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THE SOCIAL LIVING COURSES

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The social living course began as a fusion of English and social studies; it has been called "basic curriculum", "core course", "core curriculum" and "social living" by its friends, and still worse names by its enemies.

This course usually occupies two periods a day, is taught by a single teacher cuts across traditional subject matter lines and stresses such things as common ideals, common attitudes, common understandings. Such common backgrounds are good in war or in peace, good for all men at all times and in all places. The chief aim is to develop better tastes, better opinions, and better voters. The social living course has no immediate, practical, or vocational aims.

The social living course has developed in response to the much felt need of adjusting part of our school program, at least, to the individual differences in ability, interest, need, and maturation level of the students we are trying to serve. It is attempting to do this by making the social living course the center of guidance activities, by making it responsible for a continuation of fundamental processes, and giving it the assignment of general education.

With this double period organization it seems reasonable that a given teacher should be able to "learn" each pupil at least twice as well as he could twice as many pupils in two single periods. In other words, he can do a better job of guidance and counseling half as many pupils that he meets for two periods a day than he can twice the number with whom contact is made for one period a day only. The social living course, then, should become the center of guidance activities.

For a long time it has been felt that training in fundamental processes was the job of the elementary school only, and that those who entered the secondary school would need no further training in them. Evidence is accumulating to show that tools of learning are increasingly important on all levels of the educative process and that training in some of them is necessary, not only to the end of the elementary school but, all through college. Reading, for example, is a skill that offers almost unlimited possibilities for improvement.

If the social living course is to assume responsibility for general education it must shift emphasis from subject matter as an end to preparation for citizenship in its broadest meanings. Instead of dealing with subject matter as such it should deal with vital problems and cut across any subject matter lines that will contribute to an understanding or a solution of the problem. Such a problem may take the form of a Unit of Adaptation, or a Center of Interest Unit. The selection of a problem should be governed by pupil interest and current world conditions. Following is a list of suggestive problems:

Inflation and control of living costs; rationing; new taxes; safety, Consumer problems; production of goods and services; employment problems; recreation; Latin American Relations; relocation;

classification of manpower; transportation in war time; communication; importance of air power in today's world; the stock market; a speech contest; parliamentary procedure; the post-war world; Victory Corps program, etc.

1. Strong, W.M., "A Center of Interest Unit", Cal. Jr. of Sec. Ed.
March '43
2. Strong, W.M., "Safety - A way of Life", Safety Education, Dec. '42

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CURRICULUM GUIDE

SOURCE MATERIAL FOR THE MAJOR FUNCTIONS OF SOCIAL LIVING

Age Group - Ten and Eleven Years

Scope and Sequence Chart

Understandings Basic to Man's Developing Control of Tools
and Techniques

Aspects or Problems and questions for section B of the
Major Functions, "Protecting, Conserving, and Using
Our Resources".

Suggested Activities for use in solving problems for the
same section and level.

Reference Materials

Grades Five and Six

Integrative Theme: Adaptation of our regulatory arrangements to the control and direction of technological development.

Specific Theme: for Grades five and six: How modern man uses science and inventions.

Center of interest for grade five: Effects of discoveries, inventions and development of machinery on our living in the United States.

Understandings Basic to Man's Developing Control of Tools and Techniques

Man's progress has depended upon his skill in use of tools. His hands were his first tools; later, he used stone, wood, and bone. Extensive agriculture was impossible in the stone age. Until man was able to cultivate land, he was forced to move from place to place in order to obtain food for himself and his animals.

When man discovered iron and learned to forge tools and weapons, it became possible to better protect himself, till his land, raise food and maintain a permanent home.

Man improved his methods for the production of food, shelter and clothing. He advanced from the use of skins for clothing and shelter to the use of woven and other materials for more comfortable living. Man discovered fire and learned how to put it to use, to warm his dwelling, and to cook food. He learned to cure his ills through the use of certain roots and shrubs.

The first power used by man was his hand. He extended the use of his hands by employing a stick which he later fashioned into a plow or cultivator. He substituted domesticated animal power for his own. He also used hand and foot powered machines, an example of which is the loom.

Man found that his flat stick converted into a circle made a wheel. This he also used with water power to run his mill.

Steampower used to drive the locomotive and ship was a great advance over sails and wind. The combustion engine followed this step to give us the automobile, airplane, and other machines. Electric power through the use of the turbine engine was the last great advance.

Grades Five and Six

Integrative Theme: Adaptation of our regulatory arrangements to the control and direction of technological development.

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Scope

Aspects

B. Protecting, Conserv- ing and Using Our Resources

1. Soil Conservation: Why is soil conservation vital to human existence? What kinds of soil are there and how can we make the best use of them? What discoveries and invention help us to analyze soil, to add to its nutritive value, and to check soil erosion? Where are the eroded areas in the United States? In the world?
2. Conservation of plant and animal life: Why is it important to conserve plant life? Why is animal life important to human life? What are the native plants and animals of Poston and what measures should we take to protect the valuable types? What plants and animals in the United States need Federal protection to prevent their becoming extinct?
3. Conservation of minerals: What minerals are found in Poston and also in other areas of the United States? Of what value are these minerals to us and how can we best conserve them for future generations?
4. Security and Safety: a. The Fire Department - How does the Fire Department protect our lives and property? What scientific discoveries and inventions do they use to make their work more effective?
b. Police Department - How does the Police Department protect us and what scientific discoveries and inventions do they use to make their work more effective?
c. Sanitation - How does the Public Health Department help us live more safely? What scientific discoveries and inventions do they use to make their work more effective?

What kind of soil is found in Poston?

How do scientists analyze soil?

Who analyzes soil in Poston?

Does the wind harm the soil which is to be used for agriculture?

Do heavy rains harm the soil?

What can be done to prevent the wind and rain from harming the soil?

What are the areas which have suffered most from soil erosion in the United States?

What other countries have problems of soil erosion?

ScopeB. Protecting, Conserv-
ing and Using Our
ResourcesAspects

What caused the great floods in China?
 Why did the people have to move away from southern sections of Italy years ago?
 What is meant when we say "Babylonia was the cradle of the world"?
 Why did that land furnish food for large numbers of people in ancient times?
 Why are most of the people who live there now very poor and sickly?
 Does the soil in Poston have enough food in it for the plants so that they will help keep us healthy?
 How can plant food be added to the soil?
 Where does plant food come from?
 What other kinds of vegetables must we have to keep us healthy?
 What is meant by "crop rotation"?
 Did Indians rotate their crops? Did Indians irrigate their crops?
 What fertilizers cannot be obtained because of priorities? What substitutes can be used?
 Where is guano found?
 What are the Chilean nitrate beds?
 How do countries like China, Mexico, and other fertilize their crops?
 Why is it dangerous for an American to eat fresh fruit and vegetables in those countries?
 Why is it necessary to change from one type of plant crop to another?
 What kind of vegetables grow best in the Arizona climate?
 Why is it possible to raise two crops a year in Poston? Can two crops a year be raised in any other section of the country?
 Where does Poston's irrigation water come from?
 Do other countries use dams to check soil erosion and to store water?
 Why are there no longer bad floods in the Nito Country?
 What has China done to check the bad floods in the Yangtze River?
 Has China been able to prevent these floods?
 What kind of damages are done by floods?

 Why do no trees with large leaves grow on the desert?
 What sort of plants grow on the desert near Poston?
 What sort of animals live in the desert near Poston?
 Are these plants and animals found in any other section of the country?
 What other deserts are there in the United States?
 Do people live on these deserts?
 Are any of these deserts under cultivation?
 How does our desert compare with the desert in Lybia?
 Where are other great deserts located in the world?
 What is an "oasis"? Do we have any oasis in our deserts?
 Why is it supposed to be dangerous to cross the desert?

ScopeAspectsB. Protecting, Conserv-
ing and Using Our
Resources

Do you know any stories about pioneers crossing this desert?

How does our desert compare in appearance to other deserts you have read about?

What sort of insects and pests are likely to attack our vegetables?

What can be done to prevent pests from ruining our crops?

Is there any danger of farm animals being infected with diseases?

What can be done to prevent this from happening?

What is the famous pest that spoils the cotton crops?

Do farmers near Poston have any trouble with it?

How has it affected the cotton crops in the south?

What has been done to get rid of this pest in the south?

What is meant by the "dust bowl"?

Where is it located?

What caused it?

What kind of land was found there originally by the pioneers?

What kind of farming was done there just before the depression?

Can this land be restored to the people? If so, how?

What has been done to help restore this land?

What has been done by the Federal Government to re-forest this land and prevent wind erosion?

Are there any dust bowls in other parts of the world?

What are the procedures that foreign countries have used to prevent the formulation of these dust bowls or to restore their fertility after they have been formed?

What is "top soil"?

How long does it take for top soil to be produced?

How can we replace top soil which has been lost due to wind or rain?

What is meant by a "virgin forest" or "virgin land"?

Are there any sections in the world where we can find virgin forests or virgin land?

How have the people of Japan, Java, and the East Indies tried to conserve their soil when they must use hillsides for agriculture?

What kind of soil did the early southern colonists find in the southern states?

What crops did they raise there?

What happened to the soil?

What is the condition of the people in certain sections of the south now?

Why are they unable to make a living?

What is being done to help restore the fertility of the soil?

What kind of soil did the New England colonists find when they landed in America?

ScopeAspectsB. Protecting, Conserv-
ing and Using Our
Resources

- What have been the chief industries in the New England states? Why?
- What were the chief industries in the New England states just before the last war?
- What is meant by the "cut-over land" of the Great Lakes?
- What sort of country was this before the lumbermen came in?
- What is being done to this land?
- What is happening to the many lakes and streams in this section of the country?
- What has happened to the great forests of Washington, Oregon and California?
- Why was this allowed to happen?
- Is anything being done to restore these forests?
- What is the National Government doing to save the remaining forests in this country?
- What countries have been the leaders in forest conservation?
- What kind of laws did they have?
- Where are the important forests in the world?
- What sort of lumber comes from each important locality?
- How does the National Government try to prevent fires from ruining our forests?
- What men help in this work?
- What sort of training do they need?
- Have you ever talked to one of these men?
- How does the cutting down of trees affect rainfall?
- What happens to rain which falls in a forest?
- What happens to rain which falls on bare land? What happens to the land?
- What happens to the people who live on this land?
- Why do people who live on one side of the mountain have better food than those on the other side?
- What has happened to the great schools of salmon that used to go up the rivers of the northwest?
- What can they no longer go up these rivers?
- What kind of laws are made to help take care of this situation?
- What else is being done to help the salmon and other fish in this country?
- What is meant by "extinct"?
- What other kinds of fish may become extinct?
- What is the national government doing about this problem?
- What sort of laws do foreign governments have to prevent fish from becoming extinct?
- Why do we have so few buffalo today?
- What other animals are in danger of becoming extinct?
- What laws has the Federal Government made to protect them?
- What is meant by "in season" in regard to deer hunting?

ScopeAspectsB. Protecting, Conserv-
ing and Using Our
Resources

- Are forest fires necessary?
 What kinds of fire extinguishers are there?
 How do they work?
 Do you have a fire extinguisher in your apartment?
 Do you know where it is?
 What would you do if a fire started in your home?
 What ways are there to put out a fire if you do not have a fire extinguisher?
 How can you help the firemen in case of a fire near your home?
 How is the water pressure produced by the fire truck?
 Where do the firemen get reserve water?
 What are some of the famous fires we have had in this country?
- How is the garbage disposed of in Boston?
 What danger is there to people in careless disposal of garbage?
 How is the sewage disposed of in Boston?
 What sort of a process is used to disinfect the sewage and why?
 What are the sewers in Paris used for besides carrying away waste material?
 What cities dispose of their sewage by emptying it into rivers and lakes?
 How can drinking water be infected by this practice?
 Why is it dangerous for children to swim in our canals?
 In the Mississippi River?
 Why do many people bathe in the Ganges River in India?
 What is the danger of this practice?
 Is the Colorado River polluted by any large city?
 Why cannot states protect themselves from polluted water?
 What are the rivers where this problem is the greatest?
- What is the fine for pulling up cactus in Arizona and why?
 What is the fine for taking desert holly out of the state and why?
 How can flowers and leaves be picked without injuring the plant?
 Why do states have laws against picking wild flowers?
 What is the State flower of Arizona, of California, or of any other states which you know?
 Why do we protect trees?
 What causes the dust in Boston?
- How do the police help to prevent crime?
 What are the United States Federal Police called?
 What are the Canadian Federal Police called?
 What is the nickname of an English policeman?
 What is the French policeman called?
 Are there any policemen to enforce countries to obey international laws?
 What happens if countries do not obey these laws?

ScopeAspectsB. Protecting, Conserv-
ing and Using Our
Resources

- How is the work of a Federal policeman different from that of a city policeman?
- What is meant by the "Big Brother" movement among the police?
- How does the organization of playgrounds and recreation centers help prevent crime?
- What connection does the Poston police department have with Yuma County and the State of Arizona?
- What types of cases are referred to the county sheriff and to the state police?
- How does the radio help the police?
- How do the police use the teletype, telephone, telegraph, and the printing press?
- How does our Poston police system protect us?
- Why do we need police in Poston?
- What happenings should be reported to the police?
- Who is the chief of police in Poston?
- Why is it necessary to have a chief?
- What are his duties? Who assist him?
- What are the various ranks in the Police Department?
- What is the duty of each rank?
- How do the policemen help the firemen?
- How do the police help the Department of Public Health?
- What is the difference between a petty offense and a felony?
- How do fingerprints help the police?
- Do we use fingerprints for other purposes? Footprints?
- How can a criminal be identified by his fingerprints?
- What device is used for this process?
- What other measurements are used to identify criminals?
- How are chemical tests and the microscope used to identify criminals?
- How are blood tests used and what are the limitations of these tests?
- What causes the beautiful colors in the rocks and mountains around Poston?
- Are there any valuable stones or gem stone in our mountains?
- Are there any valuable minerals here?
- What caused the boom in Parker in 19--?
- Have all the valuable minerals been removed?
- How are minerals refined?
- What is meant by "ore"?
- What metals are on priority now?
- What happens to a mine if excavation is stopped when the easily available mineral has been removed although much valuable, but less attainable minerals remain?
- What mineral was discovered in California about 90 years ago?
- What happened to California after this mineral was discovered?
- Do know any stories about the gold rush?
- Where else was gold discovered later in the century?

B. Protecting, Conserv-
ing and Using Our
Resources

What other valuable minerals are found in the United States?

Where are these mines located?

What are the uses of these minerals?

How does the shortage of coal, iron and oil in Germany affect the war?

Where are the large deposits of oil found in the world?
 Of coal? Of iron?

What is meant by the Russian "scorched earth" policy?

Why are the Caucasus Mountains so important in this war?

Why is so much of the war being fought in North Africa?

Why is coal used so little in the west?

What fuels do we use for power?

Why was gasoline rationed in the east before it was rationed here?

What changes are people in the east making in the heating of their homes?

How did people do their cooking in colonial days?

What was the Franklyn stove?

Why was it an improvement over earlier heating methods?

How does a modern furnace work? When is steam heat used?

When is hot air used? When is a circulating heater used?

How are furnaces regulated automatically? How is heat controlled by a button? How do air conditioners work?

SCOPEB. Protecting, Conserving
and Using Our ResourcesActivities

Visit the soil survey section of the Agriculture Department in Block 37. Interview some person who can discuss the types of soil found in Poston. Read state or government pamphlets which describe types of soil found in this section of the country.

To discover acidity or alkalinity of Poston soil, carry out the following experiment with litmus paper: (Experiment set up by Mr. George Shibata)

Simple Litmus Paper test to determine the Acidity or Alkalinity of Poston Soils.

Apparatus: Soil sample, two small glass jars or cups, litmus paper (red and blue), water, dilute hydrochloric acid and dilute sodium or potassium hydroxide (.10 N).

Procedure: Place some of the soil sample into two glass jars or cups making sure that the soil particles are first broken into minute particles. Place a piece of red litmus paper into the soil sample in one of the containers (A) and place a piece of blue litmus paper into the soil sample in the other container (B). Pour into both containers enough water to completely saturate the soil (a slight excess will not harm the results). After a short time, take out the litmus paper from each of the jars and observe the change in color, if any, in each case.

Result: The soils of Poston are largely alkaline soil and so the litmus paper should be blue. The litmus (red) in container (A) should be blue, and the litmus (blue) in container (B) should be unchanged.

Discussion: This simple experiment can be used by the teachers to demonstrate to their pupils that soils of Poston are so-called alkali soils. The dilute hydrochloric acid could be used with litmus to determine the acid reaction on both blue and red litmus. (Blue litmus in the presence of acid will turn red, and the red litmus in acids will not show any change.) The same could be done with the dilute base solution (red litmus in the presence of base will turn blue, and the blue will show no change). Explain that the white crust so often seen on the soil surface is the salt in the soil coming to the surface and that this salt is harmful to the plants themselves. Because of the excess alkali in the soils of Poston, many of the vegetables will not grow as they normally should, but instead are weak-looking and stunted in growth.

For a more technical discussion of the soil reaction, refer to the United States Department of Agriculture Yearbook - 1938 - "Soils and Men" which can be found at the Agriculture Department in each camp.

Interview the soil survey officials to find out how scientists analyze soil. Watch these men at work if possible. Find out their names and the particular work each does.

Take a field trip to find samples of soils of various texture and to collect these samples. Try to find pure clay, pure sand and loam which is a mixture of sand and clay. Some loam is very sandy and some has more clay in it.

Experiment With Soils

Experiment set up by Mr. George Shibata,
Instructor in Adult Education

Simple tests to demonstrate the difference in the water-holding capacity and drainage of various types of soils in Poston.

Apparatus: Sandy soil samples, clay soil samples, loamy type of soil sample, funnel or milk carton with perforations at one end and open at the other end, cup or glass for water, cup or glass to collect water (3), and filter paper.

Procedure: Place some of each soil sample (which should first be broken into minute particles) into either a funnel or a milk carton so that there will be a funnel or carton containing a sample of (1) sandy soil, (2) clay soil and (3) loamy soil. Place a filter paper in the funnel or carton before putting in the soil samples. Pack the soil down in each case. Then pour equal amounts of water (COLORED WATER WOULD BE GOOD FOR DEMONSTRATION) into each container and observe the funnel or milk carton. Also the relative amounts of water which has collected after a certain length of time should be noted.

Result: The sandy soil should show the quickest penetration of water and appear first beneath the funnel or carton, the loam and the clay soils may not show much difference although the loam, if a sandy loam, may show a more accelerated penetration. The results in the amounts of water collected should show the most water from the sandy soil, and about the same amount in the case of the loam and clay soils. Here again, if sandy loam soil is used, a difference may be noted.

Discussion: This demonstration can be used to point out that soils vary in the speed with which water will move through the soil depending upon the soil type. Also after a rain, the puddles which often remain in certain areas of the camp, while not in other parts of the camp, can be explained by the difference in soils. For the teachers' information the size of the individual soil aggregates determine the speed with which water can move through the soil. The sandy soils, because of the much larger individual sand grains, possess more and large air spaces through which the water can move down. The loam being composed of both sand and clay would react differently from either. Because of the smaller soil particles, the clays and loams will retain more of the water and therefore, have superior water holding capacities. Water-holding capacity is a desirable factor of soils for agricultural use.

(Road United States Department of Agriculture Yearbook - 1938)

Visit the soil laboratory of the Agriculture Department of Block 6 Laundry Room to see the "salt bridge" and to find out the percentage of salt in the soil. Collect a sample of soil with salt concretions (crusts) to show the deposit of salt.

Discuss how the wind harms the soil which is to be used for agriculture. Discuss the effect of heavy rains on the soil. Discuss what can be done to prevent wind and rain from harming the soils.

Experiment with Soils

Set up by Mr. George Shibata, Instructor in
Adult Education

Simple test to demonstrate the reason for the "Dust in Poston and the effect of a cover as a control method."

Apparatus: Small boxes or nursery flats, soil samples, water in glass, grass seeds, oats, etc.

Procedure: Place the soil, which should first be broken into minute particles, into the boxes or nursery flats. Plant seeds in one and allow time for seeds to sprout. When the flats are ready, place the unplanted flat on a table. Stand on one side and place mouth near the box and blow. Observe the result. (Caution - blow hard enough to see the dust from the soil). Place the planted flat on the table and blow on it with the same velocity and observe. Sprinkle enough water over the surface of the unplanted flat to cover it, blow again and observe.

Result: The exposed soils (i.e., without covering or moisture) should show the dust when blown. The soil with greenery should show little dust and the moistened soil show little dust.

Discussion: The reason for the dust in Poston during any wind is because the native vegetation was entirely removed to build our community which resulted in the exposing of the soils to the natural element - wind. Therefore, every time it blows, the minute soil particles are carried by the wind creating the dust which we see. This is called wind erosion. So often when the wind is blowing in Poston, and the dust is so evident and discomforting here, outside the camps, the dust does not seem evident. This is because of the natural covering which is still there as a protective covering. The demonstration showed that a natural covering will protect the soil surface from wind erosion. Also, the watering of the roads of Poston is done because, as the result of the experiment showed, the water lessens the dust by forming a moist covering which acts as a protection against the wind action.

Experiment with Soils

Simple test to demonstrate the effect of covering as a control method to prevent soil erosions from rain.

Apparatus: Small boxes or nursery flats, soil samples, water in sprinkling can, if possible, and one nursery flat planted with grass or oats.

Procedure: Pack bare soil into a nursery flat or box which is placed on a slight incline. Sprinkle for a few minutes with water and observe the movement of the soil. Catch some of the "run-off". Let this water settle and observe the sediment. Also observe the eroded surface of the soil. Contrast the results in the experiment with the tilted flat with a flat sprinkled when placed on the level; when planted with turf and placed on a slope; and when covered with straw and placed on a slight slope.

Result: The exposed soil when placed on a slope should show the loss of considerable soil as it is washed down with the water and this soil should be deposited as a sediment in the glass in which the water is caught. The exposed soil in the flat which is placed on the level should not show loss of soil if the

water is sprinkled gradually enough and in reasonable quantity. The flats which are covered with turf or straw may show a small loss of soil when gently sprinkled, but the loss will not compare in any way to that found from the bare flat. It is important to see that the sprinkling is gentle and not too prolonged so that the effect is that of a rain and not a cloud burst.

Discussion: When vegetation is completely removed from the soil, there are no plant roots to hold the soil together. As a consequence, a rain hitting a sloping surface washes down considerable soil and thereby reduces the fertility of the land. Agriculturalists agree that crops should not be planted on land which has a 5% or greater slope unless terracing or a special agricultural method is used. Natural vegetation, at least roots, remain in the soil during the entire year, but when crops are planted in the soil, the harvesting process usually requires the removal of plants, roots and all and hence, leaves the soil on the hillsides in a condition to be rapidly washed away.

Discuss contour plowing in relation to soil erosion. Discuss that plants must get their food out of the soil. The animals and people who eat the plants get the food value from these plants which originally came from the soil. Interview a member of the Agriculture Department to find out if the Poston soils have enough of the food elements which people need.

Observation - To observe that animal bones have the same elements in them as are found in the soil. Place a piece of bone in hydrochloric acid and watch the bone dissolve. Place some soil (salty) in a glass, add hydrochloric acid and watch the mineral (calcium) in the soil. Compare to that in bone.

Discuss how plant food can be added to the soil. Discuss where plant food comes from.

Observation - Arrange three milk cartons on a table. One milk carton should contain plain sandy soil, the second should contain sandy soil with nitrogen (sodium nitrate) added and the third should contain sandy soil with vigoro added. Plant tomatoes in each carton and compare for height and color. This experiment takes about a month. Small holes should be placed in the bottom of each carton so that there will be drainage.

Observation - Visit the nursery and observe how fertilizer is used or visit the Agriculture Department when the gardeners are going to put fertilizer on a certain plot of ground. (Inquire beforehand for the time and place).

Read about the Chilean nitrate beds. Also about Muscle Shoals as an example of a nitrate plant where nitrate is produced out of the air by chemical and electrical fusion. Write to the T.V.A. for information on Muscle Shoals.

Read about guano and how it is used.

Read stories of how Indians planted corn. Plant corn with a planting stick in Indian fashion. Read about the type of irrigation used by the South West Indians.

Discuss what is meant by crop rotation and why it is necessary. See United States Agriculture Yearbook on Crop Rotation.

Read about agriculture and fertilizers used in China, Mexico, and other countries. Discuss why it is dangerous for us to eat fresh fruit and vegetables in these countries.

Discuss how alfalfa or other legume plants help replace the nitrate in the soil.

Observation - In order to see the nodules containing bacteria which produce nitrogen on the roots of a plant, plant bean seeds. After three weeks or a month, pull up the plants and observe the roots for nodules.

Discussion - Inside of the nodules are small bacteria which combine the free nitrogen from the air in the soil with oxygen to form nitrates. It is necessary to plow the plants under the ground after the beans are harvested in order to preserve the necessary chemicals. It is not necessary to plow under alfalfa plants.

Discuss why fertilizers cannot be obtained because of priority and what substitutes are obtainable.

Interview members of the Agriculture Department or read bulletins from the Arizona State Agriculture Department to find out what kind of vegetables grow best in the Arizona climate.

Discuss what other kinds of vegetables we must have in order to keep us healthy. Read in health books to find the vegetables needed for a balanced diet.

Discuss why it is possible to raise two crops a year in Arizona. Try to find out how long the growing season is for Arizona, for Delaware, for Maine, for Southern California and for Northern California.

(For further information refer to the Agriculture Department or read in the Agriculture Yearbooks published by the Agriculture Department in Washington, D. C. There are some of those books in the Poston Agriculture Department. It is best to get the books through the Arizona senator or representative. It is wise to ask for the books through the Project Director.)

Find out in what parts of the country two crops a year can be grown.

Find out where the irrigation water for Poston comes from. Interview the engineers in the Administration Buildings.

Find out about famous dams in this and other countries.

Study about the dams and flood control in the Valley of the Nile.

Try to find out if China has done anything to prevent the bad floods on her most important rivers. Find out what happens to the people when these bad floods occur.

Discuss why no trees with large leaves grow on the desert.

Observation - Put a potted plant with large leaves under a glass jar in the sun light and watch the moisture collect on the inner surface on the top of the jar. Put a potted desert plant under another glass in the sunlight and observe the amount of moisture which will collect on top of that jar. Compare the amount of moisture which is sent out by each plant.

Discussion - Plants which have large leaves allow a great deal of moisture to pass from the plant into the air. This is because the large surface of the leaf allows a large quantity of water to evaporate. Plants with small, narrow leaves do not allow so much water to evaporate. Hence, they are better adapted to the desert. As a consequence, the cotton woods (trees with large leaves) are found near the banks of a river where there is plenty of moisture and the mesquites (trees with small leaves) are found out in the dryer parts of the desert.

Make a collection of leaves of plants which grow on the desert near Poston.

Keep them in notebooks all carefully labeled. Visit the biology laboratory of Mr. Anderson in Camp 2 to see the collection of stuffed desert animals.

The Arizona Guide Book has been placed in the professional library in Camp 2. A book entitled "Desert Plants and Life" by Jeagor can be found in the Poston Public Library in Camps 1 and 2 and may be found in the professional library.

Read in science books to find out if plants and animals similar to those in Poston are found in any other section of the country.

Read in geographies to find where other deserts are located in the United States. Read about the people who live on these deserts. Read to find if any of these deserts are under cultivation.

Read about the desert in Lybia. Find out if it is different from our desert. Read about other great deserts in the world and find where they are located. Make a map of the world showing all the great deserts illustrating the comparative size of each.

Study about oasis, what causes them, and what trees and plants grow in them. Find out what is meant by a mirage. Find stories about travelers in the desert. Discuss why it is dangerous to cross the desert.

Observation - Fill two glasses with equal amounts of water. Mark the surface of the water by typing a string around the glass at that level. Put one glass in the sun and keep the other glass in the classroom. Observe the evaporation and compare each day.

Discussion - When people walk or work outside in the sun, they perspire and lose a good deal of water from their bodies. They must drink more water to replace the water that they have lost.

Observation - Fill two glasses with equal amounts of water. Add a teaspoon of salt to each glass of water. Stir until the salt is dissolved. Cover each jar with a piece of cloth which is allowed to touch the surface of the water. It is important to keep this cloth floating on the top of the water at all times. After three or four days remove the cloth, dry it out and observe the salt crystals which have collected on its surface. Wash the salt from the cloth and observe the cloth when it is dry.

Discussion - As the water evaporates, the salt which is in the water collects on the surface of the cloth. As water evaporates from the body in perspiration salt collects on the skin and is brushed off by clothing or washed off by bathing as happened when you wash the cloth. In very hot weather when one perspires a great deal, a large quantity of water and salt are lost from the body. Frequent drinking replaces the water lost, but the salt can be replaced by eating salt tablets or by taking additional salt in food. If the loss of salt is not made up, one may become very ill from heat exhaustion. This illness is due more to loss of salt than to the heat. It is important to take salt in the hot summer months in Poston. To prevent harm from the direct rays of the sun on the head, it is important to wear helmets or carry umbrellas.

Try to find out how our desert compares in appearance to other deserts you read about.

Try to think of reasons why crickets are likely to eat clothing.

Observation - Collect two or three crickets and place them in a large glass jar with holes on the cover for air. Secure two pieces of cloth and saturate one with salt by soaking it in salt water. After it is dry, place both pieces of cloth in the jar with the crickets which have been provided with other food such as bread crumbs. Observe what the crickets eat.

Discuss what other insects damage clothing.

Read the life story of the moth and try to find why moths eat clothing.

Try to find out what sort of insects are likely to attack our vegetables. Collect insects from various vegetable crops. Look these up in books to find their names and whether or not they are helpful or harmful to vegetables.

- Interview the Agriculture Department for help on this matter. (James Katayama).
 Find out what can be done to prevent pests from ruining our crops.
 Investigate if there is any danger of farm animals becoming infected with diseases.
 Read agriculture bulletins to find out what diseases hogs and chickens are likely to have. Interview the Agriculture Department (William Kobayashi) regarding hogs. Fred Kobayashi regarding poultry to find what can be done to prevent the development of diseases in Poston.
 Secure information about the boll weevil which has caused so much trouble in the south by ruining the cotton crops. Try to find out what the people have done to get rid of this pest. Look up the United States Agriculture Department reports to find how airplanes have helped in the work of pest control. Try to find information regarding the use of a different kind of insects to attack and destroy the boll weevil.
- Discuss what is meant by the dust bowl and locate it on the maps. Read bulletins from the University of Oklahoma and from the Soil Conservation Service, Albuquerque, New Mexico, for information. Try to find out what caused the dust bowl to develop.
 Make a map showing where the dust bowl is located and over what states it extends. Investigate bulletins and geographies to find what kind of soil was found on the great plains by the early pioneers. Find what natural growth covered the hundred of miles of these plains. Read to find what kind of farming the pioneers engaged in in this section.
 See soil conservation bulletins to find what kind of farming was carried on in the dust bowl just before the depression. Try to find how this farming affected the land.
 Examine soil conservation bulletins to find if this land can be restored to the people and if so, how? Find out what has been done recently to help restore this land.
 Read what has been done by the Federal Government to reforest land in the Central States and prevent wind erosion.
 Discuss what is meant by "top soil". Read to find out how long it takes for top soil to be produced. Interview the Agriculture Department to find how the top soil was formed in Poston.
 Observe any places which have been excavated or where holes have been dug to see how far the soft silt goes down before it meets a layer of sand. This will indicate the depth of the "top soil". Find out if the "top soil" is usually as deep in other sections of the country.
 Read to find how we can replace top soil which has been lost through wind or rain. Try to find out if there are any dust bowls in other countries. Learn what other countries have done to prevent these from forming or to restore their fertility after they have been formed.
 Read to find which are the areas which have suffered most from soil erosion in the United States. Discuss what caused the erosion in in each case.
 Read to find which other countries in the world have suffered from soil erosion. Discuss what caused the erosion there.
 Read about the great floods in China. Discuss what caused the floods and what happens to the people who live there.
 Read about how people live in Italy in early times. Find out why they moved away from southern Italy years ago.
 Read about how people lived in early Babylonia. Find out what kind of a country it was and what the people raised for food. Find out what Babylonia is like today and how the people live.
- Consult your geographies to find what is meant by "virgin forest" and "virgin sand".
 Find where the virgin forests in North and South America are located; also virgin forests in other parts of the world.

- Discover what sort of agriculture is used in Norway, Japan, Philippine Islands and the East Indies when crops must be grown on the hillsides.
- Read to find what kind of soil was found by the early colonists when they first settled in the southern states. Find out what crops they raised. Discover what has been happening to the soil ever since it was first cultivated by the colonists.
- Consult bulletins from the Tennessee Valley Authority and from the Soil Conservation Service to find the condition of people in agricultural sections of the South. Find out why many of them are now unable to make a living. Read what is being done to help restore the fertility of the soil.
- Find from your history and geography what kind of soil the New England colonists found when they landed in America.
- Discover what the chief industries in the New England States have been and why these industries were developed. Find out whether or not these industries are still the most important and if not, what others have taken their places exclusive of recent war industries. Find what has happened to many of the great cotton mills of New England and why.
- Discuss what is meant by the cut-over land of the Great Lakes? See pamphlets of the Forestry Department, University of California.
- Discuss the type of country that was found in this section by the pioneers before the lumbermen came. Read in geographies to learn about this country. Discuss what is being done to restore this land.
- Discuss what is happening to the many lakes and streams in this section of the country. Find out why many people who live here have goiter.
- Discuss and read about what has happened to the great forests of Washington, Oregon, and California and why this was allowed to happen; also, what is being done to restore these forests. Read about forest restoration in government pamphlets and books.
- Discuss and read about what the National Government is doing to save the remaining forests all over the United States.
- Find out what countries have taken the lead in forest conservation. Discover what regulations are made for the lumbermen.
- Make a map showing the most important forests in the world. Show from what sections the best lumber comes.
- Describe the efforts made by our National Government to prevent fires from ruining our forests and learn about the work of the forest rangers. Find out what sort of training they are required to have.
- See a bulletin from the University of California at Berkeley which describes the courses required for the training of these men.
- Discuss how the cutting of trees affect rainfall--what happens to rain which falls in the forest--what happens to rain which falls on bare land. What happens to the land?
- Observation - Get two small boards approximately the same size. Cover one board with a piece of carpet. Leave the other bare. Place both boards so that they incline slightly. Pour a quarter of a cup of water on each board and compare the amount of water that collects in the containers placed at the bottom of each board. Discuss the difference. Discuss the similarity of the carpet to the "forest cover". Discuss the possibility of floods when all the water runs off at once, also the loss of top soil. Discuss the gradual seeping of the water into the streams through the forest cover to that much water is retrained and the rest runs off gradually.
- Consider what happens to the people who live on the "cut-over land" and on forest protected land.
- Discuss why people who live on one side of a mountain range running north and south are able to have better food than those who live on the other side.

Observation - Slant two pieces of glass in a tent shape to represent a mountain. Boil water in a teapot or a similar vessel so that the steam goes directly toward the glass. Observe that the moisture condenses on the side toward the kettle and does not fall and condense on the far side. Compare the California mountain ranges which are heavily forested on the west and comparatively bare on the east.

Discussion - Moisture is necessary for the growth of trees and plants which are used for food.

Discuss what has happened to the great schools of salmon that used to go up the rivers of the northwest.

Read about the salmon industry in the Columbia River basin and elsewhere on the northwest coast.

Investigate why these fish can no longer go up these rivers in the way they used to do. Learn about the great dams which have been built in this area. Compare the advantages these dams bring to the people with the disadvantages if there are any to the fish industry. Read about the kinds of laws that had been made to prevent the salmon from becoming extinct.

Collect information about other things that are being done to help the salmon and other fish in this country.

Discuss what is meant by "extinct". Look it up in the dictionary.

Investigate what other kinds of fish are in danger of becoming extinct. Read about the laws that have been made by the Federal Government to protect all kinds of fish in this country. Discuss what laws foreign countries have for protecting their fish. Compare their laws with ours.

Learn about fishing rights set up between countries.

Visit the fish hatchery in Poston and interview the supervisor (Mr. John Marumoto). After the interview, read pamphlets from the United States Department of Fisheries.

Discuss the damage caused by forest fires and what causes them. Find out how many billions of dollars are lost each year in the United States and Canada due to forest fires. Find out the forest resources of the United States compared to those of England, France, Germany, and Belgium. Find out about the conservation methods used in Germany and France. Locate some famous forestry experiments in these countries.

Make a map of the national forests in the United States. Read about forest fires in geographies and discuss how they can be prevented.

Discuss the various kinds of fire extinguishers and try to find out how they work. Interview the fire chief or a fireman and ask him about those which you do not understand.

Observation - Place a small candle in a glass jar, light the candle and screw the cover on tightly. Discuss why the flame is gradually extinguished. Discuss why a blanket, rug or coat thrown over a burning material would operate the same way. Watch a fireman demonstrate the use of a pump fire extinguisher in Poston.

Check in your barrack and find out where the fire extinguisher is.

Discuss how you would use the fire extinguisher if a fire started in your home.

Discuss what else you could do while someone else was using the fire extinguisher.

Discuss what you could use to smother the air around a fire besides water.

Discover why you never put water on an oil fire.

Observation - Put a little oil in the bottom of a glass jar. Pour water over it and observe the effect. Watch your teacher carry on the same experiment with a tin can out of doors with the can sitting in a bank of sand. The teacher will light the oil floating on the surface of the water.

Discussion - One should never try to put out an oil or grease fire by pouring water on it. Sand or dirt will put the fire out.

Discuss how you can help the firemen in case there is a fire near your home.

Interview a fireman and let him see if he thinks your ideas are wise.

Learn how the water pressure is produced by the fire truck. Visit the fire-station and ask the fire chief to explain this process to you. Investigate where the firemen get their reserve water in case of a bad fire.

Read about some of the famous fires we have had in this country.

Find out how the garbage is disposed of in Boston, how often it is collected and what is done with it.

Discuss what danger there is to the people if garbage is disposed of carelessly. State reason why it is necessary to keep garbage cans covered.

Check in your block to find out when garbage is collected from your mess halls.

Keep a record for two weeks of your observations made once each day to see if the garbage containers in your block are covered.

Learn why you have one can for garbage and one can for trash. Find out what is done with the trash and also the garbage.

Discuss how the sewage is disposed of in Boston.

Find out what sort of a process is used to disinfect the sewage and why.

Discover how the sewers in Paris are used. Read about cities which dispose of their sewage by emptying it into rivers and lakes. Discuss how drinking water can be infected by this process. Find out how the communities which get their drinking water from rivers into which other people have emptied their sewage can purify the water.

Inquire why it is dangerous for children to swim in the canals of Boston now, in the Hudson River. Read about the people who bathe in the Ganges River in India and discuss what part this plays in their religion. Discuss the danger of such a practice.

Find out if the Colorado River is polluted by the sewage from any large city.

Check its course from its tributaries to its mouth on the maps of your geographies to see what large cities are located on its banks.

Consider why states cannot prevent other states from polluting the water which they must use. Look on your maps and read to find out what are the rivers where this problem is the greatest.

Find out what is the fine for pulling up cactus in Arizona and why. Interview the Boston Agriculture Department if you cannot find the information elsewhere.

Investigate what is the fine for taking desert holly out of the state and why.

Learn how flowers and leaves can be picked without injuring the plant. Interview biology teachers or the Agriculture Department.

Secure information about the laws various states have against picking wild flowers and discuss why these are necessary.

Find out what is the Arizona state flower, the California state flower, and make a map of the United States showing all the state flowers.

Learn the national flowers of some foreign countries.

Discuss why it is important to protect all trees, shrubs and plants unless it is necessary to remove them for building or other purposes.

Investigate the cause for the dust in Boston. Observe on a windy day which areas are dusty and which are not. Find out where the dust is coming from. Consider whether you could do anything to help hold the dust down in the worst places.

Discuss how the police help in preventing crime.
 Learn what the United States and Canadian Federal Police are called. Learn the nicknames for the English police and the name for the French policemen.
 Inquire if there are any policemen to enforce countries to obey international laws. Discover what happens if countries do not obey these laws.
 Learn how the work of a Federal Officer is different from of a city policeman.
 Discuss and read about what is meant by the "big brother" and "big sister" movement to assist the police.
 Read about playgrounds and recreation centers and discuss how their organization helps prevent crime.
 Interview the Poston Police Department to find out what connection they have with Yuma County and the State of Arizona. Find out what types of cases are referred to the county sheriff and to the state police.
 Find out what law enforcement officers the Federal Government has. Find out for what offenses the Federal officers are called in.
 Discuss how the radio helps the police. Find out if our police cars are equipped with radios.
 Interview the policemen to find out how they use the teletype, telephone, telegraph and the printing press.
 Find out how our Poston police system protect us.
 Discuss why we need police in Poston. Decide what happenings should be reported to the police.
 Learn who is the chief of police in Poston. Discuss why it is necessary to have a chief. Find out what his duties are and who assist him.
 Interview a policeman to find out what the various ranks are in the Police Department. Find out what are the duties of the men in each rank.
 Secure information on how the policemen help the firemen and also how they help the Department of Public Health.
 Interview a policeman and find out what is the difference between a petty offense and a felony.
 Report on how finger prints help the police. Try experiments with various inks in making your own finger prints.
 Inquire for what other purposes fingerprints are used. Discuss how footprints are used.
 Learn how a criminal can be identified by his fingerprints. Find out what device is used for this purpose.
 Find out what other measurements are used to identify a criminal.
 Investigate how chemical tests and the microscope are used to identify criminals.
 Collect information how blood tests are used and what are the limitations of each test. Interview the head of the clinical laboratory (Henry Sugiura) for information on blood tests.

Discuss the cause of the beautiful colors in the mountains around Poston. Read in geology books to find the names of the various types of rocks. Collect rocks and classify for types and label.

There is no need to keep more than one good example of each type of rock. Keep collection in boxes which have transparent covers if possible. Cellophane may be used if available.

Find out if there are any valuable stones or gem stones in our mountains.
 Inquire if there ever were any valuable minerals in our mountains. Find out if there are any left. Find out what caused the boom in Parker.
 Learn how minerals are separated from the rocks in which they are found. Read to find out what is meant by "ore".
 Find out what metals are on priority now.
 Read and discuss what happens to a mine when an excavation is stopped when easily available minerals are removed although much valuable, but less attainable minerals remain.

Look up the great gold rush in California about 90 years ago. Discuss how this discovery changed life in California. Find stories about the gold rush.

Read about other great gold discoveries in the history of our country.

Collect information on what other valuable minerals are found in the United States, and where these mines are located. Read to find what are the uses of these minerals and why they are important to us.

Find out where other great gold mines are found in the world; also, the source of diamonds and other jewels.

Discuss how the shortage of coal, iron and oil in Germany affect the war.

Make maps showing the location of the large deposits of oil, coal and iron in various parts of the world.

Find magazine or newspaper articles which tell about the Russian "scorched earth" policy.

Collect information on why the Caucasus Mountains are so important in this war.

Study the geography of the Mediterranean Sea and North Africa to find why such an important part of the war is being fought there.

Read to find why coal is found so little in the west and what fuels we use for power.

Learn why gasoline was rationed in the east before it was rationed here.

Bring in magazines and newspaper articles which tell of the changes people are making in the east in the heating of their homes.

Secure information on how people did their cooking in colonial days. Read about the Benjamin Franklin stove and discuss why it was an improvement over earlier heating methods.

Discuss how various types of furnaces work.

Report upon the value of steam heat and how it works.

Discuss how hot air is used to heat houses and what are its advantages.

Find out how a circulating heater works. Learn how furnaces are automatically regulated and how heat is controlled by a button. Learn how air conditioners work.

Find out what the correct temperature for a room should be when one is sitting down -- when one is moving around.