This subunit, consisting of an introduction and geography of the USSR, is part of a unit on the USSR, one of four resource units for an eleventh-grade course on area studies. The introduction contains suggested teaching procedures for each part of the USSR unit and objectives for the introduction. The section on geography focuses on developing an idea of the potential of the area for industrial and agricultural growth. It begins by having pupils study a physical map and set up hypotheses about other physical features and human activities in the USSR. The hypotheses are checked against other maps and data, hypotheses are developed about other features, which are also checked against various kinds of data. A teacher's guide to the entire course is SO 006 320. A teacher's supplement to the unit on the USSR is SO 006 324; other subunits of the USSR are SO 006 326, SO 006 327, and SO 006 328. (Author/KSM)
Grade: Eleven
Unit 2: The U.S.S.R.

a) Introduction
b) Sub-Unit on Geography

RESOURCE UNIT
on
THE U.S.S.R.

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1967
GENERAL SUGGESTIONS FOR TEACHING THE UNIT ON THE U.S.S.R.

To avoid superficial conclusions, students should spend at least ten to twelve
studying the U.S.S.R. Such a long unit needs to be broken into sub-units for
graders. This area study is divided into an introduction and a series of sub-
the geography of the U.S.S.R., the history of Russia, the Soviet totalitari-
em (political system, economic system, social system), and the foreign policy
U.S.S.R. Each of these topics is treated as one major section in the outline
ent for the area study. However, the teaching procedures are arranged to pro-
introductory, developmental, and culminating activities for each sub-unit. These
procedures are numbered consecutively within each sub-unit in the order in which
might be used within the classroom.

Part I of this outline of content, with the accompanying teaching procedures,
vides an introduction to the entire area study. It should accomplish the fol-
purposes:

1. It should relate the study of the U.S.S.R. to the overall work of the
   and to the unit on Western Europe.

2. It should serve to arouse pupil interest in the U.S.S.R.

3. It should provide pupils with an overview of the area study. Preferab-
   this should be done by providing them with an opportunity to help plan
   study. (See 4 below.)

4. It should give pupils an opportunity to identify goals to be achieved
   some alternative courses of action to be followed in our relations with
   U.S.S.R. It should give pupils an opportunity to figure out how each
   social science might help them come to conclusions about which altern
   should be followed to achieve their goals. Pupils should have a chance
   suggest the kinds of questions which people in each of the social sci-
   would ask about the U.S.S.R. The emphasis in this area study of the U
   should be upon the Soviet Union as a totalitarian system under commu-
   upon the relations of such a totalitarian system with other parts of the
   and with the U.S. However, such study obviously requires a study of g
   and history as well as of the political, economic and social systems.

Part II of the outline of content, with the accompanying teaching procedures,
upon geography. However, it should not be thought that this section includes
the material in the unit which a geographer would analyze as he studies the S
GENERAL SUGGESTIONS FOR TEACHING THE UNIT ON THE U.S.S.R.

Before conclusions, students should spend at least ten to twelve weeks on the U.S.S.R. Such a long unit needs to be broken into sub-units for eleventh-grade study, divided into an introduction and a series of sub-units. The area study of the U.S.S.R., the history of Russia, the Soviet totalitarian system, economic system, social system, and the foreign policy of the area are treated as one major section in the outline of area study. However, the teaching procedures are arranged to provide developmental, and culminating activities for each sub-unit. Each sub-unit is numbered consecutively within the outline of content, with the accompanying teaching procedures, introduction to the entire area study. It should accomplish the following:

1. Relate the study of the U.S.S.R. to the overall work of the year. Such study should relate to the unit on Western Europe.
2. Serve to arouse pupil interest in the U.S.S.R. The introduction to the area study should be done by providing them with an opportunity to help plan the study. (See 4 below.)
3. Give pupils an opportunity to identify goals to be achieved and alternative courses of action to be followed in our relations with the U.S.S.R. It should give pupils an opportunity to figure out how each of the social sciences might help them come to conclusions about which alternative policies can be followed to achieve their goals. Pupils should have a chance to test the kinds of questions which people in each of the social sciences ask about the U.S.S.R. The emphasis in this area study of the U.S.S.R. should be upon the Soviet Union as a totalitarian system under communism, and the relations of such a totalitarian system with other parts of the world.
4. Give pupils an opportunity to plan the study of geography as well as of the political, economic and social systems.

The outline of content, with the accompanying teaching procedures, focuses on why. However, it should not be thought that this section includes all of the unit which a geographer would analyze as he studies the Soviet...
Union. Since the geographer is interested in what makes one area of the world different from other areas, he must perform analyze historical factors which make an area different and must also study present-day economic, political and social factors which help differentiate the U.S.S.R. from other parts of the world. In this sense, the whole unit deals with material which the geographer must consider when studying the Soviet Union. More particularly, the geographer would certainly wish a study of Soviet agriculture and industry. Part II of this resource unit does not include material on agricultural production and problems, on resources, and on industrial production and centers. However, the ways of organizing agriculture and industry are left to the section dealing with the economic system.

Although this section of the unit begins by focusing upon physical geography, teacher must make sure that pupils analyze ways in which man uses and modifies cultural environment in terms of his cultural values, perceptions, and technology. After pupils set up hypotheses about the influence of certain physical factors, they should be forced to test them in the light of other maps, charts, and reading materials. In so doing, they will find that they must modify generalizations which have been stated too broadly or have implied geographical determinism. There is a great deal of material in Part II which is designed to help pupils learn about the cultural use and modification of the environment.

Part III of this outline of content deals with the history of Russia. This section is presented in two different outlines, as follows:

1. The first outline presents generalizations about cultural change to be taught in a study of Russian history and shows how historical data might help pupils arrive at these generalizations. However, this outline does not provide the suggested order for studying Russian history. Rather, we suggest a more chronological organization (mixed with some topical history in the 19th century). At the end of their study of Russian history, pupils should have the resources from which to generalize about both cultural change and cultural continuities.

2. The second outline is organized in the suggested order for teaching. Teaching procedures are placed opposite this outline.

3. The historical part of this area study is brought up only to the period when Stalin was able to take control of the government. This is done so that rate topics such as the political system under totalitarianism can be
the geographer is interested in what makes one area of the world different from other areas, he must perform an analysis of historical factors which make the area unique and must also study present-day economic, political, and social features that help differentiate the U.S.S.R. from other parts of the world. In one hole unit deals with material which the geographer must consider as he studies the Soviet Union. More particularly, the geographer would certainly include Soviet agriculture and industry. Part II of this resource unit does in detail on agricultural production and problems, on resources, and on industry and centers. However, the ways of organizing agriculture and industry are covered in the section dealing with the economic system.

A section of the unit begins by focusing upon physical geography, the ways in which man uses and modifies his environment in terms of his cultural values, perceptions, and level of technological development. Pupils set up hypotheses about the influence of certain physical features should be forced to test them in the light of other maps, charts, and details. In so doing, they will find that they must modify generalizations. Generalizations have been stated too broadly or have implied geographical characteristics. There is a great deal of material in Part II which is designed to help pupils think about the cultural use and modification of the environment.

This outline of content deals with the history of Russia. This section is divided into two different outlines, as follows:

First outline presents generalizations about culture change that might be taught through a study of Russian history and shows how historical data might help pupils understand these generalizations. However, this outline does not provide a suggested order for studying Russian history. Rather, we suggest a more nearly logical organization (mixed with some topical history in the 19th century). At the end of their study of Russian history, pupils should have the raw data which to generalize about both cultural change and cultural continuity.

Second outline is organized in the suggested order for teaching. Possible teaching procedures are placed opposite this outline. Historical part of this area study is brought up only to the period when the U.S.S.R. was able to take control of the government. This is done so that separate topics such as the political system under totalitarianism can be studied
more systematically and so that pupils can see the changes that have taken place from Stalin to the present day.

Part IV of the unit provides the main focus for the unit. It is divided into three parts: the political system, the economic system, and the social system. These topics are all included in Part IV to emphasize both their interrelationships with each other and the fact that a totalitarian system affects all aspects of life, including the economic and social systems.

Part V of the area study deals with the U.S.S.R.'s international relations, especially as they pertain to the United States. This sub-unit should serve as a culminating section for the entire area study. Having examined the relations up to the present, the class should do the following:

1. Students should reconsider the alternative courses of action they suggested during the introduction to the area study and suggest other alternatives. First, they should list possible alternatives. Next, they should try to predict possible consequences of each course of action and decide what evidence they have to support the likelihood that these consequences would follow. They should consider all that they now know about the Soviet Union as they reach conclusions about these alternative courses of action. Finally, they should decide which course or courses of action they would support tentatively and present their reasons for their conclusions. (The class does not need to agree. However, students should understand how different pupils arrive at different conclusions and the reasons for these differences. Are the differences in conclusions due to differences in values; differences in predictions about possible consequences of different actions; etc.)

2. Students should consider once again the amount and kind of help they go to the different social scientists in their attempts to study foreign problems related to the U.S.S.R.

3. Pupils should also discuss the following question: Are there other benefits gained from the work done by each kind of social scientist as he studies the Soviet Union? (For example, can we learn anything about cultural change, totalitarianism etc., which has broader implications than just our relations with the Soviet Union?) Have pupils prepare a list of generalizations.
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place from Stalin to the present day.

The unit provides the main focus for the unit. It is divided into three
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the Soviet Union?) Have pupils prepare a list of generalizations which
they have developed from their study of the U.S.S.R. and which they think might have broader transfer value for studying other problems or areas of the world. Pupils should suggest concrete situations in which these generalizations might have value. Discuss: Can you be sure that these generalizations will hold true in another culture? Why or why not? What is the value of testing such generalizations in other cultures, past and present?
OBJECTIVES FOR INTRODUCTION

The introduction should make progress toward developing the following:

**GENERALIZATIONS**

1. The world is a community of interdependent countries. (Important political happenings in one part of the world affect other parts.)

2. The international system may be looked at as a series of power relationships.

3. There are many sources of power in dealing with other countries.
   - a. Military capacity is an important factor in the development of national power and not the only one or even the dominant one.
   - b. Industrial capacity is an important component of national power.
   - c. Scientific and technological developments provide an important component of national power.

4. Decision-making in a large, complex society is shared by several groups and is subject to varying influences and limitations.
   - a. The institutions of government constitute the arenas or the structure within which authoritative decisions of the political process are made.

5. The unity and homogeneity of totalitarianism demands is the pluralism of liberal democracy.

6. Technological change may create problems in a society.

7. An increase in population of the birth rate plus immigration is greater than the death rate plus emigration.

8. All maps contain distortion or another; each map project advantages and disadvantages upon one's purpose in using it.

**SKILLS**

The broad skill toward which ultimately directed is underlIn aspect of a skill taught in the course is in plain type.
OBJECTIVES FOR INTRODUCTION

The student should make progress toward developing the following concepts:

1) It is easier for a totalitarian system to make drastic changes rapidly than it is for a democratic system to do so.

2. The decision-maker reacts to pressures from other decision-makers as well as from the outside.

3. The unity and homogeneity of life which totalitarianism demands is contrary to the pluralism of liberal democracy.

4. Technological change may create serious problems in a society.

5. An increase in population occurs when the birth rate plus immigration is greater than the death rate plus emigration.

6. All maps contain distortions of one kind or another; each map projection has both advantages and disadvantages, depending upon one's purpose in using a map.

SKILLS

The broad skill toward which teaching is ultimately directed is underlined. A specific aspect of a skill taught in this introduction is in plain type.
1. Attacks problems in a rational manner.
   a. Sets up hypotheses.
   b. Considers alternative courses of action.
   c. Deduces possible consequences from hypotheses (if-then statements) to guide collection of data.
   d. Considers the relevance of each of the social science disciplines, and uses the types of questions asked and the analytical concepts used in the relevant disciplines to help him analyze the problem.

2. Locates information.
   a. Uses appropriate reference books to locate information.

   a. Interprets graphs.
      1) Draws inferences from graphs.
      2) Looks for misleading graphic devices.
   b. Draws inferences from tables.
   c. Uses effective geographic skills.
      a. Has a sense of distance and area.
      b. Compares distances with
      c. Compares areas with
      d. Interprets maps.
         1) Identifies distortions
            Compares map grid with to detect distortions
         2) Uses the map or globe to compare distances north and south maps of different
         c. Selects the appropriate projection (or globe) for purpose.

5. Evaluates information:
   a. Evaluates information in accuracy.
   b. Identifies assumptions.
   c. Distinguishes between direct and indirect proof.
   d. Checks on the completeness.
   e. Is wary of generalization.
   f. Insufficient evidence
problems in a rational manner. Up hypotheses.

1. Compares distances with known distances.
2. Compares areas with known areas.

b. **Interprets maps.**

1) Identifies distortions on maps. Compares map grid with globe grid to detect distortions on maps.
2) Uses the map or globe to estimate distances north and south and to compare maps of different scale.
3) Uses meridians to identify differences in time zones.

5. **Evaluates Information.**

   a. Evaluates information in terms of accuracy.
   b. Identifies assumptions.
   c. Distinguishes between difficulty of proof.
   d. Checks on the completeness of data and is wary of generalizations based on insufficient evidence.
ATTITUDES

1. Is curious about social data.
2. Feels a sense of responsibility for keeping informed about current problems.
OBJECTIVES

G. The international system may be looked at as a series of power relationships.

G. The world is a community of interdependent countries. Important political happenings in one part of the world affect other parts.

OUTLINE OF CONTENT

1. The Soviet Union is one of the two most powerful countries in the world. What it does affects the life of every American.

A. IS CURIOUS ABOUT SOCIAL DATA.
TEACHING PROCEDURES

Initiatory Activities

1. Prepare a bulletin board showing the importance of the U.S.S.R. in world affairs.

2. Give pupils a pretest to find out what they know about Soviet power and to see if they have some of the common stereotypes about the U.S.S.R. Discuss briefly or at least have pupils tabulate results to find out degree of agreement within the class and the degree to which the class as a whole holds misconceptions.

3. Read aloud two quotations, one from Frankel on the ideas expressed by a Soviet citizen about the U.S., and another from Bronfenbrenner on the ideas American children have about the Soviet Union. Discuss: Do you think the Soviet citizen’s views of the U.S. indicate a good understanding of the U.S.? Why or why not? Do you think the American children’s views about the U.S.S.R. represent a good understanding of the Soviet Union? Why or why not? What errors are the American children falling into as they give reasons why the Soviets plant trees along roads? What errors does the Soviet citizen fall into as he lists problems in the U.S.? Discuss the quotations briefly in order to suggest the importance of studying the Soviet Union in some depth.

Max Frankel, "Typical Soviet Expounds on U.S."

Urie Bronfenbrenner
The Russians: Planting the Road?" Sat, Rev 1933, p. 96. Or see Supplement to Unit
TEACHING PROCEDURES

Activities

a bulletin board showing the importance of the
in world affairs.

1. Display a pretest to find out what they know about
power and to see if they have some of the common
errors about the U.S.S.R. Discuss briefly or at
least with a sample pretest.

2. Discuss briefly or at
least two quotations, one from Frankel on the
views of a Soviet citizen about the U.S.
and from Bronfenbrenner on the ideas American
children have about the Soviet Union. Discuss:
Do
you think the American children's views about
the Soviet Union represent a good understanding of the
U.S.? Why or why not? What errors are the
children falling into as they give reasons
Soviets plant trees along roads? What errors
the Soviet citizen fall into as he lists problems
the U.S.? Discuss the quotations briefly in order
to stress the importance of studying the Soviet Union
depth.

See "Teacher's Supplement
to Unit on U.S.S.R.," for
a sample pretest.

Max Frankel, "Typical Russian Expounds on U.S.,"

Urie Bronfenbrenner, "Why Do
The Russians Plant Trees Along
the Road?" Sat. Review, Jan. 5,
1933, p. 96. Or see "Teacher's
Supplement to Unit on U.S.S.R.,"
A. The U.S.S.R. is the largest country in the world and has the third largest population in the world.

1. The U.S.S.R. is over 2½ times the area of the U.S. (including Alaska) and over 2½ times the area of China larger than the entire continent of North America.

S. Compares areas with known areas.

S. Uses the map or globe grid to estimate distances north and south and to compare distances on maps of different scales.

S. Compares distances with known distances.

G. All maps contain distortions of one kind or another.

S. Identifies distortions on map.
areas with known areas.

He main globe grid to
be distances north and
to compare distances on
fles distortions on map.

The U.S.S.R. is the 
lowest country in
the world and has the third largest
population in the world.

1. The U.S.S.R. is over 2.5
times the area of the U.S. (including Alaska)
over 2.5 times the area of China and
larger than the entire continent of
North America.
4. Have pupils examine a globe and political-physical maps of the Soviet Union and of North America. Ask: How does the U.S.S.R. compare in size with the U.S.? with China? with North America? (At this point, do not try to have pupils be too accurate in their comparisons.) Then have pupils use the maps to make more accurate comparisons. Use a, b, and c or d (1, 2, 3, 4).

a. Have pupils count the number of degrees of latitude covered by the U.S.S.R. and the U.S. and multiply each degree by 70 miles to figure out the approximate north-south distance for both countries. Have them count the number of degrees of latitude for the U.S. and Canada combined and multiply by 70 miles to compare this distance with the north-south distance in the Soviet Union. Ask: Why use the grid rather than the map scale to compare distances on these two maps?

b. Have pupils count the number of degrees of longitude covered by the U.S. at the 49th parallel. Have them measure this distance off in degrees from the western border of the Soviet Union along the 49th parallel. Now have the pupils measure the number of degrees of longitude covered by the Soviet Union at 60 degrees north latitude (on approximate latitude of Leningrad). At this point, one degree of longitude equals about 34.6 miles. Have pupils figure out the distance across the Soviet Union at this latitude. Compare this distance with the distance across the U.S. Now have pupils
S. Uses meridians to identify differences in time zones.

S. Compares distances with known distances.
measure the number of degrees of longitude between Kaliningrad (old Koplsberg) on the Baltic Sea and the Bering Strait at Cape Dezhnev. Compare this figure (about 170 degrees) with the figure for the number of degrees of longitude which would cover half the distance around the earth at this parallel.

c. Have pupils figure out the distances in time between the most eastern and most western parts of the U.S. and between the following places in the Soviet Union: Kaliningrad and Cape Dezhnev; Moscow and Vladivostok.

Ask: Suppose you lived in Kaliningrad and got up at 6:30 in the morning. What time would it be then at Cape Dezhnev? Suppose you ate lunch in Kaliningrad at 12:00 noon. What time would it be then in Cape Dezhnev? What time is it in Vladivostok when it is 7:00 in the morning in Moscow? When it is 12:00 noon in Moscow? (Remind pupils that each 15 degrees of longitude makes a difference of 1 hour in sun time.) Compare the number of time zones in the U.S.S.R. and in the U.S.

d. Have pupils use a string to measure and compare the following distances on the globe. (Use the string to measure off distances for bar charts on the chalkboard.)

1) The greatest north-south distance in the Soviet Union as compared with the greatest north-south distance in the U.S. and the greatest north-south distance in the U.S. and Canada combined.

2) The greatest east-west distance in the Soviet Union as compared to the greatest east-west dis-
S. Compares distances with known distances.

G. All maps contain distortions of one kind or another.

S. Identifies distortions on maps.

S. Selects the appropriate type of map projection (or globe) for a specific purpose.

S. Compares areas with known areas.
3) The distance between Moscow and New York as compared to the distance between Moscow and Vladivostok.

4) The distance between Kaliningrad and Cape Dezhnev as compared to the distance between San Francisco and London. Ask: Why measure distances with a string on the globe rather than on a world map?

5. Do one of the following to help pupils make a more careful comparison of areas.

a. Have several pupils use the globe to make a rough tracing of the U.S. on a piece of tracing paper. (This will be a rough sketch since the globe is round. However, pupils can cut and paste tucks in the paper to make it fit the surface of the globe better.) Pupils should make as many of these tracings as they need to fill in the area of the U.S. S.R. on the globe. They will find that they must cut the last one because it is too large to fit in the remaining space.

b. Or, have pupils make tracings from an equal-area map of the world rather than from the globe. (Ask questions listed under c.)
The distance between Moscow and New York as compared to the distance between Moscow and Vladivostok.

The distance between Kaliningrad and Cape Dezhnev compared to the distance between San Francisco and London. Ask: Why measure distances with a string on the globe rather than on a world map?

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have pupils make tracings from an equal-area of the world rather than from the globe. (Ask Equal-area map of the questions listed under c.)
S. Compares areas with known areas.

S. Selects the appropriate type of map projection for a specific purpose.

G. All maps contain distortions of one kind or another; each map projection has both advantages and disadvantages, depending upon one's purpose in using a map.

S. Compares map grid with globe grid to detect distortion on maps.

G. All maps contain distortions of one kind or another; each map projection has both advantages and disadvantages, depending upon one's purpose in using a map.
c. Or show pupils an overlay map showing the U.S.S.R. and then with a map of North America-superimposed over the U.S.S.R. Ask: What kind of map projection do you think I used to make this overlay? Why did I choose this kind rather than a Mercator projection? If pupils cannot answer these questions, use one of a number of devices to help them detect distortion on a Mercator map. For example, you might have them:

1) Compare grid on globe and on Mercator map to figure out distortions. (Start with this procedure and use others only if necessary.)

2) Or compare areas on globe with some areas on Mercator projection.

3) Or compare different east-west distances across U.S.S.R. on globe and make a bar chart showing these distances for different longitudes. Now do the same for the U.S.S.R. on a Mercator map.

4) Discuss: If a Mercator map distorts area and distance to such a degree, why do you think people ever use this kind of map projection? (This question is designed to review what pupils have learned in earlier grades. However, it may be necessary to have pupils examine shapes and directions on the Mercator map, a globe, and other projections such as an equal-area projection in order to understand the possible uses of a Mercator map.)
how pupils an overlay map showing the U.S.S.R. map of the U.S., superimposed over the U.S.S.R., then with a map of North America superimposed the U.S.S.R. Ask: What kind of map project- do you think I used to make this overlay? Why choose this kind rather than a Mercator proj- on? If pupils cannot answer these questions, one of a number of devices to help them detect tion on a Mercator map. For example, you have them:

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- compare areas on globe with some areas on Mercator projection.

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S. Uses appropriate reference books to locate information.

S. Compares areas with known areas.

S. Interprets graphs. (Draws inferences from graphs, looks for misleading graphic devices.)

S. Distinguishes between difficulty of proof.

2. The U.S.S.R. has a population 30 million more than that of India. If the population continues to grow at the rate of recent years, it will reach about 300 million. The large population is a source of military manpower in case of war, but much lower than that of India. The large population is a source of workers for farm and industrial peacetime.

G. An increase in population occurs when the birth rate plus immigration is greater than the death rate plus emigration.

S. Interprets graphs. (looks for misleading graphic devices.)
2. The U.S.S.R. has a population of about 30 million more than that of the U.S. but much lower than that of China or India. If the population continues to grow at the rate of recent years, it will reach about 300 million by 1975. The large population is a source of military manpower in case of war and of workers for farm and industry in peacetime.
6. Discuss possible sources or references to use in looking up area and population figures for U.S.S.R. and U.S. Then have a pupil look up the total square miles found within the Soviet Union, the U.S., and China. Have him make a bar graph to compare these areas.

7. Have another pupil look up the total population of the U.S.S.R., China, India, and the U.S. He should make a bar graph to show these population differences. Show the class a pictograph comparing the present populations of these four countries. Use symbols which differ in size rather than numbers. Compare with pupil's bar graph. Discuss: Which is the better style of graph to use? Why? The pupil might also find out the estimated total world population and make a pie graph to show the proportion of the world population found in each of these countries. Discuss: Why is it difficult to make really accurate comparisons between population figures for different countries?

8. Ask: Suppose you were a demographer or a scientist interested in population growth and population characteristics. You wish to make an estimate of the probable population of the U.S.S.R. and of the U.S. for 1975. What figures would you look at? Show pupils a bar graph comparing estimates of population totals for these countries in 1975. Ask: Suppose you are a Soviet propagandist and wish to make this probable increase look very great. Which of the following graphs would you use? Suppose you are an American who wishes to make this increase appear small. Which would you use? (Show graphs which exaggerate or minimize growth by using devices such as not using 0 on scale, varying size of vertical or horizontal scale, etc.)
possible sources or references to use in looking up population figures for U.S.S.R. and China. Have a pupil look up the total square miles in the Soviet Union, the U.S., and China, and make a bar graph to compare these areas.

Ask: Did you use an Almanac, a Geographical Atlas, or a World Atlas? What is the advantage of using an Almanac? It gives population figures for the entire world. The disadvantage is that it is only a one-page fact-filled, but not very useful graph. Ask: Should your Almanac contain population figures? Yes. Why? They are useful and make good reading material. Is it possible to get world population figures? Yes. Why? The United Nations and the U.S. Census Bureau give such figures.

Another pupil look up the total population of U.S.S.R., China, India, and the U.S. He should graph to show these population differences. Class a pictograph comparing the populations of these four countries. Use symbols for in size rather than numbers. Compare the bar graph. Discuss: Which is the preferred graph to use? Why? The pupil might like to make the estimated total world population a pie graph to show the proportion of the population found in each of these countries. Why is it difficult to make really accurate comparisons between population figures for different years? For examples of misleading graphic devices, see Huff, How to Lie With Statistics.

Suppose you were a demographer or a scientist interested in population growth and population characteristics. You wish to make an estimate of the probable population of the U.S.S.R. and of the U.S. for the year 1975. Ask: How would you look at? Show pupils a graph comparing estimates of population totals for countries in 1975. Ask: Suppose you are a propagandist and wish to make this probable increase appear very great. Which of the following could you use? Suppose you are an American and wish to make this increase appear small. What did you use? (Show graphs which exaggerate or minimize growth by using devices such as not using varying size of vertical or horizontal scale.)
S. Sets up hypotheses.

S. Deduces possible consequences of hypotheses (if-then statements) to guide collection of data.

G. There are many sources or bases of national power in dealing with other nations. (Military capacity is an important factor in the development of national power but not the only one or even the dominant one.)

S. Distinguishes between difficulty of proof.

S. Checks on the completeness of data and is wary of generalizations based on insufficient evidence.

A. IS CURIOUS ABOUT SOCIAL DATA.

G. The world is a community of interdependent countries.

B. The U.S.S.R. and the U.S. are at the foremost position in strength.
various about social data, and is a community of interests. A. The U.S. and the U.S.S.R. have been locked in a lengthy cold war which has at times threatened to become a hot war. With intercontinental missiles in the hands of both powers, a war could end in terrible destruction for both countries, as well as for the rest of the world.

B. The U.S. S.R. and the U.S. are in a race for the foremost position in military strength.

C. The U.S. S.R. has many sources of bases and is wary of generalizations and insufficient evidence. In dealing with national power, the military capacity is an important factor. In the development of national power but not one of them.

The U.S. S.R. and the U.S. are in a race for the foremost position in military strength.
9. Discuss: Is a large population more of an asset or liability to a country? (Let pupils set up hypotheses to check on during the rest of this unit and course. Be sure to have them deduce possible consequences from their hypotheses (if-then statements) which might be used to guide their collection of data for testing the hypotheses.

10. Have pupils read recent articles comparing Soviet American military strength, or select pertinent charts and graphs which show significant differences between the two countries. Have pupils set up a hypothesis of their own. Discuss: Does the size of this country have an impact on its ability to produce and maintain military strength? Have pupils look for newspaper and magazine articles on the military race during the course of this unit.

If pupils have found differing estimates of Soviet and American military strength, discuss the reasons for these differences. How do Americans arrive at their figures? (Discuss the difficulty of getting accurate figures on the U.S.S.R., and the fact that our figures are estimates.) If pupils have not found differing accounts, you should still discuss the difficulty of obtaining such data on the Soviet Union and of proving the statements made.

11. Prepare a bulletin board on "U.S.-U.S.S.R. Showdowns, 1945 to the Present." Read aloud brief excerpts from newspapers or magazines of the time of each crisis to show the danger Americans perceived in each crisis.
Is a large population more of an asset or to a country? (Let pupils set up hypotheses during the rest of this unit and course.) Have them deduce possible consequences from hypotheses (if-then statements) which might be in their collection of data for testing the

Is read recent articles comparing Soviet military strength, their nuclear potential, and military production. What reasons do you think they give for these figures? Discuss the difficulty of getting accurate data on the U.S.S.R. and the facts that our figures are not necessarily accurate. How do Americans arrive at their figures? If pupils have not found differing estimates of Soviet military strength, discuss the reasons for differences. How do Americans arrive at their figures? (Discuss the difficulty of getting accurate data on the U.S.S.R. and the fact that our figures are not necessarily accurate.) If pupils have not found differing estimates of nuclear forces, see Scholastic Book Service Editors, The Soviet Union, p. 124.


On the military race during the course of the present cold war, use a bulletin board on "U.S. -- U.S.S.R. Showdowns, the Present." Read aloud brief excerpts from newspapers or magazines of the time of each crisis to show how danger Americans perceived in each crisis.

See "Teacher's Supplement to Unit on U.S.S.R." for examples of excerpts.
G. The world is a community of interdependent countries.

G. Technological change may create serious problems in a society.

S. Evaluates information in terms of accuracy.

G. The world is a community of interdependent countries.

G. Technological change may create serious problems in a society.
12. Depending upon the background of pupils, you may wish to spend a little time having pupils read about and analyze the possible dangers of an atomic war. If you think pupils already have a fairly good understanding of the dangers, you might have pupils write one of the following imaginary accounts:

a. An archaeologist's report of excavations in the U.S.--written in the year 2065 A.D.

b. A newspaper article written for an Argentine newspaper following an atomic war between the U.S. and the U.S.S.R.

c. The diary of an American who lives through an atomic war by hiding out in a deep underground shelter far from any American city.

d. A Rip Van Winkle story of an American who was exploring a deep cave at the time an atomic war broke out between the U.S. and the U.S.S.R. He falls asleep while still in the cave, knowing nothing about the war. He wakes up ten years later, leaves the cave, and compares life with what he knew before the war.

Read aloud several of the best papers or ditto them for pupils to read. Then discuss: Do you think these papers exaggerate the damage which would be inflicted by an atomic war between the U.S. and the U.S.S.R.?

Now have pupils read some recent estimates of the amount of damage which could be expected in case of such a war as well as several quotations from Americans and Soviet leaders on the possibilities of a clash between the U.S. and the U.S.S.R., the communist-capitalist struggle, and their views about the dangers of atomic destruction.

Discuss: Why do nuclear weapons make the job of the President more difficult than before World War II when dealing with the U.S.S.R.?
n the background of pupils, you may wish to spend some time having pupils read about and discuss possible dangers of an atomic war. If your pupils already have a fairly good understanding of the dangers, you might have pupils write imaginary accounts:

- Logist's report of excavations in the ten in the year 2065 A.D.,
- An article written for an Argentine newspaper by an atomic war between the U.S. and R.

Here is a story of an American who lives through an atomic war by hiding out in a deep underground shelter in any American city.

Winkle, the story of an American who was a spy, is a story of an American who was a deep cover agent at the time of an atomic war between the U.S. and the U.S.S.R. He was in the war while still in the cave, knowing that the war would be over in ten years. He wakes up ten years later, still in the cave, and compares life with what he remembers of the war.

Several of the best papers or ditto them can be read. Then discuss: Do you think these papers rate the damage which would be inflicted by a war between the U.S. and the U.S.S.R.?

Try to read some recent estimates of the amount of damage which could be expected in case of such a war. Some quotations from Americans about the possibilities of a clash between the U.S. and the U.S.S.R., the communist-capitalist struggle, the dangers of atomic destruction, and the job of the nuclear weapons make the world than before World War II when the U.S.S.R.?
S. Interprets graphs. (Draws inferences from graphs.)

S. Draws inferences from tables.

S. Uses simple statistical devices for analyzing data.

G. There are many sources of national power in dealing with other countries. (Industrial capacity is an important component of national power.)

S. Checks on the completeness of data and is wary of generalizations based on insufficient evidence.

S. Distinguishes between difficulty of proof.
D. The U.S.S.R. is the second most important industrial power in the world. It has been growing at a faster rate than the U.S. during the past two decades, even though its growth rate slowed down for a time and was surpassed by that in the U.S. in 1962-1963.
13. Show the class graphs comparing the industrial production of the U.S. and of the U.S.S.R. in the 1960's. Ask: Which country was producing more? Now show the class a table presenting the comparative dollar values of the GNP in the U.S., the U.S.S.R., West Germany, the United Kingdom, Japan, France, and Italy in 1964. Ask: How did the U.S.S.R. rank in total economic output?

Now show pupils a chart comparing rates of economic growth from 1950-1964. (Be sure to review what students learned in the tenth grade course about the meaning of the economic growth rate.) Ask: Which country was growing fastest from 1950 to 1964? How did the U.S. and the U.S.S.R. growth rates compare for 1960? 1961? 1962? 1963? 1964? What conclusions can you draw, if any, about the probable industrial strength of the U.S. and of the U.S.S.R. in the future? Why? (Make sure that students understand that the countries have shifted back and forth somewhat in the lead on growth rates, but that the U.S.S.R. has been ahead during the last two decades taken as a whole.) Also ask: Is it easier to maintain a high growth rate when industrial production has been low or when it has been high? Why?

14. Have pupils read and discuss a series of quotations from U.S. and Soviet sources on the threat to the U.S. from Soviet industrial growth. Also have them examine the Soviet figures comparing U.S. and Soviet growth. Discuss: Do you think that conditions have changed any since these people made their statements? (Have pupils explain their answers.) Why do you think the Soviets and different American economists come up with different figures on growth rates and industrial production? (Perhaps show pupils the chart in Campbell which compares different estimates on growth rates.)
class graphs comparing the industrial production of the U.S. and of the U.S.S.R. In the 1960's, which country was producing more? Now show the table presenting the comparative dollar values of GNP in the U.S., the U.S.S.R., West Germany, the United Kingdom, Japan, France, and Italy in 1964, and did the U.S.S.R. rank in total economic output highest? Ask pupils a chart comparing rates of economic growth from 1950-1964. (Be sure to review what students mean by quotable growth rates.) Ask: Which country was fastest from 1950 to 1964? How did the U.S., U.S.S.R., growth rates compare for 1960? 1961? 1963? 1964? What conclusions can you draw, if any, about the probable industrial strength of the U.S. and the U.S.S.R. in the future? Why? (Make sure students understand that the countries have been in the lead on growth but that the U.S.S.R. has been ahead during the two decades taken as a whole.) Also ask: Is it possible to maintain a high growth rate when industrial production has been low or when it has been high? Why?

Pupils read and discuss a series of quotations and Soviet sources on the threat to the U.S. from Soviet industrial growth. Also have them examine det figures comparing U.S. and Soviet growth. Do you think that conditions have changed since these people made their statements? (Have pupils explain their answers.) Why do you think that different American economists come up with different estimates on growth rates? (Perhaps show pupils the chart in Campbell compares different estimates on growth rates.)

For a graph of industrial production, see Thayer, Russia, p. 66. For charts showing GNP and growth rates for the U.S., the U.S.S.R., and the other countries mentioned, see "Teacher's Supplement to Unit on U.S.S.R."

A. IS CURIOUS ABOUT SOCIAL DATA.

G. The institutions of government constitute the arena or the structure within which the authoritative decisions of the political process are made.

G. It is easier for a totalitarian system to make drastic changes rapidly than it is for a democratic system to do so.

G. Decision-making in a democracy is shared by several groups and is subject to varying influences and limitations.

G. The decision-maker reacts to pressures from other decision-makers and to pressures from outside the government.

G. The unity and homogeneity of life which totalitarianism demands is contrary to the pluralism of liberal democracy.

G. There are many sources of national power in dealing with other nations. (Scientific and technological developments provide an important component of national power.)

E. The Soviet Union has made progress and has achieved scientific breakthroughs in scientists, although U.S. have been ahead in other de
Institutions of government constitute the arenas or the structures within which the authoritative decisions of the political process are made.

It is easier for a totalitarian government to make drastic changes quickly than it is for a democratic government to do so.

Decision-making in a democracy is shared by several persons and is subject to varying influences and limitations.

A decision-maker reacts to pressures from other decision-makers as well as to pressures from outside the government.

Unity and homogeneity of life in totalitarianism demands purity to the pluralism of national democracy.

There are many sources of national power in dealing with other nations, and scientific and technological developments provide an important component of national power.)

E. The Soviet Union has made rapid scientific progress and has achieved some important scientific breakthroughs ahead of U.S. scientists, although U.S. scientists have been ahead in other developments.
Also discuss: Do you think the MIT professor is justified in his gloom? Why or why not? Do we have enough information to be sure of our conclusions? Why or why not?

15. In a class of capable students, you might have pupils read an excerpt from Adlai Stevenson's Friends and Enemies on the peril the U.S. faces if it does not decide to make the necessary sacrifices to meet the Soviet competition. Discuss: Do you think that the position of the U.S. is better or worse than Stevenson predicted in 1959? Do you agree with Stevenson's analysis of American weaknesses? Why or why not?

16. Ask: Can you think of any recent scientific "first" or advance in the Soviet Union. Of what importance is this development to the U.S.?
JSS: Do you think the MIT professor is justified to be gloomy? Why or why not? Do we have enough evidence to be sure of our conclusions? Why or why not?

of capable students, you might have pupils as Stevenson's "Friends and Enemies," p. xii-xxi.

In the peril the U.S. faces if it does not make the necessary sacrifices to meet the competition. Discuss: Do you think that the situation of the U.S. is better or worse than Stevenson foresaw in 1959? Do you agree with Stevenson's analysis of American weaknesses? Why or why not?

you think of any recent scientific "first" in the Soviet Union. Of what importance is it to the U.S.?
S. Considers alternative courses of action.
A. IS CURIOUS ABOUT SOCIAL DATA.
A. FEELS A SENSE OF RESPONSIBILITY FOR KEEPING INFORMED ABOUT CURRENT PROBLEMS.

S. Identifies assumptions.
S. Considers alternative courses of action.
S. Considers the relevance of each of the social science disciplines, and uses the types of questions asked and the analytical concepts used in the relevant disciplines to help him analyze the problem.
A. FEELS A SENSE OF RESPONSIBILITY FOR KEEPING INFORMED ABOUT CURRENT PROBLEMS.
A. IS CURIOUS ABOUT SOCIAL DATA.

F. The U.S.S.R. was the first country in the world and is the two leading communist powers struggle with Red China over influence may prove either an advantage to the U.S. in affairs.

G. A sound foreign policy toward the many aspects of Soviet life can be built only on knowledge in these fields, S. can help us at home as well as dealings with other countries.
bers alternative courses of
ious about social data.

A sense of responsibility
ving informed about current

ies assumptions.
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al science disciplines,
ne the types of questions
and the analytical concepts
he relevant disciplines
him analyze the problem.

A sense of responsibility
ving informed about current
ous about social data.

F. The U.S.S.R. was the first communist
country in the world and is still one of
the two leading communist powers. Its
struggle with Red China over communist
fluence may prove either a disadvantage
or an advantage to the U.S. In world
airs.

G. A sound foreign policy toward the Soviet
Union can be built only on knowledge about
the many aspects of Soviet life.

H. Study of the U.S.S.R. can help us test
social science hypotheses and advance our
knowledge in these fields. Such knowledge
can help us at home as well as in our
dealings with other countries.
17. Prepare a bulletin board display on conflict between the U.S.S.R. and Red China. Or read aloud headlines pointing out this conflict. Or have each pupil read a current article dealing with the conflict. Then discuss: How may the outcome of this conflict affect the U.S.? If you were President, how would you deal with the Soviet Union in the light of this conflict? Do you have enough information about either the Soviet Union or China to answer this question at the present time? Why or why not?

18. Read aloud quotes from people advocating different policies toward the Soviet Union. What goals do these people hold as they suggest these policies? What assumptions are they making? Have pupils try to define their own goals for our relations with the U.S.S.R. Have them suggest other policy alternatives than those already quoted. Ask: Suppose you were President or the Secretary of State. What kinds of information would you want before trying to make up your mind about what foreign policies we should adopt in our dealings with the Soviet Union? What kinds of help can we get from the different social scientists in helping to answer such questions? What kinds of questions would each kind of social scientist ask about the Soviet Union? Does it matter whether or not American citizens are informed about the Soviet Union so long as the President, the State Department, and Congressmen are informed? Why? What advantages can you see to studying the U.S.S.R. other than getting help in determining our policies toward the Soviet Union?
a bulletin board display on conflict between S.R. and Red China. Or read aloud headlines about this conflict. Or have each pupil read an article dealing with the conflict. Then how may the outcome of this conflict affect you? If you were President, how would you deal with the Soviet Union in the light of this conflict? Have enough information about either the Union or China to answer this question at the time? Why or why not? 

Read quotes from people advocating different policies toward the Soviet Union. What goals do people hold as they suggest these policies? What assumptions are they making? Have pupils try to state their own goals for our relations with the Union. Have them suggest other policy alternatives that are already quoted. Ask: Suppose you were President or the Secretary of State, what kinds of information would you want before trying to make up our minds about what foreign policies we should adopt with the Soviet Union? What kinds of information do we get from the different social scientists, those dealing with the Soviet Union? What kinds of questions would each kind of social scientist ask about the U.S.S.R.? Does it matter whether or not U.S. citizens are informed about the Soviet Union? Does it matter whether or not Congressmen are informed? Why? What advantages do we see to studying the U.S.S.R. other than getting information about the Soviet Union?

20. Give pupils an overview for the entire area-study, pointing out the way in which it will be broken into sub-units and the ways in which the questions they have raised will be studied.
OBJECTIVES FOR SUB-UNIT ON GEOGRAPHY

The sub-unit on geography should make progress toward developing the following generalizations:

1. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.
   a. Whether or not a country's size provides more advantages or disadvantages depends upon the problems inhabitants face at a particular time, upon their goals, and upon their level of technology.
   b. The significance of location depends upon cultural developments both within and outside a country.
   c. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the earlier limitations.
   d. Obstacles to communication may be social as well as physical.
   e. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.
   f. Types of agriculture depend upon man's cultural perceptions, and technology upon climate, soils, and...
   g. Population distribution values and his technology physical features of an area.

2. Temperature is affected by:
   a. Places in the interior of a continent tend to have greater temperature than places along the coasts.
      1) The ocean and other bodies of water do not heat as land.
      2) Winds which blow over land are warm air to nearby land.
   3. The rotation of the earth produces day and night, while the inclination of the earth and its revolution around the sun...

These objectives have also been taught in the introduction to the overall the U.S.S.R.
OBJECTIVES FOR SUB-UNIT ON GEOGRAPHY

The unit on geography should make progress toward developing the following:

1. Types of agriculture in a region depend upon man's cultural values, perceptions, and technology as well as upon climate, soils, and topography.

2. Population distribution reflects man's values and his technology as well as physical features of an area.

2. Temperature is affected by the distance from the equator, elevation, distance from warm water bodies, prevailing winds, air pressure systems, ocean currents, and physical features which block winds from certain directions.

   a. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

      1) The ocean and other large bodies of water do not heat up so rapidly as land.

      2) Winds which blow over warm bodies of water (or land areas) carry warm air to nearby land areas.

   b. Places near the equator tend to have a year-around high temperature.

   c. The rotation of the Earth produces day and night, while the inclination of the Earth and its revolution around the sun makes seasons.

   d. The significance of location depends upon cultural developments both within and outside a country.

   e. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the former limitations.

   f. Mates to communication may be social as well as physical.

   g. The objectives have also been taught in the introduction to the overall unit on S,R.
result in seasons and differences in temperature on the earth's surface.

4. Rainfall is affected by distance from bodies of warm water, wind direction, temperature, and physical features which block winds carrying moisture.

5. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow; they need water and dryness at different times during their period of growth.

a. Vegetation is affected by temperature. (Grass will grow in some areas which are too cold for trees to grow.)

b. The land in hot regions dries fast as the warm air picks up moisture; therefore, more rain is needed to grow crops in these regions than in regions which are not so hot.

6. Soil in a particular place is affected by the type of basic rock in the region; the climate; vegetation; erosion; wind, glaciers and rivers which move soil; and by how man treats the soil.

7. Nature changes the face of the earth through biotic processes.

8. Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to people's skills, etc.

9. Unevenly distributed phenomena distinctive patterns on the map.

a. Population is distributed unevenly over the earth's surface; many land areas are unevenly populated.

10. A region is an area of one or more homogeneous features. The core area is homogeneously, but there are transition zones where boundaries are between different regions.

11. Regions are delimited on many bases, depending upon the purpose of the study; some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and the basis of functional unity.

12. An increase in population occurs when the birth rate plus immigration is greater than the death rate plus emigration.

13. Changes in the birth and death rates and in the ratio between sexes can have important effects upon a society.

14. The degree of horizontal mobility of people in a society (including shifts of population from rural to urban areas) can have important effects upon a society.
Reasons and differences in the earth's surface.

- Affected by distance from warm water, wind direction, and physical features which carry moisture.

- Crops need differing amounts and differing temperatures of frost-free days in order, they need water and dryness at times during their period.

- A particular place is affected by temperature and grow in some areas which are not so hot. In hot regions, air picks up moisture, and more rain is needed to crops in these regions than in which are not so hot.

- Processes of basic rock in the re-climate, vegetation, erosion, and rivers which move by how man treats the soil changes the face of the earth.

- Access to resources, access to markets, people's skills, etc.

- Unevenly distributed phenomena form distinctive patterns on the map.

- A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

- Regions are delimited on many different bases, depending upon the purpose of the study; some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on functional relations.

- An increase in population occurs when the birth rate plus immigration is greater than the death rate plus emigration.

- Changes in the birth and death rates and in the ratio between sexes can have important effects upon a society.

- The degree of horizontal mobility within a society (including shifts of population from rural to urban areas) can have important effects upon a society.
15. People who are in contact with each other are likely to borrow cultural traits from each other. Migration of people from one part of the world to another involves the movement of culture and material objects, thus resulting in changes in the area to which people migrate.

*16. The world is a community of interdependent countries.

17. Nations may pool their power behind common goals in varying systems of alliance and combinations.

18. Foreign policy decisions are affected by ... considerations of national self-interest....

SKILLS

The broad skill toward which teaching is ultimately directed is underlined. A specific aspect of a skill is in plain type.

1. Attacks problems in a rational manner.
   *a. Sets up hypotheses.
   b. Sets up ways of testing hypotheses.

2. Locates information.
   *a. Chooses appropriate reference book to locate information.

   *a. Interprets graphs and tables. (Draws inferences from graphs and tables.)

4. Uses effective geographic skills.
   a. Has a sense of distance and
      *1) Compares distances with
   b. Interprets maps.
      1) Interprets map symbols (lines, color layers, etc.).
      2) Compares area with known
         *2) Compares area with known
   c. Visualizes a generalized
      U.S.S.R., etc.
   d. Differentiates between small and large-scale maps and knows each.
o are in contact with each other likely to borrow cultural material objects, thus resulting in the area to which they grate.

is a community of interdependencies, pooling their power behind common varying systems of alliances. Policy decisions are affected by considerations of national self-pool toward which teaching is directed is generally. A specific of a skill is in plain type. Problems in a rational manner. Hypotheses, ways of testing hypotheses, and information. An appropriate reference book to gather information.

3. Gathers Information.

*a. Interprets graphs and tables.
   (Draws inferences from graphs and tables.)

4. Uses effective geographic skills.

a. Has a sense of distance and area.
   *1) Compares distances with known distances.

   *2) Compares area with known areas.

b. Interprets maps.

1) Interprets map symbols (isometric lines, color layers, dots, hatching).

2) Draws inferences from maps by applying previously-learned concepts and generalizations.

3) Draws inferences from a comparison of different map patterns of the same area.

c. Visualizes a generalized map of the U.S.S.R.

d. Differentiates between small-scale and large-scale maps and knows when to use each.
e. Is in the habit of looking at places or events in terms of relative location.

5. Evaluates information.
   a. Checks on the completeness of data.
   b. Organizes and analyzes data and draws conclusions.
   c. Tests hypotheses against data.

ATTITUDES

1. Is curious about social data.

2. Is sceptical of the finality of knowledge; considers generalizations and theories as tentative, always subject to change in the light of new evidence.

3. Respects evidence even when it contradicts preconceptions.

4. Believes that the social sciences can contribute to men's welfare by providing information and explanatory generalizations which help them achieve their goals.
A. Is curious about social data.

II. Man uses his physical environment of his cultural values, perception of level of technology.

S. Draws inferences from maps by applying previously-learned concepts and generalizations.

A. The great size of the Soviet Union had advantages and disadvantages which are being changed somewhat by technological developments.
II. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

A. The great size of the Soviet Union has had advantages and disadvantages; these are being changed somewhat by technological developments.
1. Give the class a pupil's guide to this sub-unit. Discuss possible individual and small group activities, and ask for pupil suggestions for other kinds of activities. Have pupils list their choices for activities in order of preference and turn their lists in at the end of the hour. Assign activities the next day, and give pupils a tentative schedule to show the days on which they are to be prepared with their activities. (This is a long unit, so each pupil should do several individual or small group activities.)

2. Have pupils try to figure out the importance of many of the physical features of the U.S.S.R. by studying different map patterns of that country. Have them set up a series of hypotheses as they study each map. They should check these hypotheses, too, against other kinds of data in tabular and material. Because working on the first hypothesis in implications of size of the country, pupils should look at other maps before they can check their hypotheses to check with these maps. It is now have pupils set up as many hypotheses as possible from each map before moving on to the next one. You will have to tell pupils that they will check these hypotheses at a later date.

You should not try to teach the generalizations listed in column one as pupils set up hypotheses, nor should you teach the content listed in the outline of content. They are presented opposite the activities calling for hypotheses-making only so that the teacher will know the purpose of the activities in terms of unit generalizations and content and so that he will know better what questions to ask to stimulate hypotheses. Since the
S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Whether or not a country's size provides more advantages or disadvantages depends upon the problems inhabitants face at a particular time, upon their goals, and upon their level of technology.

1. Great size makes it more likely country will have a varied resources for different kinds of cultural crops and industry.

2. Great size may make it easier for country to support a large population although size itself is not tantamount to size of the area in which men can use productively and in which men use the land to live.

3. The great size of Russia and Soviet Union has permitted "Retreat" in past wars, in which men have been defeated by permit to advance so far into Russia that transportation lines became effective, military action gaining existing levels of technology.
Ferences from maps by previously-learned and generalizations.

hypotheses.
his physical environment of his cultural values, or not a country's size more advantages or disad-
depends upon the problems he face at a particular on their goals, and upon level of technology.

1. Great size makes it more likely that a country will have a varied climate and resources for different kinds of agricultural crops and industry.

2. Great size may make it easier for a country to support a large population, although size itself is not so important as is the size of the area which men can use productively and the ways in which men use the land to earn a living.

3. The great size of Russia and now the Soviet Union has permitted "Defense by Retreat" in past wars; invading armies have been defeated by permitting them to advance so far into Russia that their transportation lines became too long for effective military action given the existing levels of technology. This
content is listed at this point in the outline. It is not repeated later during activities designed to test the earlier hypotheses. However, the generalizations are listed again.

During the hypotheses-making stage of this sub-unit, you may wish to ask each student to develop his own list of hypotheses and then have a committee use them to develop a composite list. Or you may wish to develop a class list through a general class discussion, with a class secretary keeping a list of the suggested hypotheses as you write them on the chalkboard. Be sure to include and even attempt to stimulate contradictory hypotheses at this stage of the unit.

Begin with a political-physical map showing the Soviet Union in relation to its bordering countries. Ask: In what ways do you think that the great size of the Soviet Union has been of importance? Let pupils think of all of the possible ways they can and list them on the chalkboard as untested hypotheses. If necessary, stimulate pupil thinking by asking more detailed questions such as: Do you think that the great size could affect agriculture in any way? How? Do you think it could affect the kind of resources which the Soviet Union might have? How? Do you think that it could have affected the development of transportation facilities? How? Do you think that its great size will have proved useful or a handicap in its wars with western and Far Eastern countries? Have pupils examine the long coast line of the Soviet Union. What do they think this long coastline might mean in terms of sea transport?

Be sure to have pupils answer such questions, indicating why and stating possible hypotheses. They should not be permitted to answer just "yes" or "no." Do not try to
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and later during activities designed to test
hypotheses. However, the generalizations
again.

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have pupils answer such questions, indicating
ating possible hypotheses. They should not be
answer just "yes" or "no." Do not try to
6. The significance of location depends upon cultural developments both within and outside of a country.

4. The size of the Soviet Union combined with topography and communication difficulties make it difficult to develop transportation and communication. In the past these difficulties were being reduced by technological developments and the use of more complex transportation routes. Improved transportation has contributed to a higher value for the people of the Soviet Union.

5. The great size and distance of the Soviet Union (east-west and north-south) meant that parts of the country were bound to be warm and others to have continental climate of cold winters.

3. Russia's location between West Europe, the Middle East, and the Far East turned it into a crossroad. People from all three areas adopted aspects of the culture. Russia's location has also influenced the course of Russian history.

2. The great size of the Soviet Union combined with topography and communication difficulties make it difficult to develop transportation and communication. In the past these difficulties were being reduced by technological developments and the use of more complex transportation routes. Improved transportation has contributed to a higher value for the people of the Soviet Union.

1. Russia's location between West Europe, the Middle East, and the Far East turned it into a crossroad. People from all three areas adopted aspects of the culture. Russia's location has also influenced the course of Russian history.

S. Sets up ways of testing hypotheses.

S. Sets up ways of testing hypotheses.

S. In the habit of looking at places for events in terms of relative location.

S. Sets up ways of testing hypotheses.
ays of testing hypotheses.

advantage would be lost in a war fought entirely with missiles.

4. The great size of the Soviet Union has combined with topography and climate to make it difficult to develop needed transportation and communication facilities in the past; these difficulties are being reduced by technological developments and the use of more capital to develop transportation routes now that improved transportation has come to hold a higher value for the people of the Soviet Union.

5. The great size and distances across the U.S.S.R. (east-west and north-south) have meant that parts of the Soviet Union are bound to be far from warm oceans. This in turn means that part of the country will have a continental climate of cold winters and hot summers.

B. The significance of the Soviet Union's location has depended upon cultural developments; however, the location has also influenced the course of Russian history.

1. Russia's location between Western Europe, the Middle East, and the Far East turned it into a crossroads for people from all three areas; Russia adopted aspects of the culture of all three areas, so that Soviet culture differs from the culture in each of the other areas.

B. The significance of the Soviet Union's location has depended upon cultural developments; however, the location has also influenced the course of Russian history.

1. Russia's location between Western Europe, the Middle East, and the Far East turned it into a crossroads for people from all three areas; Russia adopted aspects of the culture of all three areas, so that Soviet culture differs from the culture in each of the other areas.
have pupils test their hypotheses at the present time. Rather, encourage pupils to list hypotheses. Include conflicting hypotheses if pupils suggest them. Tell the students that they will test these hypotheses at a later point. However, at this time ask: How do you think we can test these hypotheses? What kinds of data do we need to test each of those we have listed?

3. Have pupils examine a physical-political map of the U.S.S.R. in relation to all of its neighbors. They should note the location of the two cultures which they have studied earlier (Western Europe in grade eleven and the Middle East in grade eight or nine). Then have pupils note the relative location of the U.S.S.R. in connection with cultures of the Far East. Ask: What significance do you think this central location between these three great culture areas may have had for Russia? Do not discuss hypotheses in detail at this time. Tell pupils they will do so at a later point in the unit. However, ask: How do you think we can check your guesses (or hypotheses)?
their hypotheses at the present time. Tell pupils to list hypotheses. Include hypotheses if pupils suggest them. Tell them they will test these hypotheses at a later point in the unit (Western Europe in grade eleven; East in grade eight or nine). Then have pupils examine a physical-political map of the U.S.S.R., showing countries which border upon it. Physical-political map of the U.S.S.R. showing countries which border upon it. Then have pupils examine a physical-political map of the nation to all of its neighbors. They have examined the relative location of the two cultures which they have learned about earlier. (Western Europe in grade eleven; East in grade eight or nine). Then have pupils examine the relative location of the U.S.S.R. in relation to other cultures of the Far East. Ask: What do you think this central location between the great culture areas may have had for Russia? Examine hypotheses in detail at this time. Tell pupils to test these hypotheses at a later point in the unit. Ask: How do you think we can check your guesses??
The significance of location depends upon cultural developments both within and outside a country.

Foreign policy decisions are affected by considerations of national self-interest.

Russia's location on the European plain has meant that military objective for expansion in the past.

Russia's location in relation to other countries has meant that ports on open seas were dominated by other countries.

Russia's struggles with other countries have meant that ports on open seas were not available to Russia.
2. Russia's location on the eastern end of the European plain has made it an important military objective for European expansion in the past.

3. Russia's location in relationship to other countries has meant that it has had no ports except in the Arctic that give access to open seas without having to go close to or through narrow passages dominated by other countries. The desire for ports on open seas was a contributing factor in the Russo-Japanese War and in Russia's struggles with Turkey.
Have pupils note the number of different countries which border on the U.S.S.R. Ask: What significance do you think this has for Soviet foreign affairs? (Have pupils set up hypotheses.)

4. Have pupils note the broad expanse of the plain which extends across Europe into the Soviet Union. Discuss: Do you think this lack of physical barrier in the days before airplanes may have had any influence upon the course of Russian history? Have pupils set up hypotheses to test. Do not try to test them at this time.

5. Have pupils note the countries which control the outlets to some of the seas on which the Soviet Union has ports. What significance does this have for Soviet foreign policy? Have pupils set up hypotheses to test later.

6. Show pupils a map of the areas acquired by the U.S.S.R. after World War II. Discuss: Why do you think the U.S.S.R. wanted these areas? Have pupils set up hypotheses to check against historians' conclusions as they study a later part of the unit.
Ask: What significance do you see for Soviet foreign affairs? (Have pupils set up hypotheses.)

Discuss: this lack of physical barrier in the days may have had any influence upon the Asian history? Have pupils set up hypotheses not try to test them at this time.

Discuss: Why do you think the areas acquired these areas? Have pupils set up hypotheses to test against historians' conclusions as they part of the unit.
S. Compares distances with known distances.

G. The world is a community of interdependent countries.

G. Nations may pool their power behind common goals in varying systems of alliances and combinations.
distances with known
his physical environment
of his cultural values,
and the level of tech-

ons, and level of tech-

t countries.

may pool their power behind

of the U.S.*S.R.'s location in relation-
ship to the Arctic has changed as a
result of the development of planes and
missiles.

4. The U.S.*S.R.'s location in relation-
ship to the Arctic circle and Alaska has
made it a close neighbor of the U.S.,
Our defense system against missiles and
planes has been built to guard against
attack from the north. The significance
of the U.S.*S.R.'s location in relation-
ship to the Arctic has changed as a
result of the development of planes and
missiles.

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7. Ask: Outside of Canada and Mexico, which country is our closest neighbor? Have several pupils examine the globe again. They should use a string to measure the distance between the northernmost edge of the Soviet Union and the northern edge of the U.S. (not counting Alaska). Have them use a string to measure the distance between the U.S. and other countries than Canada and Mexico. They might make a bar graph to compare these distances. (e.g., U.S.-U.S.S.R.; U.S.-Britain; U.S.-France; U.S.-China; U.S.-Cuba; etc.) Now have pupils measure the distance between the U.S.S.R. and Alaska and compare this distance with that between Florida and Cuba.

Several other pupils might work together to measure the distances between their home town and different capitals of the world, including Moscow. They should also make a bar graph to illustrate their findings.

Have the class examine the bar graphs. The pupils who made them should explain how they made them and why they used the globe rather than a map to do so.

Discuss: What does the closeness between the U.S.S.R. and the U.S. mean today? Do you think it meant the same thing before we had airplanes? before we had intercontinental missiles?

8. Have an able student give an illustrated oral report on our defense system against missiles and planes. Where are the defense systems placed? Discuss: In the modern age of missiles, could the U.S. set up a defense system against missiles without cooperating with other countries?
ide of Canada and Mexico, which country is our
neighbor? Have several pupils examine the globe
and string. They should use a string to measure the distance
between the northernmost edge of the Soviet Union and
the northernmost edge of the U.S. (not counting Alaska).
Use a string to measure the distance between the
U.S.S.R.; U.S.-Britain; U.S.-France; U.S.-
Cuba; etc.) Now have pupils measure the
distance between the U.S.S.R. and Alaska and compare
it with that between Florida and Cuba.
Other pupils might work together to measure the
distance between their home town and different capitals
in Europe, including Moscow. They should also make
a bar graph to illustrate their findings.

Class examine the bar graphs. The pupils who
should explain how they made them and why they
used the globe rather than a map to do so.

What does the closeness between the U.S.S.R.
and the U.S. mean today? Do you think it meant the same
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A student give an illustrated oral report on
the system against missiles and planes. Where
were the defense systems placed? Discuss: In the modern
world of missiles, could the U.S. set up a defense system
without cooperating with other countries?
S. Is in the habit of looking at places and events in terms of relative location.

5. The Soviet Union's location in northern latitudes has combined with other factors to give the country a relatively cold climate with short days in summer and long days in winter. The area of permafrost, which is ice-free all year, makes for poor drainage. This permafrost makes it impossible to grow certain kinds of crops.

a. About 4/5 of the country of the northern boundary

S. Draws Inferences from maps by applying previously-learned concepts and generalizations.

b. The U.S.S.R. has a large area of permafrost in which the never thaws below the to this permafrost makes it impossible to grow certain kinds of crops.

c. A large part of the Soviet area is too cold for people to inhabit.

G. Temperature is affected by the distance from the equator, distance from warm water bodies, prevailing winds, air pressure systems, ocean currents, and physical features which block winds from certain directions.

S. Sets up ways of testing hypotheses.

b. The U.S.S.R. has a large area of permafrost in which the never thaws below the to grow certain kinds of crops makes for poor drainage.

c. A large part of the Soviet area is too cold for people to inhabit. However, many agricultural products have been developed at great expense.
The habit of looking at places in terms of relative advantage is another way of testing hypotheses. Differences from maps by distance from the equator, by distance from water bodies, by prevailing air pressure systems, by ocean currents, and physical features such as lock winds from certain directions.

The Soviet Union's location in the northern latitudes has combined with other factors to give the country long days in summer and short days in winter, a relatively cold climate with a large area of permafrost, only one harbor which is ice-free all year long, rivers which freeze much of the year, and large breaks with less than 100 consecutive days free from frost for growing crops.

a. About 4/5 of the country lies north of the northern boundary of the U.S.
b. The U.S.S.R. has a large area of permafrost in which the ground never thaws below the top few feet; this permafrost makes it difficult to grow certain kinds of crops and makes for poor drainage. Many agricultural products except at great expense. However, the Soviets have developed an elaborate system of greenhouses to grow vegetables for

c. A large part of the Soviet Union has too few frost-free days for growing crops. In summer and short days in winter, a relatively cold climate with a large area of permafrost, only one harbor which is ice-free all year long, rivers which freeze much of the year, and large breaks with less than 100 consecutive days free from frost for growing crops.
9. Have pupils look at a world map to note the relative location of the U.S.S.R. and the U.S. in terms of latitude. In less capable classes, perhaps have a pupil make a cut-out of the U.S. from the world map and move it into its appropriate position in terms of latitude over the southern part of the U.S.S.R. and the region south of the U.S.S.R. Have another pupil do the same thing with a cut-out map of North America. Place these cut-outs on clear plastic so that pupils can see through them. In other classes, use overlays to show the same thing. Or project a single-page overlay showing these two countries superimposed in this way. Use one of several sources.

Now have pupils compare the locations of a number of cities or lakes in the Soviet Union and in the U.S. and Canada (e.g. Odessa on the Black Sea with Duluth; Kiev with Winnipeg; Leningrad with Skagway, Alaska; Moscow with Ketchikan, Alaska; Vladivostok with Halifax; Alma Ata in Middle Asia with Salt Lake City; Caspian Sea with the Great Lakes). At first do not tell pupils what cities to find which are relatively parallel with the Soviet cities. Have them think of their own possibilities.

10. Ask: What effect do you think this northerly location would have upon the Soviet Union? (If necessary ask more detailed questions to get pupils to set up hypotheses about possible effects upon temperature in general and more specifically upon ports, rivers, vegetation, agriculture or length of growing season between frosts, ease of invading Soviet Union, etc. Also ask: What effects would this northern location have upon the length of the day in summer? In winter?) Do not test pupils' hypotheses at this time. However, ask: What kinds of data should we examine to test our hypotheses?
Look at a world map to note the relative positions of the U.S.S.R. and the U.S. in terms of latitude. In capable classes, perhaps have a pupil of the U.S. from the world map and more appropriate position in terms of latitude. Have another pupil do the same, i.e. a cut-out map of North America. Place the U.S. on plastic so that pupils can see.

In other classes, use overlays to show superimposed in this way. Use one of.

Compare the locations of a number of places in the Soviet Union and in the U.S, and between the Black Sea with Duluth; Kiev with Leningrad with Skagway, Alaska; Moscow, Alaska; Vladivostok with Halifax; Alma Asia with Salt Lake City; Caspian Sea with the.

At first do not tell pupils what are relatively parallel with the. Have them think of their own possibilities.

In the Soviet Union? (If necessary ask questions to get pupils to set up hypotheses.) What effects upon temperature in general upon ports, rivers, vegetation, length of growing season between frosts, growing Soviet Union, etc. Also ask: What this northern location have upon the length summer? In winter? Do not test pupils' this time. However, ask: What kinds of examine to test our hypotheses?
G. Vegetation is affected by temperature. (Grass will grow in some areas which are too cold for trees to grow.)

G. Differing crops need differing, ... temperatures and number of frost-free days in order to grow, ...

S. Tests hypotheses against data.

G. The rotation of the earth produces day and night, while the inclination of the earth and its revolution around the sun result in seasons and differences in temperature on the earth's surface.

S. Tests hypotheses against data.

G. Temperature is affected by ... ocean currents.

G. Foreign policy decisions are affected by ... considerations of national self-interest.

Some of the towns they have in northern Siberia.

d. At times the cold winters have Russians against invading armies.

e. Soviet rivers are frozen over much of the year, thus making rivers less useful for river travel.

f. The U.S.S.R.'s northern location it very long days in the summer, help overcome the shortness of period which is frost-free.

g. The Soviet Union has only one which is ice-free all year round because of the warm currents which sweep up and around Scandinavia. However, this port is in an area which ships meet frequent and storms. It is also distant from major centers of population. Lack of warm water ports has been important factor in a number of wars. Russia has tried to acquire land to give it ports which open more months during the
ion is affected by temperature. Grass will grow in some conditions which are too cold for trees. Growing crops need differing temperature and number of frost-free days in order to grow.

hypotheses against data.

Orientation of the earth produces night, while the inclination of the earth and its revolution around the sun results in seasons of temperature differences on earth's surface.

hypotheses against data.

Temperature is affected by current.

Policy decisions are made by considerations of self-interest.

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some of the towns they have established in northern Siberia.

d. At times the cold winters have helped Russians against invading armies.

e. Soviet rivers are frozen over for much of the year, thus making the rivers less useful for river transport.

f. The U.S.S.R.'s northern location gives it very long days in the summer which help overcome the shortness of the period which is frost-free.

g. The Soviet Union has only one port which is ice-free all year round because of the warm currents which sweep up and around Scandinavia. However, this port is in an area in which ships meet frequent and heavy storms. It is also distant from the major centers of population. This lack of warm water ports has been an important factor in a number of Russian wars. Russia has tried to acquire land to give it ports which would be open more months during the year.
11. Show pupils charts of the length of day at different latitudes in summer and winter. Have them check their hypotheses about the length of days at different times of year in the Soviet Union.

Charts may be found Miller, et al., Geography, pp. 31.

12. Have a committee prepare a bulletin board display on "Seaports in the U.S.S.R." The display should include a large map showing the major ports. There should be a card listing the advantages and disadvantages of each port. Each card should be connected to the appropriate place on the map by colored string.
charts of the length of day at different times in summer and winter. Have them check their estimates about the length of days at different times in the Soviet Union.

The display should include the following:

1. A bulletin board display on the U.S.S.R. The display should include charts showing the major ports. There should be a card for each chart stating the advantages and disadvantages of each port. Each card should be connected to the appropriate chart by colored string.
G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.

S. Sets up ways of testing hypotheses.

G. Temperature is affected by the distance from warm water bodies, prevailing winds, air pressure systems, ocean currents, and physical features which block winds from certain directions.

G. Places in the interior of continents tend to have greater extremes of temperature than places along the coast.

G. The ocean and other large bodies of water do not heat up as rapidly as land nor cool so rapidly as land.

h. The Soviet Union has developed Northern Sea Route whose action must use ice-breakers, planes to help ships move from northern port to another during months of the year. The latter route made it necessary to send its navy around Africa during its war with Japan.

6. The U.S.S.R.'s location in relation to the Atlantic Ocean has helped it a continental climate and amount of rainfall. The Arctic cold to provide a moderating influence in the winter time.
his physical environment of his cultural values, and level of technology.

The Soviet Union has developed the Northern Sea Route whose administration must use ice-breakers and spotter planes to help ships move from one northern port to another during many months of the year. The lack of such a route made it necessary for Russia to send its navy around the tip of Africa during its war with Japan in 1905.

6. The U.S.S.R.'s location in relationship to the Atlantic Ocean has helped give it a continental climate and reduce the amount of rainfall. The Arctic is too cold to provide a moderating influence in the winter-time.

...
13. After the class has studied the bulletin board display, ask: Suppose you were the Soviet leaders and wished to use the northern ports more months in the year. What steps might you take? Let pupils discuss the possibilities briefly. Then read aloud brief excerpts from Cressy to describe what the Soviets have done and the importance of the Northern Sea Route to the U.S.S.R. (Cressey, Soviet p. 173 and first par p. 175.)

14. Have pupils look at the location of the U.S.S.R, in relationship to the Atlantic Ocean. Ask: In what direction do the prevailing winds blow in this latitude? (Pupils should know from study of Western Europe.) What do you think the location means in terms of the kind of climate which the Soviet Union would have (temperature and rainfall)? Again have pupils set up hypotheses to test but do not try to test them at this time. Ask: How do you think you can check these hypotheses?
look at the location of the U.S.S.R. in relation to the Atlantic Ocean. Ask: In what direction do the prevailing winds blow in this latitude? How do you think this location means in terms of climate? Let pupils set up hypotheses to test but do not test them at this time. Ask: How do you think the Soviets have done and the Northern Sea Route to the U.S.S.R.

Now, study the bulletin board display. If you were the Soviet leaders and wished to make ports more accessible to you, where would you locate them? Let pupils discuss the possibilities. Then read aloud brief excerpts from Cressey, Soviet Potentials (Use last paragraph on p. 173 and first paragraph on p. 175.)
G. Winds which blow over warm bodies of water (or land areas) carry warm air to nearby land areas.

C. Rainfall is affected by distance from bodies of warm water, wind direction, etc.

S. Draws inferences from maps by applying previously learned concepts and generalizations.

S. Sets up hypotheses.

S. Sets up ways of testing hypotheses.

G. Temperature is affected by the distance from the equator, distance from warm water bodies, physical features which block winds from certain directions.

G. Temperature is affected by prevailing winds, air pressure systems, ocean currents, and physical features which block winds from certain directions.

G. Rainfall is affected by distance from bodies of warm water, wind direction, etc.

7. The U.S.S.R.'s location in relation to the Arctic Ocean, combined lack of mountains to the north helped to make the northern part of the country much colder.

8. The U.S.S.R.'s location in relation to prevailing winds and high air pressure systems has helped give the country a cold, dry climate.

a. The western part of the country receives rain from the Atlantic, but storms are deflected to the east in the winter time by the high pressure system over Siberia. This high pressure system also deflects storms from the Mediterranean and keeps them from bringing much rain.
which blow over warm bodies (or land areas) carry to nearby land areas. It is affected by distance dies of warm water, wind on, etc.

Inferences from maps by previously-learned s and generalizations, hypotheses, ways of testing hypotheses.

Temperature is affected by the dis- steam the equator, distance rm water bodies, and features which block winds rtain directions.

Temperature is affected by pre- winds, air pressure systems, currents, and physical features lock winds from certain ions.

It is affected by distance dies of warm water, wind on, etc.

7. The U.S.S.R.'s location in relationship to the Arctic Ocean, combined with the lack of mountains to the north have helped to make the northern part of the country much colder.

8. The U.S.S.R.'s location in relationship to prevailing winds and high and low pressure systems has helped give the country a cold, dry climate.

a. The western part of the country gets rain from the Atlantic, but the storms are deflected to the north in the winter time by the high pressure system over Siberia. This high pressure system also deflects storms from the Mediterranean and keeps them from bringing much rain to
15. Have pupils look at the location of the U.S.S.R. in relation to the North Pole and the Arctic Ocean. Have them also note the landforms (or lack of mountains) in the northern part of European Russia and western and central Siberia. Ask: What effect do you think this location and lack of mountains may mean in terms of weather in the northern part of the Soviet Union? Why? Again have pupils set up hypotheses to test later. Ask: How do you think you can test these hypotheses?

16. Place a large sheet of plastic over the physical map or project a physical map transparency with an overhead projector. Use a china marking pencil to draw in the high and low pressure systems and wind directions in January. Note the relationship between the high pressure system in Central Siberia and the winds during this time. Ask: How do you think the U.S.S.R.'s location in terms of this high pressure center and the prevailing winds affects rainfall and temperature during the winter time? Now show a plastic overlay with the low pressure system and prevailing winds in the summer time. Ask: How do you think the location of the U.S.S.R. in relationship to this kind of weather pattern in the
Look at the location of the U.S.S.R. in the North Pole and the Arctic Ocean. Note the landforms (or lack of mountains) in part of Europe and western Asia. Ask: What effect do you think this lack of mountains may mean in terms of northern part of the Soviet Union? Why? Can you set up hypotheses to test later, or do you think you can test these hypotheses?

Set a sheet of plastic over the physical map or a map transparency with an overhead projector marking pencil to draw in the pressure systems and wind directions in the relationship between the high pressure center in Central Siberia and the winds during the summer. How do you think the U.S.S.R.'s location of this high pressure center and the prevailing winds in the summer affects rainfall and temperature during the summer? Now show a plastic overlay with the system and prevailing winds in the summer. How do you think the location of the U.S.S.R. could affect this kind of weather pattern in the summer?
S. Draws inferences from maps by applying previously learned concepts and generalizations to new data.

S. Sets up hypotheses.

S. Sets up ways of testing hypotheses.

S. Interprets map symbols (color layers).

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. The topography of a region may present limitations given a specific level of technology.

S. Sets up hypotheses.

S. Differentiates between small-scale and large-scale maps and knows when to use each.

B. The Soviet Union's topography has been a habitant for a number of reasons. It has learned to overcome some of the limitations placed upon him by this earlier in history.

1. The lack of physical barriers west and the great plains made frequent invasions of Russia from the west and the drive to expand borders. Even the Urals were crossed long before modern transportation were developed.

b. Prevailing winds keep the eastern parts of the count during the winter time.
eastern parts of the country during the winter time.

b. Prevailing winds keep the areas bordering the Pacific Ocean from getting as much warmth from the Pacific Ocean during the winter time as though the winds were from the opposite direction.

B. The Soviet Union's topography has been important for a number of reasons; however, man has learned to overcome some of the limitations placed upon him by this topography earlier in history.

1. The lack of physical barriers on the west and the great plains made easy frequent invasions of Russia from both east and west and the drive to expand Russia's borders. Even the Ural's were easily crossed long before modern types of transportation were developed.
Summer time affects rainfall and temperature? Do not discuss at this point. Just set up hypotheses and possible reasons. (Be sure to have pupils look at Far Eastern part of country as well as western part of Soviet Union as they try to figure out hypotheses.) Ask: How do you think you can check these hypotheses?

17. Prepare a bulletin board display showing a physical map of the Soviet Union with photographs illustrating many of the places shown on the map. The photographs should be connected to the appropriate places on the map with colored string.

18. Now have pupils look at a physical map of the U.S.S.R. in more detail. Also project a large scale map of the Urals. (You may wish to show pupils comparative sketches of profiles of the Urals and the Appalachians looking at them from the west or from the east. Also have pupils measure the east-west width of the Urals as compared with the Appalachians at several different points.)

Ask: What are the advantages or disadvantages of large-scale and small-scale maps? Ask: Do you think the Urals provided any barrier to invasion from either the east or west prior to the invention of the airplane? Why or why not? Do you think they provided any barrier to eastward expansion by the Russians prior to the development of the airplane? Why or why not? (Have pupils set up hypotheses to test in the next activity.)
Affects rainfall and temperature? Do not this point. Just set up hypotheses and possi-
(Do sure to have pupils look at Far East
entry as well as western part of Soviet Union
to figure out hypotheses.) Ask: "How do you
an check these hypotheses?

Bulletin board display showing a physical map
of the U.S.S.R. and photos of places in
U.S.S.R.

Pupils look at a physical map of the U.S.S.R.
first. Also project a large scale map of the
you may wish to show pupils comparative sketch-
ses of the Urals and the Appalachians looking
from the west or from the east. Also, have pupils
as compared
appalachians at several different points,
are the advantages or disadvantages of large
small-scale maps? Ask: "Do you think the
Raided any barrier to invasion from either the
west prior to the invention of the airplane?
not? Do you think they provided any barrier
d expansion by the Russians prior to the de-
the airplane? Why or why not? (Have pupils
theses to test in the next activity.)

Physical map of U.S.S.R.

See Lydolph, Geography of
the U.S.S.R., p. 134 for
map of Urals.

Physical map of U.S.S.R.

or of the eastern part of
the U.S.
S. Tests hypotheses against data.

G. Rainfall is affected by distance from bodies of warm water, wind direction, temperature and physical features which block winds carrying moisture.

2. The high mountains affect climate by cutting off air from the Pacific Ocean (Only a small area in the upper mountainous area.

3. High mountains also prevent air from the cold northern Scandinavian area and the cold Siberian peninsula; however, mountains in the great U.S.S.R. means that the cold Arctic winds except...
Hypotheses against data.

The high mountains in the south and east affect climate by cutting off rainfall and warm air from the Pacific and from the Indian Ocean. Only a small area in the Far East receives much moisture from the Pacific during the monsoon season.

High mountains also provide some protection from the cold northern winds in the Transcaucasian area and the southern side of the Crimean peninsula. However, the lack of high mountains in the greater part of northern U.S.S.R. means that there is no barrier to cold Arctic winds except the high pressure systems of the atmosphere.
19. Have a pupil give a report on the physical problems facing Napoleon during the Napoleonic Invasion of Russia. Have another pupil give a similar report on the physical problems facing the Germans during their invasion of World War II. Be sure to have pupils compare the area invaded by the Germans with the area east of the Mississippi in the U.S. Discuss: Do you think your hypothesis was correct? (Or, which of your hypotheses do you think is borne out by the evidence thus far?) Do you think that the principle of defense by retreat would hold true if the Soviet Union were to go to war with a country in the Far East? How far would Japan have to invade the U.S.S.R. to reach the first important industrial complex? Suppose a war were to break out between the Soviet Union and China. Would this principle of defense by retreat be of help?

Now have a pupil report on the military difficulties which faced the Russian government during the Russo-Japanese War in 1905. Discuss: Do you think that the great size of Russia had anything to do with the defeat? What other aspects of Russian physical features seem to have been involved? What cultural factors seem to have been involved?

20. Have pupils look at the high mountainous areas in southern and eastern U.S.S.R. Ask: What effect do you think these mountains would have upon rainfall in different parts of the Soviet Union? Why? What effect do you think they would have upon temperatures in the Soviet Union? Why? What do you think the effect is of a lack of high mountains in the northern part of the U.S.S.R.? (Let pupils set up hypotheses about temperatures and rainfall to check later.) You may wish to prepare a cut-out bulletin board to remind pupils of the effects
I give a report on the physical problems Napoleon during the Napoleonic Invasion of Russia, or pupil give a similar report on the physical plight the Germans during their invasion of Russia. Be sure to have pupils compare the area the Germans with the area east of the Mississippi. Discuss: Do you think your hypotheses correct? (Or, which of your hypotheses do you see put by the evidence thus far?). Do you think the principle of defense by retreat would if the Soviet Union were to go to war with a nation in the Far East? How far would Japan have to to reach the first important Industries? Suppose a war were to break out between the Soviet Union and China. Would this principle of retreat be of help?

Pupil report on the military difficulties of the Russian government during the Russo-Japanese War in 1905. Discuss: Do you think that the geography of Russia had anything to do with the defeat? Physical map of U.S.S.R. Read the passage again. Discuss: What do you think is involved? What cultural factors seem to have played a role?

Look at the high mountainous areas in southeastern U.S.S.R. Ask: What effect do you think mountains would have upon rainfall in different parts of the Soviet Union? Why? What effect do you suppose the effect of a lack of mountains in the northern part of the U.S.S.R.? You may wish to prepare a bulletin board to remind pupils of the effects.
S. Tests hypotheses against data.
S. Interprets map symbols (isolines).
G. Unevenly distributed phenomena form distinctive patterns on the map.

S. Applies previously-learned concepts and generalizations to new data.
G. Temperature is affected by the distance from the equator, elevation, distances from warm water bodies, prevailing winds, air pressure systems, ocean currents, and physical features which block winds from certain directions.

21. Now have pupils check their many hypotheses about temperature and rainfall against three kinds of sources. First, have them examine climatic maps of the Soviet Union showing temperatures and rainfall in January and in July and maps showing the number of frost-free months in different parts of the Soviet Union. (Review the use of isometric lines on maps.) Second, have pupils examine climatic data charts for selected cities in the Soviet Union.

Perhaps have a pupil translate temperature data into a series of graphs comparing Soviet cities with U.S. or Canadian cities at the same latitude. (Compare the temperatures of western Soviet cities with temperatures of west coast cities in the Americas. Compare east coast cities in both America and the Soviet Union. Compare southern, interior cities in the U.S.S.R. with interior cities in the U.S.) Or compare Moscow and Leningrad temperatures with temperatures in Minneapolis which is further south. Have the class examine these graphs. Then ask: How do you account for these differences of temperature for cities at the same latitude?
students barriers upon rainfall. An illustra-
tion in an article by James R. Smith, "Bulletin
Geography," The Journal of Geography; 58: 301,
December, 1959).

Pupils check their many hypotheses about temper-
are illustrated by rain.

First, examine climatic maps of the Soviet Union
and rainfall in January and in July,
showing the number of frost-free months in
different parts of the Soviet Union. (Review the
climatic lines on maps.) Second, have pupils
plot data charts for selected cities in the So-

For maps see: Lydolph,
Gamphy of the U.S.S.R.,
pp. 16-17; Cressy, Soviet
Potential, pp. 48-49; Oxford
Regional Atlas of the U.S.S.R.,
Petersburg, et al., World's
Yates, pp. 52-72.

For climatic charts and
tables, see: Cressy, Soviet
Potential, p. 216; insert
data chart on map on p. 30 of
the Oxford Regional Atlas
of the U.S.S.R., See also
of the World, p. 238.

Have a pupil translate temperature data into
graphs comparing Soviet cities with U.S. or
cities at the same latitude. (Compare the tem-
peratures of western Soviet cities with temperatures of
cities in the Americas. Compare the east coast
of both America and the Soviet Union. Compare
interior cities in the U.S.S.R. with interior
cities in the U.S.) Or compare Moscow and Leningrad tem-
with temperatures in Minneapolis which is furth-

Have the class examine these graphs. Then ask:
account for these differences of temperature?

at the same latitude?
S. Compares areas with known areas.

G. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.

S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.

G. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the earlier limitations.

4. The lack of much relief on northern plains has combined with permafrost to give the U.S. poor drainage conditions.

5. A large part of Russia (about) is too mountainous or has little cropland under present conditions.
areas with known areas.

Limited by maps are activities given specific limitations of technology; however, man has earned to overcome many limitations.

4. The lack of much relief on many of the northern plains has combined with the permafrost to give the U.S.S.R. large sections of poorly drained and swampy lands.

5. A large part of Russia (about one-eighth) is too mountainous or hilly to make good crop land under present technological conditions.
23. Compare the area of permafrost in the U.S.S.R. with the area of the U.S. Perhaps show the class a map which indicates areas where there are also islands of permafrost outside of the main area.

Read aloud Cressey's description of the permafrost. Or have a pupil present an illustrated report on the effects of permafrost in Siberia. He should compare the changes reported from the 1960 article to the 1967 article.

24. Once again show pupils the temperature maps of the U.S.S.R. and have them examine these in relationship to the physical map. Ask: What effects do you think the physical relief of these northern plains areas combined with the temperature in these areas would have upon drainage? Would you expect to have well-drained land or swampy land? Why? (Have pupils set up hypotheses to test later.)

25. Once again show the class a physical map of the U.S.S.R. and have them examine this in relationship to the physical-political map. Ask: Are there any parts of the Soviet Union where you think it would be difficult to grow crops because of physical relief? Where? How much of the country is too mountainous or hilly to make good crop land under present technological conditions? What could be done to increase the amount of hilly land used for crops?
area of permafrost in the U.S.S.R. with the
in the U.S. Perhaps show the class a map which in-
area where there are also islands of permafrost
the main area.

descriptions of the permafrost. Or
present an illustrated report on the effects
in Siberia. He should compare the changes
from the 1960 article to the 1967 article.

detail the temperature maps of the U.S.S.R.
them examine these in relationship to the physi-
Ask: What effects do you think the physical
these northern plains areas combined with the
in these areas would have upon drainage?
expect to have well-drained land or swampy
(Have pupils set up hypotheses to test lat-
show the class a physical map of the U.S.S.R.
there any parts of the Soviet Union where you
would be difficult to grow crops because of
relief? Where? How much of the country is
hilly or hilly to make good crop land under
technological conditions? What could be done to
the amount of hilly land used for crops?

For map, see Mellor, Geoq.
of the U.S.S.R., p. 53 or
Deasy, et. al., World's Na-
tions, p. 603.
Cressey, Soviet Potentials,
p. 46; paragraph 2.
Sochurek, "Russia's Remote
Conger, " Siberia; Russia's
Frozen Frontier," National
297-345.

show pupils the temperature maps of the U.S.S.R.
Maps of Jan. and July tem-
perature in the U.S.S.R.

Physical map of the U.S.S.R.

Physical-political map of the
U.S.S.R.
S. Tests hypotheses against data.

S. Interprets tables (draws inferences from tables.)

S. Sets up hypotheses.

G. The topography of a region may present limitations given a specific level of technology; however, man

6. The lack of much relief on the plains has made it less expensive to build railroads and roads over much of the area, but poor drainage and topography have made it difficult to build trains in some areas or to keep them in good repair. Air traffic can offset some of these handicaps, although too expensive as yet to move goods.

7. The high mountains have made it difficult to build roads and railroads to parts of Russia; as a result, transportation has been relatively isolated until recent years, when technological advancements have made it easier to build roads and railroads in these areas.
6. The lack of much relief on the extensive plains has made it less expensive to build railroads and roads over much of the area; however, poor drainage and permafrost have made it difficult to build transportation routes in some areas or to keep them in good repair. Air traffic can overcome some of these handicaps, although it is too expensive as yet to move very bulky goods.

7. The high mountains have made it difficult to build good roads and railroads through parts of Russia; as a result, some parts have been relatively isolated. Airlines are making transportation to some of these areas easier, and technological developments have made it easier to build railroads and roads in these areas.
6. Have pupils look at the plains areas on a physical map of the U.S.S.R. Ask: What effect do you think these extensive plains would have upon attempts to build roads and railroads? What effect would the temperature pattern have upon such attempts? What effects would the temperature pattern have upon roads and railroads which have been built? (If necessary remind pupils of what they learned in activity 23 about the effects of permafrost and summer thawing upon buildings and streets in Yakutsk.)

27. Show pupils a physical map and large-scale maps of some of the mountainous areas. Also show pictures of these areas. Ask: How easy do you think it would have been for people in Russia to build railroads and roads through these mountains prior to recent roadbuilding machinery? How easy would it be today? What effect do you think the problems of building roads would have upon the people living in these mountainous areas? Do you think this situation may be changing today? Why or why not?

8. Have pupils examine a map showing railroads and highways in the Soviet Union. Have them compare these maps with similar maps for the U.S. Also show tables comparing miles of railroads and roads in the U.S. and in the U.S.S.R. How do they account for the differences? (Be sure that pupils understand that the difference is not all due to differences in difficulties in building roads.) Ask: From your study of these maps, where would you expect to find the greatest population densities? The fewest people? (Have pupils set up hypotheses to check later.)
Is look at the plains areas on a physical map of U.S.S.R. Ask: What effect do you think these extensive would have upon attempts to build roads and railways? What effect would the temperature pattern have upon roads and railroads which have been built in these areas? (If necessary, remind pupils of what they read in activity 23 about the effects of permafrost thawing upon buildings and streets in Yakutsk.)

Is a physical map and large-scale maps of some of U.S.S.R. areas. Also show pictures of these areas. Ask: easy do you think it would have been for people to build railroads and roads through these moun- or to recent roadbuilding machinery? How easy do you think it would have been for people to build railroads and roads through these moun- or to recent roadbuilding machinery? How easy is it today? What effect do you think the problems of building roads would have upon the people living in mountainous areas? Do you think this situation may change today? Why or why not?

Examine a map showing railroads and highways in the Soviet Union. Have them compare these maps with maps for the U.S. Also show tables comparing railroads and roads in the U.S. and in the Soviet Union. How do they account for the differences? (Be sure pupils understand that the difference is not only in difficulties in building roads.) In your study of these maps, where would you extend the greatest population densities? The fewest? (Have pupils set up hypotheses to check

Physical map of the U.S.S.R.
Thayer, Russia, pp. 22-23, 85 (pictures).
Cressey, Soviet Potentials, pp. 19, 64, 140, 142, 146, 151, 153 (pictures).
Stavrianos, Global History, p. 304.

has learned to overcome many of the earlier limitations.

5. Draws inferences from maps by applying previously-learned concepts and generalizations.

8. The direction in which the new Engineering techniques
8. The direction in which the rivers flow has been important. Particularly in the past, new engineering techniques are overcoming limitations.
Now have a group of pupils or the entire class check geography texts and other materials to find out how accurate their predictions have been about roads and railroads.

29. Project a map of airlines in the U.S.S.R. Ask pupils to compare it with the railroad and highway maps. To what extent do airlines supplement these other types of transport in the same regions? To what extent do they provide transportation facilities to areas outside of those served by railroads and highways?

Project a table showing the increase in air traffic from 1955 to 1965. Discuss its implications.

30. Now have pupils look at a map showing the rivers in western U.S.S.R. Ask: In what direction do the different rivers flow? Why? Into what bodies of water do these...
group of pupils or the entire class check texts and other materials to find out how acc-

drived predictions have been about roads and rail-


development*, pp. 62-63, 66-

77 (maps and tables).

Whiting, *Sov. Union Today*,

230-233 (maps of highways).

For written discussion of

railroads and highways, see:

Cressey, *Soviet Potentials*,

pp. 7-8.

Whiting, *Soviet Union Today*,

pp. 229-230.


Scholastic Book Services Ed-

itors, *Sov. Union*, pp. 92-

93.


Kohn and Drummond, *The World*

Today*, pp. 391-392. *Flinstrip:*

Transp. & Comm. In Sov. Un.,

S.V.C., Frames 33-40.

Whiting, *Sov. Union Today*,

pp. 238-239 (map), p. 241

(table).

map of airlines in the U.S.S.R. Ask pupils to

with the railroad and highway maps. To what

airlines supplement these other types of trans-

e same regions? To what extent do they provide

facilities to areas outside of those served by

des and highways?

table showing the increase in air traffic from

65. Discuss its implications.

pupils look at a map showing the rivers in west-

R. Ask: In what direction do the different

w? Why? Into what bodies of water do these

Physical map of U.S.S.R.
S. Sets up hypotheses.

G. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the earlier limitations.

a. The Volga flows into the Caspian Sea. It has been a transportation but not so useful for transport into a body of water to open seas. Recent construction of the Volga River to the Caspian Sea. The Don River flows into the Caspian Sea. The Volga flows into Moscow, which lies some distance from any sea, is now connected by canals and rivers to flow to other bodies of water.

b. The course of the eastern rivers has helped to link them from moderately dry areas with sparse population to several areas of dense population. Consequently the rivers provide more for transportation than they would otherwise be.

c. The rivers of the Soviet Union flow generally north or south rather than east and west. This has meant that they have not provided as good transportation as the eastern rivers. However, a number of tributaries and rivers do provide some transportation. Earlier in Russian history there were few connecting the tributaries.

d. Most of the eastern rivers flow into the Arctic. This is useful for transportation.
Apotheses. Hypothesis of a region may pre-
Some of the problems of the past.

a. The Volga flows into the landlocked Cas-
plan Sea. It has been useful for trans-
poration but not so useful as though it flowed into a body of water with access
to open seas. Recent canals have tied
the Volga River to the Don River which
flows into the Caspian Sea and to the
River which flows into the Baltic Sea.
Moscow, which lies some distance from
any sea, is now connected by a series of
canals and rivers to five seas.

b. The course of the eastern rivers takes
them from moderately sparsely populated areas with sparse population, rather than
between several areas of dense population.
Consequently, the rivers are less useful
for transportation than they might other-
wise be.

c. The rivers of the Soviet Union flow main-
ly north or south rather than east and
west. This has meant that the rivers
have not provided as good transportation
as many would have desired.

However, a number of tributaries of these
rivers do provide some east-west routes.

Earlier, in Russian history, men portaged
between these tributaries. Today, the
Soviet Union has built many canals con-
necting the tributaries.

d. Most of the eastern rivers flow northward
into the Arctic. This makes them less
useful for transportation because the
How useful do you think these rivers would be for transportation? Why? From what you know so far about the Soviet Union, how dense would you expect the population to be near the mouths of the eastern rivers? Why? If you are right in your guess, how would this affect the usefulness of these rivers? How useful are the rivers for transportation east and west across the Soviet Union? How do you think early Russians used them as they moved in an east-west direction? How do you think the Soviets might increase their value for east-west transportation today? (Have pupils set up hypotheses to check later.)

31. Remind pupils of the temperature maps once more. Ask: What effect do you think temperatures would have upon the usefulness of Soviet rivers for transportation? Project a table showing the length of the shipping season.
How useful do you think these rivers would be for transportation? Why? From what you know so far, how dense would you expect the population to be near the mouths of the eastern rivers? If you are right in your guess, how would this affect the usefulness of these rivers? How useful are the rivers for transportation east and west across the Soviet Union? How do you think early Russians used them as they expanded their empire in an east-west direction? How do you think the length of the shipping season might increase their value for east-west transportation today? (Have pupils set up hypotheses to check pupils of the temperature maps once more. Ask: How do you think temperatures would have upon the usefulness of Soviet rivers for transportation? Probably, showing the length of the shipping season.

Physical map of U.S.S.R.
Temperature map of U.S.S.R.
S. Sets up hypotheses.

G. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the earlier limitations.

S. Tests hypotheses against data.
River mouths are frozen over much of the year. Furthermore, the river ice melts to the south and so on the upper parts of the river first; this means that the water is more likely to overflow the river banks where rivers are still frozen. There is great flooding in the plains area in the spring; combined with permafrost, this flooding has resulted in many swampy areas.
on major rivers in the U.S.S.R.

Also ask: Where does the ice in the Mississippi thaw first? What effect does this thawing have upon the river below? Why was there such a serious flood in Minnesota on the Mississippi and Minnesota rivers in the spring of 1965? (The ground froze very deep before heavy snows came, so that the water from melted snow could not sink into the ground.) Now consider the Soviet rivers which flow northward. What parts of these rivers would thaw first when spring comes? Would you expect these rivers to flood more or less than the Mississippi? Why? Would you expect the 1965 situation of run-off in Minnesota due to the freezing of the ground to be similar to the Russian situation or would you expect the floods to sink rapidly into the Russian soil along the rivers? Why? Would you expect the floods to recede more rapidly in Minnesota or in the Soviet Union? Why? What do you think the effects of this flooding would have upon the land for agricultural purposes? Now describe the floods which take place on Soviet rivers.

Have pupils check their hypotheses about the usefulness of rivers for transportation by reading various geography texts. Be sure to have some pupils read Lydolph and Créssey on the building of canals and Taaffe on the reasons why rivers are not used to full capacity for handling freight when railroads are so over-worked.

After pupils have finished reading, discuss: Were your hypotheses correct or do you need to modify them? (Analyze reasons.) How have the Soviets made their river system more useful for transportation? Why isn't more freight traffic shifted to the rivers now that so many canals have been built and since railroads are so busy?

Lengyel, Sov. 8.
Lydolph, Geo., pp. 36-37, 64, 127-129, 191-193, 389.
Créssey, Sov., pp. 84-85, 97-100, 129.
Taaffe, "Volga transportation: Pro
Rivers in the U.S.S.R.

Where does the ice in the Mississippi thaw at effect does this thawing have upon the water? Why was there such a serious flood in Minnesota and Minnesota rivers in the 1965? (The ground froze very deep before heavy snow fell, so that the water from melted snow could sink into the ground.) Consider the Soviet rivers first when spring comes. Would you expect them to flood more or less than the Mississippi? And do you expect the 1965 situation of run-off in the Soviet Union to be similar to the Russian situation or would you expect the water to sink rapidly into the Russian soil along the rivers? Would you expect the floods to recede quickly in Minnesota or in the Soviet Union? Why? How do you think the effects of this flooding would change the land for agricultural purposes? Now describe some floods which take place on Soviet rivers.

Is check their hypotheses about the usefulness for transportation by reading various geographers. Be sure to have some pupils read Lydolph on the building of canals and Taaffe on the use of the rivers.

If they have finished reading, discuss: Were your hypotheses correct or do you need to modify them? (Analyze.) How have the Soviets made their rivers useful for transportation? Why isn't more traffic shifted to the rivers now that so many canals have been built and since railroads are so over-worked?

Lengyel, Sov. Union, pp. 7-8.
Taaffe, "Volga River Transportation: Problems and Pros-
S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. The significance of location depends upon cultural developments both within and outside a country.

G. The topography of a region may present limitations given a specific level of technology; however, man has learned to overcome many of the earlier limitations.

9. The U.S.S.R. has vast water potential.

a. It has many sources of water in the southern and eastern areas; however, many of the potential sources are not close to major concentrations of population or industry and many of the rivers are frozen much of the time.

b. The lack of much relief on parts of the Soviet plains has made river transportation easier. On these plains the rivers flow very slowly much of their course. This has made even dam-building and the development of water power more difficult. Man has overcome the lack of falls by building dams, but steep banks along some of the rivers have made even dam-building very difficult.
9. The U.S.S.R. has vast water power potential.

a. It has many sources of water power in the southern and eastern mountains; however, many of the potential sources are not close to major concentrations of population or industry and many of the rivers are frozen much of the year.

b. The lack of much relief on large parts of the Soviet plains has made the rivers on these plains flow very slowly over much of their course. This has made river transportation easier but has handicapped the development of water power. Man can overcome the lack of natural falls by building dams, but the lack of steep banks along some of the rivers has made even dam-building difficult on some of the rivers.
33. Call the attention of the class to the physical map and to a rainfall map once more. Ask: What possible sources do you see for the development of water power? How useful would the southern and eastern mountains be as a source of water power? Why?

Now show pupils maps and pictures of some of the plains areas through which Soviet rivers flow. Ask: What effect do you think this kind of relief would have upon the ease of moving boats over these rivers? Upon the possibilities of using the rivers for water power? (Discuss possibilities without dams. Discuss difficulties of building dams in some of these areas.)

Have several pupils check in geography texts to find out more about water power developments and the problems facing the Soviets as they try to build dams.

Project a map showing hydroelectric developments in the U.S.S.R. and have pupils test their hypotheses against it. Does the lack of development in eastern mountains
Attentio of the class to the physical map and all map once more. Ask: What possible sources for the development of water power? How use the southern and eastern mountains be as a water power? Why?

Pupils maps and pictures of some of the plains through which Soviet rivers flow. Ask: What efficiency think this kind of relief would have upon of moving boats over these rivers? Upon the tiles of using the rivers for water power? (Disabilities without dams. Discuss difficulties ing dams in some of these areas.)

Pupils check in geography texts to find out water power developments and the problems e Soviets as they try to build dams.

Map showing hydroelectric developments in the and have pupils test their hypotheses against the lack of development in eastern mountains.
S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.

G. Climate may set up limitations upon man's activities, given a specific level of technology, but man has learned to overcome many of the earlier limitations.

S. Tests hypotheses against data.

G. Vegetation is affected by temperature and precipitation.

G. Phenomena are distributed unevenly over the earth's surface, resulting in great diversity or variability from one place to another.

G. Unevenly-distributed phenomena form distinctive patterns on the map.

C. Types of agriculture in a region a nation's cultural values, perception of technology as well as upon climate and physical relief.

1. The climate has affected vegetation and the development of agriculture.

a. The climate has affected the distribution of natural vegetation.

1) The U.S.S.R. may be divided into major vegetation zones of taiga, steppe, and desert regions.

2) There is a small area of alpine vegetation near the

3) Vegetation in the southern region depends upon elevation and/or southern exposure while both rainfall and temperature

b. The climate and vegetation are also affected by the

In the region, the movement of glaciers

S. Draws inferences from maps by applying previously-learned concepts and generalizations.

S. Sets up hypotheses.
The climate has affected vegetation, soils, and the development of agriculture. Although the climate has affected the development of natural vegetation, and the climate has affected vegetation, soils, and the development of agriculture, although the climate has affected vegetation, soils, and the development of agriculture, although man is learning to overcome some of the previous limitations upon agriculture.

a. The climate has affected the development of natural vegetation.

1) The U.S.S.R. may be divided into four major vegetation zones: tundra, taiga, steppe, and desert.

2) There is a small area of sub-tropical vegetation near the Black Sea.

3) Vegetation in the southern mountains depends upon elevation and northern or southern exposure which affects both rainfall and temperature.

b. The climate and vegetation have affected soils in the Soviet Union, although soils are also affected by the kind of rocks in the region, the movement of soil through various types of erosion and glaciation.

c. Types of agriculture in a region depend upon a nation's cultural values, perceptions, and technology as well as upon climate, soils, and physical relief.

1. The climate has affected vegetation, soils, and the development of agriculture, although man is learning to overcome some of the previous limitations upon agriculture.
prove that there is no potential there? Why or why not? Quote Lydolph on the potential in this area.

34. Have pupils consider all of the other maps which they have examined thus far. Discuss: How do you think climate would affect vegetation and agricultural production in different parts of the U.S.S.R.? (How would it affect types of vegetation? The soil? The kinds of crops grown? The distribution of crops? Other uses to which the land might be put?) Remind pupils that most field crops developed up to the present time need at least 100 days free from frost.

35. Have pupils examine a map of natural vegetation. (Be sure to include a map showing marshlands.) Show pictures of vegetation. Discuss: Were your hypotheses correct or do you need to modify them? How do you account for differences in different parts of the Soviet Union?

36. Review what pupils learned in earlier grades about the factors affecting soil development and the effects of soil upon growing crops. Or, if necessary, have pupils read a brief description of these factors and effects.
there is no potential there? Why or why not?

If there is potential, discuss: How do you think this potential would affect vegetation and agricultural production? How would it affect the kinds of vegetation? The distribution of crops? Other uses of the land? Remind pupils that different crops developed up to the present time need 100 days free from frosts...

For maps, see Lydolph, Geogr. Today, pp. 67-74; Kohn and Drummond, World Potentials, Nat'l Res. of the Sov. Union, or frame 28 in filmstrip: Cressey, Sov. Potential, p. 16; atlases of the Sov. Union, p. 4-5; Cyriax, Sov., 1956; Matlil, Res. of the Sov. Un.
Tests hypotheses against data.

G. Nature changes the face of the earth through biotic processes.

G. The soil type in a particular place is affected by the type of basic rock in the region, the climate, vegetation, erosion, wind, and glaciers as well as by how man treats the soil.

S. Draws inferences from maps by applying previously learned concepts and generalizations.

S. Sets up hypotheses.

S. Tests hypotheses against data.

G. Types of agriculture in a region depend upon man's cultural values perceptions and technology as well as upon climate, soils and topography.

G. The land in hot regions dries fast as the warm air picks up moisture; therefore, more rain is needed to grow crops in these regions than in regions which are not so hot.

1) The effects of climate degree of leaching because the amount of humus in the result of natural wind and water erosion; affected by man's use of

2) Permafrost has also been cause of poor drainage in northern Russia.

c. The climate, landforms, and affected agriculture, although learned to overcome some of limitations.

1) Much of southern, central U.S.S.R. has too little existing crops unless irrigated; even the best the Soviet Union is subject to threat of drought.

2) The areas of the U.S.S.R. with the least rain are also
theses against data.

changes the face of the

through biotic processes.

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vegetation, erosion, wind,
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agriculture in a region

man's cultural values

and technology as well

climate, soils and topog-

hot regions dries fast

air picks up moisture;

more rain is needed to

in these regions than in

ich are not so hot.

1) The effects of climate include the
degree of leaching because of rain,
the amount of humus in the soil as
the result of natural vegetation,
and the degree to which there is
wind and water erosion; soil is also
affected by man's use of the soil.

2) Permafrost has also been an important
cause of poor drainage in much of
northern Russia.

c. The climate, landforms, and soil have
affected agriculture, although man has
learned to overcome some of the earlier
limitations.

1) Much of southern, central, and east-
ern U.S.S.R. has too little rain for
existing crops unless land can be ir-
rigated; even the best farmland in
the Soviet Union is subject to the
threat of drought.

2) The areas of the U.S.S.R. which get
the least rain are also the areas
Now show the class rainfall and vegetation maps of the Soviet Union again. In which parts of the country would they expect the most leaching? In which parts of the country would they expect the most acid soils? In which part would they expect the richest soils? In which part would they expect the greatest wind erosion? Recall what pupils learned earlier about permafrost. In what areas would they find poor soil drainage?

Have pupils check these guesses against a soils map.

37. Have the class compare the soils map with the rainfall map. In what soil regions does the U.S.S.R. get the best rainfall for crops? the least rainfall? What kind of rainfall does the best soil region get? Have pupils look at the temperature map again. What would they expect to be true of evaporation in different parts of the Soviet Union? Is evaporation greater where rainfall is heaviest or where it is scarce? How does evaporation affect agriculture? Compare the rainfall in the black earth region of the U.S.S.R. with that in the black earth region of the U.S. Ask: Why does the U.S.S.R. need slightly less rainfall than the U.S. does for agricultural crops? (The U.S. needs about 20 inches a year; the U.S.S.R. can get by with about 15 inches a year.) Where do you think crops would be grown in the Soviet Union? What kinds of crops? Where do you think there would be dairying? grazing?

Now compare the temperature, rainfall, soils and physical maps with a map showing those parts of the Soviet Union which are cultivated. Have pupils identify the...
the class rainfall and evaporation maps of the
ion again. In which parts of the country
expect the most leaching? In which parts of
would they expect the most acid soils? In
would they expect the richest soils? In
would they expect the greatest wind erosion?
pupils learned earlier about precipitation
areas would they find poor soil drainage?

Is check these guesses against a soil map.

Class compare the next map with the rainfall
what soil regions does the U.S.S.R. get the
fell for crops? the least rainfall? What kind
I does the best soil region get? Have pupils
the temperature map again. What would they ex-
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ion? Is evaporation greater where rainfall is
where it is scarce? How does evaporation
environment? Compare the rainfall in the black
ion of the U.S.S.R., with that in the black
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ion? What kinds of crops? Where do you think
be dairying? grazing?

As the temperature, rainfall, soils and physi-
with a map showing those parts of the Soviet
ich are cultivated. Have pupils identify the

Lydolph, Geog. of the U.S.S.R.,
p. 298.
Cressey, Sov. Potentials,
S. Draws inferences from tables and graphs

I. RESPECTS EVIDENCE EVEN WHEN IT CONTRADICTS PRECONCEPTIONS.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Tests hypotheses against data.

G. Differing crops need differing amounts of rainfall and differing temperatures and number of frost-free days in order to grow; they need water and dryness at different times during their period of growth.

2. The kinds of crops grown are the basis of cultural as well as technological developments.

a. The type of agricultural production and the kinds of crops grown are a part by climate, soil, and

3) Much of the northern part of the United States is too cold (with too many frosty days) for many kinds of crops under even most crops under even modern technological developments.

4) Only about 10\% of land is arable; another 16\% is used for hay crops and animals (other than reindeer), such as the Soviets cultivated about 10% more land than was cultivated in the United States in 1960.
ences from tables and

IVIDENCE EVEN WHEN IT

PRECONCEPTIONS.

hysical environment
his cultural values,
and level of technol-

theses against data.

crops need differing ar-
rainfall and differing
umber of frost-
order to grow; they
and dryness at differ-
turing their period of

with the highest temperatures and
so the most evaporation; the amount
of evaporation is also important
when dams are built for irrigation
purposes.

3) Much of the northern part of the U.S.S.R.
is too cold (with too few frost-free
days) for many kinds of crops and
even most crops under existing tech-
nological developments.

4) Only about 10½ per cent of the land
is arable; another 16.6 per cent is
used for hay crops and pasture for
animals (other than reindeer). The
Soviets cultivated about 50 per cent
more land than was cultivated in the

2. The kinds of crops grown are selected on
the basis of cultural as well as physical
factors.

a. The type of agricultural activity and
kinds of crops grown are affected in
part by climate, soil, and landforms.
Fertile triangle, as shown on this map. They should also identify the climatic, vegetation, soil and landform characteristics of the area within the triangle.

36. Show the class a pie graph on land-use in the U.S.S.R. Ask: What proportion of the land is cultivated for food crops? What part is used for hay and pasture?

Show pupils a chart comparing the amount of sown crop-land (1960) in the U.S.S.R. and in the U.S. Compare the amount in each with the population in each country. Is the difference important? What factor must be considered in deciding which country is better off in terms of agricultural resources?

Now show the class a chart comparing the yield per acre for a number of crops in the U.S. and in the U.S.S.R. How can pupils account for this difference? What might be factors, other than soil types, temperature, and rainfall?

39. Show pupils a series of maps on agricultural production in the Soviet Union. Ask: Were your earlier hypotheses correct? Have pupils compare these maps once more with soil, rainfall, temperature, vegetation and physical maps to help them understand better why certain crops are grown in certain places and why other types of agricultural production are carried on in areas where there is little cultivated land.
triangle, as shown on this map. They should also
be the climatic, vegetation, soil and landform
characteristics of the area within the triangle.

The class a pie graph on land-use in the U.S.S.R.
What proportion of the land is cultivated for food
What part is used for hay and pasture?

Pilils a chart comparing the amount of sown crops
(560) in the U.S.S.R. and in the U.S. Compare the
in each with the population in each country. Is
ference important? What factor must be consider-
deciding which country is better off in terms of
atural resources?

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Pupils account for this difference? What might
other than soil types, temperature, and rain-
falls a series of maps on agricultural production
Soviet Union. Ask: Were your earlier hypotheses?
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help them understand better why certain crops
in certain places and why other types of agri-
production are carried on in areas where there
be cultivated land.

pp. 4-5.
Deasy, et al., World's Nations,
p. 576.

Lydolph, Geog. of the U.S.S.R.,
p. 284 (pie graph), p. 285
(table comparing yield per
acre), p. 280 (table compar-
ing cultivated land in the
two countries).

Deasy, World's Nations,
Lydolph, Geog. of the U.S.S.R.,
pp. 301-314, 318-323.
G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

S. Sets up hypotheses.

A. IS SCEPTICAL OF THE FINALITY OF KNOWLEDGE; CONSIDERS GENERALIZATION AND THEORIES AS TENTATIVE, ALWAYS SUBJECT TO CHANGE IN THE LIGHT OF NEW EVIDENCE.

b. The type of agricultural crops grown in part by man's cultural technological knowledge.

1) The Soviets are rotating the main wheat-growing areas in order to maintain soil fertility.

2) The Soviet Union is selecting the crops because of the need for certain crops to be grown earlier and be available in places where some of the crops can be grown.

3. The Soviet Union is using irrigation to try to expand the areas where crops can be grown; it has already cultivated area by about 73% between 1928 and 1958.

a. The government has been very successful in vast irrigation projects in swamplands.

b. The government has opened vast farms in relatively dry places (in Land areas) and has developed irrigation techniques in these areas.
The type of agricultural activity and the kinds of crops grown are affected in part by man's cultural values and technological knowledge.

1) The Soviets are rotating crops within the main wheat-growing area in order to maintain soil fertility.

2) The Soviet Union is changing some of the crops because of a new desire for certain crops not grown in abundance earlier and because of new places where some of the old crops can be grown.

3. The Soviet Union is using many approaches to try to expand the areas in which it can grow crops; it has already increased its cultivated area by about 73 per cent between 1928 and 1958.

a. The government has been developing vast irrigation projects and draining swamplands.

b. The government has opened up new wheat farms in relatively dry areas (the Virgin Land areas) and has used dry-farming techniques in these areas.
40. Ask: Do you think physical features and climate determine where the crops are grown? Why or why not? Tell the class about recent changes in crops with a switch to greater corn production in the Ukraine because of desires of the people. Use other examples, or have pupils point out examples, of places in which a number of crops are grown or could be grown and where the kinds grown are affected by cultural choice.

Have pupils read a brief description of agricultural crops and other land use in different parts of the Soviet Union.

41. Ask: Suppose you are a Soviet agricultural expert and you want to expand the amount of cultivated land in the U.S.S.R. What might you do? What has been done in the U.S. to expand cultivated land? (If necessary ask additional questions about what has been done in this country to expand cultivated land in dry and swampy areas.)

42. Show pupils a physical map of the U.S.S.R. once more. Where are possible sources of water for irrigation in the dry areas? Now show pupils a map of irrigated lands in the Soviet Union and point out proposed projects.

43. Now have pupils read brief descriptions of ways in which the Soviets are trying to expand cultivated areas and the food supply. Discuss: To what degree do you think each of these techniques will be successful in expanding areas of cultivated land?
Do you think physical features and climate deter-
the crops are grown? Why or why not? Tell
is about recent changes in crops with a switch
corn production in the Ukraine because of de-
the people. Use other examples, or have pupils
examples, of places in which a number of crops
or could be grown and where the kinds grown
acted by cultural choice.

Read a brief description of agricultural
and other land use in different parts of the So-

\[\text{Kohn and Drummond, World Today, pp. 380-382.}\]
\[\text{Deasy, World's Nations, pp. 604, 609.}\]

Suppose you are a Soviet agricultural expert and
a cultivated land in the
, what might you do? What has been done in the
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questions about what has been done in this
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G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Climate may set up limitations upon man's activities given a specific level of technology, but man has learned to overcome many of the earlier limitations.

G. Types of agriculture in a region depend upon man's cultural values, perceptions, and level of technology as well as upon climate, soils, and topography.

c. Agricultural experts are developing food plants which can grow in such a long growing season.

d. Agricultural experts are working with techniques for warming the soil and/or the seed in order to grow some of the plants that do not grow there.

e. The Soviet Union grows some of their crops in greenhouses in very cold areas in order to provide themselves with food.

S. Draws inferences from a comparison of different map patterns of the same area.

S. Sets up hypotheses.

S. Interprets map symbols (dots and hatching).

D. The population distribution is related to the distribution of agriculture. Although this distribution is what has new mineral and power opened up.

1. Most of the people live in the "triangle" between Leningrad, Novosibirsk. This area covers about one-eighth of the land area of the country.
his physical environment of his cultural values, and level of tech-

c. Agricultural experts are trying to develop food plants which do not need such a long growing season.

ons, and level of tech-
d. Agricultural experts are experimenting with techniques for warming the soil and/or the seed in order to grow crops in tundra areas which otherwise would not grow there.

maya set up limitations up-
e. The Soviet Union grows some vegetables in greenhouses in very cold areas where they wish to have towns and must provide them with food.

activities given a specif-

agriculture in a region
pon man's cultural values, ons, and level of tech-
s well as upon climate, and topography.

ferences from a comparison rent map patterns of the a.

hypotheses.

its map symbols (dots and )

D. The population distribution is closely related to the distribution of agricultural resources, although this distribution is changing somewhat as new mineral and power resources are opened up.

1. Most of the people live in the "fertile triangle" between Leningrad, Odessa, and Novosibirsk. This area comprises only about one-eighth of the land area of the country.
Now have a pupil report on his investigations of the success of the Virgin Lands project. Or prepare tables using data from Schwartz on what happened to production in the Virgin Lands. Project in class and have pupils discuss: How successful has the Virgin Lands Project been? Quote brief excerpts from Schwartz on the results.

Invite a local county agent or an agricultural specialist to talk to the class about ways in which technical developments have made it possible to grow certain crops in areas which formerly were too far north or too dry. He might use examples from the U.S., but also describe some of the new developments in the Soviet Union if he knows about them.

Have pupils refer once again to the different maps of the Soviet Union which they have used before. Ask: Where do you think you would find heavy population densities? Medium population densities? Light population densities? Perhaps have pupils make up a population map using a three-symbol key to show what they think the population pattern would be like.

Now show pupils a population map of the U.S.S.R. (Show a dot map and compare it with an isoline or color bar...
report on his investigations of the Virgin Lands project. Or prepare tables from Schwartz on what happened to production in class and have pupils successful how the Virgin Lands Project had made it possible to grow certain crops which formerly were too far north or too dry. Examples from the U.S., but also describe new developments in the Soviet Union if he has excerpts from Schwartz on the results.

If you have an agricultural special-

- refer once again to the different maps of population density which they have used before. Ask: if you heavy population densities? Light population densities? Perhaps have pupils make up a population distribution map like the three-symbol key to show what they think the pattern would be like.

- population density map of the U.S.S.R. (Show a population map of the U.S.S.R. today, p. 373, or atlas, or Cressey, U.S.S.R., p. 271, or Cressy, Soviet Union, p. 323.)


G. Population distribution reflects man's values and his technology as well as climate, topography and resources of an area.

G. Population is distributed unevenly over the earth's surface; many of the land areas are thinly populated.

G. Unevenly-distributed phenomena form distinctive patterns on the map.

S. Tests hypotheses against data.

S. Sets up hypotheses.

G. The degree of horizontal mobility within a society can have important effects upon society.

G. Population distribution reflects man's values and his technology as well as climate, topography and resources of an area.

G. Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

G. Population distribution reflects man's values and his technology as well as climate, topography and resources of an area.

3. About 4 percent of the population is distributed along the Trans-Siberian railway, the eastern tip of the triangle is Pacific.

4. Only about one percent of the population is distributed through the rest of the country.

5. The population distribution is changing somewhat as new areas of agriculture opened up by irrigation projects, railroads and other types of transportation are developed, and as new re or industrial areas are developed in the fertile triangle. The greatest population density is still found west of the Urals but the proportion of the population in this area is decreasing in and east of the Urals as more intensively.
Distribution reflects his technology as a function of topography and area. Distribution is unevenly distributed on the surface; many of the patterns are thinly populated against data.

Physical environment, cultural values, and level of technology can have important effects on society. Distribution reflects his technology as a function of topography and area.

3. About 6 percent of the population lives along the Trans-Siberian railway between the eastern tip of the triangle to the Pacific.

4. Only about one percent of the population is distributed through the rest of the country.

5. The population distribution is changing somewhat as new areas of agriculture are opened up by irrigation projects, as new railroads and other types of transportation are developed, and as new resources or industrial areas are developed outside the fertile triangle. The greatest population density is still found west of the Urals but the proportion of the total population in this area is decreasing as sections in and east of the Urals are developed more intensively.
map with their own maps. If they are different, what accounts for the differences? Discuss: Why do you think the population density map looks the way it does? (Relate population density to kinds of agricultural use of land.) There are large areas of the Soviet Union which are practically empty of people. Do you think these areas offer great potential for future population expansion as the world becomes more crowded? Where do you think the population is most likely to increase in the future?

6. Now show pupils a population density map of pre-World War II vintage. Have pupils compare the two density maps. What changes do they see? Or have pupils study the map showing population changes from 1939 to 1959 in Lydolph. What factors might account for these changes?

Project graphs showing population densities and changes in population in different regions of the Soviet Union. Which regions are increasing most rapidly? Which regions are growing the most slowly? How can pupils account for these differences? (Let pupils set up hypotheses to test later.)

7. Have a pupil make a graph comparing the population density in his own state, in New York, and in New Mexico with the population densities in different parts of the Soviet Union. Discuss.
own maps. If they are different, what are the differences? Discuss: Why do you think the population density map looks the way it does? Population density to kinds of agricultural-use areas are large areas of the Soviet Union practically empty of people. Do you think for great potential for future population the world becomes more crowded? Where do you think the population is most likely to increase in

-76-

Is a population density map of pre-World War II. Have pupils compare the two density maps do they see? Or have pupils studying population changes from 1939 to 1959 that factors might account for these changes? Lydolph, Geog. of the U.S.S.R., p. 273.

Looking at maps showing population densities and changes in different regions of the Soviet Union, are increasing most rapidly? Which regions are increasing most slowly? How can pupils account for these changes? (Let pupils set up hypotheses to test Lydolph, Geog. of the U.S.S.R., p. 273.

Make a graph comparing the population density in your own state, in New York, and in New Mexico. What factors contribute to the different population densities in different parts of the world? See World Almanac for population densities in U.S. states. Lydolph, Geog. of the U.S.S.R., p. 271-273.
S. **Sets up hypotheses.**

S. **Tests hypotheses against data.**

G. Some things can be produced better in one place than in another because of climate, resources, access to markets, people's skills, etc.

A. **RESPECTS EVIDENCE EVEN WHEN IT CONTRADICTS PRECONCEPTIONS.**

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E. The distribution of Russian industries and cities is related to the presence of known power and mineral resources (particularly coal and iron), to the local markets, and to the historical development of cities, which provided skilled workers, markets and better transportation systems.

1. Two of the five major industrial centers (Moscow and Leningrad) are not near either rich coal or iron deposits. They developed early, however, and their markets for labor, electrical plants, transport facilities and housing facilities still encourage the growth of industries.

2. Three of the five major industrial centers are located west of the Urals, most easily invaded across the Central Asian third of these regions is the Ukraine region centered around Kiev based on important coal and iron resources.

3. Because of the exposure of the industrial regions, the Soviet Union had to shift industrial development east to the Urals and the region east of the Urals. This shift has been co...
E. The distribution of Russian industrial centers and cities is related to the location of known power and mineral resources (particularly coal and iron), to the location of markets, and to the historical development of cities, which provided skilled workers and better transportation facilities.

1. Two of the five major industrial regions (Moscow and Leningrad) are not located near either rich coal or iron deposits of any quantity. They developed early industry, however, and their markets, skilled labor, electrical plants, transportation facilities and housing facilities for labor still encourage the growth of industry.

2. Three of the five major industrial regions are located west of the Urals in the area most easily invaded across the plains. The third of these regions is the southeastern Ukraine region centered around Kiev and based on important coal and iron resources.

3. Because of the exposure of these three industrial regions, the Soviet Union began to shift industrial development further east to the Urals and the region past the Urals. This shift has been continued since
Discuss: When is an area or country overpopulated? (Can one tell from population density figures? Is overpopulation present when a particular place cannot raise enough food to feed the people in the place? Is an area underpopulated if there are no people living in it?)

40. Have pupils look at the population map of the U.S.S.R. once more. Where are the major cities? Show a graph which some pupil has made to compare the sizes of some of the larger cities of the U.S.S.R. with some of those in the U.S. Show another pupil-made graph comparing the number of cities over 1 million in population in the U.S. and the U.S.S.R.

Now have pupils look at a map of major industrial centers. Ask: What do you expect to find close to a major industrial center? Have pupils examine a map of mineral and power resources in the Soviet Union. Ask: What two major cities and industrial centers are not located close to rich coal or iron ore deposits? Can you think of any reasons why these cities of Moscow and Leningrad are important industrial centers despite this drawback? Show pupils a map of the flow of goods to and from Moscow. Have pupils read about the Moscow and Leningrad areas to test their ideas about why they became great industrial centers.

Now ask: Suppose you had been the Soviet planners during the 1930's and wished to decide where to build new industrial plants. What factors would you have considered? (Have pupils list kinds of factors and make sure that you ask additional questions to bring out some of the factors they omit.)
is an area or country overpopulated? (Can population density figures? Is overpop-
when a particular place cannot raise feed the people in the place? Is an
ated if there are no people living in it?)

Look at the population map of the U.S.S.R. Are the major cities? Show a graph
I has made to compare the sizes of some cities of the U.S.S.R., with some of those
how another pupil-made graph comparing the is over 1 million in population in the U.S.

Look at a map of major industrial cen-
ent do you expect to find close to a major
er? Have pupils examine a map of minerals sources in the Soviet Union. Ask: What
es and Industrial centers are not located
al or Iron ore deposits? Can you think
why these cities of Moscow and Leningrad
industrial centers despite this drawback?
map of the flow of goods to and from Mos-
cils read about the Moscow and Leningrad
their ideas about why they became great
ers.

ose you had been the Soviet planners dur-
and wished to decide where to build new
nts. What factors would you have consid-
pilis, list kinds of factors and make sure
ditional questions to bring out some of
y omit.)

For population density map
of the U.S.S.R., see activity
ity above. For data on pop-
ulation of Soviet cities, see
Lydolph, Geoq. of the
U.S.S.R., pp. 276-277 or
Wilt and Turner, Sov. Union,
p. 37.
For data on U.S. cities, see
World Almanac. For maps of
coal and Iron deposits see
Lydolph, p. 354 (Iron), 334,
336 (coal).
For map showing flow of goods
to Moscow, see Lydolph, p. 35.
For maps of industrial regions,
see atlases of the Soviet
Union; Wheeler, et. al., Re-
Regional Geoq. of the World To-
day, p. 251; Lydolph, pp. 329,
331; Kohn and Drummond, World
Today, p. 388. For reading
material on Moscow and the
Leningrad areas see: Lydolph,
pp. 32-37, 112; Cressey, Sov.
Potentials, pp. 120-124, 128-
135; Deasy et. al., World's
Nations, pp. 571-78; Wheeler
et. al., pp. 252-253.
Man uses his physical environment in terms of his cultural values, perceptions, and level of technology.

The significance of location depends upon cultural developments both within and outside of a country.

Some things can be produced better in one place than in another because of climate, resources, transportation routes, access to resources, access to markets, people's skills, etc.

The war, and has been accentuated by the discovery of new mineral deposits.

a. The Urals region has excellent deposits and many other minerals though it lacks good coke for steel, coal has been imported to make important steel-making and machinery industries.

b. The Kuznetzk Novosibirsk manu region has excellent coal deposits and brings in iron from the Urals change for its coal (so that the iron do not travel empty either way). Iron deposits in other nearby areas are also helping to make this important center for heavy industry.

4. Other industrial areas are being developed due to major source deposits of minerals.
the war, and has been accentuated by the discovery of new mineral deposits.

a. The Urals region has excellent iron ore deposits and many other minerals. Although it lacks good coke for making steel, coal has been imported for important steel-making and machine-making industries.

b. The Kuznetsk Novosibirsk manufacturing region has excellent coal deposits and brings in iron from the Urals in exchange for its coal (so that box cars do not travel empty either way). New iron deposits in other nearby regions are also helping to make this area an important center for heavy industry.

4. Other industrial areas are being planned and developed due to major sources of power or deposits of minerals.
Have pupils try to decide from the information given on the maps, why the southeastern Ukraine region, the Urals region, and the Kuznets region are such important industrial centers. Discuss: What problems would the Urals region face in building up a steel industry? What problems would the Kuznets region face?

49. Have a pupil give an oral report on the system which was built up to connect the Urals Magnitogorsk with Kuznetsk in order to overcome the lack of good coal in one and good iron in the other. Point out the recent discoveries of iron ore near the Kuznetsk Basin.

Lydolph, Geog. of the World, p. 256.

50. Now have pupils look at a map to identify other rich sources of iron and coal. Are they close to any industrial center? Is it likely that an industrial center will be built in the area? Why or why not? What kind of transportation facility is available or could be provided to transport the raw material to an existing industrial center?

Map of resources of the Sov. Union, Sov. Potentials, 70.
Frame 43 in Filmstrip Resources of the Sov. Union.

51. Have pupils look at a map to identify some of the newer industrial developments which are growing rapidly or which have sprung up in unoccupied areas. What are the advantages and disadvantages of each area? (or of some of them). Perhaps have pupils report on some of these new cities.

Map of industrial progress (see activity 48).
to decide from the information given on the southeastern Ukraine region, the Urals Kuznets region are such important industries:

Discuss: What problems would the Urals face building up a steel industry? What problems Kuznets region face?

Prepare an oral report on the system which connects the Urals Magnitogorsk with the other to overcome the lack of good coal in one and the other. Point out the recent iron ore near the Kuznetsk Basin.

Look at a map to identify other rich iron and coal. Are they close to any industrial centers? Is it likely that an industrial center could grow in the area? Why or why not? What kind of facility is available or could be transported the raw material to an existing industrial center?

Look at a map to identify some of the newer developments which are growing rapidly or have sprung up in unoccupied areas. What are the disadvantages of each area? (or of some of them) Have pupils report on some of these new developments.
S. Interprets graphs. (Looks for misleading graphic devices. Draws inferences from graphs.)

S. Chooses appropriate reference book to locate information.

S. Interprets graphs. (Draws inferences from graphs.)

A. RESPECTS EVIDENCE EVEN WHEN IT CONTRADICTS PRECONCEPTIONS.

S. Checks on the completeness of data.

F. The Soviet Union has greater power and resources than any nation in the world although production is not so great in some other countries.

1. The Soviet Union is among the three producers of many of the minerals and power resources.

2. The U.S.S.R. is more nearly self-sufficient in terms of kinds of minerals and industry than any other country in the world.
The Soviet Union has greater power and mineral resources than any nation in the world, although production is not so great as in some other countries.

1. The Soviet Union is among the top two or three producers of many of the key minerals and power resources.

2. The U.S.S.R. is more nearly self-sufficient in terms of kinds of minerals needed for industry than any other country in the world.
Have pupils examine the graphs shown in Soviet publications on growth in production in certain areas over the past few years. Choose graphs which do not use a scale beginning with zero. Have pupils analyze these graphs, picking out the device by which the increase in recent years is exaggerated. Have pupils now make a graph showing the same data but with the scale beginning at zero. Compare the two graphs.

53. Show pupils graphs comparing U.S., U.S.S.R., reserves and production of a number of major minerals and power resources, with those in other countries including the U.S. Or have pupils prepare such graphs from figures found in different reference books. Before they begin work, discuss reference works which can be used to locate the needed data.

54. Have pupils read differing accounts in textbooks to find out if the Soviet Union lacks any important resources needed for industry. (Have some pupils look at older texts and some at newer ones and compare them. In some cases it will be found that older texts mention a lack of some resources but a newer text reports a recent discovery of this resource.) Where texts differ, ask pupils about date of their text copyright. Why does the date make a difference?
mine the graphs shown in Soviet publica-
ations on production in certain areas over the
years. Choose graphs which do not use a scale
beginning at zero. Have pupils analyze these graphs,
decide by which the increase in recent
years has been measured. Have pupils now make a graph show-
ing the increase in production of natural
gas, mineral fertilizer, cotton, and textiles in Central
Asian region of U.S.S.R. e.g. See Soviet
life today, October, 1964, p. 14. (graphs on increases
in production of natural gas, mineral fertilizer,
cotton, and textiles in Central Asian region of U.S.S.R.)

graphs comparing U.S.S.R. reserves and pro-
mobilization efforts in other countries including the U.S. Or
pare such graphs from figures found in
textbooks. Before they begin work, dis-
Kohn and Drummond, World To-
Scholastic Book Services
editors, Sov. Union, pp. 11-
Schwartz, Sov. Union (pamph-
Cressey, Sov. Potentials,
Lydolph, Geog. of the U.S.S.R.,
McIlor, Geog. of the U.S.S.R.,
wheeler et. al., Reg. Geog.
The significance of location depends upon cultural developments both within and outside a country.

G. A region is an area of one or more homogeneous features. The core area is highly homogeneous, but there are transitional zones where boundaries are drawn between different regions.

G. Regions are delimited on many different bases, depending upon the purpose of the study. Some are delimited on the basis of a single phenomenon, some on the basis of multiple phenomena, and some on the basis of functional relationships.

G. The Soviet Union is handicapped by the fact that some of the regions are located great distances from where they are needed (for combinations of other resources or for markets to transportation routes).

G. The Soviet Union is obviously difficult to describe as a whole; different parts of the country are quite different. The country may be divided into a number of major regions in terms of the use to which the land is put, the degree of urbanization, the type of industrialization, population density, and the numbers of difference groupings with slightly different characteristics.
The Soviet Union is handicapped somewhat by the fact that some of the resources are located great distances from where they are needed (for combination with other resources or for markets or distance to transportation routes).

The Soviet Union is obviously difficult to describe as a whole; different parts of the country are quite different. The country may be divided into a number of major regions depending upon the degree of urbanization, the amount and type of industrialization, population density, and the numbers of different nationality groupings with slightly different cultures.
5. Have pupils look at maps once more while you point out some of the newly discovered mineral resources and the areas of potential water power in eastern Siberia. Discuss: How easy will it be for the Soviet Union to develop these resources? Perhaps quote Lydolp about the difficulties because of their distance from centers of population.

56. Perhaps divide the class into groups, letting each group investigate one of the Soviet regions in more detail. They should prepare maps, find pictures to display, and prepare bulletin boards, charts or written reports to be distributed to the other class members describing the key characteristics of their region and the important changes taking place in it. Then hold a class discussion on differences between these regions. Why do you think geographers have divided up the Soviet Union in this way? Do you think a geographer’s regionalization might change as the years pass? Why or why not? Perhaps show a different regionalization of the Soviet Union and discuss the different criteria used in differentiating regions. Compare the two systems of regionalization.

57. Have pupils take imaginary trips from Moscow to some other city in the U.S.S.R. and write one of the following to describe what they see and feel in the way of physical and cultural landscape and climate:

a. A diary of their trip.
b. A series of letters to a friend.
c. A travel guide for other Americans.
at maps once more while you point out
by discovered mineral resources and the
tal water power in eastern Siberia. Dit-
will it be for the Soviet Union to de-
resources? Perhaps quote Lydolph about the
ause of their distance from centers of

the class into groups, letting each
one of the Soviet regions in more de-
prepare maps, find pictures to dis-
bulletin boards, charts or written re-
tributed to the other class members de-
characteristics of their region and the
ning place in it. Then hold a class
ferences between these regions. Why do
phers have divided up the Soviet Union
you think a geographer's regionalization
the years pass? Why or why not? Per-
erent regionalization of the Soviet Un-
the different criteria used in differen-
are. Compare the two systems of regionaliza-

For a map of mineral re-
see Cressey, Sov.
Potentials, pp. 70-71. Or
see minerals map of central
and eastern Siberia in Ly-
dolph, Geog. of the U.S.S.R.,
p. 235.
For a discussion of difficul-
ties, see Lydolph, pp. 240-
244.

Lydolph, Geog. of the U.S.S.R.,
map of regions on p. 26 and
most of chapters.
Wheeler, Reg. Geog. of the
World, ch. 13.
Cressey, Sov. Potentials,
chs. 6-8.

imagine trips from Moscow to some
the U.S.S.R. and write one of the follow-
what they see and feel in the way of
atural landscape and climate:

If their trip.
of letters to a friend.
guide for other Americans.
G. Visualizes a generalized map of the U.S.S.R.

S. Checks on the completeness of data.

S. Interprets graphs. (Draws inferences from graphs.)

G. Changes in the birth and death rates or in the ratio between sexes can have important effects upon a society.

G. An increase in population occurs when the birth rate plus immigration is greater than the death rate plus emigration.

S. Interprets graphs and tables. (Draws inferences from graphs and tables.)

G. Changes in ... the ratio between sexes can have important effects upon a society.

G. Changing population patterns are important effects upon the Soviet Union.

1. For a long period of time during the 20th century, population growth slowed. It has increased again.
   
a. Although the population was increasing less rapidly in the U.S. in part this was due to increasing industrialization and in part to the high rate of men during wars, civil purges.

b. The birth rate has increased; the death rate is declining; population is growing at a fast gain, although not so fast as in other countries.

2. The two world wars, the civil wars, purges led to a great declination compared with adult women. This in turn led to the Soviet government to use women widely in phy...
G. Changing population patterns are having important effects upon the Soviet Union.

1. For a long period of time during this century, population growth slowed down but it has increased again.
   a. Although the population was increasing, it was increasing less rapidly than in the U.S. In part this was due to increasing industrialization and urbanization and in part to the high death rate of men during wars, civil wars and purges.
   b. The birth rate has increased once more, the death rate is declining, and the population is growing at a faster rate again, although not so fast as in some countries.

2. The two world wars, the civil war and the purges led to a great decimation of men as compared with adult women. This imbalance in the sex ratio has led the Soviet government to use women widely in physical labor.
53. Give all pupils sheets of pages of the same size and have them try to draw rough outline maps of the U.S.S.R. from memory. They should include major cities, rivers, and land forms as well as the boundaries and names of countries bordering the U.S.S.R. Then compare some of the maps with an opaque projector. Discuss: Why is it helpful to have a visualized map of the U.S.S.R. in our minds?

55. Have a pupil prepare a graph comparing population growth in the U.S. and the U.S.S.R. over a period of fifty years. Pupils should note that some of the Russian figures are estimates. The pupil should use this graph in reporting to the class on changes in population growth in the U.S.S.R. and the reasons for them. Discuss: What implications do you see in the changing rate of population growth?

60. Show pupils a graph and some tables on the sex ratio within different age groups in the Soviet Union. Discuss: Why do you think this imbalance between men and women in the over-40 age group exists? What effects do you think it might have?

For data, see Lydolph, Geog. of the U.S.S.R., pp. 257-260.
sheets of pages of the same size and have rough outline maps of the U.S.S.R. from should include major cities, rivers, and well as the boundaries and names of coun- the U.S.S.R. Then compare some of the paque projector. Discuss: Why is it help-

ualized map of the U.S.S.R. in our mIs?

Prepare a graph comparing population growth in the U.S.S.R. over a period of fifty years. Note that some of the Russian figures are Your should use this graph in reporting changes in population growth in the reasons for them. Discuss: What impl-

see in the changing rate of population

For data, see Lydolph, Geog. of the U.S.S.R., pp. 255-260.


graph and some tables on the sex ratio at age groups in the Soviet Union. Dis- you think this imbalance between men and over-40 age group exists? What effects do
S. Interprets graphs. (Draws inferences from graphs.)

G. Changes in the birth and death rates ... can have important effects upon a society.

S. Tests hypotheses against data.

S. Interprets graphs and tables. (Draws inferences from graphs and tables.)

S. Sets up hypotheses.

G. The degree of horizontal mobility within a society (including shifts of population from rural to urban areas) can have important effects upon society.

S. Sets up hypotheses.

G. Obstacles to communication may be social as well as physical.

3. The decline in the birth rate in a much smaller group of young who are coming of military age to work in industry. The government changed its educational policy in young people to work sooner than years ago.

4. The rural-urban population ratio to a much higher urban population in the U.S.S.R. is still far less than in the U.S.

H. Although about three-fourths of the population is of Slavic descent, the Soviet Union is peopled by many different national groupings.

1. There is a great diversity of languages spoken from one part of the country to another.
3. The decline in the birth rate has resulted in a much smaller group of young people who are coming of military age and of age to work in industry. The government has changed its educational policies to get young people to work sooner than a few years ago.

4. The rural-urban population ratio is shifting to a much higher urban proportion, but the U.S.S.R. is still far less urbanized than is the U.S.

H. Although about three-fourths of the population is of Slavic descent, the Soviet Union is peopled by many different nationality groupings.

1. There is a great diversity of culture and of languages spoken from one part of the country to another.
Show pupils another graph showing the number of women in the labor force and read aloud a description of the ways in which women engage in hard physical labor in the U.S.S.R. (Perhaps show slides or pictures to illustrate this fact.)

61. Show pupils a graph of the distribution of the Soviet population by age groups. Discuss the implications of the small number of youths in the age bracket of 16-21.

62. Project a graph showing changes in urban-rural relations in the U.S.S.R. and another graph comparing urbanization in the U.S. and in the U.S.S.R. Discuss: What are the implications of this change in the urban-rural ratio on the U.S.S.R.? (Compare the proportion of the rural population and the total agricultural production for the two countries.) Ask: What can you tell about agricultural productivity per farm worker in these two countries? Show table to test hypotheses.

63. Show pupils, very briefly, a chart listing the many different nationalities represented in the Soviet Union. Also show a map of nationalities in the U.S.S.R. Pick out a few of these nationalities and have pupils find out if they have had their own nation at any time in the last 200 years. If so, why might this fact be important? Show a chart of the many different languages spoken in the Soviet Union. Discuss: What problems might arise from the fact that the Soviet Union has so many different nationalities and languages? Point out that pupils will study this question in more detail later.
Another graph showing the number of women in and read aloud a description of the ways they engage in hard physical labor in the shops. Show slides or pictures to illustrate.

A graph of the distribution of the Soviet age groups. Discuss the implications of the number of youths in the age bracket of 16-21.

A graph showing changes in urban-rural relations and another graph comparing urbanization and it in the U.S.S.R. Discuss: What are the implications of this change in the urban-rural ratio on the total agricultural production for the two countries? What can you tell about agricultural productivity per farm worker in these two countries?

Very briefly, a chart listing the many different nationalities represented in the Soviet Union. Map of nationalities in the U.S.S.R. Pick these nationalities and have pupils find where they have had their own nation at any time in the past. If so, why might this be important? Discuss: What problems might arise that the Soviet Union has so many different nationalities and languages? Point out that pupils will discuss this in more detail later.

For figures on agricultural productivity per farm worker, see Lydolph, Geog. of the U.S.S.R., p. 295.

For data on languages and former independence see Petrovich, Sov. Union, p. 14-18, Lydolph, Geog. of the U.S.S.R., pp. 261-270 (map and charts on number of nationalities, and discussion).

Deasy, et. al., World's Nations, p. 601 (map).

Cressey, Sov. Potentials, pp. 23-30 (discussion).
G. People who are in contact with each other are likely to borrow cultural traits from each other. Migration of people from one part of the world to another involves the movement of culture and material objects, thus resulting in changes in the area to which people migrate.

S. Tests hypotheses against data.

A. BELIEVES THAT THE SOCIAL SCIENCES CAN CONTRIBUTE TO MEN'S WELFARE BY PROVIDING INFORMATION AND EXPLANATORY GENERALIZATIONS WHICH HELP THEM ACHIEVE THEIR GOALS.

2. Modern transportation facilities industrialization are bringing about cultural unity and the movement into many parts of the country.
likely to borrow}
its from each other. People from one part to another involves culture and material thus resulting in the area to which people are in contact with.

2. Modern transportation facilities and industrialization are bringing about greater cultural unity and the movement of Russians into many parts of the country.

THE SOCIAL SCIENCES
TO MEN'S WELFARE
INFORMATION AND EX-
ERALIZATIONS WHICH
IEVE THEIR GOALS.
1. Give pupils figures or charts or maps showing how a number of Russians are moving into areas formerly occupied primarily by other nationality groups. Discuss: What effects do you think this movement of population within the country may have?

5. Have pupils check back over their lists of hypotheses made so far during the course of the unit. Which ones have they tested and found supported by the data? Contradicted by the data? Which ones still need testing during the remainder of the unit? How can they be tested? (Be sure to keep a list of those which must still be tested by use of historical or other data.)

65. Hold a discussion on the topic: Of what help do you think our study of the geography of the U.S.S.R. has been in helping us decide what our policies should be toward the U.S.S.R.?
ures or charts or maps showing how a num-
are moving into areas formerly occupied
her nationality groups. Discuss: What
think this movement of population within
have?

ack back over their lists of hypothest's
ing the course of the unit. Which ones
ed and found supported by the data? Con-
e data? Which ones still need testing
nder of the unit? How can they be
re to keep a list of those which must
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y of the geography of the U.S.S.R. has
us decide what our policies should be
.S.S.R.?