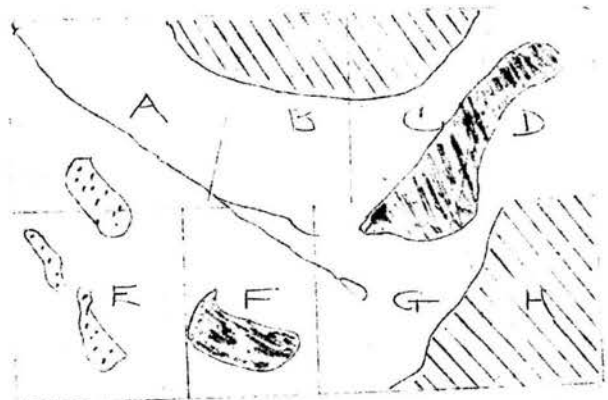
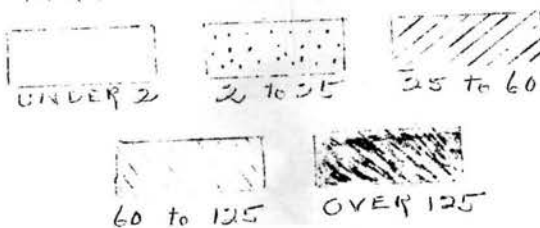
MAP 1 RAINFALL



MAP 3 OCCUPATIONS



MAP 2 POPULATION



MAP 4. COAL RESOURCES



18. Which state has the greatest amount of rainfall?

a. B

b. C

c. D

d. A

19. The dense population of C might be explained by the fact that

a. there is a river port in the state

b. there are coal resources

c. it has a state capital site

d. population is increasing

20. The population of E shows that

a. the state has few resources

b. farming is the chief occupation

c. there are several lumbering centers

d. rainfall is abundant

21. The land in B is probably used for

a. growing rice

b. factory locations

c. summer resorts

d. grazing

22. The states that carry on manufacturing are:

a. E and F

b. G and H

c. D and H

d. A and C

CHAPTER IV
ANALYSIS OF DATA

The analysis of the data is as follows:

1. Range of total scores of pupils in relation to possible scores on all tests.
2. The relationship between the writer's test and the criterion, intelligence.
3. The relationship between the writer's test and the Iowa Every-Pupil Tests of Basic Skills, Advanced Battery, Form L, Grades 6-8.
4. The relationship between the various sub-parts of the writer's test.
5. Analysis of the test items, comparing the upper twenty-five per cent with the lower twenty-five per cent.
6. Index of ease for each item.

TABLE I
RANGE OF SCORES FOR SOCIAL
STUDIES SKILLS TEST
N=275 PUPILS - GRADE SEVEN

Scores	Frequency	Scores	Frequency
128-131	4	88-91	19
124-127	6	84-87	26
120-123	13	80-83	17
116-119	21	76-79	13

TABLE I (concluded)

Scores	Frequency	Scores	Frequency
112-115	23	72-75	7
108-111	33	68-71	5
104-107	19	64-67	0
100-103	30	60-63	0
96- 99	17	56-59	4
92- 95	18	-	-
Mean	97.92		
S.D.	15.39		
S.E. Mean	.93		

There were 150 items in the writer's test. The range of scores shows that no pupil received a score higher than 131 out of a possible 150. Results reveal that there were items of challenging difficulty. From an inventory point of view it showed that on the whole there are skills in the area tested that definitely need to be taught.

TABLE II
RANGE OF INTELLIGENCE QUOTIENTS
N=275 PUPILS - GRADE SEVEN

Scores	Frequency	Scores	Frequency
140-143	3	104-107	12
136-139	7	100-103	16
132-135	11	96- 99	18
128-131	17	92- 95	15
124-127	19	88- 91	13
120-123	23	84- 87	5
116-119	30	80- 83	9
112-115	29	76- 79	4
108-111	43	72- 75	1
Mean	109.48		
S.D.	14.75		
S.E. Mean	.90		

The mean for the entire group fell about half-way in the distribution. This was a typical heterogeneous group for a correlation study.

TABLE III
RANGE OF SCORES FOR IOWA
EVERY-PUPIL TESTS OF BASIC SKILLS;
WORK-STUDY SKILLS, ADVANCED BATTERY
FORM L - N-275 - GRADE SEVEN

Scores	Frequency	Scores	Frequency
110-above	1	66-69	27
106-109	1	62-65	26
102-105	1	58-61	23
98-101	3	54-57	25
94- 97	4	50-53	15
90- 93	8	46-49	12
86- 89	4	42-45	23
82- 85	13	38-41	10
78- 81	12	34-37	8
74- 77	19	30-33	6
70- 73	31	26-29	3
Mean	61.40		
S.D.	16.42		
S.E. of M.	.99		

In the above table the 23 cases at the lower half of the distribution, interval 42-45, make a bi-modal distribution when compared with 31 cases in interval 70-73. Thus it is difficult to make comparisons with Table I. From the total 138 items on the Iowa Every-Pupil Tests of Basic Skills, only one pupil achieved a score over 110. The element of time may have influenced the total scores on this test. Pupils would need to be able to select

correct items rather fast to attain high scores. The mean of 97.92 indicates there are more skills to be taught in this group.

TABLE IV
CORRELATIONS BETWEEN THE
SOCIAL STUDIES SKILLS TEST
AND TWO OUTSIDE VALIDITY CRITERIA

	Test					
	2		3			
	N	r	N	r		
1. Social Studies Skills Test	275	.5866	275	.7264		
2. Intelligence	275	-	275	.7127		
3. Iowa Every-Pupil Test	275	-	275	-		

The correlation between the Social Studies Skills Test and Intelligence is .5866(.59), Greene and Jorgensen¹ state that coefficients of correlation from .50 to .60 evidence some relationship between the two criteria and are about 20 per cent accurate for forecasting purposes.

The correlation .59 may be interpreted to mean that there is relationship enough for acceptable statistical purposes but the test is definitely not an intelligence test.

¹ Harry A. Greene and Albert N. Jorgensen, The Use and Interpretation of Educational Tests, (New York: Longmans, Green and Company, 1929), pp. 162-163.

The correlation between the Social Studies Skills Test and the Iowa Every-Pupil Tests of Basic Skills is .7264 (.73), which evidences marked relationship and rather marked prognostic value. This may be interpreted to mean that the writer's test is an acceptable skills test and for practical teaching purposes of significant value in determining the social studies skills background of pupils at grade seven level.

The Iowa Every-Pupil Tests for Basic Skills, Work Study Skills, Advanced Battery, Form L., has a correlation coefficient of .7127 (.71) with Intelligence Quotients. There are similar traits in what these two tests are measuring.

TABLE V
CORRELATION BETWEEN THE THREE
SUB-TESTS OF THE SOCIAL STUDIES TEST

	2	3
1. Terms and Concepts	.49	.36
2. Use of Reference Books	-	.42
3. Interpretations Charts, Graphs, Maps	-	-

Relationships between the sub-parts of the Social Studies Skills Test.-- Table V shows the intercorrelations worked out between the sub-tests of the test. The correlation between Part I - Terms and Concepts and Part II - Use of Reference Books, is $r=.49$, the highest correlation between any two parts. These two sub-tests are more similar in their testing nature than any other parts of the test. Between Part II and III $r=.42$. Between Part I and III $r=.36$.

None of the correlations are significant from a statistical standpoint, however, it may be deduced that no one sub-test is testing the same kind of skill that another is testing.

Item Analysis.-- The critical ratio and index of ease of all items of the three parts of the test were found and reported in Tables VI, VII and VIII. The critical ratio was a result of the comparison of the number right in the upper twenty-five per cent and the number right in the lower twenty-five per cent of cases.

Guilford^{1/} believes there is need for knowing item difficulty in arranging tests. The index of ease was computed on both the upper and lower twenty-five

1/ J.P. Guilford, Fundamental Statistics in Psychology and Education, (New York: McGraw-Hill Book Company, 1942,) pp. 292-293.

TABLE VI
ITEM ANALYSIS - SUB TEST ONE

Items	Per Cent right		Difference	S.E. of Difference	Critical Index Ratio	of Ease
	Upper	Lower				
1	97	97	0	.0000	.000*	97
2	97	69	26	.0596	4.348	83
3	58	41	17	.0834	2.039*	50
4	60	55	5	.0841	.595*	58
5	92	60	32	.0750	4.266	76
6	94	84	10	.0526	1.901*	89
7	97	63	34	.0617	2.270*	80
8	71	50	21	.0814	2.579	61
9	97	55	42	.0636	6.610	76
10	91	50	41	.0689	5.951	71
11	87	59	28	.0711	3.940	73
12	82	42	40	.0746	5.360	62
13	89	62	27	.0683	3.950	71
14	62	45	17	.0832	2.045	54
15	91	52	39	.0689	5.951	72
16	94	71	23	.0621	3.695	83
17	84	59	25	.0736	3.441	72
18	98	81	17	.0499	3.406	90
19	95	69	26	.0617	4.214	82
20	100	79	21	.0505	4.158	90
21	100	88	12	.0406	2.955	94
22	98	85	13	.0472	2.755	92
23	97	79	18	.0532	3.380	88
24	87	50	37	.0716	5.160	69
25	96	69	27	.0605	4.462	83
26	97	98	1	.0286	.349*	98
27	99	74	25	.0555	4.510	87
28	67	49	18	.0827	2.175*	58
29	75	52	23	.0795	2.900	64
30	86	43	42	.0749	5.620	65
31	83	55	27	.0749	3.610	69
32	92	64	28	.0666	4.210	78
33	80	38	42	.0750	5.610	59
34	81	67	14	.0739	2.150*	74
35	89	65	23	.0683	3.510	77
36	91	67	24	.0656	3.510	74
37	88	73	15	.0658	2.284*	81
38	89	88	1	.0546	0.183*	89
39	95	67	28	.0626	4.472	81
40	92	78	14	.0603	2.315*	85

TABLE VI (Continued)

Items	Per Cent right		Difference	S.E. of Difference	Critical Ratio	Index of Ease
	Upper	Lower				
41	88	62	26	.0700	3.710	75
42	91	62	29	.0673	4.320	77
43	88	94	6	.0486	1.232*	91
44	88	38	50	.1070	4.670	63
45	74	48	26	.0800	3.250	66
46	73	42	31	.0792	3.915	58
47	55	39	16	.1080	1.481*	47
48	54	44	10	.0852	1.054*	49
49	73	51	22	.0800	2.750	62
50	87	73	14	.0664	2.110*	80
51	88	42	46	.0710	6.470	65
52	94	75	19	.0595	3.190	85
53	93	58	34	.0665	5.250	76
54	93	57	36	.0676	5.320	75
55	87	84	3	.0559	0.540*	86
56	86	64	22	.0714	3.080	75
57	83	54	29	.0750	3.878	74
58	83	52	31	.0750	4.000	68
59	94	73	21	.0605	3.375	84
60	99	74	25	.0543	4.420	87
61	88	38	50	.0700	7.140	63
62	94	73	21	.0605	3.470	84
63	74	48	26	.0800	3.245	63
64	88	89	1	.0545	0.183*	89
65	88	42	46	.0709	6.500	65
66	81	52	29	.0764	3.790	67
67	71	53	18	.0815	2.210*	62
68	87	81	6	.0975	0.615*	84
69	58	39	19	.0834	2.190*	49
70	83	52	31	.0413	7.506	68
71	86	49	37	.0716	5.160	68
72	84	58	26	.0735	3.540	71
73	82	73	9	.0703	1.280	88
74	75	49	26	.0795	3.275	67
75	59	34	25	.0822	3.039	47
76	74	75	1	.0752	0.133*	75
77	78	30	48	.0752	6.383	54
78	61	36	25	.0828	3.019	49
79	68	58	10	.0815	1.250*	63
80	67	42	25	.0821	3.410	55
81	68	36	32	.0806	3.970	52
82	99	68	31	.0677	4.575	83

TABLE VI (Concluded)

<u>Items</u>	<u>Per Cent</u> <u>right</u>		<u>Difference</u>	<u>S.E. of</u> <u>Difference</u>	<u>Critical</u> <u>Ratio</u>	<u>Index</u> <u>of Ease</u>
	<u>Upper</u>	<u>Lower</u>				
83	94	58	36	.0657	5.480	76
84	89	48	41	.0710	5.775	69
85	97	53	44	.0635	6.935	75
86	100	64	36	.0594	6.060	82

All items marked * are not statistically significant.

TABLE VII
ITEM ANALYSIS - SUB TEST II

Items	Per Cent right		Difference	S.E. of Difference	Critical Ratio	Index of Ease
	Upper	Lower				
1	100	98	2	.0487	0.411*	99
2	65	33	32	.0804	3.985	49
3	94	81	13	.0553	2.345	88
4	64	54	10	.0835	1.196*	59
5	73	59	14	.0792	1.765*	66
6	39	20	19	.0760	2.495	30
7	65	38	27	.0815	3.318	52
8	64	32	32	.0827	3.750	48
9	75	52	23	.0795	2.884	64
10	88	29	59	.0675	8.745	59
11	67	32	35	.0800	4.370	50
12	57	45	12	.0850	1.415*	51
13	65	22	43	.0757	5.820	44
14	77	35	42	.0765	5.750	56
15	77	30	47	.0750	6.400	54
16	62	12	50	.0713	7.010	37
17	71	29	42	.0777	5.410	50
18	96	89	7	.0444	1.576*	93
19	64	64	0	-	- *	64
20	86	52	34	.0731	4.640	69
21	78	53	25	.0770	3.510	66
22	95	52	43	.0654	6.600	74
23	73	59	14	.0793	1.761*	66
24	67	41	26	.0821	3.141	54
25	64	52	12	.0835	1.475*	58
26	97	69	26	.0596	4.348*	83
27	96	80	16	.0532	3.008*	88
28	73	47	26	.0800	3.250*	65
29	89	45	44	.0710	6.475*	67
30	51	37	14	.0835	1.675*	44
31	55	28	27	.0807	2.790*	42
32	65	22	43	.0758	5.675*	44

All items marked * are not statistically significant.

TABLE VIII
ITEM ANALYSIS - SUB TEST III

	Per Cent right		Difference	S.E. of Difference	Critical Ratio	Index of Ease
	Upper	Lower				
1a	97	82	15	.0506	2.965	90
1b	57	65	8	.0805	1.088*	61
1c	47	28	19	.0807	2.354*	38
1d	95	81	14	.0537	2.608	88
1e	68	32	36	.0791	4.551	50
1f	99	83	16	.0465	3.460	91
1g	96	83	15	.0505	2.576	90
2a	83	42	41	.0744	5.520	63
2b	89	42	47	.0710	6.480	66
2c	87	50	37	.0770	4.760	69
2d	81	35	46	.0738	6.235	58
2e	84	52	32	.0745	4.285	68
3	91	86	5	.0922	0.542*	89
4	98	33	65	.0594	10.950	66
5	79	70	9	.0730	1.232*	75
6	71	83	12	.0710	1.690*	77
7	81	61	20	.0754	2.650	71
8	47	30	17	.0814	2.090*	39
9	90	30	60	.0657	9.160	60
10	81	26	45	.0710	7.740	54
11	92	74	18	.0624	2.890	83
12	99	41	42	.0601	6.970	70
13	94	61	33	.0656	5.030	78
14	92	94	2	.0439	0.456*	93
15	100	67	33	.0582	5.670	84
16	78	35	43	.0765	5.750	57
17	81	71	10	.0724	1.384*	76
18	89	20	69	.0618	11.170	55
19	91	34	57	.0665	8.570	63
20	91	75	16	.0621	2.576	83
21	44	38	6	.0772	0.770*	41
22	44	80	36	.0770	4.670	62

All items marked * are not statistically significant.

per cent of the cases. This amounted to 69 cases from the top and 69 cases from the bottom of the distribution. The standard errors of the percentages for the number right in the upper and lower cases were taken from Edgerton's^{1/} "Table of Standard Errors and Probable Errors of Percentages for Varying Numbers of Cases."

Mills^{2/} criterion for a true difference is 2.576 corresponding to the critical ratio evaluation for each item. He^{3/} further says,

If a given difference between hypothetical and observed values would occur as a result of chance one time out of a hundred, or less frequently, we may say that the difference is significant.

In Sub Test I, 63 of the 86 items have a critical ratio of 2.576 or over and are statistically significant.

In Sub Test II, 23 of the 32 items show a critical ratio of 2.576 or better and are statistically significant.

In Sub Test III, 23 of the 32 items are statistically significant.

^{1/} H.A. Edgerton and D.G. Paterson, "Table of Standard Errors of Percentages for Varying Numbers of Cases," Journal of Applied Psychology, 10:378-391, September, 1926.

^{2/} F.C. Mills, Statistical Methods (New York: Henry Holt & Company, 1938), p. 471.

^{3/} Ibid.

In the complete test of 150 items, 109 items are statistically significant.

Index of Ease.-- Guilford^{1/} says:

A knowledge of difficulty of items serves several purposes. One of long-standing recognition is the practice of arranging items in rank order in a test, easiest items first. If there is felt a need of graduating the difficulty more or less steeply from beginning to end, with a liberal supply of items from which to draw, this need can be fulfilled. It is also important to temper the general average difficulty of items to the ability level of the group to be examined. Here several accepted rules apply, rules that are wise on both theoretical and empirical grounds. Items passed by everybody are of no value for measurement purposes. This rule may be violated for the sake of introducing one or two very easy 'shock absorbers' at the beginning of a test. The maximum discrimination among testees is to be obtained by items that about one half the individuals can pass.

The index of ease of each item was found by computing the arithmetic average for the upper and lower per cents correct. Guilford^{2/} states that:

Where P_u = proportion of the upper criterion group that responds in some specified manner to the item. P_l = proportion of the lower criterion group that responds in the same manner.

^{1/} J.P. Guilford, Fundamental Statistics in Psychology and Education, (New York: McGraw-Hill Book Company, 1942) p. 293.

^{2/} Ibid., 296.

P= proportion of the two subgroups combined that react in this manner and is given by the relationship $P = \frac{P_u + P_l}{2}$.

In Sub Test I of the writer's test 16% of the 86 items have an index of ease in the 40-60 interval or approaching the 50% criterion. None are below 40; 84% are above 60.

In Sub Test II, 50% of the 32 items have an index of ease in the 40-60 interval; 5% are below 40; 45% are above 60.

In Sub Test III, 16% of the 32 items are in the 40-60 interval; 5% are below 40; 79% are above.

Allowing the highest index of ease to indicate the easiest sub test the parts of the writer's test would rank relatively in this order: (1) Sub Test I, least difficult; (2) Sub Test III more difficult; (3) Sub Test II, most difficult.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to construct and validate a test to measure skills in the social studies at the seventh grade level. After a careful review of literature pertaining to skills in the social studies the test items were centered around the following:

1. Terms and Concepts.
2. Reference Material.
3. Interpretations of Charts, Graphs and Tables.

The test was administered to 275 pupils in schools of three typical New England areas. The sample of school population represents as good a cross-section of grade seven as could be obtained by the writer.

Measures for two outside criteria, mental ability and achievement on the Iowa Every Pupil Tests of Basic Skills, Advanced Battery, Form L, were obtained. These were used in a correlation study with the writer's test.

Each item of the writer's test was statistically analyzed for its critical ratio and index of ease.

From the analysis of the data the following conclusions were obtained:

1. The skills tested were not all within the ability of the 275 pupils of this group.

2. There are many skills to be taught particularly in the use of reference materials.

3. The correlation, between the writer's test and intelligence quotients showed a significant degree of relationship for the purposes of this study.

4. The correlation between the writer's test and the criterion, Iowa Every Pupil Tests of Basic Skills, Work Study Skills, was .73.

5. The high validity of the writer's test is indicated by the high correlation between the above criteria.

6. The item analysis revealed 109 out of the 150 items tested to be statistically significant.

7. Sub Test II of the writer's test is the most difficult part according to the indexes of ease of the individual items.

CHAPTER VI

SUGGESTIONS FOR FURTHER RESEARCH

1. The test might be correlated with reading as an outside criterion to see how reading achievement affects achievement on the social studies skills test.

2. Comparison of accomplishment between boys and girls should make interesting data.

3. A revision of the test with the following procedure:

(a) Omission of the items that are not statistically significant.

(b) Arrangement of items in order of relative difficulty according to index of ease.

4. This test might be given in grades eight and nine to determine grade differences.

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APPENDIX

GENERAL DIRECTIONS TO TEACHERS

1. Make yourself thoroughly familiar with the test and with the detailed directions for it before attempting to administer it. You should go through each step of the directions beforehand, reading aloud those parts that are to be read to the pupils, in order that the directions may be read without hesitation and with proper emphasis.

2. Physical conditions: The room in which the tests are to be administered should be quiet, and arrangements should be made so that there will be no interruptions or distractions. Preferably, only the pupils and the person (or persons) giving the test should be present.

3. Seating: Pupils should be separated as much as the seating arrangement of the room allows. A seating arrangement which makes copying difficult is better than warning against copying.

4. Preparation: Desks should be cleared of all other materials. The pupils should be told in advance to bring two pencils and a ruler.

5. Keeping time: It is especially important with short testing periods that time be kept accurately. A

watch with a second hand will do for this purpose; a stop watch is even better. If you are using an ordinary watch, make a written note of the exact time at which you start each subtest.

6. After the test has begun, walk quietly about the room, seeing that pupils:

- a. are indicating answers by the proper method;
- b. are working on the right part of the test;
- c. are not dawdling or wasting time on items that are too difficult for them;
- d. are not delayed by pencils breaking, etc.

Give no help other than showing pupils the proper procedure.