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ABSTRACT

The program of map and globe study skills for elementary social studies contains two parts: primary level for grades 1-2 and intermediate level for grades 3-6. Concepts of the units include maps as geographical representations; maps as symbols; directions; astronomical maps; city and world maps; and scales and measurement, among others. Each lesson contains the required materials and basic objectives to be achieved with the development of each new concept introduced in the units. Extension activities are also listed to supplement the curriculum guide. The programs are based on materials available from Nystrom Publishing and from the Independent School District of Fridley, Minnesota. (JR)

Don Stutes
166-0223

ELEMENTARY SOCIAL STUDIES

MAP AND GLOBE STUDY SKILLS PROGRAM

INDEPENDENT SCHOOL DISTRICT NO. 14

6000 WEST MOORE LAKE DRIVE

FRIDLEY, MINNESOTA 55432

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Multimedia Learning Systems/Maps/Globes/Models

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INTRODUCTION

In the pursuit of excellence within our school system, curriculum improvement has been a basic consideration in the attainment of our goal. Our vehicle for curriculum development has been our curriculum council and the many individual staff members, who contribute so effectively in the planning and writing of guides. The creative use of locally developed curriculum guides promises to maximize the effectiveness of classroom instruction within our district. I wish to express my deepest appreciation to all who have worked on this guide.

/s/

John K. Hansen
Superintendent

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FOREWORD

The completion of this curriculum guide represents a bench mark in curriculum study rather than a stopping point. Those who have worked on the curriculum development that resulted in this guide recognize that curriculum study is a deliberate type of endeavor which calls for continuous thought, discussion, and action. Therefore, staff members who have occasion to use this guide should realize that it is not to be thought of as the last word in curriculum, for the real curriculum is that learning experience which occurs in the classroom involving students, teacher, and subject content. It thus follows that every educator in District 14 must and will become involved in the process of curriculum improvement, and every staff member who uses this guide should begin to explore immediately how it might be improved.

/s/

Tom Myhra
Curriculum Coordinator

INDEPENDENT SCHOOL DISTRICT NO. 14

FRIDLEY, MINNESOTA

PHILOSOPHY

THE FRIDLEY PUBLIC SCHOOLS ARE DEDICATED TO THE TASK OF CREATING AN EDUCATIONAL ENVIRONMENT WHICH PROVIDES THE INDIVIDUAL WITH CONTINUING LIFETIME OPPORTUNITIES TO DEVELOP HIS CAPABILITIES AND TO FULFILL HIS ASPIRATIONS.

IN ORDER TO ACHIEVE THESE OBJECTIVES THE EDUCATIONAL SYSTEM MUST RECOGNIZE STUDENT NEEDS AND THE RESULTING IMPLICATIONS FOR COMMUNITY SUPPORT, CURRICULUM ADAPTABILITY, AND PROFESSIONAL STAFF OBLIGATIONS.

Adopted: Board of Education
December 19, 1972

OBJECTIVES AND AIMS

STUDENTS NEEDS

The education program of the Fridley Public Schools is basically dedicated to the principle of meeting the needs of all students by meeting the needs of each student; taking into account differences in capabilities, aspirations, backgrounds, and personal needs. To this end the schools are committed to:

Providing for on-going student involvement and responsibility in matters concerning school life.

Guiding the student in recognizing, developing, and maintaining good mental and physical health, intellectual growth, and wholesome moral and spiritual character traits.

Satisfying the academic needs and interests of the individual student.

Fulfilling the personal needs of each student, including the special needs of students with learning disabilities.

Providing learning experiences for the student to explore a variety of career opportunities.

Providing learning experiences for the student to explore family living and other life experiences.

Preparing the student in such a way that upon leaving school he will be ready for entering either post-secondary education or the world of work.

Aiding the student in developing self-confidence, the power to think for himself, the recognition of his obligations to the group, and the desire to work together with other people, to share responsibilities, and to accept common goals.

Providing common educational experiences based on individual needs, which will foster a feeling of fellowship among human beings and a sense of belonging for individuals.

COMMUNITY SUPPORT

The education of an individual is a very complex process that can be more successfully accomplished if the student, parent, educator, and the community as a whole each make a contribution of interest and effort; all sharing the responsibility for a full educational program. To that end the community can help meet its obligation by being committed to:

Accepting the necessity of sharing with the school the responsibility for the welfare and development of youth, for the education process of the students, and for serving as a primary laboratory of learning.

Developing a willingness to accept change, to initiate and support new programs of learning, and to maintain and modify the physical plant needed to accommodate the changing needs of the educational program.

Encouraging parental involvement and responsibility through sharing, supporting, understanding, and participating as actively as possible in the educational process.

Encouraging student involvement and willingness to participate in available educational opportunity to the best of the individual's ability.

Supporting the idea of pre-school education and the continuance of education through adult life.

Accepting the necessity of research as both a diagnostic and evaluative device.

Supporting the idea of in-service education for teachers and people in the community.

Encouraging an expansion of summer school by providing supplemental funds from community resources for the purpose of increasing the number of enrichment programs and developing more refined programs for special student needs.

Encouraging the concept of individualizing the educational program by maintaining a favorable student-instructor ratio based on the grade level involved and the subject being taught; and to further encourage the indivi ualization concept by providing resources for the purpose of staffing professional counseling positions at all levels of schooling in addition to expanding the counseling role of the classroom teacher.

TEACHER RESPONSIBILITY

The teaching staff represents to students the most immediate element of public education and the quality of the education process is determined more by the person teaching than by any other factor; therefore staff members have the primary responsibility of maintaining a humanized atmosphere within a trustful

climate wherein the student may be guided to develop self-confidence, to think for himself, to recognize a concern for the group, and to accept his responsibility to society. To achieve these goals the teaching staff must be committed to:

Providing opportunities for the student to experience the satisfaction of success.

Recognizing student achievements in the myriad ways they should occur, finding the areas of excellence in each student, and helping the student to be aware of his positive attributes, thereby enabling the teacher to accept the student's shortcomings.

Providing the needed individuality in the educational experience that encourages students to grow from a state of dependence to independence.

Realizing the importance of constantly being aware of the necessity of instilling and nurturing in students the desire to learn.

Guiding the student to accept his responsibility to society, and providing for individual student participation in democratic life through involvement and responsibilities in experiences at school.

Accepting the obligation of cooperatively helping to make decisions in areas of their professional responsibility.

Accepting the obligation of providing each student with a continuity of learning experiences that are introduced, applied, practiced, evaluated, and re-taught according to his needs.

Understanding that while publishers assign grade level designations to instructional materials, teachers will utilize materials and/or instructional procedures that they judge professionally to be appropriate, and that each student will use those materials which are pertinent to his needs.

Implementing a practice of evaluating that will emphasize and encourage diagnostic investigation in addition to the practice of testing for achievement monitoring.

Establishing effective lines of communication between the staff and the students, and providing personal guidance based on an adequate evaluation and diagnostic program and conducted in an atmosphere of friendliness and respect between student and teacher.

Establishing effective lines of communication between teacher and parent as a means of reaching an understanding of goals, and as a way of establishing a work relationship of cooperation and trust.

Recognizing that humor and incongruity are an important part of life's experiences.

CURRICULUM FEATURES

The curriculum of the Fridley Public Schools is composed of the planned experiences a student has at school, both formal and informal, and including curricular, co-curricular and extra-curricular activities. It should be based on a philosophy of humaneness and can meet the needs of all students by being flexible and adaptive to the needs of the individual student. All persons involved in curriculum supervision, planning and development need to be committed to a curriculum:

Revealing a complete structure based on learning and instructional objectives reflecting a balance from the areas of understandings, attitudes, mental skills, and physical development.

Emphasizing the fundamental processes of communication by providing full instruction in speaking, reading, listening, writing, computing, viewing, and thinking according to individual needs of the student.

Promoting pride in our heritage, and cultivating appreciation and awareness of both the responsibilities and the benefits found in a republic.

Offering a comprehensive education reflecting a balance between theoretical and practical based units and/or courses to meet the needs of each student.

Revealing a full and thorough commitment to educating the handicapped student and those in special learning groups.

Providing opportunities for the student from kindergarten through high school to relate his present educational experiences with future employment opportunities.

Insuring that the student upon leaving our schools is prepared for college, vocational education, or immediate employment.

Providing opportunities for student growth in the social skills and progress in getting along with others.

Offering co-curricular activities that provide a means for students to expand their own areas of interest and that provide future carry-over in later life.

Providing opportunities for individualized learning through curricular offerings and scheduling.

CLOSING STATEMENT

Finally, if the statement of educational philosophy is to become a viable blueprint for the school program it is imperative that schools at each level develop a plan for operationalizing this district philosophy at that school.

If the district philosophy is to remain viable it is imperative that it again be reviewed and studied by a district-wide committee in five or six years for possible needed alterations to meet changing conditions. At regular two or three year intervals during that time, different groups having different perspectives should review this philosophy and forward their comments, suggestions, and recommendations to the district office for use at a later time by the district-wide committee.

The evaluation of the total philosophy will be determined by the degree to which the educational program of the schools meets the needs of students and community. The individual items in the objectives and aims section will be evaluated by judging how well the individual schools are able to develop performance objectives to actualize these items.

Adopted: Board of Education
January 16, 1973

MAP - GLOBE STUDY SKILLS PROGRAM

Description:

The study program written in the following booklet includes two parts: primary level for grades 1-2 and intermediate level for grades 3-6.

The primary program consists of the Nystrom Maps Show the Earth kit that includes:

- 3 filmstrips with cassettes
- 12 study prints
- 20 flash cards
- Set of label sheets for study prints
- Folded floor map
- Student workbooks for each child
- Teacher's guide

Primary also will use cassette #3 Four Main Directions from Nystrom kit Where and Why.

The intermediate program consists of Nystrom Where and Why cassettes plus extra materials listed:

- 23 cassettes
- 20 spirit master tests
- Student globes
- Raised relief USA maps
- Raised relief World maps
- World readiness map
- USA readiness map
- Teacher's guide (3)
- Trippensee planetarium
- Desk outline world maps
  - Set DD9
  - Set DD99
- Map symbols charts
- Nyco marking pens
- Learning to Use Globe Set 1
- Learning to Use Globe Set 2
- Learning to Use a Map
- Form-A-Globe Kit

Program content:

In each lesson following the materials and tape numbers are listed. Each lesson consists of basic objectives to be achieved. The content of the lesson may be evaluated by a teacher made test or a spirit master quiz (as in Why and Where kit). The extension activities are listed at the end of each lesson. The fifth and sixth grade will also be using the books Learning to Use a Globe Sets 1 and 2 and Learning to Use a Map. Reference materials including filmstrips are also included in each lesson. An asterisk by a lesson or number shows specific reference to pages in the Harcourt, Brace and World, Inc., The Social Sciences.

Teaching Format:

Introduce each lesson by the sequence order shown in this booklet. Note that the sequence of tape numbers does not necessarily follow numerical sequence. In primary the lessons do follow order and grade three tapes 1-6 must be used in order. However, following grade three keep to the sequence of this booklet while assigning lessons.

Devote at least 30-40 minutes to each concept. Many lessons are two part lessons or are concepts which will require more than one day. The extension activities should be reviewed prior to the lesson and activities chosen as to needs of the students. The teacher's guides of both Maps Show the Earth and Where and Why should be reviewed for basic content of the taped lesson.

In connection with this unit, the teacher may wish to use the Educators Guide to Free Social Studies Materials published by Educators Progress Service, Inc. This may be located in your library. This guide includes where to attain films, filmstrips, slides, tapes, maps and other printed brochures.

GRADE ONE

Lesson 1: Maps are Special Pictures of the Earth's Surface

Required Materials

1. Filmstrips and Cassette: Maps are Pictures
2. Workbook pages 4-5, and 6
3. Expose the children to as many different types of maps as possible.

Behavioral Objectives

1. Students will define a map as a picture of some part of the earth's surface
2. Students will recognize the existence of many types of maps.
3. Students will relate through class discussion their experience in using maps.

Extension Activities

1. Have the children bring as many different types of maps to school as possible. Expose the children to the many uses of maps.
2. Have the children bring in a map of some type (encourage variety). The children then should decide what occupation they could have if this map was needed in their job. The answers could go from very different occupations to the same occupation for a special kind of map. Encourage the children to realize the importance of maps to many people.
3. Ask the children to determine why and how the first maps developed. After a discussion of possibilities, read pages 8 to 10 in Monroe Schere's book, The Story of Maps.

Reference Materials

1. 3M Map Projection Transparencies (Geography Packet)
   a. The Globe
2. Barbara Rinkoff, A Map is a Picture.
3. Monroe Schere, The Story of Maps; Chapter 2, pages 8-10: "The First Men and the First Maps."
4. Filmstrip
   0105 Maps Show Us Where

Lesson 2: Maps Show Natural Things Like Mountains and Rivers

Required Materials

1. Filmstrips and Cassette: Maps are Pictures (for review)
2. Study prints 1 and 7
3. Workbook page 7

Behavior Objectives

1. Students will recognize the earth as made up of natural physical features.
2. Students will identify a variety of physical features which make up the earth's surface.
3. Students will complete a map showing the physical features of an area after seeing a picture of that area.
4. Students will define the shape of the earth as round, like a ball.

Extension Activities

*1. Have the children page through their social studies text, The Social Sciences: Concepts and Values to find pictures of physical features of the earth.

*2. Discuss Chapter 2, "The Places We Live In," in The Social Sciences: Concepts and Values. Relate this to the physical features the children have identified in the tapes and filmstrip. Have the children identify physical features shown on pages 18 to 29 in their text.

3. Take a field trip in the area of the school. Note the physical features (creek, gully, hill). Distinguish between natural features and man-made features (buildings, sidewalks).

4. Use charts 13, 20, and 21 from Map Symbols and Geographic Concepts Charts. Have the children identify the physical features in the pictures. Compare the types of mountains.

5. Have the children bring in pictures of land features. Make certain they are identified by their proper name (distinguish lake from river or ocean).

6. Make several different charts. One should be for water, one for land features and a third for vegetation. The children could bring in pictures or draw pictures for each category of physical land features.

7. Using the charts in activity #6, discuss change in relation to each of these. Discussion might include questions about the rate of change, or how the change in one area affects the change in another area.

8. Take a field trip, perhaps only to an area of the playground. Find an area, perhaps only a few square feet in area. Be certain it includes vegetation, land, and water. The water may only be

a small puddle and the vegetation a few tufts of grass. Mark this area with string and stakes. The children could make a sketch of the area. Visit the area a week later and note any changes that have occurred. A weather study could also be included.

9. The children can make their own contour maps of a known area, or an imaginary area by making landforms in a box lined with plastic and filled with sand or dirt. Mountains, hills, valleys, as well as other features could be included.

Reference Materials

1. 3M Physical Geography Transparencies (Packet #3): Mountains, Rivers, Coasts
   3F: Mountain Range
   3I: River
   3P: Valley
   3Q: Lake and Island
   3R: Harbor
   3S: Peninsula
   3T: Gulf (describe coastline or shoreline)
2. Josephine van Dolzen Pease, <u>This is the World.</u>

Lesson 3: Maps Show Man-Made Things Like Highways and Towns

Required Materials

1. Filmstrip and Cassette: Maps are Pictures (for review)
2. Study Prints 2, 3, 4, 5 and 11

Behavioral Objectives

1. Students will identify mappable features on the earth's surface which have been made by man.
2. Students will distinguish between man-made features and natural features on the earth.
3. Students will recognize a map of the earth as including both natural and man-made features.

Extension Activities

1. Have the children bring in pictures of man-made and natural earth features. Set up a chart, one side with man-made things and the other with natural.
2. Discuss charts 35 and 36 from Map Symbols and Geographic Concepts Charts. Identify bridge, port railroads, and highways.
3. Make flashcards out of various pictures. Have the children identify as natural or man-made. On the back of each card, put the answer (man-made might be identified with a man, natural might be a sun).
4. Visit a construction project. Discuss the amount of time needed to finish a construction project, such as a section of highway.
5. Discuss city planning. The children should know their neighborhoods well enough to describe park areas, shopping centers, main highways, or schools. Emphasize in discussion that the choice for location of these areas is not a random choice.
6. Discuss with the children any changes (man-made) which have occurred in their neighborhoods that they have experienced. This could be anything from planting a garden to a new street.

Reference Materials

1. Josephine van Dolzen Pease, This is Your World.

Lesson 4: Maps Picture the Earth from a Point Far Above

Required Materials

1. Study Prints 8 and 9
2. Workbook pages 8 and 9

Behavioral Objectives

1. Students will describe a map as a picture of the earth as seen from far above (an airplane).
2. Students will identify a very small map as representing a very large area on the earth.
3. Students will be able to find specific locations on a map.

Extension Activities

*1. Relate this lesson to "On Your Own" lessons 3 and 4 in The Social Sciences: Concepts and Values. These lessons discuss room maps, street maps and neighborhood maps.

2. Make a map of your classroom with squares for desks. Have the children label their desk with their name and label the desks of their neighbors.

3. The page which follows with blocks representing furniture may be used as an individual activity for each child. Provide them with another sheet of paper for the actual room (floor). They should then color the furniture which they have in their rooms and cut it out, placing it in the proper place. More advanced students could add windows doors and closets.

4. Compare the size of a model (a map or globe) w h that of a real object (area of the earth or the whole earth). Make a list of comparisons (toy train with a real train, cherry tomato with a regular tomato).

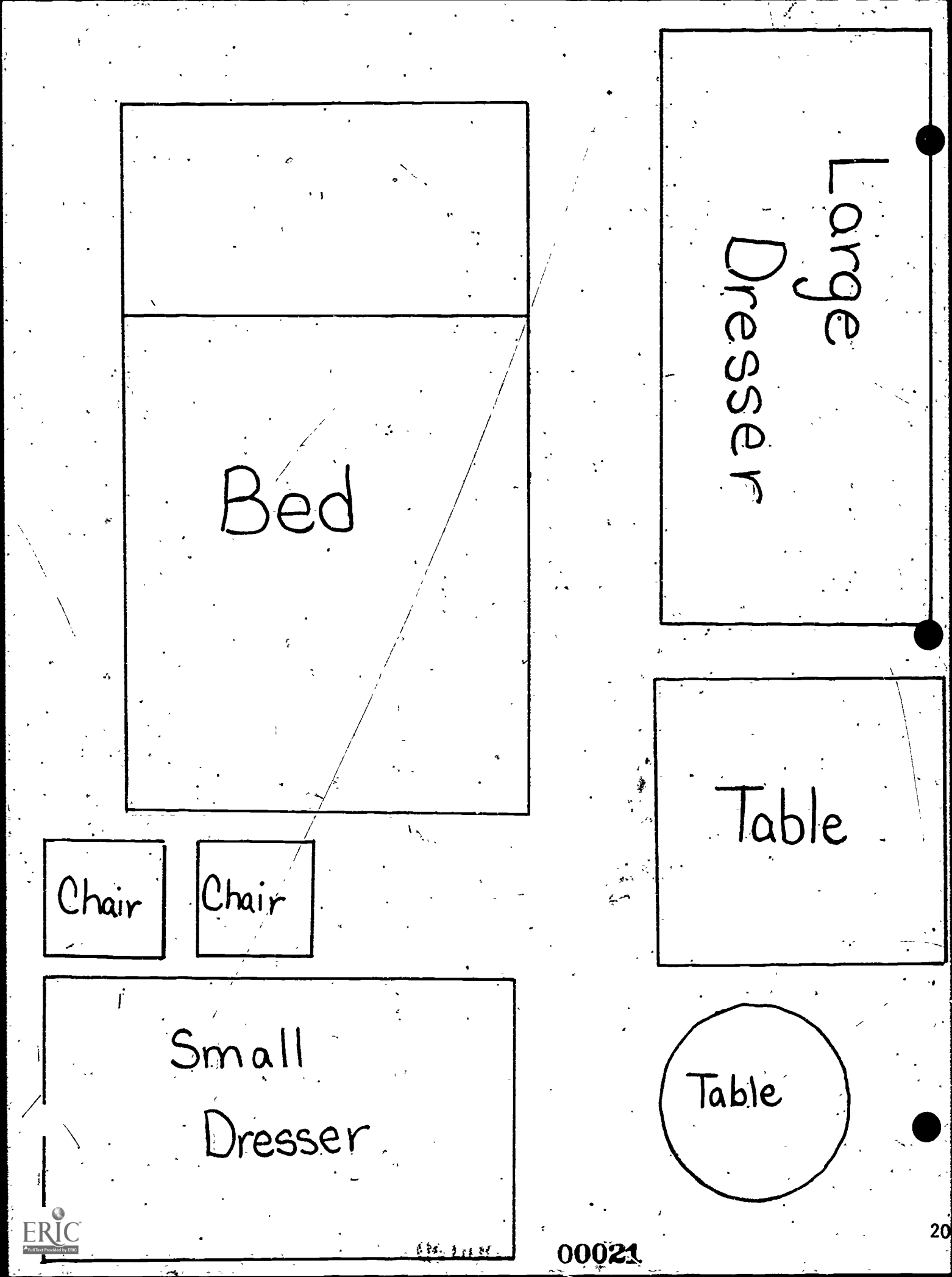
5. Children have a hard time understanding or describing distances. Show the children a map of their neighborhood, perhaps only several blocks. Discuss their concept of the distances involved. Then go for a walk along the same area shown in the map. When back at school discuss the time involved to walk a block. Show the children another map, this time of the whole area around their school, then a map of Fridley, then of Minnesota. Discuss all of these in terms of distance and time.

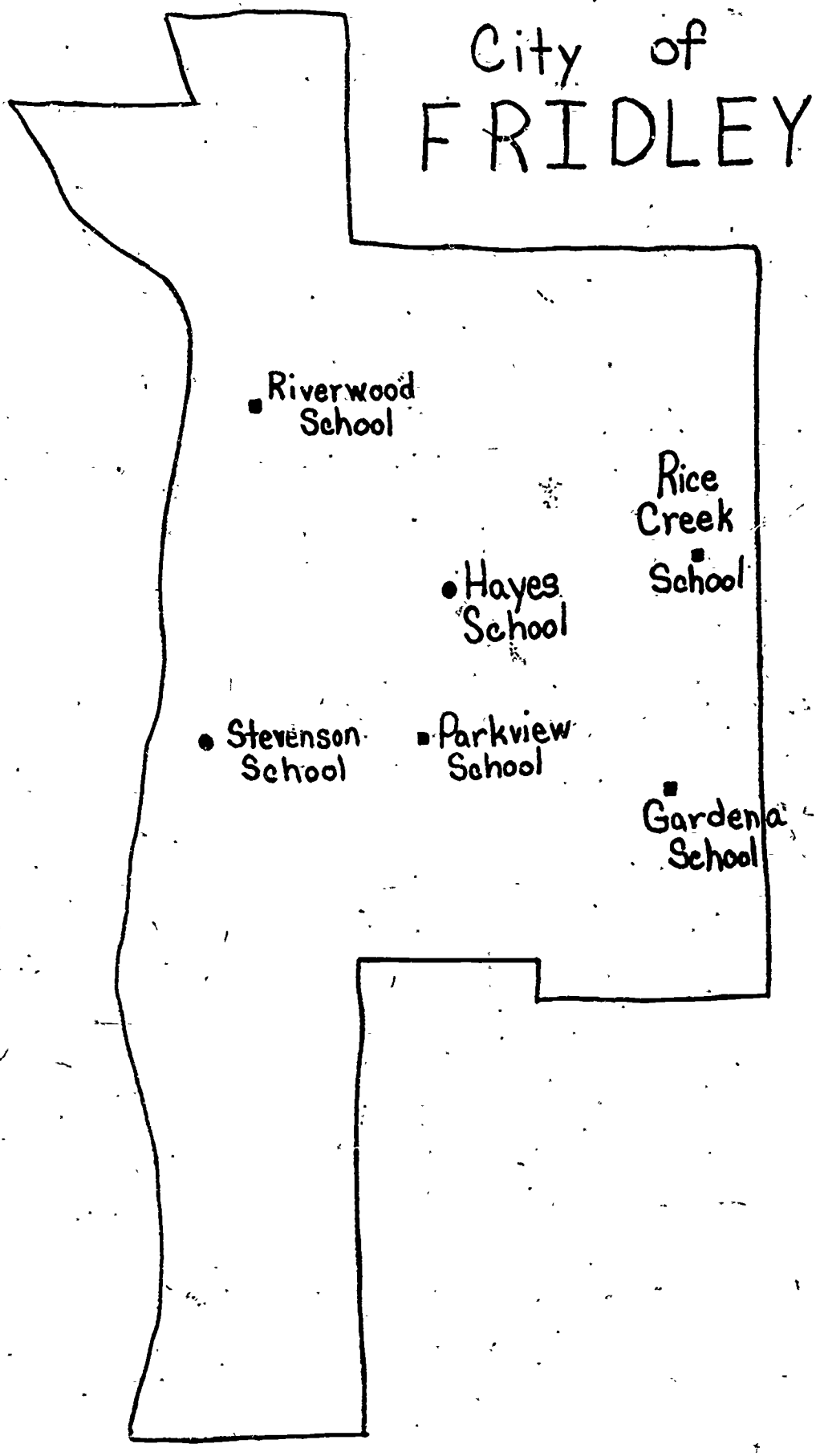
6. Use the maps to show the location of their school within the United States.

7. Talk about flying around the world and what the children would see. How large would the area be that you would see? Make certain the children understand why they could not see small objects.

Reference Materials

1. Filmstrip
   K107 Making a Floor Plan


Large Dresser
Bed
Table
Chair
Chair
Small Dresser
Table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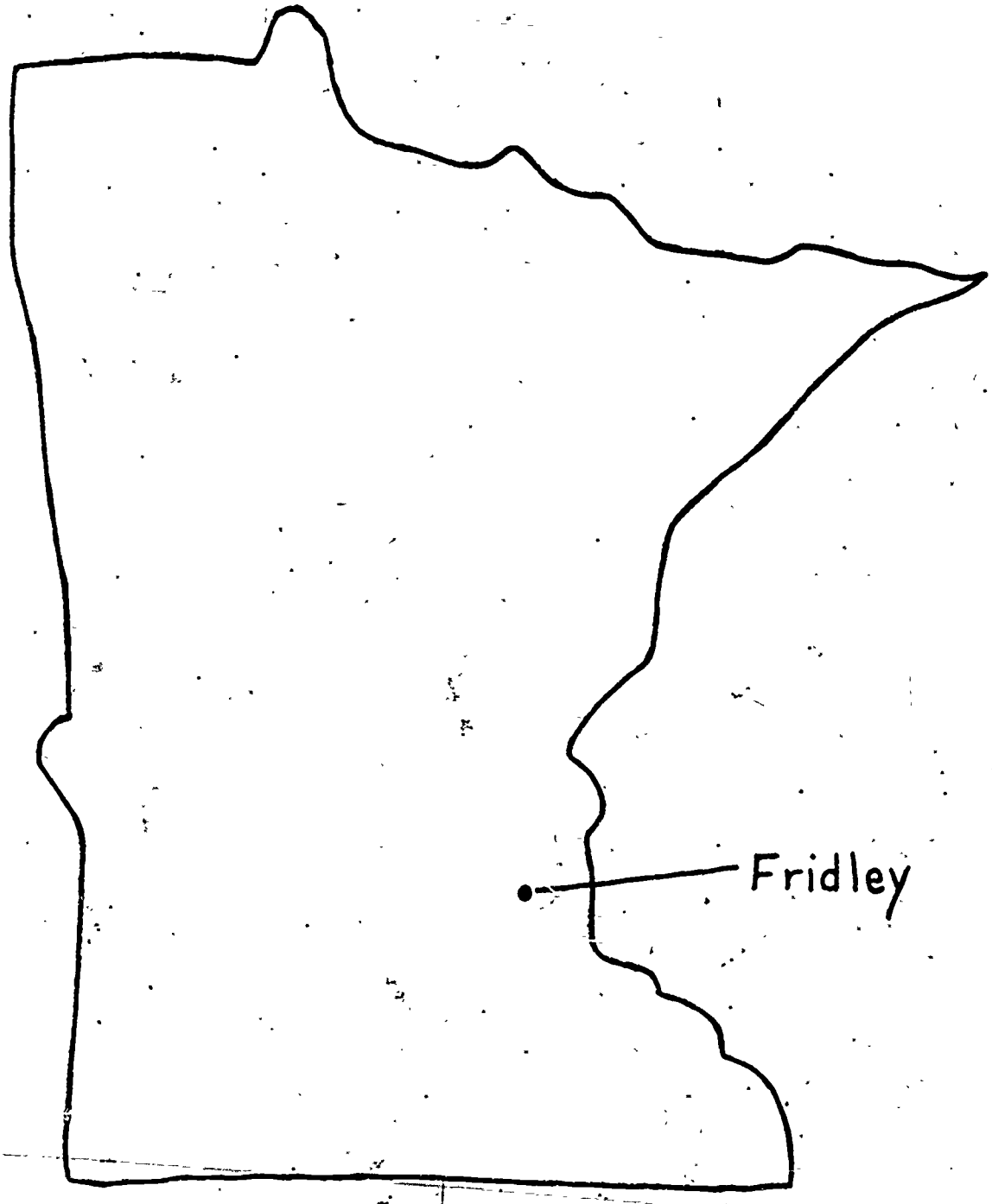


Minnesota

GRADE TWO

Lesson 1: Maps Make Large Things Look Small

Required Materials

1. Filmstrip and Cassette: Maps Are Pictures. This film will be a review from first grade.
2. Study Prints 9 and 10.
3. Workbook 10, 11, 12, 13, 24.

Behavioral Objectives

1. Students will recognize a map as a very small representation of something much larger.
2. Given an object of a particular size and its size on a map (perhaps the "object" could be a building) and another object on the map, the student will be able to determine the comparative actual size of the second object.

Extension Activities

1. The map activities from the first grade lesson, Maps Picture the Earth from a Point Far above, may be repeated. These will help the children understand the concept of comparative size.
2. Take a field trip and observe the features of one block. Make a map of this block.
3. Make a list of miniatures and their larger equivalents (globe - real earth, toy truck - real truck).

Reference Materials

1. Filmstrip
   0162 What a Map Is

Lesson 2: Maps Use Symbols to Show What's on Earth

Required Materials

1. Filmstrip and Cassette: Maps Use Symbols
2. Symbol flash cards

Behavioral Objectives

1. The students will define map symbols as pictures which stand for real things on maps.
2. The students will demonstrate an understanding of map symbols by reading a map using symbols rather than word labels.
3. The students will define legend and key for a map.

Extension Activities and Reference Materials

See the following lesson, Map Symbols Stand for Natural and Man-Made Things.

Lesson 3: Map Symbols Stand for Natural and Man-Made Things

Required Materials

1. Filmstrip and Cassette: Maps Use Symbols (review)
2. Study Prints 1 through 6.
3. Study Prints Labels 1 through 6.
4. Workbook 14

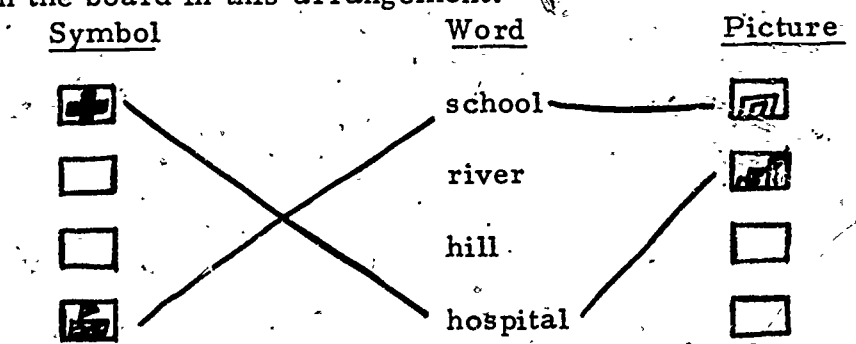
Behavioral Objectives

1. The students will demonstrate increased proficiency and independence in reading maps using symbols.
2. The students will demonstrate their ability to make use of the map key by using symbols they have not been exposed to before.

Extension Activities

These activities are appropriate for the previous lesson also.

1. Grab Bag Game: Use two paper bags filled with slips of paper, one bag having names of symbols on the paper, the other bag having the symbols themselves drawn on the paper. Divide into two teams. Symbols are passed out to each member of one team. The other team, one at a time, draws a word out of the bag, saying it aloud. If the person holding the symbol can hold it into the air within five seconds, the team holding symbols gains a point. If the wrong symbol is held up, or if the time limit is gone beyond, a point is scored by the team with word cards. If the wrong word is read, the team with symbols scores. To be sure all children are watching and listening, be sure they are the ones to catch mistakes made or correct responses. Change teams and cards for a second round.
2. Bulletin board or game board: Words and symbols may be placed on the board in this arrangement:



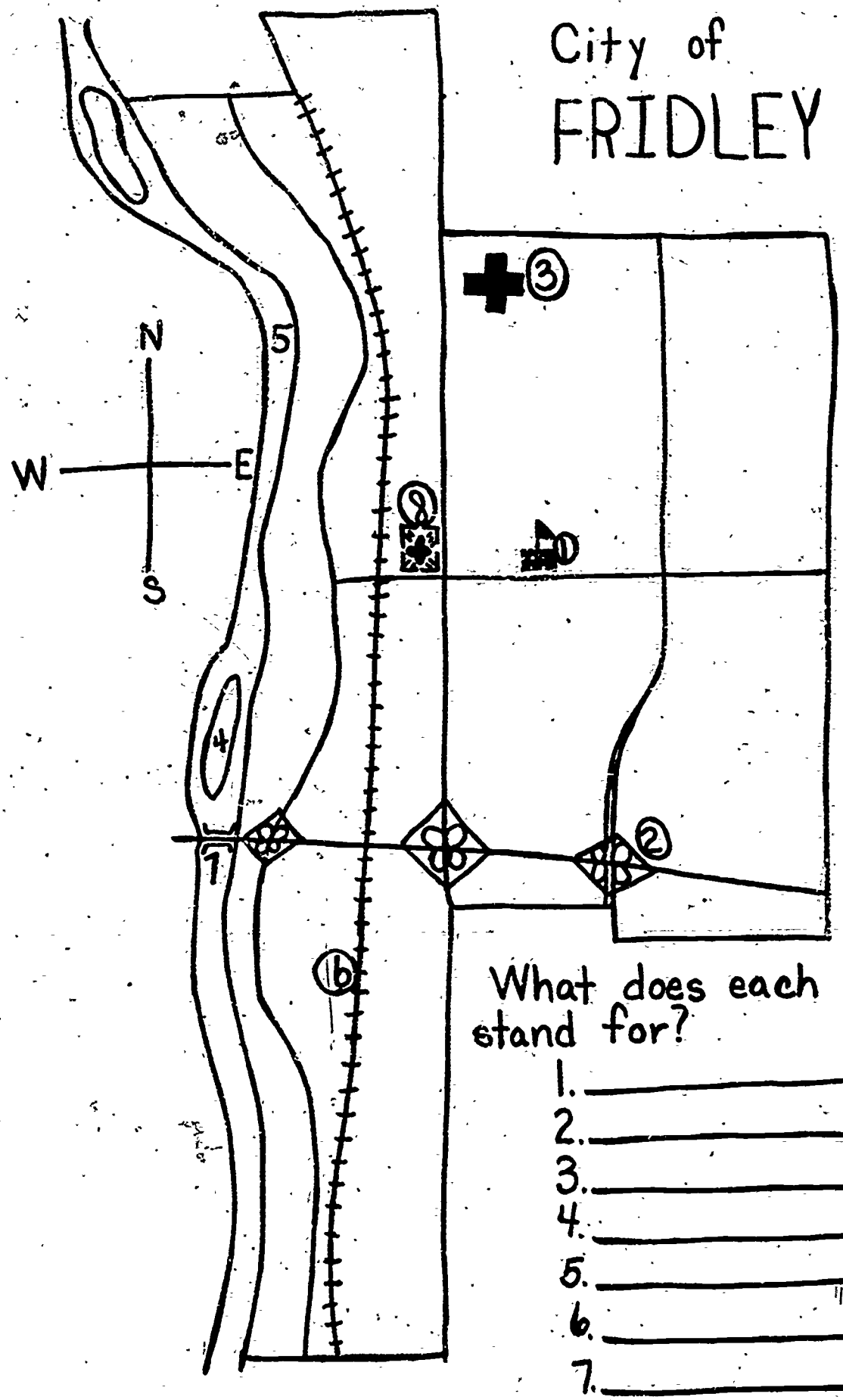
Place yard and fasteners by each item in each column so children can practice matching. Be sure there is a key in the corner.

3. Explorers: Pretend you have discovered a new land. Use symbols to show what the new land looks like. This could be structured by limiting the children to hills, forests, islands, or mountains. Do an example in the group. Have each child then describe in sequence according to his map, what he would see if he traveled from one side of his map straight across to the other.
4. Use symbol flash cards to play Conductor.
5. Make a set of posters for several symbols. Have the children bring pictures and put them on the appropriate poster for the map symbol.
6. Use the Fridley map following this with symbols.

Reference Materials

1. Filmstrip
   K112 Map Symbols -
2. Irene Estep, Good Times With Maps.
3. Dorothy Rhodes, How to Read a City Map.

City of FRIDLEY



What does each symbol stand for?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Lesson 4: Maps and the Earth's Rotation

Required Materials

1. Filmstrip and Cassette: Maps Show Where
2. Workbook 15
3. Classroom maps and globes

Behavioral Objectives

1. The student will demonstrate the ability to find the direction north and from this point to find the three other main directions.
2. The child will make a distinction in definitions between up and down and north and south.

Extension Activities

1. This may be related to a science unit on space. A discussion could be made of day and night and the earth's rotation. The location of the North Star could also be discussed.
2. One day the class could go outside before school, at noon, and after school, noting the position of the sun at each time.
3. Discuss how the amount of light in a room is dependent on the position of the windows in the room in relation to the sun.
4. Introduce compasses and have children follow directions outside using compasses.

Resource Materials

1. Sam and Beryl Epstein, The First Book of Maps and Globes.

Lesson 5: Maps Give Directions

Required Materials

1. Filmstrip and Cassette: Maps Show Where (review)
2. Workbook pages 18 and 19

Behavioral Objectives

1. The student will identify the four main directions on a map.
2. The student will identify the directions in which the sun rises and sets.
3. The student will describe the sun's apparent motion and the earth's actual motion.

Extension Activities

*1. This may be related to Lessons 2-5 in "On Your Own," The Social Sciences: Concepts and Values. These lessons include activities which can be included in direction study.
2. Learn the directions in the classroom and place signs up indicating the directions.
3. Finding directions: Discuss warm and cool or cold winds and where they normally come from. Choose a leader to call out directions as "Cold North Wind" or "Snow from the West." The class will face the direction the leader calls. Change leaders after 3 directions.

Reference Materials

1. Filmstrip
   0105 Maps Show Us Where

Lesson 6: Four Main Directions

Required Materials

1. Cassette #3 from Where and Why: Four Main Directions
2. Teacher's guide for Where and Why tapes

Behavioral Objectives

1. Students will name the four main directions: north, south, east, west.
2. Given a simple compass rose with one of the four main directions labeled, students will correctly label the other three directions.
3. The students will follow the four main directions to find locations on a map.

Extended Activities: Those activities listed for grade 2, lesson 5, would also be appropriate here.

Lesson 7: Maps Give Other Data About Our World

Required Materials

1. Workbook pages 16-17, 20-21, and 22-23.
2. Large floor map
   Cardboard or index cards
3. Maps of Fridley

Behavioral Objectives

1. The students will list various uses for maps and globes.
2. Students will use maps to get certain information.

Extended Activities

*1. This could be related to Unit 7, lessons 5 and 11 in The Social Sciences: Concepts and Values. These lessons discuss information from different types of maps.
2. The students could make a mural showing the ideal neighborhood, including specific areas for recreation, shopping, and industry.
3. Make a map and add the third dimension by using blocks and sand and branches.
4. Have each child map the way to his own house.
5. Illustrate a story. Read The Mighty Hunter by Berta and Elmer Hader once for information. Read it a second time and have the children make a map illustrating events in the story.

Reference Materials

1. Film
   101 What is a Neighborhood?

GRADE THREE

*Lesson 1: What is a Globe? (This lesson correlates with pgs. 33-36 in the Social Sciences, Harcourt, Brace & World, Inc.)

Required Materials:

1. Tape #1
2. 12" Readiness Globe
3. Paper and pencil

Behavioral Objectives

1. Students define a globe as a model of the earth.
2. Students differentiate between land and water on a globe.
3. Students recognize on a globe the printed names of major water bodies, continents, countries, cities.
4. Students master vocabulary words of continent, ocean, sphere, globe, model.

Extension Activities

1. Encourage students to explore the globe further and to locate other places that might have relevance for them.
2. Measure the globe with a 40" string to show that the distance around is the same in every direction. Measure in many different places.
3. Try rolling the globe to see how easily it rolls in any direction. Explain that this is because the surface of the globe is curved uniformly and this shape is a sphere. Then try rolling an egg, an apple and discuss difference.
4. Tell the children that if they were to walk around the earth it would take them 2-1/2 years if they walked at a normal pace of 2-1/2 miles an hour both day and night. Ask them to find the distance around the earth by consulting encyclopedias or books available in the room.
5. To discover that the globe is really round: Darken the room, use a flashlight or projector and direct it at the globe. Direct the light source from many places and notice that the shadow will always be round no matter what position the globe is in. Ask: "If you were on the moon how would the earth appear to you?"
6. To understand why blue is used for water and green and brown is used for land on many globes: Bring a color picture showing an area of both land and water.
7. Use 22" graphic project globe to count and identify the continents. Let the children have globes in front of them for reference. Have children notice that no two are alike in size or shape.
8. Center attention upon continent of North America. Note ways in which it differs from other continents. Have children talk about what they can see about North America that will help them remember it. Locate the United States on the globe. Mark the place where they live with a nyco marker.

9. Game to give practice in locating names on a globe; A is for ? Give each class member a globe or work in pairs. Each student will need a paper and pencil. Within a given time limit each player finds on the globe as many names that begin with A as possible. The person who has the largest correct list and the end of the time limit is the winner.

10. Begin making a set of flashcards to use with this unit. On the card (large size 8"x3") put the definition of each vocabulary word studied so far. Ex: largest bodies of water on the earth. On a second card put the vocabulary word. Ex: Ocean. Use these cards in a matching game.

Ocean	largest body of water on the earth
Continent	largest land areas on the globe
Sphere	the ball shape name of a round object
Country	usually one section of a continent
Globe	a small model of the earth
Model	a replica of an object
Sea	a large body of water that is smaller than an ocean
Symbol	anything that stands for something else such as blue on a globe stands for water

11. Pretend you are out in a spaceship as an astronaut and you are orbiting the earth. Tell what kinds of things you see. This may be done as a story writing exercise with illustrations. Bring pictures from magazines.

Reference Materials

Transparencies on the globe:

Instructo Map Reading: #850-1 Maps and Globes

Filmstrips available:

K99 The Face of the Earth

NN153 Our Globe - The Whirling Ball on Which We Live

0167 The Globe

0168 Using the Globe

Books in the library: See lesson on maps

*Lesson 2: What is a Map? (This lesson correlates with pags. 36, 40-43 in The Social Sciences, Harcourt, Brace & World)

Required Materials

Tape #2
12" readiness globes
Readiness Wall map of USA, markable
Map symbols and Geographic Concepts Chart #15, with plastic cover
Nyco marker

Behavioral Objectives

1. Students define a map as a special drawing of the earth or part of the earth.
2. Students identify land and water areas and coastlines on a map.
3. Students recognize on a map of the United States, the printed names of major water bodies, states, and cities.
4. Students become familiar with meanings of the words: coastline, map, symbol, key, legend.

Extension Activities

1. Locate your own community on the map of the United States. May locate other cities that are meaningful to children.
2. Have several types of maps available so that students may explore many different legends on maps.
3. Make a list of maps in the room.
4. Collect as many kinds of maps as possible, display them in the room.
5. Make a chart of vocabulary words. Make the chart on large tagboard and let the children illustrate as many of the words as possible. Words that might be put on the chart are: map, coastline, symbol, key, legend, city, water, land, country, state, river, bay, peninsula, island, strait, lake.
6. Make an imaginary treasure map. As a class decide on symbols to use on the legend. Put a legend on the map each student makes.
7. Ditto off a classroom map. Let each child draw a route to a hidden eraser. Have the children actually hide the eraser and play a game letting one child use the map to find it. Make sure while the eraser is being hid the "finder" is out of the room.
8. Write out a list of clear directions using number of blocks, street names and main directions explaining how the child gets from school to his home. Along with the written explanation the child may include a picture or map.
9. Make a bulletin board map of the neighborhood surrounding your school. Label all directions clearly. Put symbols of houses in for each child. (Let the child place these symbols on the map.) Symbols for other familiar places can also be added such as the

school, churches, post office, shopping center, stoplight. This map may then be used to practice giving directions on how to get from one student's house to another.

10. Play a riddle game. Using the vocabulary studied so far, pick one word and ask a question, "Who Am I?" Sample: "I am the largest body of water on earth. Who am I?" If the students have globes at their desks this may be played by naming specific things. Sample: "I am the largest continent on the earth. Who am I?"

11. Review map symbols by placing all symbols on cards. Put these cards in a grab bag. Divide the class into two teams. A child from each team picks out a card. If the child can state correctly what the symbol stands for he has gained a point for his team. The team acquiring the most points wins.

12. Use a picture or drawing of an area such as a downtown section or a residential area. Identify buildings and other objects seen in the picture. Make up symbols for buildings, streets, houses, etc. Then draw a map of the picture.

13. Take a walk around the school ground pointing out and identifying directions of north, south, east and west. Give each child a blank paper and let him make a map of the school ground placing each area of play on the map. Make a legend to go with the map.

*14. Use idea in Harcourt, Brace and World text, pg. 47-48 TE.

15. Have a world map to use throughout the year that can be marked on or labeled in some way. Place studied in the third grade text can be identified. Places that might be marked are: Alaska, Morroco, New Zealand, Ecuador, Plymouth, Mass., Jamestown, Virginia, Ghana, Spain, France, England, Holland.

*16. Make a world map that can show the travels of the explorers such as Columbus, Cabot, Cartier, Coronado, DeSoto, LaSalle. This map would go along with Unit 4 in the 3rd grade Harcourt, Brace and World text. Use with pgs. 125-157.

*17. Use the map investigation showing the changes made in maps once the explorers began their travels. Page 154 in Harcourt, Brace and World text.

18. Find It Game: Give each pupil an outline of an area such as the United States with only the state boundaries shown. Place numbers on the sheet in various places that will correlate with a list of cities, rivers, lakes, state names, etc. that are written on the board. Allow each pupil ample time to refer to various maps and globes and to write each name after, or near, the correct number. After some time, stop the pupils and have them check their own work with the teacher's help. The person having the greatest number of correct responses is the winner.

Reference Materials

Filmstrips:

K106 Introduction to Maps
NN151 Let's Read Our Map
J112 What is a Map?
0163 Elements of a Map
K111 Where on Earth do you Live?
K112 Map Symbols
K113 Land and Water Features
J114 Land Forms and Their Symbols
J113 Coastlines and Their Symbols
NN152 What Geographical Terms Mean
0164 Using Common Maps

Books:

Epstein, Beryland Sam, The First Book of Maps and Globes
Estep, Irene, Good Times With Maps
Hackler, David, How Maps and Globes Help Us
Hammond, C.S. & Co., Ilustrated Atlas for Young America
Rhodes, Dorothy, How to Read a City Map
Rinkoff, Barbara, A Map is a Picture
Schrere, Monroe, The Story of Maps

Lesson 3: Four Main Directions

Required Materials

Tape #3

Paper and pencil

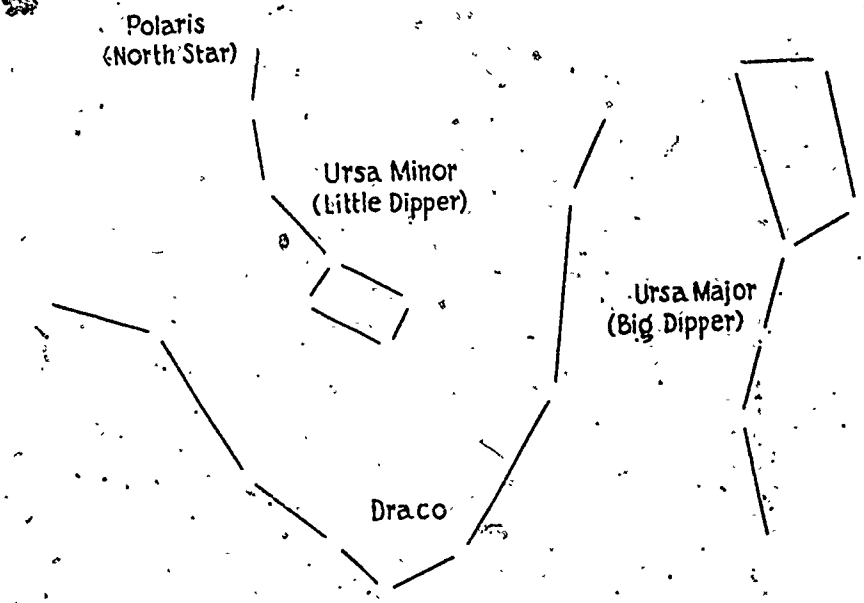
Behavioral Objectives

1. Students name the four main directions: north, south, east, west.
2. Given a simple compass rose with one of four directions labeled, students correctly label the other three directions.
3. Students can define following words: cardinal directions, north, south, east, west, opposite.

Extension Activities

1. Go outdoors. Talk about one direction at a time. Ask children to tell what they see facing north, then south, etc. Locate buildings in the area that are particular directions from the school. State a place and see if the children can guess the direction. Sample: Rice Creek is which way from the school? The shopping center is which direction from the school?
2. Place large cards or letters up on the walls of the schoolroom to help orient children to the directions inside the building.
3. Bring compasses to use both indoors and outdoors.
4. Have a set of four children stand at the front of the room. Let one child give directions to turn. When a child misses a direction a new child may take his place.
5. Talk about how to tell direction without a compass. Do an experiment with a flashlight and a tall object. Help the children remember that the sun rises in the east and sets in the west. Label a table with the directions east and west at opposite sides. Then darken the room and set the object in the middle of the table with the flashlight shining on it from the east. Make the flashlight move overhead to noon and then over to the west. All during the demonstration emphasize what direction the shadow is pointing. The children should find that early in the morning our shadow points west, at noon it is very short but it does point north, and in the late evening the shadow points east. Remember to caution the children about Daylight Saving Time. Ask about the time your shadow should point north during Daylight Saving Time (1:00 p.m.). Go outside at noon on a sunny day also.
6. Talk about how to find directions at night. Explain the best way is to look for the North Star. First find the constellation called the Big Dipper which has four stars that make up the large cup and three stars making up the handle. The two stars of the cup farthest from the handle point to the North Star. The direction of

north is on the earth just beneath the North Star. See picture below:

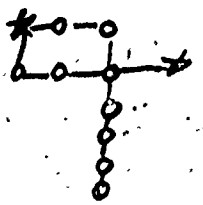


Do you know how to use the "pointer stars" of the Big Dipper to find the North Star? This star map shows you how.

7. Review correct usage of words up and down to avoid confusing those words with north and south. Up means away from the earth. Down means going toward the center of the earth. Draw pictures showing examples like:

   a. men climb up a mountain
   b. rockets go up into the air
   c. a boy digs down into the ground
   d. water falls down over a cliff

8. Prepare an imaginary bus trip around the community, as for example: We get on the bus on the corner of Fourth Street and Main Street. It goes three blocks west, turns north, and goes one block. The bus picks up more passengers at the bus stop. Then we go two blocks east and five blocks south..." Have each child "draw the trip" as he "travels", using a star for bus stops, a circle for blocks and a line for the route traveled. Illustration for story above shown here:



9. Travel Log: Make a poster for each direction out of large tagboard. Let the children bring in pictures or postcards of places they have been to in these four directions.

Reference Materials

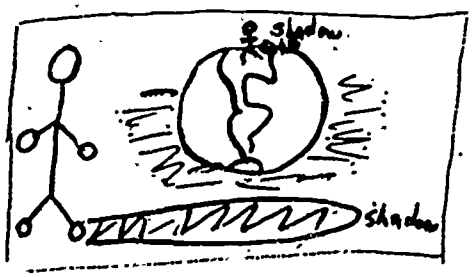
Selection of maps showing directions clearly.

*Lesson 4: Directions on Globes (To be used with Harcourt, Brace & World text pgs.)

Required Materials
12" Readiness Globe
Tape #4

Behavioral Objectives
1. Students locate the North Pole and South Pole on a globe.
2. Given a reference point or area, students demonstrate their ability to locate places on a globe in terms of the four main directions.
3. Students locate some of the grid lines used on a globe.

Extension Activities
1. Needed: a piece of paper and a pencil. Read and answer the following questions:
   a. The point farthest north on the earth is called the North Pole. Find this point on the globe. Is the North Pole on land or water?
   b. The farthest point south is called the South Pole. Find this point on the globe. Is the South Pole on land or water?
   c. There is a make-believe line around the earth that helps us locate places. This is halfway between the North Pole and the South Pole. It is called the equator. Find this line on the globe. Name a country that is on the equator.
2. Can You Find Your Way? Answer the questions below by locating the places on the globe and writing them on a paper numbered 1-7.
   (1) What ocean is east of the continent where you live?
   (2) What ocean is west of the continent where you live?
   (3) Find Europe. What ocean is north of Europe?
   (4) Find Asia. What ocean is south of Asia?
   (5) Find Australia. What ocean is west of Australia?
   (6) What is the only direction you can travel from the North Pole?
   (7) In what direction is the equator from the South Pole?
3. Place globe outside on the ground with home location at the top and the North Pole pointing due north. Place a toy man on the globe at about home location. Let one child at a time stand facing north next to the globe. Let each child compare the direction of the shadow of the toy man on the globe to his own shadow on the earth. Face the toy man toward Europe and have children face Europe. Compare shadows. The shadows should be parallel.



4. Take a trip around the globe. Pick out a city such as Washington, D. C. to start at. Then with your finger or a Nyco marker trace a journey from city to city around the globe. Students may choose cities at random and write them down on a paper to be checked or the teacher may give clues by using countries and cardinal directions to direct the students on a trip around the globe.

5. Trace any line with a Nyco marker extending from the North Pole to the South Pole. State these lines as north-south lines called longitude. Count the number of these lines on the earth. Notice that they all extend from north to south and they all meet at the poles.

*6. To reinforce idea of reason for equator and grid lines on the globe use activity in Harcourt, Brace & World text, page 46 T. E.

7. Practice finding countries by going north or south from a designated point. Give practice with directions on globe. Ex. "Put your finger on New York City in the United States. What direction would you go to get to Mexico? to Canada? to Brazil? to Greenland?

8. Learning directions of east and west on globe. Have the children point east, then west. State that when you are facing north, east is to your right and west is to your left. (Also the sun rises in the east and sets in the west.) Tell the children to pick a spot on a north-south line. Show which way they would move to go east, which way is west. Ask the students to find lines on the globe that go both east and west. Trace a line around the globe. State that these lines are called latitude. Questions: Find North America. What direction would you move to go to the Atlantic Ocean? to the Pacific Ocean? to Europe? to Japan?

9. Which Way? Game needing globes for every student to look at and two teams. The leader names a place on the globe - a continent, a country, a state or a city. Player number one on both teams locates this place. The leader then names a second Place and the players find this also. The player who first calls out the direction of travel from place on to place two gains a point for his team. The team with the most points is the winner. Sample: "Find Europe. Find Asia." Answer: "East"

Reference Materials

Transparencies 3M Packet #3

3A Latitude (simplified)

3B Longitude (simplified)

Library Books

See list on lesson 2 - What is a Map?

Lesson 5: Directions on Maps

Required Materials

Tape #5
12" Readiness Globe or 12" Sculptural Relief Globe
28" Raised Relief USA
Nyco marker

Behavioral Objectives

1. Students indicate the four main directions on a United States map.
2. Students use the terms northern, southern, eastern, western, northeastern, southeastern, northwestern, and southwestern to describe major sections on a United States map.

Extension Activities.

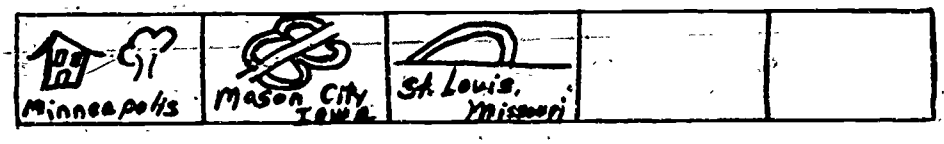
1. Practice using the terms of direction in relation to the classroom. Choose an object and state "I am thinking of something in the northeastern part of our room. What might it be?"
2. Lay out the United States map. Orient the map to the directions in the room of north, south, east and west. Call out the name of a state. Have one child find the state and tell what section of the United States it is in. Find a town in any state and have a student identify what part of the state it is in.
3. Take a large outline map of the state of Minnesota. Place it on a table and orient it to directions in the room. Use three-dimensional objects to represent main cities (building blocks), highways (strips of black paper), sandy waste lands (sand), forests (model trees) and large lakes (blue paper or foil). Locate each place correctly by using the directions of north, east, south, west, northeast, northwest, southeast, southwest.

*4. Play a guessing game using the classroom as a world map. Note the directions in the room. Decide where the equator, north and south poles would be. Also state where the middle latitudes would be reminding students that there are middle latitudes both north and south of the equator. Leader thinks of a child in the room and describes his position using directions and concepts of equator, poles, and middle latitudes. Sample: "I'm thinking of someone sitting just east of the north pole." or "I'm thinking of someone sitting in the southeast corner of the map." Use this activity to lead into climate study in Harcourt, Brace text pgs. 44-50.

5. Fire in the Forest Game: This game should help improve map reading skills. Materials needed for this game are a red flag or marker, duplicated sheets of an outline map of room showing

only desk locations. Directions: Two children take their places in the corners at the front of the room with pencils and maps. These children are the "fire wardens." Each member of the class is a tree. One child leaves the room. A designated child places the red "fire" marker on another child's desk to show that a tree is on fire. Each warden takes a pencil and draws a line on his map, starting at his own location, going through the point of fire, and ending at the opposite edge of the paper. The marker is then removed and the child is called back into the room. This child is given both maps and by putting them together, observing where the lines cross, he attempts to find the location of the tree that was on fire. He then chooses another child to leave the room and the fire wardens choose new wardens so the game continues.

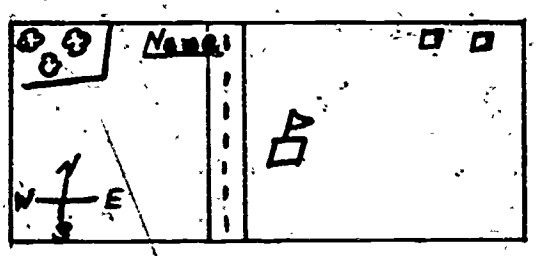
6. Answer the following questions to help identify directions on maps.
   a. What general direction is the sun from you when it sets in the evening?
   b. If you see the sun rising from behind a building in the morning, what general direction is the building from you?
   c. If you live in the United States, what direction is the sun from you at noon?
   d. What direction is the opposite of south?
   e. Look at a map and find if west is to the right or left of north.
7. Take a strip of paper and divide it into five sections. Draw a trip you have taken or would like to take. In each square show a place you have been or what you did there. Label each square to tell where you are. Each student may then point out on the map (either U.S. or Minnesota depending on what is needed.) a route of his trip.



8. Spinning Game: Need a cardboard circle with a spinner of some sort. Mark the directions of N, S, E, W, NE, NW, SE, SW, on the circle. Take a map of Minnesota and mark your town as "home base." The players take turns spinning the arrow and naming a town or city that is located that direction from "home base" as indicated by the spinner. Take turns checking responses. May use a United States map by identifying states or a world map to identify countries.

10. Use the following statements or make up similar ones to describe an area. These may be written on the board or on flashcards. Students read statements and draw the map accordingly.
    a. There is a park in the northeast corner of this area.
    b. A highway runs north and south through the center of the area.
    c. There is a school east of the highway.
    d. Two houses are located in the northeast corner of this area.
    e. A symbol for directions should be located in the southwest corner.
    f. Put your name on the north end of the map.

    The finished map should look something like the following:



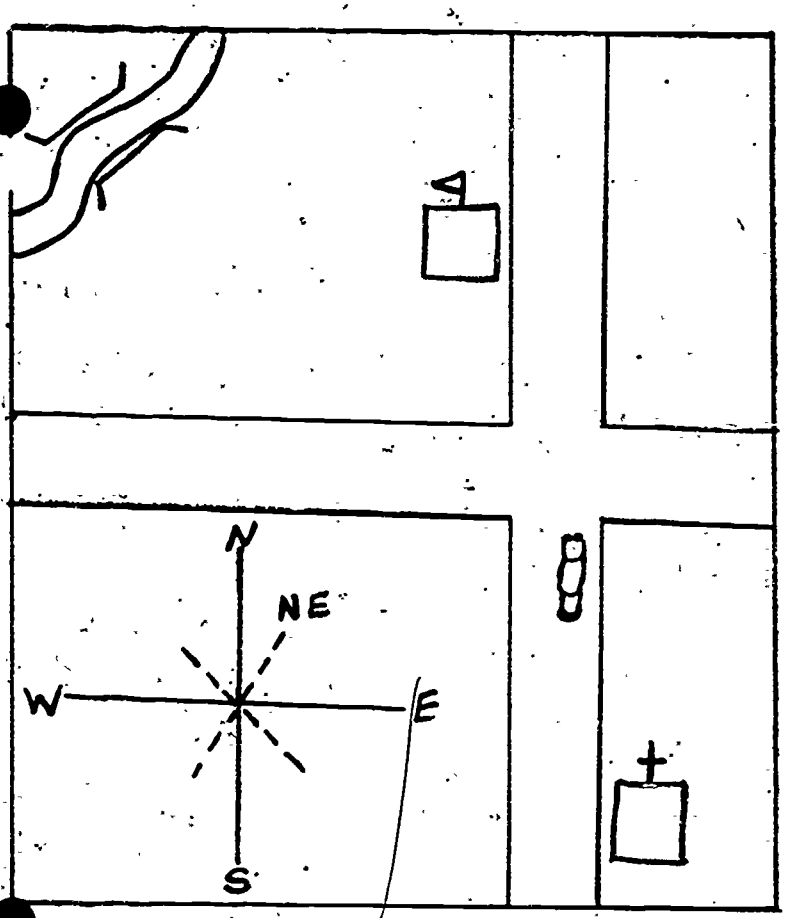
11. Worksheet follows this lesson.

Reference Materials

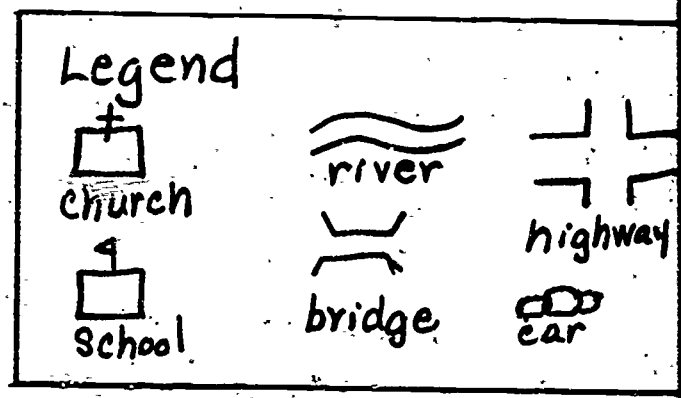
Filmstrips

K110 Locating Places

E62 Reading Directions on Maps



Answer the following questions using the map.



1. Name the symbols in the northwest corner.

_____ _____

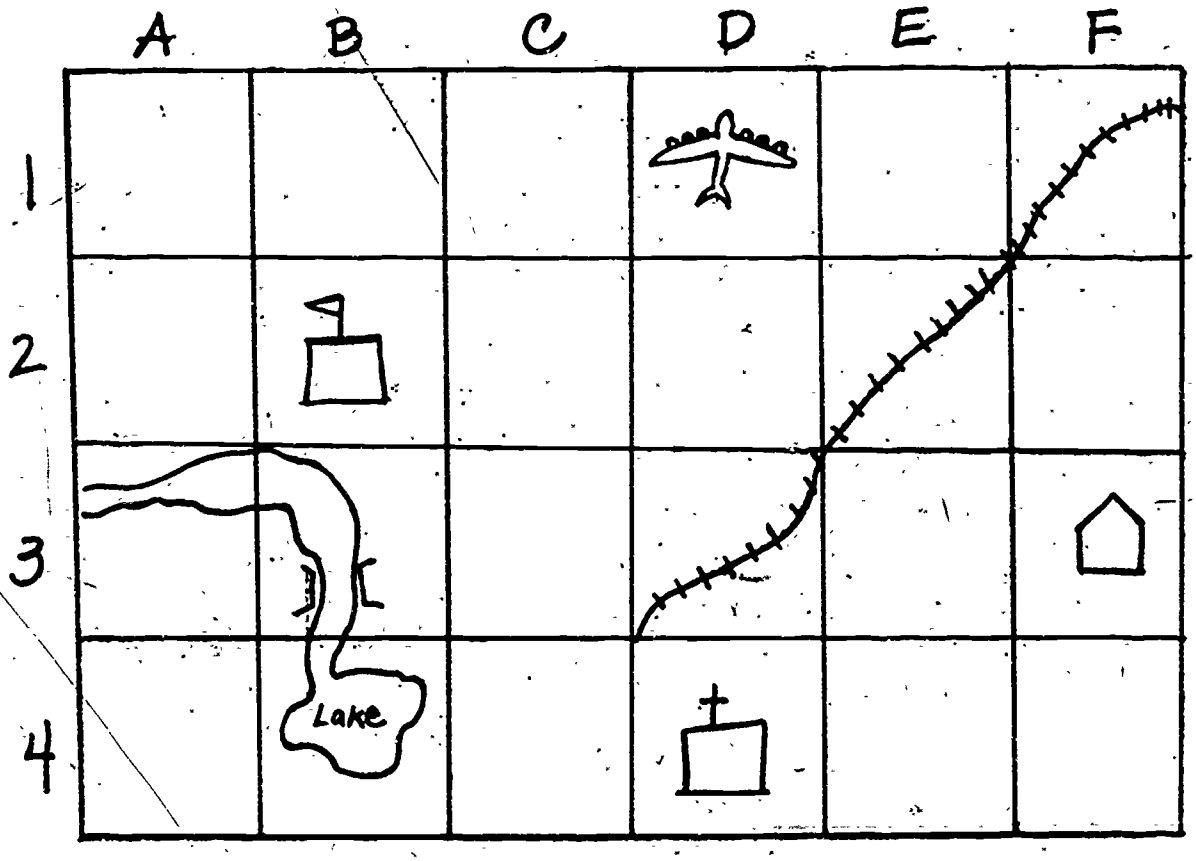
2. Color the car red.

3. Draw a line going east to west in the middle of the highway.

4. What direction will the car drive to get to the school

5. What direction would you walk going from the school to the church?

6. Put a green square in the north east corner. This symbol represents a park.



1. What symbol is in B-2? _____
2. What stretches from F-1 south to D-3? _____
3. In what square is the church located? _____
4. Locate B-3. What is there? _____
5. If you wanted to see a pilot on which square would you locate the airport? _____
6. At F-3 what do you see? _____
7. What goes from A-3 to B-4? _____
8. The lake is located in what square? _____

Lesson: Using a Compass Rose

Required Materials

Tape #6
28" Raised Relief Map of USA
Nyco Markers
Paper, pencil, ruler

Behavioral Objectives

1. Given a compass rose with one of the directions labeled, students correctly label the other main and intermediate directions.
2. Given a reference point, students use their knowledge of compass directions to locate specific places on a United States map.

Extension Activities

1. Bring Minnesota road maps for each student. Use the insert of Minneapolis and St. Paul on the back of the map. Locate places of interest (4 or 5) and tell direction from a predetermined point.
2. Use the Minnesota road map. Pick a city at the center of the state. Locate a town in each main and intermediate direction. Then locate 3 or 4 other towns of interest and have the children state which direction they are from the reference point.
3. Location of states. Bring a puzzle of the United States or make a set by tracing a map of the United States twice. One of the traced maps should be backed with cardboard. The other back with a lighter tagboard and cut the states apart. Children may pick a state and place it on the board. The second state picked must be an adjacent north, south, east, or west state. Do this until all the placed are filled.
   Variation: Use the puzzle but also use a spinner marked with main and intermediate directions. Put all the states face up. Leader puts one state on to be a reference point. The first player spins the spinner and must find and place correctly a state that is that direction from the reference point. This is done until all state spaces are filled.
4. Study the globe. Then on paper tell where you would be if you traveled to the following places:
   a. A large island northeast of North America.
   b. Small, well-known islands in the Pacific Ocean southwest of San Francisco, California which is now a state.
   c. The northwestern part of North America.
   d. The southwestern part of Europe.
   e. The northeastern part of Africa.
   f. A continent northwest of Australia.
   g. A continent southeast of North America.

Reference Materials

Books

Hackler, David, How Maps and Globes Help Us, pg. 26-27

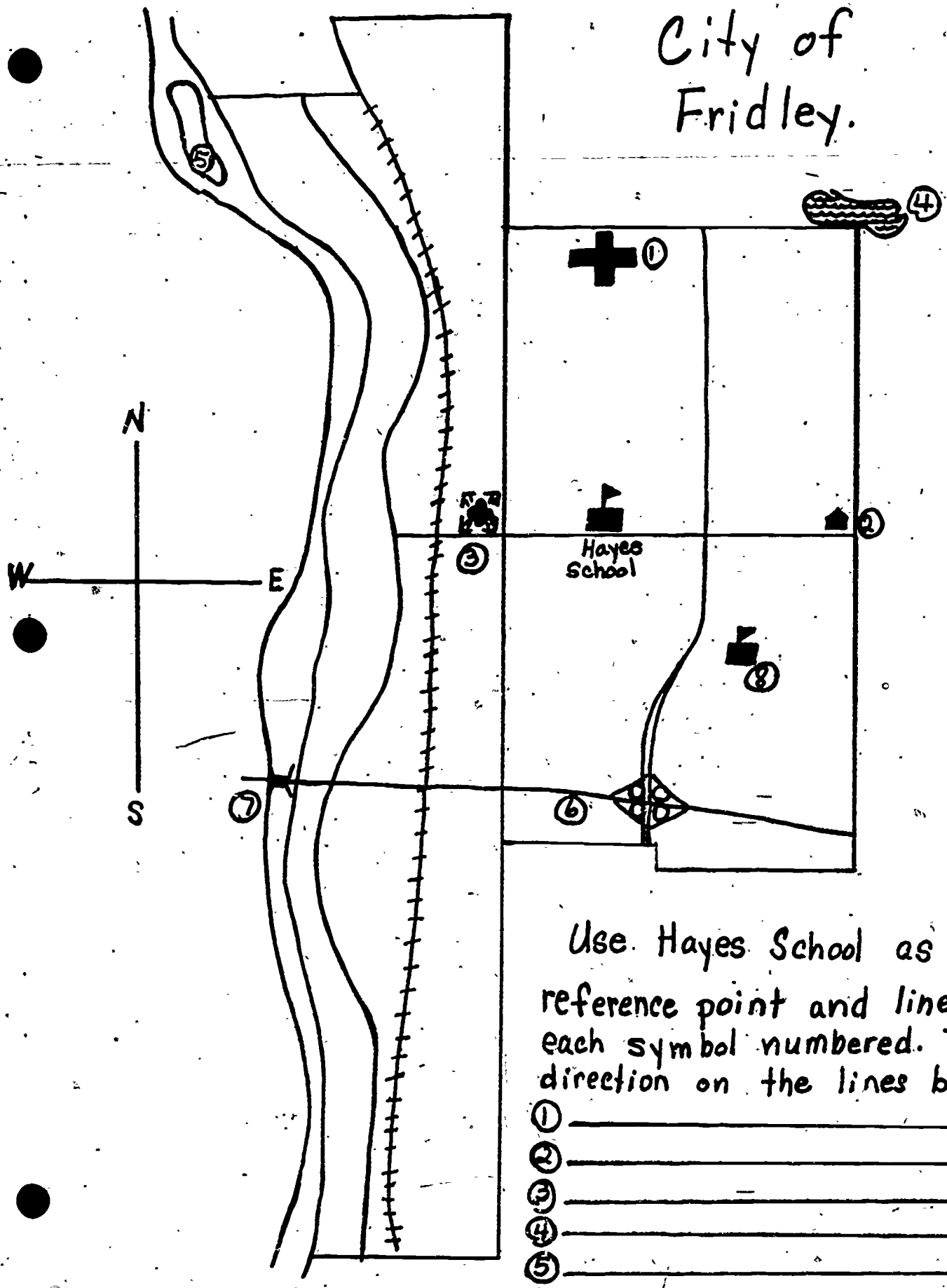
Schere, Monroe, The Story of Maps, pg. 4-6, 58

Estep, Irene, Good Times with Maps, pg. 12-13

Epstein, Sam and Beryl, First Book of Maps and Globes, pg. 18-21

Compass Rose

City of Fridley.

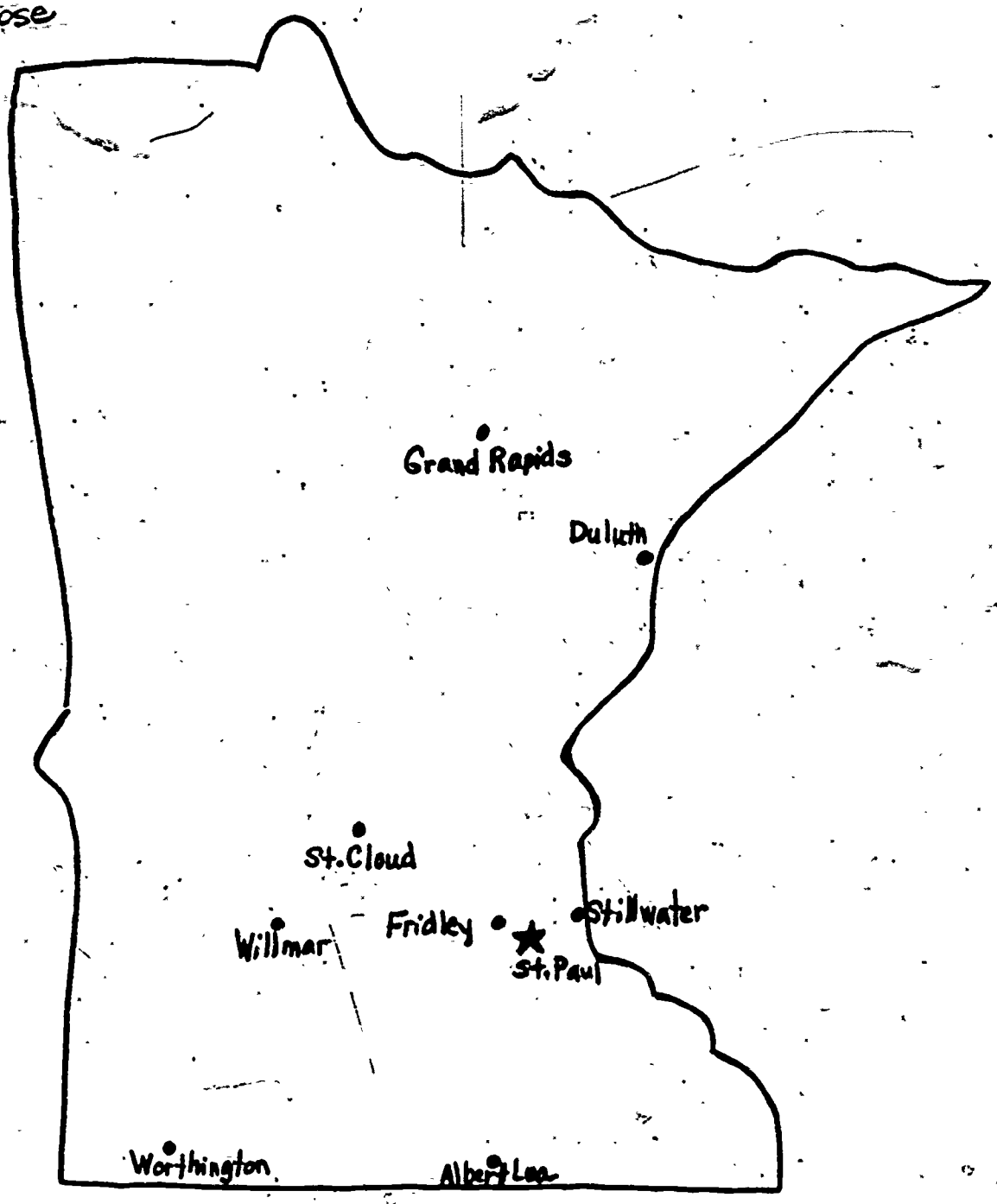


Use Hayes School as a reference point and line to each symbol numbered. Tell the direction on the lines below.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

00052

Compass Rose



Draw a line from Fridley to each city shown on the map. After each city listed below tell the direction you would drive <u>from</u> Fridley to get there.

1. Albert Lea _____
2. Duluth _____
3. Grand Rapids _____
4. St. Cloud _____
5. St. Paul _____
6. Stillwater _____
7. Willmar _____
8. Worthington _____

GRADE FOUR

Lesson: Continents and Oceans

Required Materials
Tape 14
12" Sculptural Relief Globe
22" Graphic Project Globe
Readiness Wall Map of World
World Desk Outline Map, D9
Nyco marker, chalk, paper, pencil

Behavioral Objectives
1. Students will be able to label the seven continents and four oceans on either a nameless project globe or a world outline map.

Extension Activities
1a. Arrange continents in order of size, largest first.
b. Put oceans in alphabetical order.
c. Arrange continents in alphabetical order.

2. Have the students make up riddles like the following:
a. I am thinking of a continent. It is shaped something like a carrot. Which continent is it?
b. I am thinking of a continent. It is the largest, yet it has the shortest name. Which continent is it?
When each child has one ready, the class can divide up into teams and have a contest.

3. Try playing "Twenty Questions" with the help of a globe. The answers must be yes or no until the correct answer is achieved. Ask one of the children to think of a continent or an ocean. This child responds to the questions in this manner:
"Is it an ocean?" No
"Is it a small continent?" Yes
"Is this continent attached to Asia?" No
"Is it north of the equator?" No
"Is it crossed by the equator?" No
"Is it Antarctica?" No
"Is it Australia?" Yes
Playing this game contributes to learning the names and locations of the continents and oceans. As the children learn about places and things on the earth other than continents and oceans, this game can be played to help fix the names and locations of these places firmly in their minds.

4. Have each child take a ball of clay and mark the equator, the North and South Poles, and the continents.

5. Make a simple globe by pasting strips of paper on a balloon. Have students draw and color in the continents and the oceans - emphasizing shape and size.
6. Identifying North America. Have the children learn to recognize North America by its shape and other conspicuous features as follows:
   a. The irregular coastline. Have children trace the coastline with a pointer to impress this fact.
   b. The islands along the northern coast. Point to three large islands and three small islands.
   c. The location of the Great Lakes.
   d. The larger river in the center of the continent. Trace the river from north to south and talk about where the river begins and the direction it flows. Count the rivers that flow into the main river.
   e. Review the names of the three oceans that touch North America and give the direction of each from the continent.
7. Scrapbooks. Let each interested pupil select a continent about which he would like to make an intensive study. Over a period of several months the pupils may collect items and information to put into individual scrapbooks. Included might be such things as:
   a. Pictures found in magazines and newspapers
   b. Clippings from newspapers and magazines
   c. Maps and booklets requested from different places on the continent.
   d. Written reports on famous people
   e. Outline of products and industries
   f. Stamps
   g. Original stories and poems
8. Foreign Food Recipes. Have children collect recipes of foreign foods from different parts of the continents to be compiled for a Christmas or Mothers Day gift. Each child designs his own cover for the booklet. Each pupil may bring in his mother's favorite foreign recipes.
9. Give each student a dittoed sheet which has the outline of the different continents on it. They must identify each continent and write the correct name next to it.
10. A worksheet could be made incorporating some or all of the following questions.
    a. Which two continents make up Eurasia?
    b. What is the name of the largest continent?
    c. Which continent is larger, South America or Africa?
    d. Which continents are touched by the Indian Ocean?
    e. Which two continents are closest to the continent of North America?

f. What is the name of the ocean to the east of North America?
g. What is the name of the ocean to the north of North America?
h. What is the name of the ocean to the west of North America?
i. What continent is the nearest western neighbor of southern Africa?
j. What ocean is located west of Australia?
k. Africa is south of what continent?
l. What is the name of the continent located at the South Pole?

Lesson: Hemispheres

Required Materials

Tape 7

12" Sculptural Relief Globe

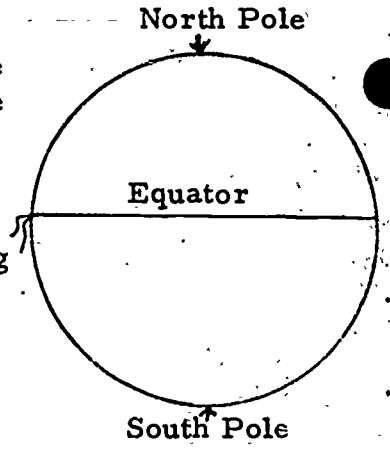
Behavioral Objectives

1. Students define a hemisphere as any half of a sphere
2. Using a globe, students name the continents that are located in the northern, southern, eastern and western hemispheres.

Extension Activities

1. Cut an orange or ball in half so each child can actually see what the term hemisphere means.
2. Materials needed - 1 globe for every two students. Give each child a dittoed sheet with names of countries or large cities. They must locate the country or city and write down which hemisphere it is found in. Begin by just having them put northern or southern. Then add eastern and western so they must have two answers for each one. Example - German, northern, eastern.
3. Hemisphere Tic Tac Toe. Divide the class into two teams. As each student's turn comes up he should have a globe to look at. Give the first student on one team the name of a country, continent, or city. If he can correctly identify the hemisphere it is in he can put an X any place he would like on a Tic Tac Toe diagram drawn on the board. The first person on the O team would then be given a different place to find. If he cannot give the correct hemisphere he cannot place an O on the diagram and the turn goes back to the X's.
4. Which Hemisphere. Players needed - two or more. The leader or one of the players gives the name of a hemisphere, as, "Northern Hemisphere." If there are more than two players, the leader points to one player and counts to ten, quietly and at a moderate rate. Before he reaches ten, the player pointed at must name a country located in the Northern Hemisphere. If he is successful, he then becomes "It" and names a hemisphere for another player. Adaptations: Cities might be used in place of countries. Caution - during the first few times that this game is played, it would be helpful to use a world map or a globe. Later on these should always be available for reference if needed.

5. Use a piece of string to divide the earth into hemispheres. Wrap the string around the globe at the equator as shown in Drawing A. Find the half of the earth between the equator and the North Pole. That half is called the northern hemisphere. Find the half between the equator and the South Pole. That half is called the southern hemisphere. Have the children write the answers to these questions:



Drawing A

   a. Do you live in the northern or southern hemisphere?
   b. Which of these two hemispheres has more land?
   c. Which hemisphere has more water?

Now use the same piece of string to divide the earth in halves the other way into eastern and western hemispheres. Have the children write the answers to these questions:

   a. Do you live in the eastern or western hemisphere?
   b. Which of these two hemispheres has more land?
   c. Which of these two hemispheres has more water?

Lesson: Scale and Measurement

Required Materials

Tape 13
12" Sculptural Relief Globe
28" x 18" Raised Relief World Map
Nyco marker
Pencil
3 strips of paper 8" x 1/2"

Behavioral Objectives

1. Students will use the graphic scale to measure the distance in miles between specified locations on both maps and globes.

Extension Activities

1. Using the paper rules which were made for the tape have the children measure other distances on the globe and world relief map. The teacher may determine what would be most appropriate for that class to measure.
2. Provide the students with a variety of state and local maps and have them compare the scale for miles on each one. Encourage them to use the scales to measure the distances between places with which they are familiar.
3. Draw a map of the classroom to scale.
4. Post a picture of a scenic area. Have pupils make a map of the picture. The map should include a key to features on the map and should be drawn to scale.
5. Using a scale of 1 inch = 200 feet (a piece of 24" x 24" paper should be used) have the children plan an ideal city.
   1st - Draw the site on the paper including topographic features (hills, valley, water, woods, roads, etc.).
   2nd - Using the site map, plan a community with single houses, townhouses, multiple apartment units, parks, shopping areas, traffic routes, etc.
6. Make maps of the state or region to scales of varying size.
7. Visualizing an acre. Measure the distance of an acre, then make a drawing to scale. A quick way will be to measure a string 208 feet long in the classroom. Then use the string to stake out a plot of ground 208' x 208'. (An acre contains 43,560 square feet. These dimensions are a little short, but easy for children to draw to scale.)

*8. Page 96 in The Social Sciences, An Investigation into Scale, could be used with this lesson.

9. Chart 32 from Map Symbols and Geographic Concepts Charts and its related activities (found on the back of the chart) could be used with this lesson.

Reference Materials

Filmstrips

K107 Making a Floor Plan

K108 Scale

K109 Measuring Distances

E63 Measuring Distances on Maps

Films

59 Maps are Fun

Transparencies

Series 851-A Map Reading

851-12 Scale

Earth Science Transparencies

MR-4 Scale

Lesson: Boundaries and Cities

Required Materials

Tape 18
Readiness Wall Map of USA, markable
Readiness Wall Map of World, markable
Map Symbols and Geographic Concepts, Chart 44
Nyco marker

Behavioral Objectives

1. Students will distinguish on a map between the symbol for an international boundary and the symbol for a state or provincial boundary.
2. When shown specific boundaries on a map, students will state whether each boundary follows: a) a natural feature, b) a man-designated line, or c) both a natural feature and a man-designated line.
3. Given a list of cities and a United States political map that classifies population size with city symbols, students will use the map legend to derive the population classification of each city.
4. Students will use the symbolism in a map legend to identify the capital cities of specified states or countries.

Extension Activities

1. On the Readiness Wall Map of the United States, have the students (1) find four states that are bounded entirely by imaginary, man-designated lines, (2) determine the population sizes of selected cities, and (3) identify the capitals of selected states.
2. Use a Minnesota state road map for this activity. Have the children use a marking pen to draw the boundary lines around the state (natural and man-made). Locate several different towns of their choice. Have the students connect the towns via the major highways and calculate the distance and direction.
3. Make an enlarged chart showing the different symbols for cities and what population each symbol represents.
4. Make flash cards with the symbol for a city on one side and the population that symbol represents on the other side. Students can use them by themselves or in pairs during spare time.
5. Symbol Quiz. Materials needed: one Minnesota map for every one or two students. The teacher says the name of a city and gives the class some help in finding in on the map. The student is to look at the symbol for that city and on paper write down the population which that symbol represents. Make sure enlarged charts and flashcards are not in sight.

6. Spot a Country. Materials needed: two world maps hanging on the wall. Three to five may play at a time. One player writes the name of a country on the board. The other players try to locate that country as quickly as possible. The first one to "Spot It" on the map is the winner and receives one point. The one who makes five points first wins that particular game and takes the place as blackboard writer while four other children are chosen to go to the maps. Variation: States, lakes, rivers, major cities of the world, oceans and many other things may be located in this manner. The game may be played as a team game with two members from each team competing. The two team mates may work together to find the country.

7. Where We Live. Materials needed: paper, pencils, duplicated sheets with the following terms at the top:
CITY STATE COUNTRY CONTINENT PLANET
Divide the class into two teams, fairly equal in ability. Give each child a duplicated sheet. Write a series of words on the board, one at a time, allowing time for children to write each word in the correct place on his sheet. An example of one series is: North America Earth United States Des Moines Iowa
After a number of series are presented, the team having the largest number of correct answers wins.

8. Map Flash. Materials needed: paper and pencil for each player; a set of large tagboard cards having outline maps of the United States with a different state colored on each and the name of that state and a number on the back. The teacher or a class member stands before the players and flashes the cards in the order they are numbered. The pupils write the name of each state as it is flashed and number the names in order. After all the cards have been flashed, the papers are checked. The person with the greatest number of correct responses is the winner. Variation: sections of the United States or countries on a continent could be used.

*9. Page 145 in The Social Sciences, An Investigation into Community Planning could be used with this lesson.

10. A worksheet could be made incorporating some or all of the following questions:
   a. What are the borders of your home? The children can write the homes or other property that touches theirs.
   b. What country borders Canan?
   c. What are the borders of our state?
   d. What countries and bodies of waterborder the 48 United States?
   e. What are the borders of the state of Alaska?
   f. Which nations border Paraguay in South America?
   g. Which nation in South America has the largest number of nations bordering it?

h. How many South American countries do not border it?
i. What nations border the Arctic Ocean?
j. Tennessee and Missouri have more bordering states than any other state in the United States. How many states border each?
k. What river borders Texas on the south?
l. What river borders Kentucky on the north?

11. Have the children gather pictures of small towns and large cities. List the differences between the two based upon the pupils' experiences and the study of the pictures.
12. The following charts from Map Symbols and Geographic Concepts Charts and their related activities (found on the back of the charts) could be used with this lesson: Charts 30, 31, 33, 34, and 39.

Reference Materials

Filmstrips

J116 Towns, Cities and Their Symbols

Lesson: Day and Night

Required Materials
Tape 19
Trippensee Planetarium

Behavioral Objectives
1. Students will demonstrate their understanding of rotation and revolution by 1) correctly distinguishing between the earth's daily rotation and yearly revolution; 2) identifying the direction of the earth's rotation as eastward or counter clockwise (when viewed from the north); 3) identifying the direction of the earth's revolution as counter clockwise (when viewed from the north).
2. Students will identify the earth's rotation as the cause of day and night, sunrise and sunset.

Extension Activities
1. Demonstrating the cause of day and night. The following procedure could be used:
   a. Darken the room, if possible, to make the distinction between the light and dark halves of the globe more distant.
   b. Have a child hold a flashlight in a stationary position to represent the sun. Direct the beam of light toward the equator.
   c. Note that one-half of the globe is lighted. Explain that this side is having day and the other side is having night.
   d. Rotate the globe slowly from west to east.
   e. Notice that a certain point (this should be previously marked) is just coming into the light. Explain that it is sunrise for that point. When that point is directly in line with the center of the beam of light (or when the sun is shining directly on it) it is noon. It is sunset for that point when it passes into the shadow.
2. Make a little flag with a matchstick and paper. Put a little clay around the bottom of the matchstick. Have a child fasten this on the globe to show where you live. Darken the room and use a lighted flashlight to stand for the sun. Hold the light a few feet away from the globe. Have the children tell how much of the world is having daylight and how much is having darkness. Rotate the globe slowly watching the flag that stands for the place where you live. Have the children identify when dawn, noon, and twilight would come to their home.

Reference Materials
Filmstrips:
D23 Night and Day

Lesson: Seasons

Required Materials
- Tape 20
- Trippensee Planetarium

Behavioral Objectives
1. Students will define the earth's axis as an imaginary north-south line through the center of the earth.
2. Students will state that seasonal changes are caused by the earth's inclination and revolution. They will demonstrate their understanding of these phenomena in the Northern Hemisphere by identifying 1) summer as the season the North Pole tilts toward the sun, 2) autumn as the season the North Pole tilts away from the sun; 4) spring as the season the North Pole begins to tilt toward the sun.

Extension Activities
1. To get some idea of how the earth moves in two ways at the same time, try the following: On the floor, place a reading lamp to stand for the sun. On the floor around the reading lamp, draw a line with chalk to stand for the earth's orbit. Move the globe along the chalk line around the lamp. At the same time, rotate the globe on its axis. (one student could be doing this) Have the rest of the class answer the following questions:
   a. How long does it actually take the earth to make one complete turn on its axis?
   b. How long does it actually take the earth to make one complete trip around the sun?
   c. How many times does the earth rotate during the time that it makes one trip around the sun?
2. Making mosaic maps. Landscape colors of North America in each of the four seasons can be an enjoyable and worthwhile activity if sufficient research is done to determine the average weather and climatic conditions in each of these four months: March, June, September and December. Students should plan their own materials and methods. Such a map could start with a rather large outline map of North America, on which white triangles may be pasted, one overlapping another, to represent snowcovered mountains; dark green triangles for trees; brown, yellow, or green squares for fields or pastures; red, yellow or purple circles for fruit; pink or lavendar circles or fancy shapes for flowers, etc. Strips of gummed tape may be colored or painted and applied as needed.

Reference Materials

Filmstrips
- D10 The Seasons
- D12 Why the Seasons

Films
- 12 Causes of the Seasons

GRADE FIVE

Lesson: Using the Grid System

Required Materials

1. Cassette #10
2. 12" Sculptural Relief Globe
3. 28" x 18" Raised Relief U.S. Map
4. Nyco marker
5. Paper and pencil
6. Ruler

Behavioral Objectives

1. The students will define the terms grid and intersection.
2. Given the latitude and longitude of several unnamed cities, students will use the grid system on a map or globe to name the cities at these locations.
3. Given a particular city, the student will determine the coordinates of that city.

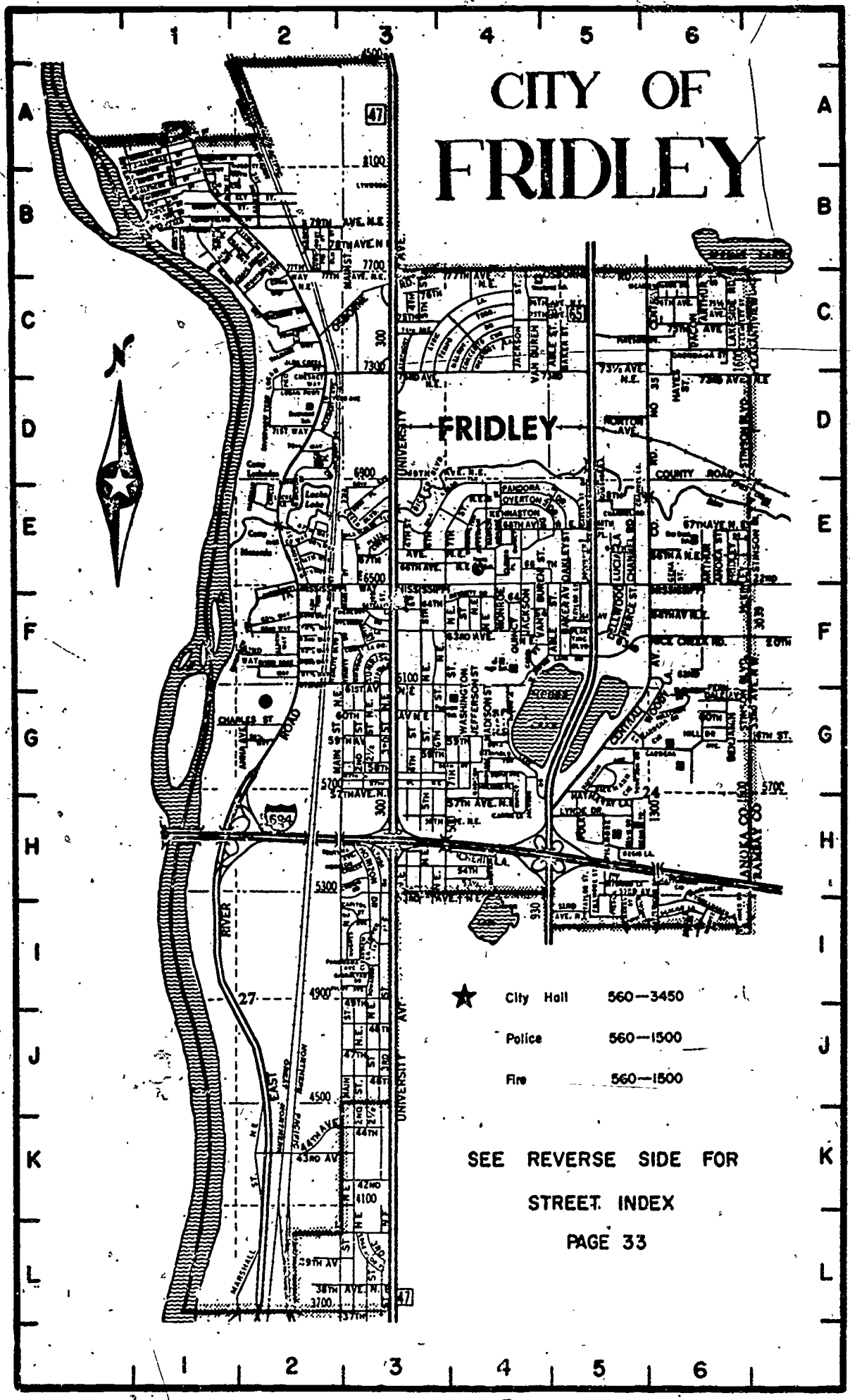
Extension Activities

1. Mark off your classroom, placing numbers along one wall and letters along another. Have each student locate his desk and other items using the grid system.
2. Locate the City: This game requires a road map with letter-number grid. One child will name a city and call on a child to give him the correct letter and number for that city. If the answer is correct, that child may give the next city and the game continues in this way. The game may also be played by giving the name of the city and its coordinates and having a child point to the city on the map.
3. Have the students plan a vacation trip through Minnesota. Limit them in mileage. Have them name the cities they will visit and the grid coordinates of each.
4. Use the map of Fridley following this to identify the grids of various landmarks, or given grids of a landmark, locate it.
5. Play a game of checkers. Label across the top and down the size grid letters and numbers. The only way a player can move is by naming the coordinates of the square he would like to move to.

Reference Materials

1. Filmstrips
   a. C84 Using the Right Map
   b. 0164 Using Common Maps
   c. K110 Locating Places
2. Sam & Beryl Epstein, The First Book of Maps and Globes, pg15-17
3. Monroe Schere, The Story of Maps, Chapter 7

CITY OF FRIDLEY



★ City Hall 560—3450

Police 560—1500

Fire 560—1500

SEE REVERSE SIDE FOR STREET INDEX

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STREET INDEX

Lesson: Distortion (Part 1)

Required Materials
- Tape #11
- 12" Sculptural Relief Globe
- Readiness Wall Map of World
- World Desk Outline Maps DD9 and DD99
- Paper, pencil, ruler

Behavioral Objectives
1. Given a world map and globe and asked to compare the size and shape of selected areas, students choose the globe as being the more accurate reference.
2. Students will be able to define the term distort or distortion.

Lesson: Distortion (Part 2)

Required Materials
- Tape #12
- 12" Sculptural Relief Globe
- 28" Raised Relief World Map
- Nyco marker
- Ruler, clay, string
- Form-A-Globe Kit

Behavioral Objectives
1. Students use the geographic scale to measure the distance in miles between specified locations on both maps and globes.
2. Students review basic concepts of scale and measurement.

Extension Activities
1. Form-A-Globe Activities. Have the students assemble the Nystrom Form-A-Globe. Follow the activities in the Form-A-Globe guide.
2. Compare scale and distances on Form-A-Globe to the scale and distances on the 12" relief globe.
3. How Far? Players all have 2 map projections of the world or the United States on their desks. Also need a ruler and possibly a pencil. The leader names two places on either the world map or the U.S. map. Each player finds the distance between these places with the aid of the ruler and map scale. Compare the two distances and tell which is greater. Person with the correct answer first gets a point. Student with the most points after several exercises is the winner.
   Variation: Students may measure on both maps and compare by subtracting to get the difference showing the distortion of map projections.

4. Find as many map projections as possible and display on a bulletin board making sure to label each projection.
5. Use the set of transparencies listed in reference materials to introduce and discuss map projections.
6. Look into atlas and old history books to find maps that explorers have made. Note the inaccuracy of distance and shape. Discuss why beginning maps were so inaccurate.
7. Use worksheets that follow lesson for more information on map projections.
8. Look at several different maps comparing the scale and how it is used on the map.
9. Use both a world map and a globe. Choose one latitude such as 40° N and follow it around the globe and across the map. Note the differences as to where the lines go through the continents and countries.
10. Have students look at a flat map and notice that along the sides of the map the latitude becomes greater rather than staying parallel as on a globe.

Reference Materials

Transparencies

View Aid MR-1 Map Projections

3M Geography Packet - Map Projection (4 transparencies)

Books

Teacher resource: Rand McNally Handbook of Map and Globe Usage, pgs. 207-212.

Hammond's Illustrated Atlas for Young America, pgs. 19-21.

Hackler, David, How Maps and Globes Help Us, pg. 39

Epstein, Sam & Beryl, The First Book of Maps and Globes, pg. 45

Raisz, Erwin, Mapping the World, pgs. 29, 30, 49, 81, 82

Schere, Monroe, The Story of Maps, pgs. 28, 29, 34-36, 62

*Lesson: Elevation (Use with text pgs. 120-125, 136-138) (This is a two part lesson)

Part 1

Required Materials

Tape 15
28" x 18" Raised Relief U.S. Map
Map Symbols and Geographic Concepts Charts 27, 43, 44
Nyco marker

Behavioral Objectives

1. Given selected places on a relief map, students will specify the upper and lower limits of elevation for the color interval in which each place is located.

Part 2

Required Materials

Tape 16
28" x 18" Raised Relief Map of U.S.
Sculptural Relief Wall Map of U.S. with name overlay
Map Symbols and Geographic Concepts Charts 44 and 45
Nyco marker

Behavioral Objectives

1. Given selected sites located between adjacent colors on a relief map, students will specify the exact elevation of each site.
2. Given selected sites on a relief map, students will demonstrate their ability to read the symbol for a peak and specify its exact location.

Extension Activities

1. Ask students to find other cities on the raised relief U.S. map for which exact elevations can be specified. Then have the students find the exact elevations of Mt. Whitney (California), Mt. Hood (Oregon), and Mt. Rainier (Washington).
2. A compairson of elevations may be made with such questions as:
   a. Which city is on higher land, Chicago or Salt Lake City?
   b. Are the mountains along the coast of California higher or lower than the Sierra Nevade?
   c. In what part of Missouri is the land highest? What is the name of this highland? (Ozark Plateau)
   d. Is the land of Florida higher or lower than most of the land of Illinois?
3. Have the students make a large clay model of a mountain. When sliced into layers of the same thickness, the cuts would show on the surface as contour lines.
4. Model relief maps can be made in several different ways. Following are some different recipes which coulc be used for this purpose.
   a. Paste and Paper. Tear paper towels or newspapers into 1-1/2 inch pieces. Put paste on one piece at a time, wad

it or shape it with your fingers and stick it on the map outline. Build up hills and mountains as desired. Paint with tempera paint after the paste has dried.

b. Salt and Flour. Mix equal parts of salt and flour, using only enough to hold the ingredients together. Apply to map outline, modeling the terrain according to plan. Keep out of humid places because salt attracts moisture.

c. Plaster and Sawdust. Mix one pint of plaster, one pint of sawdust and a quarter pint of paste that has been dissolved in water. Knead and apply to map outline. Paint after the mixture has set for fifteen to thirty minutes.

d. Plastic Starch and Detergent. Mix one part plastic starch with four parts detergent. Beat mixture until it is fluffy and apply to map outline. Be careful of the surface because it crumbles easily.

5. A worksheet could be made incorporating some or all of the following questions.
   a. What color is used to show the ocean on a physical map?
   b. What colors are used to show the lowest elevation? Highest elevation?
   c. Is Denver, Colorado or Chicago, Illinois on land of higher elevation?
   d. Is the land elevation higher in the eastern or western part of the United States?
   e. Are the Rocky Mountains of the United States higher than the Ozark Upland?
   f. Are higher mountains found in Australia or China?
   g. The highest mountains of the world are found in Central Asia. What is their name?
   h. What is the name of the highest mountains in Western Europe?
   i. Arrange these three mountain peaks in order of their height from lowest to highest: Mt. Woodroffe in Australia, Mt. Kilimanjaro in Tanzania, Africa, and Mt. Everest in the Himalayas in Asia.
6. The following charts from Map Symbols and Geographic Concepts Charts and their related activities (found on the back of the charts) could be used with this lesson: Charts 20 and 21.

Reference Materials

Transparencies

851-A Map Reading
851-11 Elevation
Earth Science Transparencies
MR2 Map Symbols and Contours

Lesson: Rivers

Required Materials

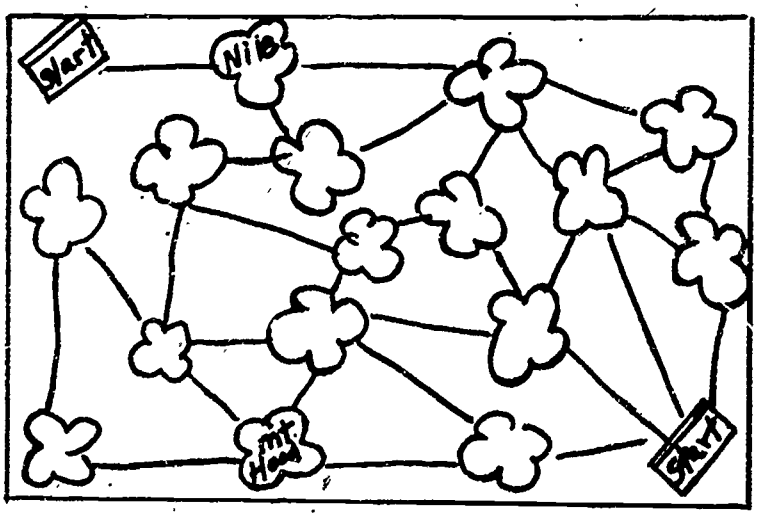
Tape 17
28" x 18" Raised Relief U.S. Map
Readiness Wall Map of World
Map Symbols and Geographic Concepts Charts 43 and 44
Nyco marker

Behavioral Objectives

1. Students will identify upstream as a direction opposite the flow of a river and downstream as a direction with the flow of a river.
2. Students will identify the source of a river as the point at which it begins and the mouth as the point at which it ends.
3. Given a relief map and selected rivers, students will use the map's color intervals to determine the direction of flow for each river.
4. Given a political map and selected rivers, students will use the arrowhead shape of each river's confluences to determine its direction of flow.

Extension Activities

1. Choose several rivers on both the raised relief U.S. Map and the wall map of the world and have the students use the appropriate method to determine each river's direction of flow.
2. Students may have difficulty locating the sources of some rivers on the maps. The easiest way to find out where a river begins is to find out where it ends and then trace upstream from the mouth to the source. Have the students practice doing this with several rivers on the raised relief U.S. map.
3. Be Lucky. The purpose of this game is to locate the important mountains and rivers of the world. Materials needed: A red and blue cardboard square to use as markers and a series of four leaf clovers with the names of mountains and rivers placed on them. Clovers may be drawn on the board or a chart or they may be placed on hooks on the bulletin board.



Possible mountains and rivers to use:

Mountain	Location
Matterhorn	Switzerland - Europe
Mt. Everest	Nepal and Tibet - Asia
Mt. Hood	United States-North America
Kilimanjaro	Tanganyika Territory-Africa

River	Location
Nile	Egypt - Africa
Amazon	South America
Mississippi	United States - North America
Thames	England - British Isles

Procedure: The group is divided into two teams, the Reds and the Blues. The Reds start on one of the squares marked "Start" and Blues start on the other "Start" square. They work toward each other. The object of the game is to collect clovers. The one with the most clovers will win. Take turns moving one space at a time if you can answer the question that is on the clover. If the question can not be answered, a turn is lost. One team can not move to a clover occupied by the other team. If one team is blocking another, the opposing team will lose the turn. Each clover has the name of a river or mountain printed on it and the team must name the country where it is found. Team members may consult each other, but only one answer will be accepted.

4. Using a variety of maps, have the children find examples of the following:
   a. Rivers that begin in very high mountains
   b. Rivers that flow between mountain ridges
   c. Rivers that make large bends
   d. Rivers that flow eastward, northward, southward
   e. Rivers with many tributaries
   f. Rivers that have built deltas
5. Have each child choose a river and tell the following things about it:
   a. Where the river begins
   b. The direction it flows
   c. Places where it flows between mountains: where the land is low
   d. The tributaries
   e. The ocean into which it flows
   f. The large city near its mouth
6. Using a map of Europe, have the children contrast the long rivers of the east, such as the Volga, with short but important rivers in Western Europe such as the Oder, Rhine, and Seine.

7. Using a map of Africa, have the children locate the Nile, the Niger, and the Congo. Have them trace each of these rivers from its source, or the source of one of the tributaries, to the mouth, noticing the following characteristics:
   a. Nile: flows north; two large tributaries; the delta with many streams that fan out across it; the location of Cairo
   b. Niger: the big bend; source near west coast; the delta
   c. Congo: the numerous tributaries; crossed by equator
8. A worksheet could be made incorporating some or all of the following questions:
   a. What is the name of the Canadian province where the source of the Columbia River is located?
   b. What Missouri city is located near the mouth of the Missouri River?
   c. What is the name of the mountains in Colorado in which the source of the Colorado River is located?
   d. What is the name of the longest tributary of the Mississippi River?
   e. Why is the Ob River, just east of the Ural Mountains in the Soviet Union, not favorably located for transportation?
   f. Do Poland and Germany in central Europe, or Algeria and Libya in North Africa have more rivers?
   g. Which continent has the fewest rivers, Australia or Antarctica?
   h. What is the name of the river in central Europe that is a natural transportation route running east and west?
   i. Many of the largest cities are located near the mouth of navigable rivers. Near the mouths of what rivers are these cities located: Shanghai, China, Saigon, South Vietnam, Alexandria, U.A.R., and New Orleans, Louisiana?
   j. What city is located near the mouth of the Indus River?
9. The following charts from Map Symbols and Geographic Concepts Charts and their related activities (found on the back of the charts) could be used with this lesson: Charts 5 and 6.

Reference Materials

Filmstrips

N43 The Story of Rivers

J115 Lakes, Rivers and Their Symbols

Lesson: Latitude

Required Materials:

Tape #8
22 inch Graphic Project Globe
12 inch Sculptural Relief Globe
Chalk (Nystrom Marking Chalk)

Behavioral Objectives:

1. Students use the terms line of latitude, east-west line, and parallel interchangeably.
2. Given specific lines of latitude, students use a globe to name the continents through which the lines extend.
3. Students indentify the equator as the line at 0^{o} latitude. They will identify the North and South poles as points that are 90^{o} north and south latitude, respectively.

Extension Activities:

1. Learning to Use a Globe 2, pages 5-10
2. Learning to Use a Map, pages 26-28
3. Refer to extension activities for longitude

Reference Materials:

Refer to Reference Materials for Longitude

Lesson: Longitude

Required Materials:

Tape #9
22 inch Graphic Project Globe
12 inch Sculptural Relief Globe
Chalk (Nystrom Marking Chalk)

Behavioral Objectives:

1. Students use the terms line of longitude, north-south line, and meridian interchangeably.
2. Given specific lines of longitude, students use a globe and name the continents through which the lines extend.
3. Students indentify the prime meridian as the line at 0^{o} longitude.

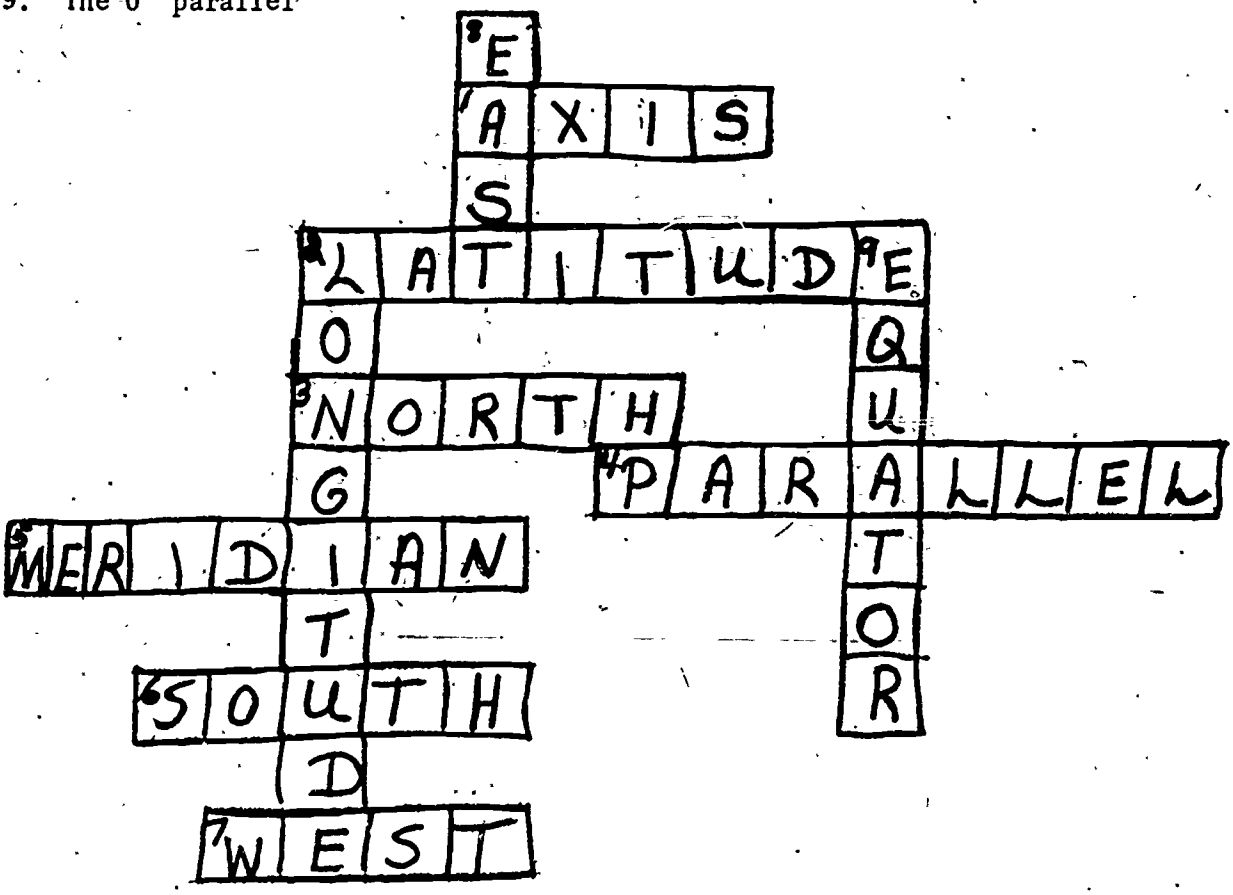
Extension Activities

1. Learning to Use a Globe 2, pages 11-17.
2. Learning to Use a Map, pages 29-30.
3. Working Model -- Latitude and Longitude
   Materials: 12" x 12" piece of brown wrapping paper, 12" x 12" piece of white wrapping paper, 18" x 18" sheet of colored paper (any color), scissors, staples, pencils with a 5" piece of string attached, ruler, and paper clips.
   Introduction: Each of you will get a piece of the three colors of paper, a pencil with a string attached, ruler, and scissors from the materials table. We are going to make a globe to help us study the latitude and longitude divisions of our world. This is not really a globe because it will be flat, but you will be able to study these divisions closely because each of you will have his own device with which to work. Measure to find the center of the white piece of paper. Place the loose end of the string on this center point, hold tightly, and draw a circle with a five inch radius. Do the same thing on the brown paper. Using the atlas for measurements, draw the longitude lines on the brown circle and the latitude lines on the white paper. Make each line ¼" wide and cut all of the circle away except these lines and the outside frame. Write equator on the proper line. Now clip the brown paper to the colored sheet and place the white one over the brown in the correct place. You now have a working device to help you find latitude and longitude.
4. Latitude and longitude crossword puzzle
   Materials: Duplicated sheets as shown in the directions.
   Directions: Divide the class into sets of partners. Each player is given a duplicated sheet and the following instructions: "What do you remember about latitude and longitude? Let's find out by completing this crossword puzzle. Can you do it more quickly than your partner?"

KEY

Across
1. The earth rotates on its _____
2. Measures distance north or south of the equator
3. We live in the _____ latitudes
4. Line of latitude
5. Line of longitude
6. The _____ pole is located on land
7. We live in the _____ longitudes

Down
2. Measures distance east or west of the reference point
8. Toward the rising sun
9. The 0° parallel



Adaptations: This puzzle could be used as an open-book exercise at the beginning of a lesson on latitude and longitude.

Cautions: The competing partners should have nearly equal ability.

5. Nystrom Map symbols and Geographic Concepts charts 40 and 41. Refer to the activities on the back of each chart.
6. Worksheets which can be used with latitude and longitude are located at the end of this lesson.

Reference Materials:

Transparencies
Instructo Map Reading #850-1 -- Maps and Globes

Hubbard Map Reading MR-3 -- Latitude and Longitude
3M Physical Geography #3 -- Latitude and Longitude

Filmstrips

NN-154 Using Latitude and Longitude

Records

Charting the Globe, Volume 1, Band 4
Charting the Globe, Volume 2, Band 1 of side 1

Books

The Book of Popular science, Volume 7, pages 218-222
The Doubleday Pictorial Library of Geography, pages 40-47
Exploring the Old World, pages 10-14
The Social Sciences: Concepts and Values, pages 330-331*

Teacher References:

Books

The Rand McNally Hand book of Map and Globe Usage, pages 74-77 and 148-150

GRADE SIX

Lesson: Latitude *

This is a repeat lesson from grade five. The lesson correlates with page 330 in The Social Sciences: Concepts and Values.

Required Materials:
- Tape # 8
- 22 inch Graphic Project Globe
- 12 inch Sculptural Relief Globe
- Chalk (Nystrom Marking chalk)

Behavioral Objectives:
1. Students use the terms line of latitude, east-west line, and parallel interchangeably.
2. Given specific lines of latitude, students use a globe to name the continents through which the lines extend.
3. Students identify the equator as the line at 0^{o} latitude. They will identify the North and South poles as points that are 90^{o} north and south latitude, respectively.

Extension Activities:
1. Learning to Use a Globe 2, pages 5 - 10
2. Learning to Use a Map, pages 26 - 28
3. Refer to extension activities for longitude

Reference Materials:
Refer to Reference Materials for Longitude

Lesson:. Longitude

This is a repeat lesson from grade five. The lesson correlates with page 330 in The Social Sciences: Concepts and Values.

Required Materials:

Tape #9
22 inch Graphic Project Globe
12 inch Sculptural Relief Globe
Chalk (Nystrom Marking Chalk)

Behavioral Objectives:

1. Students use the terms line of longitude, north-south line, and meridian interchangeably.
2. Given specific lines of longitude, students use a globe and name the continents through which the lines extend.
3. Students indentify the prime meridian as the line at 0° longitude.

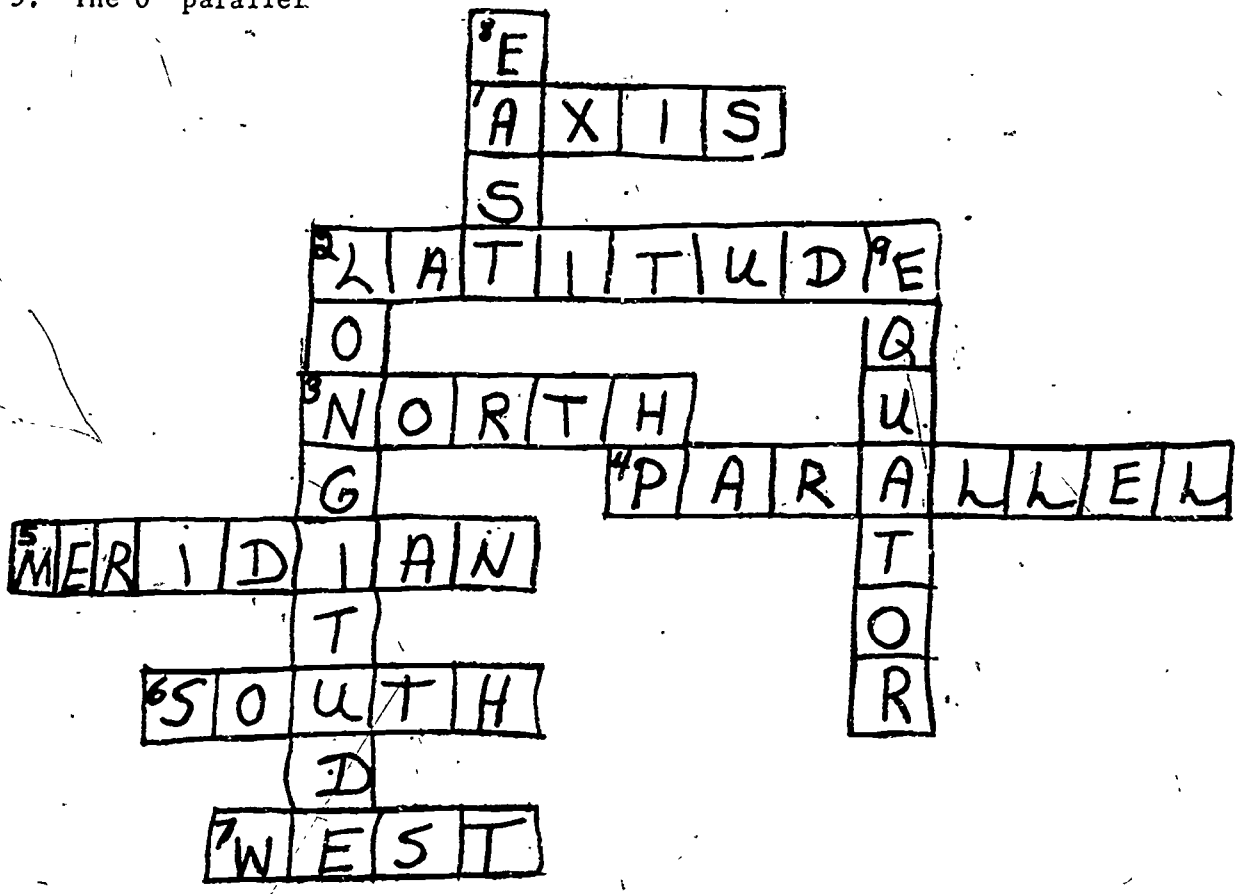
Extension Activities

1. Learning to Use a Globe 2, pages 11-17.
2. Learning to Use a Map, pages 29-30.
3. Working Model -- Latitude and Longitude
   Materials: 12" x 12" piece of brown wrapping paper, 12" x 12" piece of white wrapping paper, 18" x 18" sheet of colored paper (any color), scissors, staples, pencils with a 5" piece of string attached, ruler, and paper clips.
   Introduction: Each of you will get a piece of the three colors of paper, a pencil with a string attached, ruler, and scissors from the materials table. We are going to make a globe to help us study the latitude and longitude divisions of our world. This is not really a globe because it will be flat, but you will be able to study these divisions closely because each of you will have his own device with which to work. Measure to find the center of the white piece of paper. Place the loose end of the string on this center point, hold tightly, and draw a circle with a five inch radius. Do the same thing on the brown paper. Using the atlas for measurements, draw the longitude lines on the brown circle and the latitude lines on the white paper. Make each line ¼" wide and cut all of the circle away except these lines and the outside frame. Write equator on the proper line. Now clip the brown paper to the colored sheet and place the white one over the brown in the correct place. You now have a working device to help you find latitude and longitude.
4. Latitude and longitude crossword puzzle
   Materials: Duplicated sheets as shown in the directions.
   Directions: Divide the class into sets of partners. Each player is given a duplicated sheet and the following instructions: "What do you remember about latitude and longitude? Let's find out by completing this crossword puzzle. Can you do it more quickly than your partner?"

KEY

Across
1. The earth rotates on its _____
2. Measures distance north or south of the equator
3. We live in the _____ latitudes
4. Line of latitude
5. Line of longitude
6. The _____ pole is located on land
7. We live in the _____ longitudes

Down
2. Measures distance east or west of the reference point
8. Toward the rising sun
9. The 0^{o} parallel



Adaptations: This puzzle could be used as an open-book exercise at the beginning of a lesson on latitude and longitude.

Cautions: The competing partners should have nearly equal ability.

5. Nystrom Map symbols and Geographic Concepts charts 40 and 41. Refer to the activities on the back of each chart.
6. Worksheets which can be used with latitude and longitude are located at the end of this lesson.

Reference Materials:

Transparencies
Instructo Map Reading #850-1 -- Maps and Globes

Hubbard Map Reading MR-3 -- Latitude and Longitude
3M Physical Geography #3 -- Latitude and Longitude

Filmstrips

NN-154 Using Latitude and Longitude

Records

Charting the Globe, Volume 1, Band 4
Charting the Globe, Volume 2, Band 1 of side 1

Books

The Book of Popular science, Volume 7, pages 218-222
The Doubleday Pictorial Library of Geography, pages 40-47
Exploring the Old World, pages 10-14
The Social Sciences: Concepts and Values, pages 330-331

Teacher References:

Books

The Rand McNally Hand book of Map and Globe Usage, pages 74-77 and 148-150

Lesson: Boundaries and Cities *

This is a repeat lesson from grade four. The lesson correlates with Unit 6 in The Social Sciences: Concepts and Values.

Required Materials:

Tape #18
Readiness Wall Map of the United States
Readiness Wall Map of the World
Map Symbols Chart #44
Nyco Marker

Behavioral Objectives:

1. Students distinguish on a map between the symbol for an international boundary and the symbol for a state or provincial boundary.
2. When shown specific boundaries on a map, students state whether each boundary follows: (1) a natural feature, (2) a man-designated line, or (3) both a natural feature and a man-designated line.
3. Given a list of cities and a United States political map that classifies population size with city symbols, students use the map legend to derive the population classification of each city.
4. Students use the symbolism in a map legend to identify the capital cities of specified states or countries.

Extension Activities:

1. Learning To Use A Map, page 11
2. Learning To Use A Globe 2, pages 1 - 4
3. On the Readiness Wall Map of the United States, have the students (1) find four states that are bounded entirely by imaginary, man-designated lines, (2) determine the population sizes of selected cities, and (3) identify the capitals of selected states.
4. Use a Minnesota State road map for this activity. Have the students use a marking pen to draw the boundary lines around the state (natural and man-made). Locate several different towns of their choice. Have the students connect the towns via major highways and calculate the distances between them.

Reference Materials:

Books:

The Social Sciences: Concepts and Values, pages 355 - 382.

Lesson: Time

Required Materials:

Tape #21
12 inch Sculptural Relief Globe
Nyco Marker
Pencil and Paper

Behavioral Objectives:

1. Given the number of degrees and hours required for one complete rotation, students compute the number of degrees of longitude through which the earth rotates in one hour or more.
2. Given a world map or a globe, and the time at one location, students compute the time at other selected locations.
3. Given the time at one location as a reference, students use the time dial on a globe to find the time at other selected locations.

Extension Activities:

1. Learning To Use A Globe 2, pages 18 - 22
2. Learning To Use A Map, pages 38 - 40
3. Which Time Zone?

   Materials: A large United States Map with the time belts clearly marked. Display the map for several days prior to this lesson. You will also need sheets of paper and a pencil for each student.

   Introduction: We are going to play a game about the time zones of the United States. Fold your sheet of paper twice to form four columns. Label the columns: Eastern Time, Central Time, Mountain Time, and Pacific Time. I shall call out the names of ten cities. You place each city in the column in which you think it belongs. You will receive one point for each correct placement. Let's see how many of you will make ten points. All who do make ten points will get to place their name on the time belt map. Are you ready?

   Example:

New York	-	Eastern
Chicago	-	Central
Denver	-	Mountain
San Francisco	-	Pacific

   Variation: For an advanced group, the teacher may call out the name of a city and give the time of that city, then ask the group to write the time of other cities in other zones such as: It is eight o'clock in Denver, Colorado. What time is it in Monterey, California, (7:00); Chicago, Illinois, (9:00); Portsmouth, Virginia, (10:00).

4. Set Your Clock

   Materials: Two cardboard clock faces with movable hands; map of the United States with time zones indicated; a list of questions and answers on the time zones prepared by the teacher or a student committee.

   Directions: Select a leader and divide the rest of the class into two teams. The student leader holds the list of questions and answers and stands facing the two teams. The first player on each team stands before his team's clock face. The leader says, "It is 6:00 A.M. in New York City. What time is it in St. Louis, Missouri?" The players

check the map, and the first player to set his clock at the correct time wins a point for his team. If both players give incorrect times, they are asked to return to their seats, and the next player from each team attempts to answer correctly. The game continues until all players have had a turn, and the team with the most points wins.

Adaptations: (1) The players could write their answers on the chalkboard, eliminating the use of clock faces. (2) The game can be played with cities in the twenty-four time zones throughout the world. (3) Answers can be written on paper, each team receiving one point for each correct paper submitted by a player.

Cautions: (1) Before the game is played, the students should understand that the twenty-four time boundaries coincide approximately with the meridians in sequence from Greenwich, England, observatory. (2) If time zones throughout the world are used, players must indicate whether the time is A.M. or P.M., and also which day it is. (3) Daylight saving time will need to be considered.

Reference Materials:

Records - Charting the Globe, Volume 1, Band 6
Charting the Globe, Volume 2, Band 1 of side 1

Books - The Book of Popular Science, Volume 7, pages 220 - 222

Teacher References: Books - The Rand McNally Handbook of Map and Globe Usage, pages 82 and 140-145.

Lesson: Climate

Required Materials:

Tape #22
12 inch Sculptural Relief Globe
Nyco Marker

Behavioral Objectives:

1. Students differentiate between the terms climate and weather.
2. Students demonstrate their understanding of the following generalization: An increase in latitude is related to a decrease in yearly average temperature. Given selected cities, and a physical political globe as reference, students will correctly indicate whether a city is located in the high, middle, or low latitudes.
3. Students demonstrate their understanding of the following generalization: An increase in elevation is related to a decrease in yearly average temperature. Given pairs of cities with approximately the same latitude but an appreciable difference in elevation, and a physical-political globe as a reference, students will correctly predict which city in each pair has a "cooler" or "warmer" climate

Extension Activities:

1. Learning to Use The Globe 2, pages 8 - 9
2. Learning to Use A Map, pages 31 - 34

Reference Materials:

Filmstrips - K-61 Weather Changes and Their Causes

Films - 126 - Climates of the United States

Records - Charting the Globe, Volume 2,
Band 2 of Side 1 and Band 1
of side 2

Books - The Book Of Popular Science, Volume 1, pages 241 - 244
The Doubleday Pictorial Library Of Geography, pages 60 - 83

Teacher References:

Books - The Rand McNally Handbook Of Map and Globe Usage,
pages 186 - 187.

Lesson: Using Special Maps

Required Materials:

Tape #23

Sculptural Relief Wall Map of the United States with overlay

Behavioral Objectives:

1. Given a rainfall map of the United States, students determine the annual rainfall in selected regions.
2. Given a map of frost-free areas of the United States, students determine the yearly number of frost-free days in selected regions.
3. Given a shaded-relief map of the 48 contiguous states, students interpret the map's relief to conclude that the western half of the United States is more mountainous than the eastern half.
4. Given a shaded-relief map of the 48 contiguous states, with supplementary thematic maps, students explain why the eastern half of the United States is more agriculturally productive than the western half. Their explanations will be based on rainfall, growing season, and ruggedness of terrain.

Extension Activities:

1. Learning To Use A Map, pages 18 - 22
2. Refer to the worksheets at the end of the lesson. Find the sheet that compares two different maps of Africa. You might use this simplified map as a discussion point concerning the importance of comparing maps in order to make knowledgeable predictions about rainfall, growing season, and frost-free days.
3. Collect various types of maps, such as rainfall maps, product maps, physical maps, political maps, frost-free days maps, growing seasons maps, city maps, road maps, etc. Label each one and arrange them on a bulletin board.

Reference Materials:

Filmstrips

0-166 Maps for Special Purposes
C-84 Using The Right Map
K-114 Special Maps
E-66 Reading Political and Economic Maps

Books

Exploring The New World, pages 63-65

Teacher References:

Books

The Rand McNally Handbook of Map and Globe Usage, pages 235-244 and 249-274