COMPARISON OF THE NEW AND OLD CURRICULUM MATERIALS

SUMMARY

Curriculum and Textbook Project
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THE NEW CURRICULUM MATERIALS

The Curriculum and Textbook Project represents a major effort by the Ministry of Education of Afghanistan to modernize the national primary school curriculum through the development of new courses of study and the preparation of new instructional materials.

Underlying this effort is the recognition that the traditional curriculum has been excessively academic and detached from the realities of family, community, and national life. Too much emphasis has been placed on the rote memorization of materials of marginal relevance to the present and future roles of Afghan children, and too little attention has been given to the inculcation of knowledge, skills, and values that can effectively equip the new generations for more actively constructive and productive participation in the improvement of their social and economic well-being.

The process of developing a more socially responsive and functional curriculum for the primary grades is not confined to a specific subject area but involves the primary school program as a whole. Thus, the new materials reflect in their totality an increased concern with providing learning experiences which are demonstrably useful and helpful to the pupil in building a better life for himself and his family and in contributing to the progress of his community and his country. Related to this concern is a shift in emphasis from passive rote learning to active inquiry and problem-solving, from group drills to individualized learning experiences and projects, from "laundry list" recitals of unconnected facts to an exploration of ideas and concepts that provide a framework for examining and interpreting facts.

For the first time in the educational history of Afghanistan, teachers' guides have been prepared in all subject areas. These guides are an essential feature of the new curriculum, since they help ensure that the texts will be utilized as effectively as possible. Additional assistance is given to teachers through periodic workshops, seminars, and field visits.

Following are summaries, prepared by Afghan members of the Project, of the main program directions and emphases in the various subject areas.

Language Arts

The language arts program is of fundamental importance to the primary school curriculum, since books in all subjects are written in both Dari and Pashtu, and language arts learnings contribute to learning effectiveness in the other subject areas.

Since each of the two national languages is the mother tongue for some children and a second language for others, the language arts program is accordingly divided into two major parts: teaching of the mother tongue or first language begins in the first grade and teaching of the second language begins in the fourth. Whether a school is situated in a predominantly Dari-speaking or Pashtu-speaking region determines, of course, which language is considered the first language and which the second.

The methodology required is quite new in Afghanistan, and represents a dramatic contrast with the old. While there are obviously variations in the old techniques of language teaching, they are essentially as follows.

First pupils are taught the Pashtu or Dari alphabet. Attention then turns to reading on the one hand and to writing on the other. Reading methods consist of the teacher reading aloud a sentence or page to the pupils. Next the pupils repeat the sentence or page along with the teacher, and then they chant the words in unison without the teacher. This process is repeated over and over. Finally the teacher, in all oral testing situations, chooses a page from the memorized material and asks a child to "read" it. If the child has faithfully followed the drill, he can "read" the page without looking at the written symbols. Virtually no attention is given to his ability to comprehend the meaning of the symbols.

The old methods treat writing as a separate subject: calligraphy. Words and sentences - not correlated with reading materials - are set down either on the blackboard or in printed exercise books bought from the bazaar, and are copied by the pupils over and over again. Much more attention is paid to the esthetic qualities of letter formation in relation to the model than to the usefulness of the written language as a means of communicating ideas. Little attention is devoted to the skills of speaking and listening except as they relate to memorization and recitation.

The new methods attempt to integrate the major communication skills - reading, writing, speaking, and listening - into a coordinated series of learning experiences directed toward the development of thinking, reasoning, and creative abilities.

The child begins in the first grade with "readiness" activities. These activities are designed to help the teacher make sure that the child is physically and psychologically mature enough to recognize and write language symbols. When the child has finished his readiness activities, the teacher introduces him to the written words which he can understand because they are part of his spoken vocabulary. The words are introduced gradually so that the child has considerable practice using them in different contexts.* For example, the first-grade books attempt to build a 500-word reading vocabulary. These words are made first into sentences and then into short stories. The child learns to read the words in sentence and story contexts and to recognize the words individually. He is asked to write short sentences and stories from his own experience using the new words he has learned. He is also asked to tell stories or to use the new words orally in various sentences.

Much interaction takes place between the pupils and the teacher. Both the child and the teacher are actively involved in each lesson, through discussion questions designed to help pupils explore ideas and concepts related to the stories presented. There is a balance between oral reading and silent reading, with pupils encouraged to find in their reading answers to various questions posed. The sing-song chanting of pupils repeating mechanically what the teacher reads to them has no place in the new program.

Beginning in the fourth grade, pupils are introduced to their second national language. Pupils in Dari-speaking areas learn Pashtu, and those in Pashtu-speaking areas learn Dari.

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*By way of contrast, the old Dari first-grade reader has an average of 8 new words a page, with a range of 0-21, and the second-grade reader has an average of 20 new words a page, with a range of 8-38! More than half the words in the first-grade reader only appear once, and over half the words in the second-grade reader only appear once. Furthermore, over half the words in the first-grade reader do not appear at all in the second-grade reader. This means that a pupil may come across a word in his reader only once in two years!

Teaching a second language requires the use of methods which are different from those used in teaching the first language. Children have a spoken vocabulary in the first language when they begin school. They have already associated sound symbols with things and experiences in their everyday lives. Learning a second language means associating new sounds with familiar objects, activities, and ideas.

Thus, the first step in teaching the second language is to build up a new spoken vocabulary in which unfamiliar sounds are related to familiar experiences. Then these are gradually integrated into the structure of the new language, which differs in important ways from the structure of the other language.

The teachers' guide for second-language teaching is carefully constructed to show teachers, step by step, how to go about building vocabulary and familiarizing pupils with the basic forms of the new language structure. Pupils are encouraged to speak and listen in the second language. As they grow in proficiency, they are progressively introduced to related reading and writing learning activities. First-language teaching methods can then be used. An important goal of second-language learning is to help enable the people of Afghanistan to understand one another and communicate constructively with one another even though they have grown up speaking different languages in different parts of the country.

The language arts program has also become involved recently in the development of a foreign-language program. The Educational Reform of 1975 stipulates that, beginning in the sixth grade, all children in the country are to be introduced to a foreign language. It is anticipated that for the vast majority of the children the foreign language will be English.

The three-year (grades 6-8) sequence of English language instruction is designed to lay a foundation of skills and understandings which can serve as a starting point in developing a means of communication with the rest of the world. At this level, it would obviously be unrealistic to expect a high level of fluency as an outcome of a program limited to three class periods a week.

The emphasis in the beginning will be placed on situations that are immediate and relevant to the children's everyday life. To the extent that the time allocated will allow, the topics presented will reflect the socially, culturally, and economically oriented aims and objectives of the Educational Reform.

Mathematics

The old mathematics, like other subjects in Afghan schools, was primarily a matter of memorizing number facts and mathematical formulas. The new mathematics has entirely different goals. These goals require a more active and two-sided working relationship between pupils and teachers. In furtherance of this approach, each pair of facing pages in the teachers' guide includes a page from the pupils' text together with a page of instructions and suggestions to the teacher on ways of presenting the text material: thus, the guidance provided is on a page-by-page basis.

The major goal of the new mathematics education is to prepare Afghan children to deal with quantitative concepts and relationships so that they may take their places more effectively as productive and creative members of a changing, developing Republic of Afghanistan, and to lay a foundation for those who will pursue higher education and will need mathematics as a means instrumental to the mastery of some special field.

Related to this goal are other goals and objectives:

1. to develop and extend the child's awareness of concepts of quantity and quantitative relationships, including relationships of form, size, distance and weight as these relate to his environment;

2. to develop the child's ability to communicate in terms of numerical concepts and to express himself logically in the language of mathematics;

3. to develop in each child a general understanding of the scope and structure of mathematics and an appreciation of the applications of mathematics to meet man's needs;

4. to develop in each child a level of skill in mathematical computation consistent with his abilities;

5. to help each child to recognize problems and situations in daily life which lend themselves to mathematical solutions and to be able to apply the appropriate techniques for arriving at these solutions;

6. to cultivate each child's interest in the role of mathematics in both the physical and social sciences;

7. to help each child achieve a level of creativity and independence in mathematical thought and the utilization of mathematical skills, consistent with his abilities and interests; and

8. to help each child prepare for further mathematical learnings appropriate to his abilities and future needs.

Social Studies

The clearest way to show the nature of the new social studies program is to compare the old social studies textbooks with the approach taken in developing the new. Following are the differences as the Social Studies Section views them:

1. The old program included only geography and history with a separate textbook for each. The new textbooks provide for the integration of simple concepts from many fields: e.g., anthropology, sociology, economics, and political science as well as geography and history.

2. The major emphasis in the old program was on Afghanistan, especially Afghanistan of the past. In the new textbooks, there is much attention to Afghanistan still, but our nation is seen in a world context. Furthermore, there is a balance between attention to the past and consideration of the present and future. National problems as well as potentials are examined as they bear on social and economic development. In addition, other nations and regions of the world are studied, and the similarities and differences between them and our own country are explored.

3. In the old history textbooks, emphasis was on past dynasties, wars, and religious history. While the new textbooks include some religious history, explanations of basic Islamic ideas are given in a separate series of texts prepared by the Religious Studies Section. The new textbooks give a certain amount of attention to past leaders and military events, but they place more emphasis on ordinary people and their ways of living and give credit to leaders who have made contributions in the realm of culture. In the old textbooks the Kuchis (Afghan nomads) were completely ignored. The new textbooks include material on the way of life of this important group of Afghans.

4. The old textbooks tended to be a colorless recital of "facts" as reflected in names and dates. The new books are designed to help children to think. They raise questions and then give the children material to be used in working out answers for themselves. In place of a dreary inventory of small details, broad concepts such as change and modernization are featured and relationships between cause and effect are examined.

5. The new textbooks stress the development of skills that help children gain information from a variety of sources, including maps and globes, charts, graphs, tables, photographs and drawings, and their daily environment. Children are encouraged to organize their information and to make oral and written presentations. They are taught to pay attention to the accuracy and currency of the information sought.

6. A special attempt is made in the new program to help children build socially constructive attitudes. An important aim is to develop an intelligent understanding of and loyalty to Afghanistan as a nation and a commitment to the goals and ideals of the new Republic. This does not mean blind acceptance but rather an awareness of common problems and a willingness to help one's people. The new textbooks try to instill in the children an appreciation of the need for change in Afghanistan and a readiness to assist in bringing about improvements. Suggestions are made as to ways in which Afghan children and adults can contribute to making their country more unified and prosperous.

7. The new program provides for teachers' guides to accompany the textbooks. These guides stress the importance of going beyond knowledge of what has happened in the past or what certain places are like. Suggestions are given to teachers for helping children understand how and why things happen and the ways in which certain events and conditions are relevant to their lives. In brief, the emphasis in the teachers' guides is on teaching for understanding, thinking and problem-solving and on developing a grasp of important concepts.

8. Previously there was no provision for social studies in the first three grades. The new program provides that social studies concepts and understandings are built into the new language arts readers for those grades. Suggestions for developing these concepts and understandings are incorporated in the language arts teachers' guides.

Science

The teaching of the old malumate taabi (natural information) was largely an inventory of disparate facts about nature. The method of teaching was essentially that of memorizing and reciting. The new science program is concerned not only with knowledge but with intellectual skills and values that can help the growing generations improve their life conditions. Children must be given the opportunity to think and do, not just read about life and memorize facts. Children must be given a chance to make observations, to ask questions, to suggest possible answers, and to experiment to find out if their answers are correct.

In short, science is not just a body of factual knowledge to be memorized. It is a method of asking questions about the world we live in and trying to find the answers. The new science program involves children in studying and asking questions about such phenomena as: the earth, the solar system, plants, animals, human beings, machines, light, heat, sound, magnetism, and electricity.

More specifically, pupils explore such concerns as:

-- man's place in the physical and biological world;
-- how natural resources can most effectively be utilized and conserved;
-- what scientific principles operate in our everyday lives;
-- how the applications of science and technology can help improve our lives.

As questions are raised, the children, on the basis of the knowledge they have, suggest possible answers with the guidance of the teacher. They make a hypothesis. Then they experiment to find out if their hypothesis is correct. When they experiment, they discover facts which they will remember because they have actively participated in uncovering them.

They will also discover ways of solving problems as they occur in their own lives. In short, the children are given opportunities to do, to be involved mentally and physically instead of just memorizing. The scientific method teaches children not what to think but rather how to think in order to find their own answers.

The teachers' guide is designed to help teachers work with the new material in ways consistent with this approach. Each lesson plan is organized as follows:

CHAPTER TITLE

Lesson No. _____ Title of the Lesson _____

1. Teacher's Background Information

   This section provides additional science information on the lesson topic, i.e., more than is presented in the students' textbook. The teacher can draw on this information as needed.

2. Concepts

   The teacher is alerted to the important ideas to be learned in the lesson.

3. Objectives

   The lesson objectives are summarized so the teacher knows what kinds of learning outcomes are to be sought, and what kinds of evaluation are accordingly most appropriate.

4. Materials

   This section tells the teacher what materials will be required to teach the lesson most effectively. Usually the experimental and demonstration materials suggested are those that the teacher or children can obtain readily at little or no cost.

5. Procedure

   A step-by-step procedure in teaching the lesson is suggested. This includes the pages to be read by the pupils, appropriate questions to pose and discuss with pupils, directions for relevant demonstrations and experiments, problems to solve, and other pertinent approaches and techniques. In short, this section suggests to the teacher how to present the lesson in order to accomplish the objectives.

If the teacher follows the guide, he will not be teaching in the traditional way. The purpose of the suggested teaching methods for each lesson is to help the teacher involve the children actively in learning not only a new body of knowledge but new ways of thinking about and using that knowledge.

Health

Health, like science, is taught using a discovery method. In health education there is a direct concern with the physical and mental welfare of the pupils, their parents, and the community. For example, pupils learn about:

-- germs and how they cause disease;
-- personal hygiene and the role of cleanliness in preventing sickness;
-- food safety and nutrition: how the proper kind and care of food can help prevent disease and provide the nourishment necessary for the body to grow and maintain itself;
-- safe water: how to purify the water we drink, wash food in, and bathe in; how to construct wells and keep them clean;
-- care of teeth;
-- how to keep the community clean and to prevent sickness from spreading from one person or family to another;
-- first aid: what to do in case of sickness or accident.

Underlying the program of health education, which is a new subject in the primary curriculum of Afghanistan, is the recognition that the teaching of health must grow out of the health problems that Afghanistan is now facing and be specifically related to communal needs and to the availability of personnel, facilities and equipment. In other words, it must be practical and realistic.

Among the major topics presented in the course of study are (a) the structure, function and control of the human body with reference to the basic life processes of digestion, respiration, circulation, excretion, nutrition, metabolism, movement, the functioning of the sense organs and nervous systems; (b) the biological need for air, water, food, activity, rest and sleep; (c) mental health; (d) the dangers to health from organic and communicable diseases, accidents, poisons, drugs, and alcohol; (e) principles of scientific health care; (f) promotion and maintenance of family health and well-being; (g) health protection through public health services; and (h) occupational and consumer hygiene.

As in the other subject areas, the teachers' guide is an important part of the health education program. The guide shows the teacher how to involve the children actively in learning how to take better care of themselves, and how to discover the facts they need in order to act responsibly when they are sick or injured. The major emphasis is not on the teaching of facts but on bringing about changes in behavior.

Practical Works

The course of study in practical works is, as its name suggests, concerned with practical learning activities that can help pupils become more useful and productive members of their families and communities. The course is based largely on three major resource fields: agriculture, industrial arts, and home economics. While there is a greater emphasis on agricultural and industrial arts activities in the program for boys, and on home economics in the program for girls, the course nevertheless provides both boys and girls with opportunities to acquire appropriate understandings and skills in all three fields.

The course is not conceived as one bounded by the walls of a classroom. The goal is not to have pupils sit and talk about practical works but to involve them as active participants in practical works: emphasis is on doing. Activities are planned which can contribute in significant ways to the improvement of the community served by the school. One of the explicit aims of the program is to help strengthen the link between educational development and community development.

This is why the program is based on teachers' guides rather than pupil texts. It is not a reading but a doing course, and the guides are designed to help the teacher engage the interests of the pupils in productive directions within the framework of the units presented. For example, girls may be involved in projects related to diet and nutrition, clothing and textiles, and child care; boys may be involved in projects in agriculture, animal husbandry, and industrial arts; and both boys and girls may be involved in projects concerned with personal development, the home and community, and family economy. The teachers' guide represents a pool of prospective experiences from which selections may be made based on individual interests and aptitudes, present and prospective socioeconomic roles of boys and girls in Afghan society, and regional variations in conditions, resources, customs, and needs. Neither boys nor girls are "locked into" particular roles: while the course must make adjustments for differences in the predominant vocational patterns and expectations of Afghan culture, it is recognized that there is a need for common learning experiences which can help improve communication, cooperation, and understanding between the sexes, and can pave the way for changes in the shaping and opening of opportunities for boys and girls.

Physical Education

In the physical education program, teachers' guides have been prepared for grades 1-3 and 4-6, and additional guide is being developed for grades 7-8. Emphasis is on involving the children in activities that contribute to their physical, mental, and social development. Among the topics included in the teachers' guide are: the aims and purposes of physical education; characteristics and needs of children in relation to physical education; planning the physical education program; roles and responsibilities of teachers, headmasters and supervisors; implementing the program; evaluating the program; ball skills and related games (with special attention to basketball, soccer, and volleyball); self-testing activities; physical fitness exercises; track and field activities; dance and locomotor skills.

The program is not concerned narrowly with physical skills, but with rounded development including the mental alertness and resourcefulness required for effective participation in games and sports as well as the habits of social cooperation and coordination involved in team play. An important purpose of the program is to provide practical learning experiences which will be beneficial to children outside the classroom. This focus is particularly appropriate for the children of Afghanistan, since physical activities can be enjoyed by and contribute to the well-being of everyone regardless of the lack of material wealth.

Religion

The new textbooks and teachers' guides in religion have been prepared by mullahs working in the General Directorate of the Curriculum and Textbook Project. The major role in developing the guides has been played by a mullah who has had advanced training in Islamic studies in Cairo and in comparative religious and educational philosophy in the United States. There have been no foreign advisors working in this area. The Project responsibility has essentially been to ensure that the materials are educationally sound. The books have been developed to present the religious and cultural values of Islam in Afghanistan, drawing on the Holy Koran and its teachings. There is one pupil text for grades 1-3 and another for grades 4-6. A teachers' guide has been prepared for each text. With the expansion of the primary school curriculum into grades 7-8, an additional text and accompanying guide are being prepared for those grades.

Unlike the old program in religion, with its narrow emphasis on the memorization and recitation of passages from the Koran with virtually no attention to interpretation or application, the new program deals with religion as a system of principles and ideas of contemporary relevance to Afghan children and the society in which they live.

Conclusion

While the subject-area summaries cover only those features of the new materials that members of the respective sections wished to highlight, collectively they reflect a distinctive approach to the development of a new curriculum for Afghan schools.

First is the emphasis on active learning, with the traditional role of the pupil as a passive receptacle for whatever content the teacher chooses to put in being replaced by the new role of the pupil as an active participant in the organization and progressive shaping of learning experiences.

Second is the emphasis on concepts and ideas in place of the traditional emphasis on "bare facts". In the new program pupils are encouraged to hink for themselves and to explore the broader significance and implications of the lessons studied.

Third is the practical and functional emphasis on learning activities that can be related to the everyday life and problems of pupils. There is a new concern with linking in-school learning more closely to out-of-school learning, so that the meaning and applicability of what is learned do not end at the classroom door. Instructional materials and aids are drawn wherever possible from the pupil's own environment.

Fourth is the emphasis on motivating the child toward continuing learning throughout his life. Relatively few pupils will go on to become high school and university graduates, but as the new interest in inquiry and investigation grows, children will have a basis and incentive for continuing to ask questions about their world and their place in it after they leave school. It is expected that they will no longer be satisfied with unquestioning acceptance of what goes on around them, and will persist in seeking new information as it concerns them.

Fifth is the emphasis on relating education to the social and economic development of Afghanistan. Special attention is directed to the constructive and productive roles that pupils can assume in helping improve the living conditions in their country and in contributing to its growth and progress.

Other characteristics of the new curriculum could be noted, but it should be abundantly clear from what has been written so far that the new program represents a significant departure from the traditional curriculum, one with enormous potential for bringing about a new era in human resource development.

THE NEW CURRICULUM MATERIALS: EXAMPLES

Health

Food Safety and Nutrition

The following units on food safety (grade 5) is part of the health education program. It is illustrative of the new curricular emphasis on combining the presentation of substantive knowledge with the teaching of concepts and principles bearing on the everyday lives of pupils as well as on the problems and needs of Afghan society. The improvement of health conditions and practices in Afghanistan is one of the major national priorities, as reflected in the development of the new health education program for Afghan schools. While the offering of this course to primary-school pupils is only one step in the overall effort to promote better health, it is nevertheless an important step representing a "first" in the educational history of the country.

As a supplement to these units, examples of related learnings from other subject areas are given. These learnings are designed to complement and reinforce the instruction in health, by providing a broader curriculum context for health education.

Safe Food

Everyone enjoys safe food. It is always a pleasure to eat a delicious meal. It would not be so pleasing if you thought the food would make you sick. What does food contain that causes illness?

Often people are tricked into believing that foods are safe simply because they do not taste or smell badly. Sometimes foods that are dangerously contaminated may appear quite wholesome to eat and contain no bad odor. The most common cause of food infection and poisoning are germs and their poison products called toxine. Germs causing food poisoning usually cause cramping pains in the stomach followed by diarrhea and frequent vomiting. Although germs causing food poisoning are very often killed by stomach acids, those that survive multiply rapidly and usually cause sickness in a short period of time.

The best way to protect yourself and your family from food poisoning or other sickness caused by contaminated food is to keep germs out of the food. As you know, there are millions of germs everywhere capable of producing disease. They are found in the air, on the ground, on your clothing, and especially on unwashed hands. The only way to keep them out of food is to observe the highest possible standards of cleanliness.

The basic problems of food contamination are the source of the food, food storage, and food preparation.

Food Source

Where does the food you eat come from? Where is it grown or produced? Is the market from which it is purchased clean? Has it been washed in dirty, unsafe water? Most people do not stop to think about the source from which their food came. They are usually concerned only with taste and appearance. However, it is important to know that foods grown in soil where human waste is used as fertilizer can cause many diseases. These foods can cause typhoid fever, amebic dysentry, cholera and many other serious diseases. Ground defecation, plus the use of contaminated water for irrigation, can also cause fruits and vegetables to become contaminated.

Fruits and vegetables must always be washed and scrubbed with soap and water and rinsed in safe water before eating. To be extra safe, you should peel fruits and vegetables which are to be eaten raw.

It is very important to know the source of foods you eat, especially milk products. Milk can be dangerous because it provides an excellent place in which germs grow and multiply. It can cause such serious diseases as typhoid fever and bovine (from a cow) tuberculosis. Do you remember studying about bovine tuberculosis? Milk must always be considered as to its freshness, cleanliness, and source. Fresh milk purchased in the market should always be boiled. Milk that comes from your family's goat, sheep, or cow may or may not need to be boiled. Only an animal doctor can tell whether or not your cows or goats are diseased. Since germs grow very rapidly in milk, the highest standards of cleanliness must be observed while milking. A cow, sheep or goat's udder and teats should be washed in clean water before milking. Also a clean pail or pan should be used to catch the milk in and the milker should always have clean hands. Some families keep the udder of their animals clean by covering it with a cloth bag.

When you buy fresh milk from the market, you do not know how fresh or clean it is. Canned evaporated milk and powdered milk have already been pasteurized. Pasteurization is the process of heating milk until the hearmful germs are killed. When either canned or powdered milk is mixed with water, you should be sure that the water is safe by first boiling it.

Things to Remember

Meat and fish should always be well cooked. Fresh vegetables should be washed with plenty of soap and water after which they should be thoroughly rinsed. Fresh milk should be boiled before use. Boiling and cooking kill all germs.

Where does your family buy their food? From what source do you get your milk? Is it from a safe source?

Food Storage

As you may recall, germs multiply or grow with amazing rapidity, given the right conditions. Certain foods, especially meat, fish, and milk products, when allowed to stand for some at a warm temperature become very dangerous. A good slogan to remember about these foods is, "keep them hot, keep them cold, or don't keep them at all."

Food must be stored in an area protected from insects and rodents. Dry foods should be stored in a dry place away from rats, flies, cockroaches, and other pests. Uneaten food should be covered with a net or screen. If there is a chance that the food will spoil, then throw it away. One of the best methods of storing foods is to build a shelved cabinet fastened to the wall about one meter from the floor. This type of cabinet should have a well screened door to keep out insects and rodents. Look at the cabinet in the picture. Are foods stored in a safe place in your home? Could you help to build a cabinet like the one shown in the picture?

Food Preparation

Do you wash your hands before eating? Do you ever help to prepare a meal? Cleanliness is the key to the safe preparation of food, cleanliness of both the food handler and the food. The human nose, throat, and hands are the primary source of food contamination and food poisoning. A sick person should not handle food. In addition, a person with infected cuts or scratches should not handle food. Although the person may

feel perfectly healthy, he can still carry disease germs around with him that causes sickness to others. From time to time, we find outbreaks of diseases which have been caused by such carriers. Typhoid fever, a disease you will learn about later, is often traced to a carrier of typhoid fever germs. People known to be carriers of disease germs should never be permitted to work in restaurants or other public eating places.

One of the most important things to remember before handling food is to wash your hands often with soap and water. Hands should always be washed thoroughly after using the toilet, before preparing food, and before eating. It is very important to keep your fingernails clean too. Many germs are spread from dirty fingernails. It is difficult for people to realize that their hands are dirty when they cannot see the germs. It is only through regular hand washing that the hands can be kept clean. Is food served in your school? Is it protected from flies? Do the food handlers wash their hands before preparing and serving the food?

Washing Dishes Correctly

Have you ever helped to wash dishes in your home? If so, how did you wash them? The purpose of dishwashing is to get the dishes clean and to destroy any harmful microbes that may be on them. There is a safe way to wash and dry dishes that is simple and easy to follow.

First you must scrape the food particles from the dishes. Now the dishes must be sorted and stacked in neat piles. Any silverware should be kept separate from the dishes. Greasy pots and pans should be filled with warm soapy water to soak while the dishes are being washed. Next fill the dishpan with hot soapy water and begin to wash. Glasses are washed first, then the dishes, cups, and silverware, and last of all, the pots and pans that have been soaking. To complete the job and to be sure that all the germs are killed, the washed dishes and silverware should be dipped in boiling water or they should have boiling water poured over them. After scalding them with boiling water, the dishes and silverware should be left to dry in the air. Scalding them with boiling water is the most important part of dishwashing because it kills the germs. To keep the dishes free from germs, they should be protected from flies or stored in a fly-proof place until the next meal. This can be done by simply covering them with a thin net or cloth until they are to be used again. The dishes may also be placed in an enclosed or screened cabinet.

Do you know how to handle dishes and silverware correctly? They should be handled so as not to contaminate the surface (of the silverware or dishes) that touches the mouth or food. Knives, forks, and spoons should be touched on the handles only. Plates should be handled only by the edges. Only the outside of cups and glasses should be touched.

Have you seen food handlers who did not know how to handle dishes correctly? Why is it important to handle them right?

The following simple rules will help you to protect your food and keep it safe:

- Always wash your hands with soap and water after using the toilet and before handling or eating food.
- See that dishes, eating utensils, pots and pans are washed thoroughly with soap and hot water.
- Be sure that dishes and silverware are scalded with hot water after washing.
- Do not handle eating and drinking utensils by surfaces that come into contact with food or drink or touches your mouth. Your fingers should not touch the inside of glasses, cups, or bowls.
- Be sure that the food you eat is pure, fresh, and from a safe source.
- Wash all fresh fruits and vegetables with plenty of soap and water, then peel when possible.
- Store food, dishes, eating and cooking utensils, in a protected area, away from rats, flies, and cockroaches.
- Do not let cooked foods stand too long, especially those prepared with meat, fish, eggs, or milk. Cover all foods with a net to protect them from flies.
- Never wipe utensils with a dirty dish cloth. It is better to let them air-dry after rinsing in boiling water.
- Do not handle or prepare foods if you have diarrhea, a cold, a sore throat, or a sore on your hands. A sick person should never prepare food. He is likely to pass his disease to others.

Diseases Caused by Unsafe Food

You have learned from the previous chapters that many of the intestinal diseases are caused by eating unsafe food. The dysenteries and intestinal worms are some of the diseases with which you are already familiar. Most of the common diarrhe are also caused by unsafe food. Although diarrhea is often taken very lightly, it can be very serious when infants get it.

There is much suffering caused by unsafe food and water. Here is a story about a boy who got a disease from unsafe water. However, he could also have caught this disease from unsafe food or from flies. Read the story and then discuss the many ways that he could have gotten his sickness.

Hamid and the Chamchamast

Hamid lived with his family in a pleasant home on the Chamchamast River. From his bedroom window, Hamid could watch the hustle and bustle along the river's edge. He watched the river rise from a slow moving, sluggish stream during the summer to a raging stream during the late winter and early spring. He watched the donkey drivers as they earned their living by retrieving the sand from the river's bottom. The sand is washed down from the mountains to the river during the winter and spring and is later scooped from the bottom to be carried away by the truck and donkey load. This sand helps in the construction of the many new homes and office buildings of a triving city.

Hamid liked to walk along the river bank and to watch the tiny fish scurry from one hiding place to another. He also enjoyed watching his neighbor's ducks effortlessly swim down the river, occasionally ducking their heads to feed an ever present appetite. During the long hot summer months, the Chamchamast became a refreshing swimming place for all of Hamid's neighborhood friends. Hamid and his friends had one favorite hole in the river where they swam and played by the hour during the warm weather. They paddled and jumped and ducked their heads while being refreshed by the cool water. What a pleasant way to pass the summer days!

One day Hamid did not show up at the swimming hole. The boys wondered where he was. Finally his good friend Walid decided to go to Hamid's house to see what was the matter. He called Hamid from over the wall, but Hamid did not answer. He called again more loudly. Still Hamid did not answer. At last Walid returned to the swimming hole. He thought that his friend Hamid had probably gone to visit a neighbor or his married sister who lived on the other side of town. Little did he know that poor Hamid was very sick with typhoid fever and had been taken to the hospital by his father. Where did Hamid get his typhoid? Had he been eating bad food? Was it bad water from the well? Was his favorite swimming hole in the Chamchamast contaminated with typhoid germs? Had poor Hamid swallowed some of this contaminated water?

Let's take a look at Hamid's favorite swimming hole in the Chamchamast. The river had been used by everyone all summer to wash their clothes, to clean fresh fruits and vegetables, to perform their ablutions and some families even used it as a place to dump all of the waste materials from their houses. Pipes carrying waste from the tashnobs flowed directly into the river and continually contaminated it with microbes from sick as well as healthy people. Unfortunately, one family up the river from the swimming hole were suffering from typhoid fever. Now where then do you suppose poor Hamid got the microbes that caused his sickness? Was the river truly contaminated with typhoid germs? That appears to have been the case. Let's look at typhoid fever. Do you know what causes it? Where do the germs of typhoid live and grow? Are they similar to cholera microbes? Yes, similar but not the same. Typhoid fever is caused by a microbe known as the typhoid bacillus that lives and multiplies in food, water, milk, and other types of drinks. Remember this is a rod shaped microbe that can only be seen with a microscope. (Review the lesson on microbes.) Typhoid fever is a dangerous disease like cholera. Many persons in Afghanistan needlessly suffer and die from it every year. We say needlessly because it can be prevented through simple immunization. Yet, poor Hamid had not been immunized and now he had all of the chills, fever, and diarrhea that comes with typhoid fever. The primary source of typhoid fever is water contaminated with the feces or urine of someone sick with typhoid. So it is plain to see that Hamid's swimming hole was contaminated with typhoid fever microbes. In fact the Chamchamast was probably contaminated with typhoid fever microbes for many kilometers down the river. Do you suppose other people got typhoid fever by swallowing the river water? Probably so, because people bathe, brush their teeth, and wash fresh fruits and vegetables in the river. Some even get their drinking water from the river. When fresh fruits and vegetables are contaminated by the microbe-infested water, they too can cause typhoid fever. All foods and drinks, such as milk and cold drinks, can become carriers of typhoid fever if they become contaminated with human feces or urine from a pers n sick with typhoid fever. Sometimes a person who has had typhoid fever becomes a carrier of the disease microbes for the rest of his life.

How does food and drink become contaminated with typhoid fever microbes? Very simply, contamination comes primarily from handling food and drink with unclean hands and by using contaminated water. Contamination also comes from fruits and vegetables that have been grown in soil contaminated with feces or urine containing typhoid fever germs. So this is why you are continually advised to wash your hands with plenty of soap and water before eating, after going to the toilet and before handling food.

How can you keep from getting typhoid fever? Most importantly, you should become immunized against typhoid fever every year. Next, boil all water or other drinks that might be contaminated with typhoid microbes. Wash all fresh vegetables and fruits with soap and safe water or eat them cooked. Help persons get to a hospital or clinic who are suspected of having typhoid fever. Then remember poor sick Hamid and consider the consequences before you swim in contaminated pools, streams or rivers. No matter how clean water appears, it may be contaminated.

Questions

1. Why is it important to obtain foods from a safe source? Should human waste be used as fertilizer?

2. Why is milk a good source of food poisoning? How can milk be made safe for drinking?

3. Name 10 ways to prevent food contamination.

4. How is typhoid fever spread? Should a person sick with typhoid fever be sent to a physician?

5. How can typhoid fever be prevented?

6. Could Hamid have gotten his disease from sources other than the Chamchamast?

7. Where can you get inoculated against typhoid fever?

What is the Meaning of the Following Words?

1. pasteurization
2. diarrhea
3. rodents
4. typhoid carrier
5. dysentery
6. intestinal worms
7. bacillus
8. drilled well
9. inoculation
10. vaccination
11. typhoid bacillus
12. contaminated

TEACHER'S GUIDE FOR SAFE FOOD

One of the most common ailments of the human race is the stomach ache. Most stomach aches are caused by the food we eat or the water we drink. Food is easily contaminated. It can be contaminated through careless handling, by flies, by mixing it with contaminated water, by animals or insects and by many other methods.

Although we depend on food for life, the diseases it causes can also take away life. Undoubtedly more babies lose their lives in Afghanistan from food and water than from any other thing. Much of the infant diarrhea, the dysenteries, worms, typhoid, cholera and many other diseases, too numerous to count, comes from contaminated food and water. However, it is the weak and the very young who suffer the most and die most frequently from food and water borne diseases. Therefore, we must take every precaution to make our food and water just as safe as possible. This chapter outlines various ways that this can be done.

The chapter begins by discussing the food source, or the place where food is grown and distributed. It describes the hazards of eating food grown in our own contaminated soil and further prescribes how such food can be made relatively safe to eat.

The chapter also discusses food storage methods and an illustration is used to show the student one simple method for food storage in his home.

Since most students are requested to wash dishes at one time or the other, especially girls, part of the chapter is devoted to proper dish washing. Boiling water kills germs, so in order to make dishes safe to eat from and to kill the germs left there from persons previously eating from the dishes, the dishes must be dipped or rinsed in boiling water after washing.

A story about typhoid fever has been included in this chapter and even though the boy in the story probably catches typhoid fever from water, food is also a prime source of this disease. In fact, many cases of typhoid fever are spread by food that has been prepared by a person who carries typhoid fever germs in his body. Such a person is known as a typhoid carrier and should never be allowed to prepare food for others.

I. Objectives:

1. To help students to understand that foods cause many diseases, but that the foods can be made safe to eat.

2. To help students to understand that foods are often contaminated at their source.

3. To help students to understand that fresh fruits and vegetables should be carefully prepared before eating, especially those grown in or on the soil.

4. To help students to understand that milk and milk products, along with meat and fish, are an excellent medium for germs to grow and multiply in.

5. To help students to understand that all milk should be boiled before use.

6. To help students to understand that it is important for sanitary precautions to be taken when milking.

7. To help students to understand that proper food storage is important to food sanitation.

8. To help students understand the importance of washing dishes correctly.

9. To help students to understand that typhoid fever can be caused by contaminated food as well as contaminated water.

II. Anticipated Outcomes

1. That the student will talk intelligently about safe foods.

2. That the student will desire to wash fresh fruits and vegetables before he eats them.

3. That the student will desire to drink water from a safe source.

4. That the student will want to eat from clean dishes and with clean eating utensils.

5. That the student will not swim or bathe in obviously contaminated water.

6. That the student will avoid getting contaminated water in his mouth and nose while bathing.

7. That the student will desire to buy or obtain his food from a safe source.

8. That the student will want to eat fresh meat and fish.

9. That the student will help to prepare or obtain a safe storage place for food in his home.

10. That the student will want to be vaccinated against typhoid fever.

11. That the student will want his milk boiled before using it.

12. That students will try to keep flies and other insects away from his food.

13. That the student will not want sick persons handling his food.

III. Suggested Class Procedure

1. Read and reread the chapter on Safe Food carefully.

2. Underline new words and important ideas in the chapter.

3. Study the teacher's guide and supplementary teacher information carefully.

4. Formulate your plan for teaching class.

5. Before making a reading assignment, write all new words on the blackboard. Pronounce each of the new words to the class and define each word

6. Ask the students to pronounce the new words and to use the words in sentences.

7. Ask the students to record the new words in their notebooks and to use each of the new words in a sentence.

8. Assign part of the chapter for the class to read silently.

9. Ask individual students to read aloud and then to tell you what they have read.

10. Discuss the chapter with the students as it is read aloud.

11. Ask the students to name some of the diseases caused by unsafe food.

12. Ask the students to describe some of the diseases that they have had as a result of eating unsafe food.

13. Ask how many of the students bathe in rivers, jewys or standing water such as ponds and lakes?

14. Advise the students not to put his head under water in such places or get the water in his mouth. Remind them that they cannot spit out germs.

15. Ask the students if they believe in the saying that, "Water becomes safe after it has moved seven times." Have a discussion about this. Advise the students that people contaminate water, and so long as people bathe, wash their clothes, and empty their tashnobs into the water, the water is contaminated and may stay contaminated for several kilometers down the stream.

16. Ask the students to describe how Hamid caught typhoid fever.

17. Ask the students if they know anyone who has had typhoid recently.

18. Have a discussion about getting immunized against typhoid. Where can a person become immunized against typhoid fever in your community?

19. Ask students to discuss ways of preventing typhoid fever.

20. Review the chapter carefully to be sure that the students understand it thoroughly.

21. Again define the new words in the chapter.

22. Give a test that emphasizes the objectives of the chapter.

23. Review test results with the students to be sure that they understand the answers to all of the test questions.

IV. Class Activity

Ask the students to prepare a short paper on one of the following subjects:

1. If I were a food merchant, I would do the following things to keep the food safe.
2. What I can do to help keep my community free of typhoid fever.
3. How I can help to keep typhoid fever out of my home.
4. How disease makes a family poor.
5. How can I help to keep the food safe in my home?
6. How I wash the dishes at my house.
7. How we can make our fresh fruits and vegetables safe.
8. The many diseases caused by unsafe foods.

FOODS FOR GOOD HEALTH

Have you ever watched an animal grow from a tiny baby to its full-grown size? What makes animals grow? Growth is a result of the food an animal eats. You have grown from a small baby to your present size because of the food you have eaten. A good diet in early life is necessary for proper growth and development of the body. After adulthood, a proper diet is necessary for continued good health

Nutritious food is necessary for all age groups. A student who is undernourished cannot do his work skillfully. A poor diet can cause fatigue and decrease your energy. An improper diet can also cause many parts of your body to function poorly. Bones grow crooked and hair and skin become unhealthy as a result of a poor diet. Food is such an important part of keeping healthy that it has been said "We are what we eat."

Foods for Your Health

It is not only important to eat enough food, but you must also eat the right kind. Some foods give you energy to work and play. Others build strong muscles and help you

to grow. Still others keep your skin healthy, build strong bones and teeth, and produce red blood cells.

Foods for Growth

One group of foods called protein foods is particularly useful for body growth. Protein foods also supply the materials that keep your body in good repair. The tiny units of body structure or cells are continually wearing out.

The material for repair comes from the food you eat. Protein foods also supply your body with a certain amount of energy and are important in building resistance against diseases. Antibodies, the small disease-fighting bodies found in the bloodstream, are largely derived from proteins. Some of the foods rich in protein are meat, fish, eggs, milk, butter, cheeses, and other milk products, peas, nuts, beans and many others.

Foods for Energy

Carbohydrates and fats are the greatest source of energy. Fats are a more concentrated form of energy than are carbohydrates and can be stored in your body. Fat people have too much stored fat. Butter, fat from sheep's tail, and oil are common fat foods with which you are familiar. Carbohydrates are those foods that contain sugar and starch. Good examples of carbohydrate foods are sugar, candy, rice, and potatoes. All of these foods contain large quantities of starch and sugar. Principal sources of carbohydrates in Afghanistan are grains such as rice, wheat, oats, corn, rye, and barley. In addition most of the sugar, which is a carbohydrate, comes from sugar cane and sugar beets.

Carbohydrates and fats are also fuel foods. They supply most of the heat and energy for your body. They help to keep the temperature of your body approximately the same at all times. Regardless of how hot or cold the weather becomes, your body temperature remains at approximately 37 degrees centigrade. Although other foods supply some energy to your body, carbohydrates and fats supply the greatest quantity. Foods and drinks containing large amounts of sugar satisfy your hunger. However, by eating or drinking them between meals they often spoil your appetite for the foods that you need. Therefore, you should make it a habit to eat sweets only after you have eaten foods necessary for good health. Since carbohydrates and fats supply your body with heat and energy, the amounts

of these foods required by your body depends on the weather and the amount of energy you are using. If the weather is warm, and you are in the classroom studying, your body requires less fats and carbohydrates. On the other hand, if you were playing football or running, you would need great quantities of carbohydrates.

Vitamins and Minerals

Foods containing vitamins and minerals are also very important to good health. Minerals, as you know, are chemicals or compounds such as iron, zinc, copper, and iodine that are usually taken from the earth or water. Foods contain various minerals that are necessary for proper growth and continued good health. Calcium and phosphorus, for instance, are two minerals that help to build strong bones and good teeth. Milk is an excellent source of calcium. Fish, animal meat peas, beans, milk, and eggs contain large quantities of phosphorus. Other minerals important to good health are iodine, iron, sodium, potassium, chlorine, zinc, copper and several others. Most students never dream that iron is important to their diet. Yet, when a person does not get enough iron in his food, he may get a blood disease known as anemia. Anemia is a disease that occurs when the body does not produce enough red blood cells. Another familiar mineral, iodine, prevents you from having a disease known as goiter. Goiter is an enlargement of a gland in the neck. Most persons get a sufficient amount of iodine from salt or water. However, in certain parts of Afghanistan there is not enough iodine in the water and salt. So many people have goiter in these areas. Look at the illustration of a person with goiter. Have you ever seen anyone with goiter?

You have probably heard of vitamins. Do you know that vitamins are very important for body growth and proper body function? Vitamins are substances in foods, in very small quantities, that are required by the body to prevent certain diseases.

Each of the known vitamins has a certain function and keeps your body healthy. Here are some of the things vitamins do for you.

Vitamin A

This vitamin keeps your skin, eyes, and teeth healthy. It also helps you to grow, and protects the lining of your mouth and throat from certain diseases. Eggs, liver, butter, cheese, yellow and green vegetables are good sources of vitamin A. What yellow vegetables do you eat?

Vitamin B

Vitamin B is not one vitamin, but actually several similar vitamins. The different B vitamins are numbered such as vitamin B, vitamin B_1, B_2, etc. Each of these vitamins has a special job to do. They help to keep your nerves and blood healthy, protect your eyes from disease, help you to maintain a good appetite and regular bowel habits, and many other things. Meats, grains, and dairy products are rich in important B vitamins.

Vitamin C

The citrus fruits such as limes, lemons, oranges, grapefruits, and tangerines are rich in vitamin C. Tomatoes are also a good source of this vitamin. Vitamin C helps to keep your teeth and gums healthy and prevents a historic disease, common among sailors many years ago, known as scurvy. This disease was common among sailors because they could not get fresh fruits or vegetables for long periods of time. Sailors from England were called "limies" an English word for lemu, because they ate limes to prevent scurvy.

Vitamin D

This vitamin is commonly known as the sunshine vitamin because your body manufactures this vitamin when the sun shines on the skin. Fish liver oils are also important sources of this vitamin. Rickets, a disease of the bones, occurs when the body does not get enough vitamin D. Babies and small children often get bowed legs when they are lacking in this vitamin. Therefore, it is especially important for babies and young children to get plenty of sunshine so that their bones will grow straight and strong.

Other Vitamins

There are also other known vitamins that affect your health in various ways. These vitamins are usually adequately provided when other vitamins such as A, B, C, and D, are obtained in sufficient amounts.

For strong muscles, bright eyes, and good teeth, you must eat the right kinds of food every day. You must also eat every meal. In order to do well in school, you should have a good breakfast or lunch before leaving home. The cost of foods does not have any relationship to the nutritional value. Inexpensive foods can be just as important to health as the expensive ones. Unwise expenditures on costly foods may result in a poor diet. Improper selection of food over a long period of time may be permanently damaging to health.

One of the best ways to be sure of getting the right foods is to eat a variety of things. Make a simple chart like the one shown on the next page and keep it up-to-date for at least one week. Then check it to see if you are eating the proper foods. Check your chart against the recommended foods for good health made in this chapter. You can also compare it with the charts kept by some of your fellow students.

	MORNING MEAL FOODS	NOON MEAL FOODS	EVENING MEAL FOODS
SAT.			
SUN.			
MON.			
TUES.			
WEDS.			
THURS.			
FRI.			

Questions

1. Name as many growth foods as you can.
2. What foods might a football player eat to help him to become a better player.
3. During very cold weather, what are the best foods to eat?
4. Can you name some common local foods that contain vitamin A? Vitamin B? Vitamin C?

5. Suggest to the teacher that the class take a trip to one of the local markets so that you can make a list of available foods.

6. Ask your teacher to help you make a food chart from pictures from magazines or drawings. Arrange the foods on the chart according to their grouping, such as protein foods, carbohydrate foods, fatty foods, vitamins, minerals, etc.

What is the meaning of the following words?

1. protein	6. calcium	11. scurvy
2. nutrition	7. iodine	12. sodium
3. carbohydrates	8. phosphorus	13. chlorine
4. vitamins	9. citrus fruits	14. zinc
5. minerals	10. rickets	15. copper

TEACHER'S GUIDE FOR FOODS FOR GOOD HEALTH

Food, like water is necessary for life. In order to choose the right foods to eat, one must have knowledge about the composition and function of the foods. The body is made up of carbohydrates, fats, proteins, minerals, vitamins and water, all of which are constantly being used. In order for the body to keep proper balance, it is necessary to replace the foods we eat and drink. The three primary functions of foods are: (1) to supply the body with fuel for energy; (2) to provide the materials for building and repairing body tissues; and (3) to furnish the substances by which the body functions and processes are regulated.

The students learned about digestion in Chapter III. In this chapter they will study about the foods they need to eat in order to become strong and to stay in good health.

This chapter gives illustrations of the three kinds of foods, carbohydrates, fats, and proteins, and discusses how they are utilized by the body. It also lists some of the minerals needed by the body and mentions some foods where they are found.

The student will study a few of the more important vitamins and should learn the sources of these vitamins.

At the end of the chapter a diagram shows the student how to keep a simple daily food chart to check on his eating habits.

I. Objectives

1. To help the students to understand the relationship between a proper diet and good health.
2. To help the students to understand the three groups of foods: proteins, fats, and carbohydrates.
3. To help the students to understand the primary function of the three groups of foods.
4. To help the students to understand the primary sources of the three groups of foods in Afghanistan.
5. To help the students to understand the purpose and source of certain common minerals required by the body.
6. To help the students to understand the source and function of some of the common vitamins.
7. To help the students to understand that certain diseases such as goiter, anemia, and other diseases are a result of improper diet.
8. To help the students to think about and consider the adequacy of their own diet.
9. To give students enough information about foods and their function so that they will want to improve their own diet.

II. Anticipated Outcomes

1. That the students will talk intelligently about foods and nutrition.
2. That the students will know that good health depends on the types of food he eats.
3. That the student will attempt to eat the necessary foods for good health.
4. That the student will desire to eat foods that will help him to grow.
5. That students will understand that foods are grouped according to protein, carbohydrate, and fat foods.

6. That students will desire to eat foods from each of the food groups regularly.

7. That the student will want to eat foods containing the common vitamins and minerals necessary for good health.

8. That the students will understand something about diseases caused by improper diets and will want to eat foods to prevent these diseases.

9. That the students will attempt to choose local foods containing some of the necessary vitamins and minerals.

10. That the student will know that one good source of vitamin D is sunshine and will want to get an adequate amount.

11. That the student will want to eat a balanced diet.

III. Suggested Class Procedure

1. Read and reread the chapter carefully.

2. Underline new words that you believe the students will not know.

3. Study the teacher's guide and supplementary teacher information on nutriti

4. Write all new words on the blackboard, and pronounce and define them before assigning part of the chapter for reading.

5. Have students to record all new words in their word notebook and to write a sentence using each of the new words.

6. Assign part of the chapter for silent reading. Do not assign too much.

7. Ask certain students to read part of the chapter aloud. Discuss the chapter as the students read.

8. Ask students questions as the chapter is read aloud and discuss the main points thoroughly.

9. Ask students to list various types of growth foods. Emphasize growth foods that can be obtained locally.

10. Have a discussion of the available local carbohydrate foods.

11. Ask students to list the local foods that contain large quantities of fats.

12. Ask students to discuss their eating habits and patterns. Is this indicated by the body structure of some of the students? For example are some of the students fatter who eat large quantities of carbohydrates and fats? Also do some students hav large bone structures who eat large quantities of proteins? Heredity, as well as eating habits, pla an important role in body or bone structure.

13. Ask the students if they have seen anyone with goi Ask them to describe the person's appearance. Was their description similar to the illustration of t man with goiter in the book?

14. Ask the students to list foods containing some of the minerals such as calcium and phosphorus.

15. Ask the students to list important local sources of vitamins A, B, and C.

16. Ask students how they can get vitamin D. The sun is always an available source in Afghanistan.

17. Ask the students to keep a weekly chart of what foods they eat for one week. Tell them to include what they eat between regular meals. Ask the students to make a comparison between their charts. Some students may want to keep a chart over a longer period of time.

18. Ask the students how many of their families have gardens. Discuss the types of foods that can be grown in local gardens. Can you help the students to find some of the food values of some of the local foods? Ask how many of the students are interested in planting a small garden near their home or helping their family to plant a garden. The students should be encouraged to plant gardens at home or to help their parents plant a garden since gardens are such a good source of inexpensive healthful foods. You might also encourage the students to plant fruit trees.

19. Review the chapter after it is completed. Ask students if there are any parts not understood thoroughly. Stimulate class discussion by asking questions.

20. Review all new words again. Again ask students to pronounce, define and use them in sentences.

21. Give test that emphasizes the objectives of the chapter.

22. Review test results with students and be sure that they understand the correct answer to each question.

RELATED LEARNINGS FROM OTHER SUBJECT AREAS

The following examples of related learnings from practical works, language arts, science, and religion are presented in order to illustrate briefly some of the ways in which the teaching of food safety and nutrition in health education is reinforced by teachings in other subject areas.

Practical Works

One of the major units in the practical works program is Diet and Nutrition. In the fourth grade, where the program is first introduced, pupils learn about the need for cleanliness and sanitary practices in the place where food is served, in the use of cooking and eating utensils, and in the manner in which food is eaten. For example, the teachers' guide notes that, "Much of what we are able to do depends on having good health, and it is therefore important to observe health principles and eat clean and nourishing food... If the kitchen is not a clean and healthy place, and the dishes are not washed properly, the members of the family may become sick. . . We can say that no matter how nutritious the food may be, if it is prepared and served in an unclean pot it is not healthy. . . Pupils should be encouraged to describe their daily experiences in preparing food at home and to suggest ways in which they can help improve sanitary conditions. . . Healthy conditions in the kitchen include provision for good ventilation and light, clean water, and the personal neatness of those who work there. The kitchen should be situated away from the bathroom or latrine, in order to keep insects at a distance. . . If wooden dishes are used they should be lacquered if possible; otherwise they will absorb water and will not be healthy to use. Also, when wooden dishes are washed, one must be especially careful to wash them with very hot water so that all the dirt will be removed. . . The place or room in which food is eaten

should be clean and neat and have enough light. Most people, especially in the villages, eat their food on a piece of cloth. Using a piece of cloth is all right if it is clean. The advantages of serving food on a table should be discussed. In addition to being more comfortable, a table is off the ground and not so likely to be dirty since people do not walk on it. . . Dishes ought to be washed and cleaned in accordance with the economic circumstances of the family. For example, some of the families may be able to wash their dishes with soap powder and boiling water, while others may not be able to afford soap powder: they should not forget that sunshine and hot water can help clean the dishes and kill the germs. . . In addition to the ways of washing the dishes that have been mentioned, there are other simple methods. For example, washing and cleaning the dishes with water and ashes, with water water and sand, with water and burnt powdered brick, with a water solution made with small pieces of soap.

"To wash the dishes with water and ashes, put some ashes from the tripod burner in a dish and scrub it with a rag. Sometimes there are small pieces of charcoal in the ashes that may scratch the dishes if they rub against the surface directly In order to prevent this, put the ashes in a small cloth and use it for washing the dishes. This method can also be used if the powder of burnt brick or sand is used. Dishes should not be washed with mud and dust because there are dirt and germs of various kinds in these materials. Ashes are particularly suitable because they come from burning wood and charcoal, and fire kills every type of germ. As we noted before, dishes can also be washed with a solution of boiled water and soap pieces. Small pieces of soap which are left over from the bars used for washing clothes and hands can be saved, and when boiled in water the result is a concentrated solution that can be stored in bottles and used as needed for washing dishes.

"Some pots, especially those in which water is boiled, accumulate mineral deposits and as a result become very heavy. These mineral deposits get to be very firm and difficult to remove. At times they cause the spouts of teapots and tea kettles to become blocked. To remove these deposits a teaspoonful of vinegar should be added to the pot with boiling water.

"Dishes used by people with contagious diseases should be washed in a separate pot and wherever possible boiled in water to help kill the germs. If dishes used by sick people are washed along with the dishes used by the healthy members of the family, the healthy members may become sick.

"Dishes that are glued should not be used for eating, because dirt accumulates in the cracks and this may cause people who use them to get sick. Dishes made out of copper and tin should not be allowed to rust or they can poison the food.

"It should be made clear to the students that regardless of how nutritious and tasty the food may be, if it is eaten from an unclean dish it is more harmful than beneficial to the body. The dishes must also be put in a clean and protected place after they are used and washed. If there is no cupboard available, they can be kept in a box or basket with a lit or a trunk made of tin or wood."

In the fifth grade, the emphasis is on recognizing nutritious foods and helping in the preparation of meals. Part of the unit outline is as follows:

SCOPE: Helping with simple meals

DESIRED OUTCOMES:

1. Ability to identify and select nutritious foods
2. Development of skills in simple cooking
3. Increased knowledge of planning and serving meals

Topic	Examples of Teaching Practices
1. Foods and nutrition in relation to health	Preparation of charts showing different nutritious foods
a. Contribution of good food to healt	a. Discussion of charts, with emphasis on showing why different kinds of foods are important to good health
b. The "basic four" and their importance	b. Explanation of the "basic four", making clear their contribution to building strong and healthy bodies
(1) Dair products	(1) Discussion of different kinds of dairy products: milk, yogurt, butter, buttermilk, cheese, curds (chekah and qurute)

Topic	Examples of Teaching Practices
(2) Fruits and vegetables	(2) Study of sources and seasons of common fruits and vegetables (fresh and dried) in the market. Pupils can bring some fruits and vegetables to class, and prepare drawings for display.
(3) High-protein foods	(3) Discussion of foods high in protein (meats, eggs; make clear that dairy products, nuts, and such vegetables as legumes are also high in protein). Pupils prepare illustrative materials.
(4) Cereals	(4) Pupils name different kinds of cereals (rice, wheat, corn, etc.), and suggest ways in which they may be prepared and served in their homes. Pupils bring samples to class.
c. The place of local foods in a balanced diet	c. Discussion of the need for a varied diet, including foods from each of the "basic four", in order to have good health. Pupils and teacher bring to class or suggest sample daily menus which include the "basic four"

Topic	Examples of Teaching Practices
2. Simple cooking	2. Using small portable stove brought to class by teacher (refer to grade 4 unit on appropriate stoves common to Afghanistan, and review safety practices in use of stove--lighting, controlling heat, extinguishing fire, keeping clean, etc.), or a simple outdoor oven constructed by class with bricks (xest poxtae or xeste xam), stones, or other available materials, class prepares a sample meal. Steps to be followed: a. Selection of menu b. Collection of ingredients (Pupils and teacher may bring some to class; other ingredients may come from school garden grown as class project in unit on Agriculture.) c. Preparation of utensils and supplies (e.g., fuel) needed d. Cooking of meal, observing safety practices described in unit for grade 4. Remember: demonstration should take place outside school building. e. Serving of meal, observing hygienic and safety practices described in unit for grade 4 f. Cleaning up after meal

In the sixth grade, the major topics are: Improving family health through proper nutrition, preparing and using recipes, and food care and storage (e.g., storing in cold places; use of such food protectors as covers and tins; drying such foods as apricots, tomatoes, leeks, okra, eggplants; salting meats; conserving dairy products in the form of yogurt, cheese, curds). A variety of teaching practices and practical applications is suggested.

Language Arts

In language arts, various stories bearing on food safety and nutrition are included. The teachers' guides contain suggestions on bringing out the major implications of these stories through class discussions and other activities. The following four brief stories are illustrative of the kind of content pertinent to, and helping to reinforce, the health program teachings about food safety and nutrition.

Story 1: The Spoiled Food (from the Pashtu second-grade reader)

During one of the hot days of summer Emal's mother had made some soup. Emal was tired when he got back from playing. He said, "Mother, I am very hungry. Have you cooked anything?"

His mother said, "There is some leftover soup from last night. Go and get a bowl and put the soup in it for yourself."

Emal said, "I am not able to manage it. You put it in the bowl for me, please."

Mother said, "All right. You sit down here. I will get you some soup."

When she went to the saucepan of soup, she noticed that the lid had been taken off of it. She said to herself, "What a lot of flies have fallen into the saucepan!"

Emal's father appeared at the gate of the yard and called, "Emal's mother, what are you doing?"

Emal's mother turned to him and said, "Emal just came in from playing. He is hungry and I am getting him some cold left-over soup."

Emal's father came into the house from the yard and said, "What a lot of flies have fallen into the saucepan!"

Emal's mother said, "It does not matter. I will take the flies out of it."

Emal's father said, "It would have been better if the flies hadn't fallen in it."

At this time, Emal called his mother and said, "Please bring me some soup quickly. I am hungry."

His mother said, "I am coming right now with the bowl of soup."

Emal ate his noon meal hurriedly and went out.

When he got back from playing at dusk, he said to his mother, "I've got a stomach ache and I feel as if I'm going to faint."

His mother said, "I hope not. What is wrong with you? Are you sick?"

Emal said, "I don't know. I feel cold. I went outside and vomited several times and I have a bad stomach ache."

Emal's mother asked. "Has something put you off?"

Emal answered, "I don't know. When I ate the soup and went out, I gradually felt pain in my stomach. Probably the left-over soup made me sick."

It was evening when Emal's father got back to the house. He saw that Emal was lying in bed. We went to him and said, "Why are you lying on the bed? Are you sick?"

Emal said, "I am very sick. I feel cold. I have vomited several times and have felt a lot of pain in my intestines since dusk."

Emal's father said, "Since it is very late now, take a rest. I will take you to the doctor tomorrow."

The next day Emal's father took him to the doctor. The doctor asked him, "What is your trouble? Show me your tongue."

The doctor checked Emal's tongue and asked him again, "What is the matter with you?"

Emal answered, "Doctor, sir, I ate some leftover cold soup at noon yesterday. I have a fever now and I also feel cold. I've vomited several times. I have a bad pain in my intestines.

The physician said, "I am making a prescription for you now. Take your medicine and rest."

Then the doctor turned to Emal's father and said, "The weather is hot in summer and there are many flies, so we should cover our food and fruit from flies because they do a lot of harm."

Emal's father asked, "Sir, what kind of harm do flies do?"

The doctor answered, "Flies do a lot of harm. Flies sit on dirty things. After sitting on dirty things, they sit on our food and fruit. They make them dirty too. If we eat that food or fruit, we will become sick. So we should protect ourselves and cover the things we eat from flies."

(Stories 2-4 are from the Pashtu fourth-grade reader.)

Story 2: Good Meat

For a long time Achek was abroad. He was _____ _____. When he finished, he returned home and his friends went to see him. Mirwais was his father's name. Achek was very happy that his friends came. All his friends congratulated him because of his success and his return home. Every day people of the village came to say hellow to Achek.

One day Mirwais prepared a party for the friends. The party was very good. When lunch was finished, Zerghoon, who was the leader of the village, asked Achek, "Oh, Achek, what did you learn during the long time you were abroad?"

Achek said, "Your question is very interesting, Zerghoon. I studied about animals. I learned a lot about animal health and sicknesses, how to select the best kinds of animals, and how to increase their numbers scientifically."

Zerghoon said, "Achek, as you know, we have a lot of animals in our country. Do we have a school that can give us such knowledge about animals?"

Achek answered, "Yes, we have a school where we train doctors of animals. Tese are called schools of veterinary medicine. A person who graduates from such a school is known as a veterinary surgeon."

When Zerghoon herad this, he turned to Mirwais and said to him happily, "Oh, Mirwais, now I understand that Achek is a veterinary surgeon. It is good that we have an animal doctor among us. Mirwais, it is clear to you that our lives are based on animal husbandry. If there were no animals, where would we obtain milk, cream, butter, yogurt, cooking oil, meat, wool and leather? What do you think, Doctor? Is this not so?"

Achek said, "Zerghoon Khan, that is true. We need animal doctors for our country. If we think about it, the health of human beings is related to the production of animals. Meat is very important for a long life."

Zerghoon said, "You are right, but I wish that the butchers would kill the healthy and fat animals. They are not killing that kind of animal. They are trying to find the cheaper way. They don't care what condition they are in. When they find the animals, they kill them."

Achek said, "Indeed in this matter of life and death they are a little careless. Butchers hang meat in front of their shops. First of all, it is not good to look at. Second, the dust settles on the meat. In addition to that, during the summer-time the sun and flies are harmful to meat. The meat spoils and smells bad. So it would be better if the butchers put the meat inside the shops and kept it on screened shevles, so the air could get to it but not flies."

Zerghoon said, "Your information is very useful. Indeed, it is not difficult to keep the meat on shelves, but it requires a bit of knowledge. Last week I was buying meat from the butcher. There I saw a lung that was hanging in front of the shop. There were hundreds and hundreds of bees and flies on it. When I asked the reason for it, the butcher said, "For this reason I put the lung out for them, so that they won't spoil the other meat. If I don't do this, they eat the other meat, they disturb me and I cannot do my work well."

When the mean heard Zerghoon's story, they laughed loudly. Achek laughed so hard he cried.

When he cleared his eyes and stopped laughing, he said, "In other places the butchers are not killing the animals themselves. They are having the animals killed at a place known as a slaughterhouse. There they slaughter the animals in a clean and healthy way. Before they kill the animals, a veterinary doctor examines them. They never kill the sick and thin animals. And the other important point is this: in a slaughterhouse the rooms are very cold. Meat can be kept in these cold rooms for a long time without spoiling."

When Achek finished talking, Zerghoon looked at his watch and found that it was late. He was happy that Achek had given him such useful information. He invited Achek to his home. Mirwais and Achek both accepted Zerghoon's invitation. Then Zerghoon and his friends went home.

Science

Science education is concerned with food safety and nutrition primarily through units on human beings, animals and plants. It deals with sources of food (animals and plants) as well as disease (insects), and shows how food is broken down and utilized by the body. The following excerpts are from the sixth-grade materials.

(The animal world) "Have you ever though what the world would be like without animals? There would be no birds to fly in the sky, your favorite dog or cat would not be around, there would be no chickens to eat, and the farm animals would not be available to do their work. In fact, you would not be here either. The earth would be void of life just like the moon, which has no living thing, neither plant nor anim[illegible]

"You have already learned that animals are everywhere on the earth. There are fish in the river, animals in the desert and on the mountains, and even animals in the air, in the soil, and on our bodies that you cannot see called microbes. Of course, the animals with which you are most familiar are those that are used for work and for food. . . What animals provide you with food? Camels, goats, sheep, cows, chickens, ducks, and other animals provide food for people in your country. Animal products, or foods that come from animals, are very rich in nourishment necessary for good health and body growth. . . ."

(Insect pests) "Flies and mosquitoes are insects which can transmit many kinds of sicknesses. Flies feed and breed in filth and garbage and transfer germs to food and, thus, to humans. Some mosquitoes carry diseases such as malaria.

"In controlling insect pests, it is useful to know about the stages of development of these pests and where they breed and feed. It may be easier to kill the larvae or pupae [explained earlier] than the adult. For example, to control mosquitoes, fish may be introduced into still waters where mosquitoes breed. The fish will eat up the larvae. Another way is to spray oil on the water. The oil will form a layer on the surface of the water, preventing the pupae from obtaining oxygen. . . ."

(Systems of the human body: background information in teachers' guide) "Man's body is a very complex thing. In order to be healthy, the human body must have many vital functions operating like digestion, blood circulation, excretion, moving, nervous control, and thinking. Each of these important functions is accomplished by a combination of different parts of the body.

called organs working together. For example, the teeth, tongue, esophagus, stomach, small intestines, and large intestines all help in the digestion of food.

"The organs that work together to accomplish a body function form a system, like the digestive system, the respiratory system, etc. The individual organs are made up of tissues, and tissues are made up of groups of the building blocks of the body called cells. Cells are microscopic units that build up the body. Different tissues have different kinds of cells.

"The body, therefore, can be broken down according to different body functions into systems, and systems into organs, and organs into tissues, and tissues into cells.

"There are many important systems in the human body that enable it to function properly. The skeletal system, made up of the bones of the body, gives strength and structure to the body. The muscular system enables man to move. The digestive system helps convert the food to usable products. The circulatory system carries food and wastes in the blood to the different parts of the body. The respiratory system is responsible for taking in oxygen, which the body needs, and eliminating carbon dioxide from the body. The excretory system gets rid of the liquid wastes of the body. The nervous system allows us to use the five senses and to learn and think. The endocrine system controls many of the body functions.

"The skeletal and muscular systems have been studied in other grades. In this chapter, the digestive, respiratory, circulatory excretory, and nervous systems will be studied."

Religion

In religious studies, a major concept related to food safety in the context of good health is cleanliness. The association between cleanliness and godliness is established early in the school program. As the introduction to the teachers' guide for grades 1-3 states, "The instructor of religion should be observant of the students' health, cleanliness and neatness and make them understand that neatness and cleanliness as well as health and soundness of the body are things emphasized by religion."

The following excerpts from the guide are illustrative.

"Dear students, I would like to tell you a story about Mahmood concerning neatness and cleanliness. Mahmood is a

good boy who wakes up early in the morning and washes his hands and face with clean water. He washes his hands with clean water before every meal. He tries not to let pieces of food fall on his clothes at meal time, and he keeps a clean handkerchief in his pocket for cleaning his nose. Whenever he takes off his school clothes, he puts them in a place where the rest of his clothes are kept. He washes his hands, face, and feet before going to bed. God likes Mahmood because he is a neat student. Mahmood is always cheerful because he is neat and never gets sick because he is clean. He is healthier than all of the other students because he keeps himself clean."

"Dear students, I have told you the story of Mahmood's cleanliness. Today I am going to tell you another story. Listen carefully so that you can understand it.

"Farid is a lazy boy. He does not wash his hands, mouth, and face well. He eats with his hands and face unwashed. Pieces of food fall on his clothes because he is not careful. He wears dirty and greasy clothes. When he comes home from school he takes his clothes off and throws them anywhere he wants. When he goes to bed without washing his feet, he gets under the quilt and sleeps. Since his clothes as well as body are dirty, his bed also gets dirty. The teachers do not like Farid because he is not clean and neat. The students do not like Farid and do not sit next to him because he is an unclean boy. His body gives off a smell and they do not like the smell. Flies sit on Farid's face because he is not clean and neat. Farid's fingernails are long and black because dirt has accumulated under them. Farid gets sick a lot, for he is not neat and clean.

"The teacher advises Farid, saying, "Farid, you are a Muslim. Keep yourself neat and clean, and others will like you. Our Holy Prophet Mohammad says, 'Cleanliness is part of the faith in God.'"

(Teaching ablution) "Without wazoo (ablution) one should not pray. Performing ablution is taught to the students in connection with the value of cleanliness. In other words, the students should learn that every time we perform ablution for the purposes of prayer as well as for the purpose of keeping our bodies clean."

(The steps in performing ablution are described and demonstrated to the pupils.) "Dear students, we are all Muslims and follow the commandments of God. Taking ablution, in addition to being a command of God, has many advantages. Our religion considers neatness and cleanliness part of the faith, and since we take ablution at the time of prayer, our bodies should always be clean."

"We eat with our hands. We write and work with our hands. We cook and clean house with our hands. Our hands get dirtier than any other part of our body, so in taking ablution we wash our hands first. Then we wash our mouths, since as we eat pieces of meat and other kinds of food are left in our mouths and between our teeth. We also brush our teeth with miswak [a piece of relatively soft wood that Mohammad is said to have used because there was no suitable brush in his time; it is believed to harden the gums, and using it is one of the required acts called 'sunnat' because it is identified with Mohammad] so that our teeth do not give off a bad smell and bother other people. Next we clean the nose, since dust and dirt get into it, and if we do not wash it, it will become so dirty we will not be able to breathe well.

"Then we wash the face. A lot of dirt and dust gets on the face and covers our eyelids and the corners of our eyes. If we do not wash the face it will become very dirty and the eyes will be sick. We should also keep the head clean. The head perspires and dirt and dust accumulate in the hair. Dust and dirt also get into our ears, so we should keep them clean. Finally, we should clean our feet. If we walk around barefoot, our feet will become very dirty, and if we wear shoes our feet will perspire and smell bad. So it is very necessary to keep our feet clean."

"I am going to tell you a story concerning neatness. Listen carefully.

"A woman took milk to the bazaar for sale in a clean pot every day. Since her milk was good and the pot was clean, people would buy her milk.

"One day the woman forgot to wash the pot, and when she took the milk to the bazaar, a man came and bought some milk from her. But after a few minutes he came back and told the woman, 'Your milk is unclean. Take it back and give me my money back.' The woman took the milk back and returned the money. Another person came to buy some milk, but when he saw that the milk was unclean he did not buy it but bought milk from another place. The woman was surprised that the people who bought milk from her before were now calling her milk unclean and would not buy from her.

"Then she saw that the pot was dirty and had made the milk dirty, and she remembered that that day she had forgotten to wash the pot.

"Sad and grieved, she went back home because her milk had not been sold, and she had not been able to buy anything for her child.

"God and Mohammad have commanded us to be neat and clean. We should be neat and clean in our own persons as well as in what we have at home or take out for sale."

Language Arts

The new materials are very different from the old materials. In preparing the new materials the changes which have been taking place in society and educational theory as well as expected changes in the future were considered.

As a result the Language Arts Section of the Compilation and Translation Department with the help of Afghan and foreign specialist prepared materials which fulfill the needs of both present and the future of our country.

COMPARISON OF OLD MATERIALS AND NEW MATERIALS-ONE STORY, BOOK III

Old Materials	New Materials
Contains nine lines	Contains 84 lines
on one-half page of one book for one week no teacher guide no skill book	on 6 pages of reading text, plus additional language arts activities in skill book, plus a detailed teachers' guide for one week
50% of the words are new and not repeated.	Words are introduced in a controlled way and reinforced by repetition.
20 new words/page, Dari 2 11.5 new words/page, Pashto 2	2.8 new words/page, Dari 2 3.3 new words/page, Pashto 2
There is no established sequence of skills for language arts.	There is an established sequence of skills for language arts.
Reading is for memorization.	Reading is for understanding and use in problem solving.
Reading is simply calling words.	Reading is understanding words and has a purpose.
Teachers read text to children initially.	Children read text independently
There is little direction for development of creative composition.	There is a planned series of activities to develop creative composition based upon children's experiences.

Old Materials	New Materials
There is no planned activity for creative expression.	There are planned activities to encourage creative expression.

Old Method

1. There was one or just a few people taking part.
2. There was no experimenting done on the language arts materials before publishing.
3. Handwriting was only in Nastaliq.
4. There wasn't any teacher's guide.
5. Generally the students were just memorizing the text, like parrots.
6. There wasn't unity and consistency in lessons.
7. There was no control of new words, phrases and sentences.
8. There was no attention paid to motivating the students for reading and studying.
9. Books weren't written according to the life, time and the needs of the country.
10. Every lesson just had one activity for reading or writing.
11. There was only emphasis on reading or writing skills.
12. There were no ideas about evaluation or testing.
13. Most of the work was done by the teacher not the students.
14. Most of the period was spent on just one activity like reading or writing.

New Method

1. Now the textbooks are written [illegible] specialists with the advice of foreign specialists.
2. Before printing the textbooks are field tested in experimental schools for a least one year.
3. The style of handwriting at the beginning is Naskh, but it gradually changes to Nastaliq, for the different reasons.
4. The new books have teacher's guides that the teachers easily can teach from.
5. Reading is for understanding and using.
6. There is unity and a relationship in the subjects of the lessons.
7. The new words, phrases, and sentences are controlled; these are basic elements in writing a lesson.
8. There is encouragement to motivate the students creative skills.
9. There is a lot of effort made to ensure all the lessons should be according to the needs of present and future life, time and necessitieis.

10. In every lesson there are several activities.
11. All the language skills are taken under consideration (listening, speaking, reading, and writing).
12. After every unit or chapter there is a review or evaluation form to show how much the students have learned and where their difficulties are.
13. Most of the chances are given to the student to take part in learning and studying. The teacher just guides them or gives instruction to the students.
14. For every language skill a certain time is given and according to the given schedule the students are doing different activities.
15. The new materials capture the interest of the child, leading to greater ability.
16. The new materials are built according to the nature of children and the nature of learning. Children also like to discover "on their own" the solutions to the problems. They are encouraged by their teacher to "use their heads" and to discover for themselves; the new materials are built so that teachers do not do the discovering; the children do it.
17. Major emphasis throughout the whole new material is on meaning getting meaning from the page and lesson. Teachers are urged to ask more "why" and "how" questions than the easy kind that are answered by a "yes" or a "no".

THE STORY OF A DROP OF WATER - OLD BOOK
Page 47 - Grade 3 - Dari
By Asef Mail

A drop of rain water got in the ground. It found that place very dark and tight and wanted to go down further to become released from that narrow and dark place. While it was going, it gathered with other drops and moved with them. Gradually their society got enlarged and said to themselves: "Will we stay in this dark place forever? We should find a way to get out from this place in order to see the light of the sun." They tried hard and they made a hole in the ground and got out. They saw the sun and it's light. They said: "How beautiful is the face of ground and how attractive is the light of the sun.

The spring which you are drinking water from, is from these drops. The other drops also were getting out with a lot of interest after them. Because the place was narrow and tight, the drops which were out earlier were going fast and after them the other drops were moving. These drops were passing through forests and made all of the places around green and reached to a far place. On their way various beautiful flowers grew and made the surface of the ground pretty. These small streams which came from long distances gather with other small streams and make the big rivers.

Teaching of the Old Book - One Lesson - Day One

THE STORY OF A DROP OF WATER

1. The teacher asks one or two students about the previous lesson.
2. The teacher talks about the new lesson.
3. If the teacher has the chart of the new lesson, he or she hangs it on the wall or blackboard.
4. The teacher reads from the chart once or twice. Then one or two better students read aloud.
5. Then the teacher reads from the text or the book and some times the students repeat after him or her.
6. When the teacher finished reading from the book, one or two students, sometimes the same students who have read from the chart, read from the book.
7. In some schools good teachers makes flash cards of key or difficult words or important phrases or sentences and brings them and asks two or three students to read them aloud by help of their teacher.
8. In some schools the teacher asks the meaning of the new or key words; if they couldn't understand, the teachers write the meaning of words on the blackboard. The students copy them in their notebooks. Homework: The teacher asks the students to write five or ten times some of the lines from their book and bring it next day.

DAY TWO

1. The teacher checks the students homework and writes the correct form of their mistakes under the words which they haven't written properly.
2. Then asks them to write each mistake five or ten times.
3. Asks one or two pupils to read the lesson aloud; in the meantime asks the meaning of the difficult words.
4. Asks one or two students to go to the blackboard and dictate some lines of the lesson to them.
5. Sometimes the teacher asks the pupils write their mistake at home several times as a homework.

NANGARHAR CANAL - NEW BOOK
Grade 3 - Dari - Part II

When Anwar and Akram were passing Daranta Dam, Akram said: "How high the iron gates of the dam are!"

Anwar said: "How fast the water flows on that side of the dam!"

Akram pointed to the other side of the dam and said: "There seems to be a building under the dam. The water goes under the building. I would like to get more information about this dam."

Anwar said: "Really, this is a very interesting subject."

Akram said: "Many people visit this dam because it is such an interesting and important subject."

Anwar said: "It is possible that students from schools will come here to learn something about the dam."

(2)

At this time, a man came towards them. After greeting him, they found that he was a worker of the dam. Akram asked from him; "That building under the dam, what kind of building it it?"

The worker answered: "This is a factory for electricity. It produces electricity."

Akram asked again: "How is the electricity produced?"

The worker answered: "The water comes down with force. This force turns the wheels of machines and produces the electricity."

Anwar asked: "What are the uses of the electricity?"

The worker answered: "It lights lights. It turns the machines of the factories. It pumps water to streams and to thousands of jereebs of land for farming."

Akram asked: "How is the electricity carried from place to place?"

The worker pointed at some poles and wires and said: "The wires on those poles carry the electricity from one place to another place."

(3)

Anwar asked: "Why do the people cover the wire?"

The worker answered: "Because the electricity is very powerful, if any one touched the bare wire, they would be electrocuted."

Anwar asked again: "What are the other uses of the water of the dam?"

The worker answered: "It is pumped into the canals and then streams, and waters thousands of jereebs of farm land."

Akram asked: "Is this soil, which gets water from the canal very fertile for farming?"

The worker answered: "Yes, this soil is very fertile. But before the dam and canals were built, there was not enough water for this soil. This soil was dry and bare."

(4)

Anwar said: "My father said that fruits and vegetables from Jalalabad go to other cities for selling."

The worker said: "Your father is right. Many people are benefiting in this way."

Akram said to the worker: "Thank you very much for your beneficial information."

Anwar offered some fish to the worker, but the worker didn't want to take any. Anwar insisted and said: "There are many fish, please take some, then our basket will be lighter."

After they insisted, the worker finally took a few fish and Akram and Anwar said good bye and went home.

(5)

When they got home, Akram's father opened the basket, shook his head and said: "You have caught the small fish along with the big fish."

Akram said: "Yes, my father. Why did you shake your head?"

His father said, "You made a mistake. When you caught all the fish, you should have thrown the small ones back into the water."

Anwar said: "Uncle, the small fish are still alive. If we throw them back in the water, will they stay alive?"

Akram's father said: "Yes, if they are alive, throw them in the water and they will remain alive. After a while, they will be large fish."

Akram said: "Dear father, I apologize, we really should not catch small fish."

His father said: "My son, this is a second mistake that you made. You should never catch more than you can eat. You should never do this."

(6)

Akram understood his mistake and apologized for catching too many fish.

Akram asked: "Dear father, do you like fish meat?"

The father said: "Yes, my son. I like fish meat. This fish meat is the sweetest, freshest and healthiest meat that we can eat."

Anwar asked Akram's father: "These fish that we cannot eat, won't they spoil?"

Akram's father answered: "Both of you take what you can use. The remainder, you must give to your neighbors and relatives. If you don't they will spoil."

Akram and Anwar separted the fish that they would use. The remainder they gave to their neighbors and relatives.

Both families enjoyed eating the sweet and healthy fish meat.

(7)

Teacher's Guide
Nangrahar Canal - Story 5
Day 1

A. Introducing and reading the story (30-40 minutes)

New words

Page 28

canal
Nangarhar

Page 20

iron
building
subject
interesting
important
possible

Page 30

urn
force
wheels
wire
farming
carry

Page 31

bare

Page 32

sell
other
insist

Page 33

snake
apologize
mistake
eating

Page 34

relatives
healthiest
meat

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
Introducing the new words and picture reading.	
What do you see in the picture?	(variety of answers) dam, canal, bridge, etc.
Write the words 'canal' on the black board.)	
Name one of the eastern provinces of Afghanistan	Nangarhar, Laghman, Kunar
(write Nangarhar on the blackboard.) (point to the new words on the blackboard, and ask one or two students to read them aloud.)	
Silent Reading	
Uncover the title and ask them to read the title silently.	
Oral Reading	
Ask one or two students to read the title aloud.	
Turn to page 29 and cover the text.	
Introducing the new words and picture reading.	
Where are the two people?	On the top of the iron doors of the door.
(Write the word 'iron' on the blackboard. What else do you see in the picture? building (write word 'building' on the blackboard.)	
In your opinion what kind of story do you think this one will be? (Write the word 'interesting' on the blackboard.)	I think it is an interesting story.

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
(Write the words 'important' and 'possible' on the blackboard and ask one or two students to read them aloud.) Now I will ask you a question and to find the answer you should read page 29 silently. Why should the student from the school come to the dam?	
Silent Reading	
Uncover the page and find the answer. Don't move your lips. Don't make noise. (Help the students who need help.)	(The students read the page silently.)
(Repeat the question.) Why should the students from the schools come to the dam?	to learn something about the dam.
Oral Reading	
(Ask two or three students to read aloud the page.) (Ask the better pupils to read the long paragraph and slow pupils to read the short paragraph.)	Page 29 text
Turn to page 30 and cover the text.	
Introducing the new words and picture reading.	
What is the use of electricity for the farms?	It pumps water to streams and to land for farming.
(Write the words 'pumps' and 'farming' on the blackboard.) How do you think the electricity is produced?	The water comes down with force and turns the wheels of the machine and produces electricity.

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
(Write 'force' and 'wheels' on the blackboard.) How do you think electricity is carried from one place to another place?	The wires carry the electricity from one place to another place.
(Write 'wires' and 'carry' on the blackboard.)	
(Point to the words which are written on the blackboard and ask one or two students to read them aloud.)	
Now I am asking you a question and to find the answer read page 30 silently. When you find the answer, raise your hands. This is the question: What did the worker point at that carries the electricity?	
Silent Reading	
Uncover the page and find the answer.	(The pupils read the page silently.)
Don't make noise. (Help the students who need help.) (Repeat the question.) What did the worker point at that carries the electricity?	He pointed at some poles and wires.
Oral Reading	
(Ask one or two students to read the paragraphs of page 30.) (Better students read long paragraphs and two students read short paragraphs.)	Page 30 text.
Turn to page 31 and cover the text.	
Introducing the new words and picture reading.	
What kind of wire will electrocute a person?	The bare wire will electrocute a person.

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
(Write the word 'bare' on the blackboard.) Look at the picture. What do you think the worker will explain to the two boys?	(variety of answers)
Now I will ask you a question and to find the answer read page 31 silently. When you find the answer, raise your hands. How was the soil before the dam and canals were built?	
Silent Reading	
Uncover the page and read it silently to find the answer.	The pupils read the page silently.
(Walk around the class and help the students who need help.) (Repeat the question.) How was the soil before the dam and canal were built?	It was dry and bare.
Oral Reading	
(Ask two or three students to read the paragraphs of the page.) (Tell the students to read in a natural voice.)	Page 31 text.
Turn to page 32 and cover the text.	
Introducing new words and picture reading.	
What are they doing with the fruits and vegetables which grow in Jalalabad?	Fruits and vegetables from Jalalabad go to other cities for selling.

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
(Write 'sell' and 'other' on the blackboard.) (Write the word 'insist' on the blackboard and ask one or two students to read it aloud.) What are in the worker's hand?	I think, it will be fish.
Now I will ask you a question and to find the answer read page 32 silently. When you find the answer, raise your hands.	
After insisting what did the worker do?	
Silent Reading	
Uncover the page and read it silently to find the answer.	(The students read the page silently.)
(Walk around the class and help the students who need help.)	
(Repeat the question.) After insisting, what did the worker do?	He took a few fish.
Oral Reading	
(Ask two or three students to read the paragraphs of page 32.) (Choose good readers to read the long paragraphs.) (Choose weaker readers to read the short paragraphs.)	Page 32 text.
Now look at page 33.	
Cover the textbook at the picture.	
Introducing new words and picture reading.	

TEACHER'S ACTIVITIES	STUDENT'S ACTIVITIES
(Write 'shake' on the blackboard and ask one student to read aloud.)	
If a person makes a mistake, what will he do?	He will apologize.
(Write 'mistake' and apologize on the blackboard.) (Write 'eating' on the blackboard.) Now I am going to ask you a question to find the answer, read page 33. When you find the answer, raise your hand. The question is: What is Akram's second mistake?	They caught more fish than they needed.
Oral Reading	
(Ask different students to read the whole page aloud.) (Choose good readers to read long paragraphs.) (Choose weaker students to read short paragraphs.)	Page 33 text.
Now look at page 34. Cover the text. Look at the picture.	
Introducing new words and picture reading.	'relatives'
(Write 'relatives' on the blackboard.) What kind of meat is the fish meat?	(variety of answers) possible answer will be sweetest and healthiest meat.
(Write 'healthiest' and 'meat' on the blackboard.) Now I am going to ask you a question. When you find the answer, raise your hand. The question is: What did both families do?	

Silent Reading

Open the page and find the answer.	(The student read the page silently.)
Don't move your lips. Don't make any sounds. (The teacher helps those students who need help.) The teacher repats the question: What did both families do?	They enjoyed eating the sweet and healthy fish meat.

Oral Reading

(Choose good students to read the long paragraphs.) (Choose weak students to read the short paragraphs.)	Page 34 text.

B. Word Study (thinking of word) (15-20 minutes)

1. Write the 10 new words on the blackboard in two columns.

1. building	6. interesting
2. information	7. built
3. really	8. about
4. come down	9. Nangarhar
5. subject	10. iron

2. Number the words from 1 to 10.
3. Choose children to read the words aloud.
4. Choose one of the words, but don't tell the children which one.
5. Children try to guess the word you choose.
6. Encourage children to say, "Is it number 2 information?"
7. Respond by pointing to the word and saying no, it is not number 2 'information'.
8. Choose only those children who quietly raise their hands and do not call out words.
9. When a child guesses the word write his name on the board after that word.
10. Continue this way with all the words.

C. Interpreting the Story (20-30 minutes)
Discussing story ideas

1. Ask, "What are the main ideas in this story?"
(While we are fishing, should we catch all the fish?")
(If you throw the live fish in the water, they will stay alive.)
(We shouldn't catch more fish than we can eat.)
(The fish meat is sweeter and healtheir than other meat.)
(If we eat the fish meat carelessly, it will be dangerous.)

2. Ask children to give examples from their own experiences about each idea.

(What will you do if you catch more than you can eat?)
(Where are the fish homes?)
(Catching fish is better with net or Indian berry?)
(While you are eating fish meat if you aren't careful, what will happen?)

D. Language Skills Book (20-30 minutes) (Pages 57 and 58)
Day Two

A. Rereading the story (20-30 minutes)
Proving the answers

1. (Say to children) I will give you a question for the second page of the story. Read page 2 silently to find the answer to my question. When you find the answer to my question raise your hand.
2. (After children have raised hands, ask one pupil to give the answer. If he gives the correct answer ask him to read the line or lines in the book which proves he is right.
3. Continue with each page this way. For example ask this question about page 29. From which part of the dam does water come down fast?
These are the questions about the pages, and follow the same procedure.
Page 30 - What carries electricity from one place to another place?
Page 31 - Before the building of dam and canal what was planted in the ground?
Page 32 - How many gish did the worker take?
Page 33 - Why did Akram apologize to his father?
Paghe 34 - What kind of meat is fish meat?

B. Words Study (15-20 minutes)
Thinking of a word.

1. Write ten of the new words on the blackboard in two columns.

1. Worker
2. pump
3. wheels
4. turn
5. carry
6. poles
7. wires
8. covered
9. bare
10. canals

2. Number the words from 1 to 10.
3. Choose children to read the words aloud.
4. Choose one of the words, but don't tell children which one.
5. Children try to guess the word you chose.
6. Encourage children to say "Is it number 2 - pump?"
7. Respond by pointing to word and saying no, it is not number 2 'pump'.
8. Choose only those children who quietly raise their hands and do not call out words.
9. When a child guesses the word write his name on the board after the word.
10. Continue this way with all the words.

D. Related Activities (science) (20-30 minutes)
1. What is the cause for becoming night and day? (The earth turns around on its axis.)
2. Let's prove this with experimentation. (Ask two students to come in front of the class. Tell one student, that he is the sun. Ask him to stand face to the center of the class. Tell the other students that he is the earth. Ask him to stand in the center of the class. Tell the student who is called earth to hold a book in front of himself and stand in front of the student who is called sun.
3. Earth! Can you see the sun? (yes)
4. Sun! Can you see the book? (yes) the book is our country Afghanistan.
5. If the sun can see Afghanistan, is it day or night? (day)
6. Earth. Turn slowly until your back comes toward the sun. Sun! Can you see the book? (no).
7. When the sun can't see the earth what time will it be? (night)
8. Earth, turn to the left until you see the sun. Can you see the book now? (yes) What time is it? (day)
9. How many times does the earth turn? (one time)
10. What is the cause of becoming night and day? (turning of the earth)

E. Language Skills (20-30 minutes)
Work on page 58

Day Three
A. Rereading the story (20-30 minutes)
Main idea pictures (Group per page)

1. Divide class into as many groups as there are pages in the story.
2. Assign 1 page of the story to each group.
3. All children silently read the whole story.
4. They then reread their assigned page.
5. They then draw a picture of the most important idea on their page.
6. Have each group show their pictures and tell what their main idea was.
7. Then discuss the better main ideas.
8. Save the pictures for the next day.

B. Word Study (15-20 minutes)
Sentence Completions

1. Write the following words in a column at one side of the blackboard.

Insist 1) My (other) friends and I have interest in studying.
Other 2) I want to listen to the radio, but my mother (insists) to read the magazine.
all 3) Mahmud was asleep when his brother (shook) him.
shake 4) My mother told me to wash (all) the clothes.

2. Choose several children to read these words aloud.
3. Write the first sentence on the blackboard, with a blank space for the missing word.
4. Choose a child to read the uncomplete sentence aloud and to fill in the blank space with the correct word.
5. Choose another child to read the completed sentence aloud
6. Repeat the same procedure with the remaining sentences.

D. Related Activities (science) 20-30 minutes)
Explain the four seasons.

1. When are we wearing warm clothes? (winter)
2. When are we playing outside? (summer)
3. When do the trees make blossoms? (spring)
4. When is the season for harvesting? (fall)
5. When are the tree's leaves falling? (fall)
6. What is the difference between the seasons? (summer is warm, winter is cold, spring and fall are moderate)
7. Name the four seasons? (When the students name them, write them on the blackboard.)

E. Language Skills (20-30 minutes)
(Work on pages 59, 60, 61)

Day Four

A. Rereading the story (20-30 minutes)
Sequencing the pictures (one each page)

1. Children read the first page. Tell to one of the children groups to come in front of the class.

2. The first groups of children bring their pictures from yesterday to the front of the class and hold up each picture for the other children to see.
3. The students who are in their seats look at their picture and talk about the arrangement of the pages.
4. Teacher repeats this procedure with other pictures of every page of the story.

B. Word Study (15-20 minutes)
Using New Words
1. Write 5 of the new words on the blackboard.
   1) more
   2) apologize
   3) mistake
   4) spoil
   5) remain
2. Ask different children to make up a sentence using each new word aloud.
3. After all words have been used, erase the words and write 5 other new words.
4. Repeat same procedure so that the children have used 10 new words during the word study period.

D. Related Activities (20-30 minutes)
Explain the importance of snow.
1. Do we have snow where we live?
2. How many of you have played in the snow?
3. Where there is snow, where do the animals go?
4. Why is the snow important in Afghanistan?
5. Does the snow keep the bushes from the winter cold?

E. Language Skills (20-30 minutes)
(Work on pages 62 and 63)
Day Five
A. Rereading the story (20-30 minutes)
Sequencing Events (on each page)
1. Children silently read first page of story.
2. While they read, write that page's 3 or 4 main idea sentences on the blackboard in a mixed order.
3. Draw a line before each sentence.
4. Ask different children to read the sentences aloud.
5. Choose one child to write a number 1 in front of the sentence that happened first on the page.
6. Choose other children to number the remaining sentences.
7. Use the same procedure for each page of the story.

For Example:
a) If we take the rod with us it will be better. 2
b) Let's go fishing on Friday. 1
c) I will bring a basket with me. 3

B. Word Study (15-20 minutes)
Using New Words

1. Write 5 new words on the blackboard.
   1) Relatives
   2) Building
   3) Canal
   4) Farming
   5) Subject

2. Ask different children to make up a sentence using each new word aloud.
3. After all words have been used, erase the words and write 5 other new words.
4. Repeat same proccdure so that the children have used 10 new words during the word study period.

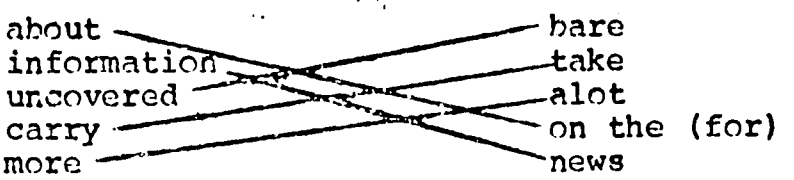
D. Related Activities (20-30 Minutes)
Social Studies
Explain the benefit of dams.
1. In the story what was built under the dam? (electricity factory)
2. How is electricity made? (water comes down with force and turns the wheels of machines which produce electricity)
3. Name three things electricity does for people. (lights, turns machines of factories, pumps water)
4. How is the water which is pumped from the dam used? (to water fields that were dry before)
5. Have any of you seen a dam? (Ask children to describe the dam they saw.)
6. Do we receive any benefits from a dam in our community?

E. Language Skills (20-30 minutes)
Work on page 64

Day Six

A. Rereading the story (20-30 minutes)
True or False
1. Children read one page of the story while you write 3 or 4 sentences for that page on the blackboard.
2. Have a child read a sentence aloud.
3. He comes up and writes a 'true' or 'false' in front of the sentences.
4. Another child finds proof in the page and reads the sentence aloud.
   For Example there are three sentences about page 29.
   1) Duranta dam had an iron door.
   2) Akram and Anwar saw a worker on the dam.
   3) Akram wasn't happy to get information about the dam.

B. Word Study (synonyms) (15-20 minutes)
1. Write the following two columns of words on the blackboard.



2. Choose different children to read different words in each column.
3. Choose a child to draw a line from the first word in column I to the word in Column II with the same meaning.
4. Ask a child to read the two words aloud.
5. Repeat the same procedures with each remaining word.

D. Related Activities (20-30 minutes)
Discuss conserving resources (social studies)
1. How many fish did the boys catch? (man, a basketful)
2. What were the two mistakes the boys made? (caught small fish and caught more than they could eat)
3. Why is it a mistake to catch small fish? (they can grow into large fish and feed more people)
4. Why is it wrong to catch more fish than you can eat? (wasteful)
5. Can you think of other areas where we can save? (trees, water, electricity, food, clothing)
6. Discuss with the class the need to conserve natural resources.

E. Language Skills (20-30 minutes)
Work on page 65

Day Seven
A. Rereading the story (20-30 minutes)
Reading to plan a pantomine
1. Have story read aloud one page at a time.
2. After each page is read, discuss what actions occur on the page.
3. After reading and discussing every page of the story, choose children to act out various parts.
4. Choose narrator for each page to read as children perform the actions.
5. Advise actors to listen carefully to the narrators so that their actions fit the text.

B. Language Skills
(Work on pages 66, 67, and 68)

Mathematics

The Mathematics Section of the Curriculum and Textbook Project has undertaken an extensive revision and updating of the mathematics curriculum of the primary schools of Afghanistan. This effort began in 1966 with the re-defining of the aims and objectives for primary education by a national commission of educators. Soon after the new aims and objectives were published, a study of the existing mathematics curriculum and textbooks of Afghanistan was begun. The results of this study indicated that there were numerous shortcomings in both the curriculum and the teaching materials. Following is a list of some of the major shortcomings revealed by this study:

a. The curriculum itself was very outdated and did not reflect recent research and trends in content and methodology.
b. The scope and sequence of topics was inconsistent. Often topics were introduced out of order or without the proper background for understanding. Also topics were not always developed from simple to more difficult examples.
c. No geometric topics were introduced in the curriculum until grade five. Then, at that time, geometry was taught as a course separate from arithmetic.
d. No guides were available for teachers and there was insufficient explanation for them in the pupil's text. Often the aim of the lesson was not clear and the teachers were in doubt about what and how to teach.
e. There was insufficient work concerning measurement. Where topics on measurement were included they often used local units which are non-standard even in Afghanistan.
f. Textbooks were poorly laid-out and lacked proper illustrations to reinforce the concepts presented.
g. Emphasis throughout the program was on drill not understanding.
h. Textbooks for various grades were written at different times by different authors and lacked consistency. Different procedures and methods were used in each grade which tends to confuse both students and teachers.
i. Equations and problems written in horizontal form were worked from right to left in grades 1-6 and from left to right in grade 7 and above. Therefore, confusion often arose as to whether a problem like $4 \div 2$ meant "4 divided by 2" or "2 divided by 4".

After determining these and other difficulties, the Mathematics Section set about to revise the primary curriculum and textbooks. The goal of this revision was to modernize the content and methodology of mathematics and still retain a curriculum relevant to the needs of the children of Afghanistan. To accomplish this goal the Mathematics Section has developed a new program with the following characteristics:

a. Topics have been carefully selected to be relevant to the Afghan situation. The culture of the country, the training of the teachers, the physical circumstances of the schools and the availability of materials were all factors in determining the new program.

b. The primary mathematics curriculum is an integrated course in arithmetic, geometry and algebra beginning in grade one and continuing through grade eight.

c. The scope and sequence of topics has been well organized. Each topic is presented in order, proceeding from simple examples to more difficult.

d. Measurement is included as a topic beginning in grade 1. Afghanistan has adopted the metric system so standard metric units are used in all measurement. No mention is made of non-standard local units which are being officially discouraged by the Government.

e. A teacher's guide has been written for each textbook. Teachers in Afghanistan often lack the proper training, therefore, a teacher's guide is indispensable. If the guide is properly written it will enable even a poorly prepared teacher to do an acceptable job of teaching. Through research and experience the Mathematics Section has determined that the guides must be brief and to the point. If there is too much material presented most teachers will not take the time to read it. Also the guides must be well organized so that the teachers can easily find the material related to a particular lesson. Considering these and other factors the Mathematics Section has chosen a page for page approach. That is, for each pupil's page there is only one page of explanation for the teacher. The pupil's text page, with the answers to the problems, is reproduced in the teacher's guide with the page of explanation opposite it. This arrangement has proved easy for the teacher to follow. The material for the teacher briefly but clearly lists the purpose of the lesson, the mathematical terms to be used, the materials needed and the teaching procedure to be used.

f.

f. The textbooks for grades 1 through 3 are workbooks. Since paper is not always readily available to the students, this format ensures that they will have the means to work the exercises. Also classes can cover more material in less time in workbook form, since they do not have to copy each problem before working it. This is particularly true in the lower primary grades.
g. The entire series of pupil's texts and teacher's guides has been written by a team of authors. They conform to a pre-planned scope and sequence of topics from grade one through eight. Every effort has been made to be consistent with the approach and procedures in each grade.
h. Beginning with grade one, all numerals, equations and problems written horizontally have been standardized to be worked from left to right. This now conforms with the procedure used in the upper grades as well as with world-wide convention.
i. The pupil's texts are well laid-out and amply illustrated. In addition to explanation of new topics there are numerous worked examples to emphasize each concept.
j. Each book is written using a "spiral approach". That is, a topic is first introduced, then it is later revised and gradually extended in a continuous process.
k. Periodically throughout the texts test pages are included to help the students and teachers evaluate their progress.
l. Before printing and distribution each text and teacher's guide was tested in experimental schools for a full academic year. On the basis of this testing and suggestions from teachers, headmasters and supervisors, the books are then revised for publication.

) far, the results received from the new mathematics materials
as been very encouraging. The scores from the end-of-year
ests in experimental and control classes indicate that the
upils using the new materials develop considerably better basic
omputational skills than pupils using traditional materials.
n addition to this, they are also gaining more skills in geometry,
easurement and the foundations of mathematics which enable them
) better understand mathematics in general. This is clearly
own by the comparison of students meeting passing standards
n the experimental and control classes. On tests of basic skills
he rate of students meeting passing standards in the experimental
lasses is four to five times that of the control classes. On
ests of general mathematical knowledge the rate of those meeting
assing standards in the experimental classes is twenty to thirty
imes that of the control classes!

n addition to this evidence, teachers have commented that they
ike the new material. It appears that the teacher's guide is
nderstandable and can be easily followed by those who will take

AIM: To show the meaning of division using

(a) jumps on the number line and
(b) repeated subtraction

MATHEMATICAL TERMS: Division, repeated subtraction, jumps, number line, divisor, dividend, quotient and remainder.

MATERIALS: Chalkboard and pupil's page

ACTIVITIES:

1. (Students have previously used jumps on the number line with division on page 25.) Put the solved example from page 64 on the board. Ask a student to explain how jumps on the number line are used in the example. Since the problem is 18-6, the student should see that we begin at 18 and take successive jumps of 6 to the left, until we reach 0. He should see that exactly 3 jumps of 6 can be taken, therefore, the quotient is 3. The number sentence can be written as 18-6 = 3.

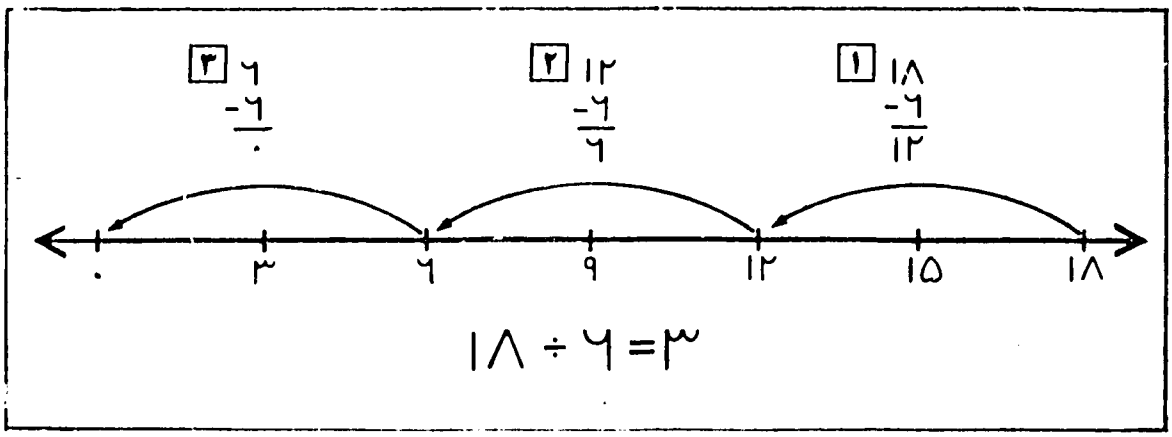
2. Now ask another student how repeated subtraction can be used to find the quotient of 18 - 6. He should see in the example that 6 can be subtracted from 18 in 3 steps as follows:

$$\begin{array}{lll} (1)\ \begin{array}{r} 18 \\ -6 \\ \hline 12 \end{array} & (2)\ \begin{array}{r} 12 \\ -6 \\ \hline 6 \end{array} & (3)\ \begin{array}{r} 6 \\ -6 \\ \hline 0 \end{array} \end{array}$$

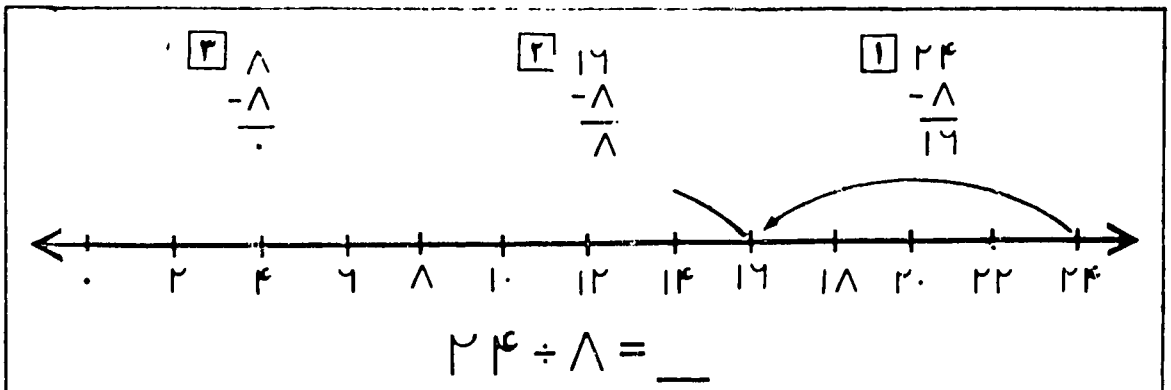
Since 6 can be subtracted from 18 three times, the quotient is 3.

3. Work a few more problems like the solved example on page 64. If the students have difficulty understanding these problems, go back to page 25 and re-work some of those activities.

4. When you are sure that the students understand the problems, have them work the exercises on page 64. Tell them to read the instructions carefully. While they work these problems check their papers and help those who are having difficulty.



Solve the following problems using jumps on the number line or repeated subtraction.



١٤ ÷ ٢ = __	٦٤ ÷ ٨ = __	٣٦ ÷ __ = ٦
١٨ ÷ ٣ = __	٣٠ ÷ __ = ٦	٦٣ ÷ __ = ٧
٢٠ ÷ ٤ = __	٧٢ ÷ __ = ٨	٧٢ ÷ ٨ = __
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Evaluation of the New Materials (Effects on Learning Achievement)

Following the descriptive report about and samples of the new materials, it is important to have objective information on the actual results of using the new materials on the learning achievement of Afghan pupils. Key questions are: can the new materials be successfully introduced in the kind of learning environment represented by Afghan schools? Do pupils using the new materials show significantly greater learning achievement than pupils using the old materials?

It is also relevant to know what kinds of studies were conducted in order to provide an empirical base for the development of the new materials, as well as to indicate the kinds of research that will be needed in the future when the new materials are completed and distributed on a nationwide scale.

Following is a summary of the materials testing program carried out by the Research Section of the Curriculum and Textbook Project.

The Materials Testing Program

The major responsibility of the Research Section is to assist the subject-area sections in evaluating the new curriculum materials as they are developed and introduced in Afghan schools. The trial schools, situated in such regions as Kabul, Kandahar, Jalalabad, Wardak, Mazar-i-Sharif and Kunduz, serve as a proving ground for the new materials prior to their approval for mass distribution. The testing program is viewed as an integral part of the process of materials development. By providing essential feedback based on field trials of the new materials, the testing program helps ensure that the materials will be adapted to the needs and realities of Afghan schools.

The evaluations have concentrated primarily on midyear and end-of-year testing to determine the extent to which pupils have been able to use the new materials effectively as well as to identify those parts of the materials that are in need of revision (e.g., words, concepts, learning sequences that are unclear, ambiguous, confusing). The testing procedures, requiring close cooperation between the Research Section and the subject-area sections, involve the following steps:

1. In advance of the testing, members of the Research Section and the respective subject-area sections meet periodically to select trial schools, schedule field visits, design the tests to be used, and make the necessary arrangements for administering them.

2. During the testing period, orientation meetings are held with school officials (the provincial director, school inspectors, principals and teachers), the tests are given, and post-test seminars are conducted to discuss teachers' reactions and answer any questions they may have.

3. Following the testing, the results are tabulated and analyzed by the Research Section, discussed with members of the subject-area section concerned, and summarized in written reports which are distributed to all sections of the Department and to appropriate Ministry and AID officials.

As the flow of new materials into trial schools has become progressively more systematized and diversified in the last three years, the testing program has gathered momentum. As a consequence, there is a growing body of evidence attesting to the value of the new materials. In language arts and mathematics, where direct comparisons can be made between classes using the new materials and those using the old materials, the former show consistently greater learning achievement than the latter. In other subjects, where such comparisons cannot be made since the new materials extend into skill areas represented only marginally or not at all in the old curriculum, the test results demonstrate that by and large pupils are experiencing substantial success in mastering the new learnings and understandings. Apart from the supportive character of such findings, the research data have also helped to indicate the kinds of problems and difficulties pupils have had with portions of the new materials and provided a basis for revising and improving them.

Language Arts and Mathematics

Of special interest are the comparative data on the relative performances of pupils using the new materials and those using the old materials in areas of shared pedagogical concern, particularly since these areas, involving basic language arts and mathematics skills, represent the core of the elementary curriculum. The cumulative evidence of the past three years shows that classes using the new materials have a decided

learning advantage over those using the old. While the magnitude of the advantage varies from one testing situation to another, it is remarkably persistent and pervasive. Following is a summary of the major results since the comparative testing of experimental classes (i.e., those using the new materials) and control classes (i.e., those using the old materials) was begun in July 1972.

Summary of Comparative Scores for Experimental and Control Groups in Language Arts and Mathematics from July 1972 to February 1975

Grade	Subject	Midyear (M) or End-of Year (E)	No. Pupils Tested	Skills Tested	Average Score Exp. Group	Average Score Cont. Group
1	Dari	M	120	Word Recognition	95%	65%
				Reading Comprehension	57%	37%
				Vocabulary	62%	30%
1	Pashtu	M	151	Reading Comprehension	49%	32%
1	Dari	E	80	Reading Comprehension	85%	58%
				Listening Comprehension	93%	81%
				Dictation (Writing/ Spelling)	73%	47%
1	Pashtu	E	147	Reading Comprehension	46%	30%
				Dictation	41%	14%
2	Dari	E	697	Reading Comprehension	48%	37%
				Vocabulary	62%	43%
2	Pashtu	E	356	Reading Comprehension	38%	28%
				Dictation	44%	37%
3	Mathematics*	M	541	General	66%	35%
				Addition	75%	59%
				Subtraction	59%	41%
				Multiplication	75%	64%
				Division	47%	30%
				Geometric Shapes	90%	50%
3	Mathematics	E	708	General	55%	23%
				Addition	73%	37%
				Subtraction	62%	29%
				Multiplication	55%	30%
				Division	35%	17%
				Geometric Shapes	70%	15%

*Comparative testing of mathematics materials was begun in grade 3. Testing of mathematics materials in grades 1 and 2 involved only classes using the new materials.

Grade	Subject	Midyear (M) or End-of Year (E)	No. Pupils Tested	Skills Tested	Average Score Exp. Group	Average Score Control Group
3	Dari	E	771	Reading Comprehension	66%	37%
				Listening Comprehension	80%	59%
				Vocabulary	68%	48%
				Dictation	50%	40%
3	Pashtu	E*	565	Reading Comprehension	66%	44%
				Vocabulary	94%	84%
				Dictation	63%	60%
3	Pashtu	E*	749	Reading Comprehension	65%	45%
				Vocabulary	66%	51%
				Dictation	56%	45%
4	Dari	M	1266	Reading Comprehension	51%	39%
				Listening Comprehension	76%	61%
				Vocabulary	63%	55%
				Dictation	41%	39%
4	Pashtu	M	633	Reading Comprehension	53%	35%
				Listening Comprehension	83%	73%
				Vocabulary	74%	55%
				Dictation	61%	53%
4	Pashtu (2nd Language)	M	1267	Reading Comprehension	57%	40%
				Listening Comprehension	59%	47%
				Vocabulary	56%	39%
				Dictation	32%	17%
4	Mathematics	E	880	General	48%	19%
				Addition	60%	20%
				Subtraction	53%	21%
				Multiplication	43%	18%
				Division	27%	16%
				Conversion	39%	11%
5	Dari (2nd Language)	M	345	Reading Comprehension	64%	55%
				Listening Comprehension	75%	65%
				Vocabulary	57%	41%
				Dictation	53%	52%
5	Mathematics	M	787	General	47%	23%
				Addition	87%	76%
				Subtraction	76%	49%
				Multiplication	44%	20%
				Division	14%	4%
				Geometric Shapes	61%	29%
				Measurement	26%	3%
				Conversion	32%	0%

*There were two end-of-year testings of third-grade Pashtu materials. The first testing was based on a limited selection of materials being tried out in third-grade classes. The second testing, involving a different test and different pupils, was based on the full range of third-grade materials.

Grade	Subject	Midyear (M) or End-of-Year (E)	No. Pupils Tested	Skills Tested	Average Score Exp. Group	Aver. Score Contr Grou
5	Dari (2nd Language)	E	305	Reading Comprehension	69%	54%
				Listening Comprehension	93%	81%
				Vocabulary	58%	43%
				Dictation	56%	41%
	Total:		10,368			

NOTE: The raw scores are not as important in the results summarized as are the comparisons between the experimental group, consisting of classes using the new materials, and the control group, consisting of classes using the traditional materials. Since different tests representing degrees of difficulty were administered on different occasions, no direct conclusions can be drawn about the level of performance in one grade as compared with that in another grade, or the level of performance at midyear as compared with that at the end of the year. The basis for comparison is that on each occasion the same test was given to the experimental group as to the control group.

Other Subjects

In other subject areas, test comparisons cannot be made between new and old materials, since there simply are no comparable old materials in these areas. Health education and practical works are completely new subjects; science and physical education are essentially new subjects, bearing little resemblance respectivel to the rudimentary "natural science" and unstructured hour-a-week physical education of the old curriculum; and social studie represents a drastic updating and revision of the "history and geography" presently being taught. In the new curriculum, physical education is to be offered from the first grade one, while health education, science, social studies and practical works are to begin in the fourth grade.

The main purpose of the testing in these subjects has been to find out how well pupils in trial schools are doing in learning from the new materials and what parts of the materials are in need of revision to make them more comprehensible and relevant. While there is no predetermined "success level" for appraising pupil performance, the Ministry pass-fail and promotion levels have privided useful reference points. In Ministry evaluations pupils are rated on a scale from zero (low) to ten (high),

with scores based on end-of-year examinations to each subject area. In order to pass from one grade to the next, a pupil must obtain an average score of 5.0 (50%) in his subjects overall. The pass-fail level for specific subjects is 3.5 (35%): thus, a pupil receiving a score of less than 3.5 in a given subject fails it.

In social studies, science, practical works, and health education, the average scores made by pupils in trial schools have been well above the Ministry pass-fail level for subjects and promotion level for grade.

-- In social studies, the average scores of pupils tested on the new materials have been at the 60% level, based on 1690 individual tests given to date.
-- In science, the average has been 65%, based on 3771 tests.
-- In practical works, the average has been 75%, based on 687 tests.
-- In health education, the average has been 76%, based on 1364 tests.

These averages would, of course, be even higher except for those test items that caused the greatest difficulty and provided a basis for appropriate revisions of the materials. The regular procedure has been to do an item analysis of questions to which fewer than 50% of the pupils give correct answers, a process that includes revieiwing the textual material related to those questions in order to make it as clear and to-the-point as possible, and checking the teachers' guide to make certain that adequate provision is made for introducing the topics, concepts, or worlds concerned.

In physical education, performance is not assessed in terms of percentages. In the physical education testing to date, focusing on the new program for grades 1-3, the major objective was to collect information on the performance of Afghan children in five skill areas: standing broad jump, bench push-ups, curl-ups, squat jump, and 30-meter dash. Approximately 500 pupils were tested at the beginning and end of the 1974 school year. As a basis for appraising the extent to which improvement in performance during the school year could be attributed to physical maturation by the pupils, on the one hand, and to the effects of the new program, on the other hand, a control group consisting of pupils who did not take part in the new program was included in the testing. The results clearly attested to the advantages of the new program: pupils taking part in the new program showed far greater improvement in performance than those who did not.

To sum up, the testing in these subject areas has indicated that pupils have generally been able to learn effectively from the new programs and materials. Certainly by Ministry standards their performance has been impressively successful. At the same time, the testing has been useful in identifying problems and difficulties experienced with the new materials and in guiding revisions accordingly.

Summary and Conclusions

The major task of the Research Section is to carry out, in coordination with the subject-area sections of the Department of Publications, evaluations of the new curriculum materials as they are introduced in trial schools in various parts of the country. At the core of the work of the Research Section is a testing program designed to assess periodically the learning achievement of pupils as they are the new materials. Two key questions are:

1. In subject areas where comparisons can be made between new and old materials, does the use of the new materials lead to significantly greater learning achievement than the use of the old materials?

2. In subject areas where such comparisons cannot be made, are pupils generally able to use the new materials with substantial success in terms of understanding the content and grasping the main principles, ideas and concepts involved?

The answer to both questions has been a resounding yes. In the all-important areas of language arts and mathematics, pupils using the new materials have consistently shown greater learning achievement than those using the old. In the other subject areas, the achievement scores of pupils using the new materials have regularly been well above Ministry pass-fail levels for subject and grade. Apart from the supportive character of these findings, the testing has helped to identify the kinds of problems and difficulties that pupils have had with parts of the new materials and accordingly provided a basis for revising and improving them.