INTEGRATING ART WITH OTHER SUBJECTS IN A FIFTH GRADE
OF THE ROBERT E. LEE SCHOOL IN DENTON, TEXAS

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INTEGRATING ART WITH OTHER SUBJECTS IN A FIFTH GRADE
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CHAPTER I

INTRODUCTION

Purpose of the Study

The purpose of this study was threefold: (1) to develop an integrative program using art as its core which was put into effect in one of two fifth grades in the Robert E. Lee School in Denton, Texas, (2) to develop criteria for evaluating an art program used as an integrating agent, and (3) to evaluate the program in terms of the criteria and in outcomes in achievement in subject matter.

Limitations of the Study

This experiment was limited to an investigation of a plan for using art as an integrating agent in a fifth-grade curriculum in the Robert E. Lee School in Denton, Texas. A study of professional literature was made in regard to the use of art as an integrating agent for a core curriculum.

Definition of Art Education

The significance of the study lies in the meaning given to the term "art." Until recently, art in the elementary school was regarded as a skill-appreciation subject dealing only with the use of materials for aesthetic purposes.¹ Art,

¹Leon Loyal Winslow, Art in Elementary Education, p. xiii.
as it is used in elementary education today, is described as follows:

Art as a school subject may be defined briefly as an organized body of educational experience dealing with the meeting of human needs as efficiently as possible through the use of materials. Yet the subject of art is much more than a curriculum area dealing with materials and processes, for it embraces experiences with information and with feelings as well as activity. In general education, art aims to meet the general educational needs for art appreciation and art production in the unified elementary school, the exploratory junior high school, the differentiated senior high school, the professional art school, and the teachers college. Through ministering to human needs, art aims to further democratic living, thus contributing to the realization of the objectives of general education, promoting art as a way of life rather than a cult.2

Source of Data

The information on which the study is based has been secured from both primary and secondary sources. The plan outlined is the one that has been put into effect in the fifth grade of the Robert E. Lee School in Denton, Texas, during the school year 1949-1950, and the units presented are those actually worked out by the pupils in this grade. Supporting educational theory for this type of teaching has been gained from study in professional books and periodicals available in the North Texas State College library.

Method of Procedure

The present study grew out of an endeavor to put some of the theory that art education is an integrating agent in

2 Ibid., pp. 4-5.
the elementary school into practice and to evaluate the outcomes. In a fifth grade in the Robert E. Lee School in Denton, Texas, the study was made on an experimental basis. A number of units with art as the core were developed. The idea developed for organizing a number of art units, including all other subjects commonly taught at this grade level, to serve as an integrating agent.

Some means of evaluating the outcomes of the instruction based on the art units were desired. A number of recommendations were developed through reference to professional literature in the field of art education. These were set up as criteria. Many of these recommendations were the same as those outlined for evaluation of any other school activity. The art units differ from other units mainly in the use of art rather than some other subject as the integrating agent.

The following was the plan of procedure: The purpose of the study, limitations, definition of term, source of data, method of procedure, and a review of related studies were included in Chapter I. Educational literature was briefly reviewed in Chapter II and criteria for evaluating a program used as an integrating agent were developed. A survey of the needs and interest of the pupils in the fifth grade of the study in the Robert E. Lee School and a description of the art program as well as a number of units developed during the year were given in Chapter III. Two groups of children were included in the survey. The fifth grade using this art
integration program was designated Group 1, and another group of fifth-grade pupils using the regular program was designated Group 2. Evaluation of the outcomes of the program were presented in Chapter IV. Two means of evaluation were used: (1) comparison of the achievement scores of the pupils in the fifth grade using art as an integrating agent with those in another fifth grade in the same school using the regular program and (2) measurement of the outcomes in terms of the criteria. Case studies of individual pupils were included. The conclusions and recommendations comprise the subject matter of Chapter V.

Related Studies

The basic study of any integrative program deals with the benefits attributed to integration as a factor in developing the objectives of education. Kilpatrick, in 1943, made a study of the values of integrative teaching as outlined in the professional literature of education and then applied the study to her own teaching situation in making the study as follows:

The purpose of this study is to examine integration in such a manner as to determine its true meaning, to analyze critically its ability to meet the challenge and produce the goals which society and the teacher have set up, and to conclude whether the utilization of integration, as conceived by the writer, will develop the child's capacity of self-expression, encourage critical thinking, develop individual aptitudes, and help him make wholesome adjustments to the group.3

Kilpatrick experimented with the conclusions developed from a study of the values of integrative teaching. The following conclusions were reached concerning the values of integration.

1. Integrative teaching developed the children's capacity for self-expression.

2. Integrative teaching served to develop wholesome relationships within the group.

3. Where plans were followed for integrative teaching, critical thinking was encouraged, intelligent interaction resulted, and individual aptitudes were developed.\footnote{Tbid., p. 39.}

Williams made a study of integration in a fifth-grade curriculum through language-arts subjects in the Stonewall Elementary School in Denton, Texas, in 1941.\footnote{Kaupe Ann Williams, "The Integration of a Fifth-Grade Curriculum Through Language Arts Subjects" (Unpublished Master's thesis, North Texas State College, Dept. of Education, August, 1941), p. 1.} Her problem was planned to provide a carefully controlled experiment to test the practical value of the integrative curriculum in operation. Over a twelve-weeks' period, an experiment was conducted with twenty-nine fifth-grade children in an integrative program centered around language arts. The class set themselves up as a publishing company, and the individual pupils managed the publication, wrote stories to be used,
and went through the mechanics of printing and binding the finished product. In the experiment, reading, writing, speech, music, spelling, arithmetic, and art were all utilized in various ways. As a final activity, an open house was held for parents and interested friends to see the results of the program. Writing the invitations, decorating them, getting ready for the visitors, and entertaining them while they were there provided valuable activities in social guidance and promoted mastery of fundamentals.

The following conclusions resulted from the experiment:

1. This unit of work provided for individual differences in interests, abilities, and needs and made individual growth possible.
2. Classroom work was so organized that children grew in total personality.
3. The pupils gained skills in fundamentals that compared favorably with skills learned by teaching subjects in isolation, according to the judgment of the teachers.
4. Leads were furnished into other worthwhile experiences, and a desire was stimulated for continuous widening interests.
5. Individual thinking and planning were provided for within the free, informal association of pupils.
7. More parents visited the classroom while this activity was in progress than at any other time during the year.
8. The children were more democratic in their method of working with the group.
9. This activity contained many happy experiences for all teachers who worked with the group as well as for the boys and girls.
10. The activity was difficult enough to enlist fully the children's abilities, yet it provided a measure of success.
11. The experience was adapted to the general level of development of the pupils.

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6Ibid., pp. 67-68.
Williams concluded her study by recommending that teachers experiment with integrative programs. She also recommended that they study reports of integrative programs and their outcomes, and that they make pupil surveys to determine their needs in an integrative program.7

Collins made a study of the possibilities of art as a tool in a fifth-grade guidance program in 1946. Her study was developed in an oil-field community and was for the purpose of determining a way by which the school could serve best all the children as a guidance center. A program was needed in this area, the author stated, "which would enrich the lives of children of varying social and financial levels, chronological ages, mental ages, personalities, talents, and other inherent traits or tendencies."8

The study was presented in the form of case studies. Actual photographs were used to illustrate the situation and the possibilities and needs for guidance. An initial testing program was carried out to determine ability and interests of the pupils. Descriptions of the experiments were given in the various case studies.

The following conclusions were derived from a study of the data presented in the study:

7Ibid., pp. 68-69.

1. The children worked happily, each one according to his own individual needs and interests.

2. Art activities were easily, successfully, and naturally integrated with all the core areas of the curriculum and served to enrich subject matter and make it more significant.

3. Art activities were found to have a definite therapeutic value; nervous and accompanying emotional disturbances were relieved to an appreciable degree in a number of cases.

4. Children of varying degrees of intelligence were found receptive to art instruction.

5. The art-guidance program helped to improve the home environment and the home-school relationship through the development of common interests, aims, and work. It proved effective in discouraging and remedying truancy and helped develop self-confidence and a feeling of "belonging."⁹

Collins concluded her study with the recommendation that further study and experiments be made of the value of art training as a valuable tool in guidance.¹⁰

The investigations conducted by Kilpatrick, Williams, and Collins, while not too closely related to the present study in subject matter and treatment, nevertheless form a valuable background for it. They demonstrate the value of

⁹Ibid., pp. 83-84.
¹⁰Ibid., p. 85.
Integration, the expected outcomes, and the possibilities for using one subject as a core for an integrative curriculum.
CHAPTER II

CRITERIA FOR DEVELOPING A PLAN TO USE ART AS AN INTEGRATING AGENT IN A CORE CURRICULUM

Desired Outcomes of an Integrated Program

Beaumont and Macomber define an integrated classroom curriculum as an "experience program in which each individual is participating in purposeful learning activities as a contributing member of his group."¹ The values of such a curriculum are summarized in the following statements:

1. A variety of experiences is provided in which each class member has an opportunity to participate successfully.

2. Situations are provided in which each individual's performance materially affects the success of the whole project.

3. Pupils learn that collaboration towards a common goal means coordination of activities in such a way that some tasks are subordinated to others.

4. The more capable children in the group learn to relinquish some of their dominance and delegate tasks to others which they can perform.

¹Henry Beaumont and Freeman Glenn Macomber, Psychological Factors in Education, pp. 154-155.
5. Each individual learns to understand his own capabilities by sharing experiences and learns to appreciate the importance of the contributions of all to the common enterprise.\(^2\)

Winslow states that integration calls for "an enriched curriculum made up of subjects that have been carefully balanced one against the other."\(^3\) He recommends art as the integrating agent because it is so closely related to all phases of the life of the student and to all learning areas. There is no history, no geography, no science which is not intimately associated with the topics around which an art course is organized. Making the art course the basis for integration brings together the necessary core areas in such a way as to make them more interesting, more understandable, and more functional in the lives of the children.

Essentials in Planning an Integrative Program

An integrative program, however, is much more difficult to develop and maintain in the classroom than the regular routine of classes in specific subject matter. Direct contacts must be established between many subjects in the integrative program, and the life experiences must be skillfully planned and directed if they are not to degenerate into aimless activities.

\(^2\)Ibid.

\(^3\)Leon Loyal Winslow, *The Integrated School Art Program*, p. 50.
One of the plans most often recommended for developing an integrated program is the use of units. The word itself means unity or wholeness, and therefore fits into an integrated program with the ultimate aim of achieving unity in subject matter and life of the pupil. According to Barr, Burton, and Brueckner, there has been a steady trend toward larger organizations than the daily lesson. The term unit has come into general usage to designate these larger sequences. An investigation of what constitutes a unit and its contents is then a part of a plan for developing an integrated program.

The unit of work chosen to be carried on at any definite period of time should be selected on the basis of a number of considerations. Winslow sets up the following criteria for a unit:

1. It should be of interest to the class group.
2. It should be chosen by the children because of their interest in the subject.
3. The content of the unit should be within the children's range of ability and yet complex enough to require their full capacity to carry it to completion.
4. The unit should provide for both individual and social growth.

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5. The unit should afford opportunity for genuine orienting, planning, executing, and evaluating.

6. The unit should accomplish the inculcation of desirable habits, attitudes, appreciations, and skills.

7. The unit should lead directly to experiences in other fields which may develop into units in those fields.\(^5\)

An integrative program, as defined by Beaumont and Macomber, is an experience program composed of a wide variety of purposeful activities.\(^6\) Stratemeyer offers the following list of questions for the evaluation of activities from the standpoint of purpose:

1. Is the experience (activity or subject content) directed toward meeting the needs of the children in their immediate adjustment to life conditions?
   a. Is it related to other activities of the children, both in and out of school?
   b. Will it give fuller meaning to the daily experiences of the children?

2. Does it form a part of a continuing development?
   a. Does it provide opportunity for the growth of the individual? The group?
   b. Is it more difficult than previous similar activities?
   c. Does it furnish leads into other worthwhile experiences...?

3. Does it give promise of outcomes functional in meeting the larger demands of society?

4. Does it provide for selecting, planning, executing, and evaluating experiences?
   a. Fostering an inquiring attitude?
   b. Developing initiative and self-direction in the ordering of experience and in carrying out the activities forward?


\(^6\) Beaumont and Macomber, op. cit., p. 154.
c. Evaluating the worth of experiences, the effectiveness of the plan used?

5. Has it inherent within it the necessity of the development of the tools—skills, habits, knowledge, appreciations—adjudged incident to the important aspects of human life?

6. Does it provide opportunity for social living and cooperative action—group thinking and planning?

7. Does it provide for individual thinking and planning within the free, informal association of pupils?

Criteria for planning an integrative program based on the preceding discussions are as follows:

1. All activities should be planned in order to secure purposeful instead of aimless activity.

2. Direct contact should be made between all subjects in the curriculum with one as the center.

3. A unit is recommended as the most natural method of unifying and integrating subject matter.

4. The activities in the unit should be based on the life experiences of the children participating in it.

Basis of Selection of Activities

Lee and Lee, well-known writers and teachers in the field of elementary education, state that interest is one of the largest factors in education. They recommend that instruction begin with the interests of the learner. Not all interests, however, are wholesome or desirable. It is the

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duty of the teacher to locate interests that are already present and to develop others that will be constructive and progressive in nature. The integrative program presents many possibilities for locating and developing different interests because it provides opportunities in which all members of the class may participate. The difficult question for the teacher in using an integrative program is to hold it to purposeful activity rather than aimless experimentation.

Beaumont and Macomber differentiate between interest and entertainment in the following quotation:

Interest has too often been misinterpreted as being synonymous with entertainment, when actually it may be far removed from this. A child or adult with a definite purpose in mind—-a goal which he is determined to reach—will drive himself through situations which not only lack entertainment, but which might otherwise be almost unbearable. Psychologically and educationally, the question is not whether a task is interesting or entertaining, but whether it is purposeful and educative. This point has often been unrecognized by both extremists in education.9

Betts states that child interests provide an "index to intellectual virility, emotional maturity, and experimental learning."10 He further states that interests can probably be studied best by means of informal, systematic procedures. Properly directed class and group discussions are recommended as "one fruitful means of identifying, sharing, extending,  

10Emrett Albert Betts, Foundations of Reading Instruction, p. 262.
and deepening interests."\textsuperscript{11} Observation of recreational activities is another means of learning pupil interests. The teacher, if he is to direct interests intelligently, should be in a position to learn what they are and how to evaluate them.

Barr, Burton, and Brueckner state that the tasks to which pupils may be "set with profit" at any particular age level depend largely upon three important factors: (1) the pupil's past training, experience, and achievement; (2) the pupil's present interests; and (3) the pupil's capacity for further growth and achievement.\textsuperscript{12} They further state if he lacks interest in activities or in the ends to which they may become satisfying means, his participation in them may be only half-hearted and consequently inefficient.

Excellent advice is offered the teacher by Wright in her book, \textit{Units of Work}. She writes as follows:

In planning the year's program, the classroom teacher must know what the predominating interests of the children living in the particular environment are likely to be. She must choose from among these interests those that are socially most worthwhile developing for a special age group. She must have investigated and continue to investigate possible excursions in the neighborhood for carrying on these interests. She must know some of the books, pictures, songs, and stories to turn to for aid and continue in her search for ever better ones. She must be provided with the material.

\textsuperscript{11}Ibid., p. 264.

necessary for such activities as experimentation, investigation, building, and construction.¹³

Interests and needs are very closely related. Teaching, according to Betts, is the "discovery of and provision for individual needs."¹⁴ All good teaching is diagnostic; therefore, the identification of learner needs is one of the first tasks of the teacher. Any school program, to be effective, should be based on the study of the individual needs and interests of its pupils.

The art program furnishes many possibilities for meeting the needs of the child in everyday life. Ruffini and Knapp, in Teaching Reference and Course of Study, state that art is a part of school, home, and community affairs and grows out of the needs and interests of the child.¹⁵ For example, the teacher in a community where there is little beauty in some of the homes has an opportunity to capitalize on the interests of every child in beauty and of his need for beauty in his life.

Criteria for selection of the activities to be used in an integration program, when based on the foregoing recommendations, may be stated as follows:

¹³Lula E. Wright, Units of Work, p. 11.
¹⁴Betts, op. cit., p. 263.
1. The activities should be based on the natural interests and needs of the pupils.

2. Some type of testing program should be used to determine pupil interests and needs.

3. Teacher observation should supplement the results obtained from the testing program.

4. The activities should have intrinsic worth and not be merely for the purposes of entertainment.

5. The activities should be those which have many points of contact with the different areas of subject matter.

Essentials of a Functional Program of Integration

Any school program needs to be functional, but an art program to be used as an integrating agent must be functional if it is to serve its purpose. Winslow states:

The present urgent need is for a program of art education which shall provide for the needs of all the children of all the people, including those with little or no special aptitude in art as well as the most gifted. Obviously, such a program cannot afford to be one-sided, but must provide experiences of various kinds. It must furnish a rich offering of subject matter and of experience in which a balance between information and activity has been carefully observed. Just enough technical information should be introduced to balance the general information and there should be an equitable amount of directed activity in relation to the creative activity included in the teaching unit.16

Trillingham recommends the unit as a basis of instruction in integrating a program.17 A unit normally consists

16Winslow, op. cit., p. 59.

of an overview of the project, then, objectives, methods of approach, and suggested activities. These activities should be purposeful as well as general, technical, directed, and creative. For example, in the study of the topic "Japanese Art" using the library as a source of information is listed as a general activity. Technical activities are the study of characteristics of Japanese pictures. Selection of group leaders to assist in distribution, collection and care of materials is classified as a "directed" activity. Creative activities are collecting exhibits of Japanese art and displaying them.

Gearhart states that a balanced art program or unit should include both information experiences and activity experiences.\(^{18}\) According to Winslow, a balance should be preserved between the general and technical aspects of information experience and of directed and creative activity.\(^ {19}\) The general information experience should be as closely related as possible to the art interests around which the unit is organized, and the technical information should deal with techniques. Directed activity should be confined to leadership, and creative activity should not be directed.

Stratemeyer sets up the following criteria for evaluating a unit from the standpoint of functional value in the lives of the children:

\(^{18}\)May Gearhart, "Experience in the Arts," Your Children and Their Schools, pp. 56-72.

\(^{19}\)Winslow, op. cit., p. 56.
1. Is the experience adapted to the general level of development of the children?
   a. Does it provide for the recognition of individual differences in interests, abilities, and needs, making individual growth possible within group activity?
   b. Is it suitably graded to the pupils' growing interests and capacities?
   c. Is it of a degree of difficulty that enlists the children's abilities fully and yet provides for at least a measure of success?

2. Is the experience significant to the pupil group--will it be accepted by them as worthwhile?
   a. Is it related to experiences familiar to the children?
   b. Is it related to other activities of the children?
   c. Will it give fuller meaning to the experience of the children?

3. Does it provide for proper balance and variety of experience?
   a. Are the needed practical materials available?
   b. Does the time factor permit it to fit in with the total program?
   c. Is it possible to carry it to a reasonable degree of completion in the school situation?
   d. Is adequate guidance available?²⁰

Criteria for determining the functional aspects of the activities in an integrative program, when based on the preceding readings, may be stated as follows:

1. The experiences must be of various kinds in order to meet the needs of all children, including those with little or no special aptitude.

2. The unit is recommended as the most functional method of presenting an integrative program.

3. A balance should be preserved between the general and technical aspects of information experiences and directed and creative activities.

²⁰Stratemeyer, op. cit., p. 181.
4. The experiences should be adapted to the general level of the development of the children.

5. The experiences should provide for the recognition and development of individual differences in interests, abilities, and needs.

6. The experiences should be difficult enough to challenge the children's abilities.

7. The experiences should be related to life activities of the pupils.

Criteria for Evaluating Outcomes of the Integrative Program

A school should have a continuous program of evaluation in progress. This is especially true of an integrative program in order to check whether or not the effort to keep activities purposeful in nature has been successful. One of the most common criticisms of the integrative program is that it is a mass of aimless activities. Some method of evaluating the program, therefore, should be worked out.

One of the primary aims in any school is the mastery of skills in subject matter. Regardless of all the discussion about life experiences and functional units, the fact remains that the child needs to learn the fundamentals of subject matter as presented in the different courses in the school. The State Department of Education sets up certain recommended courses of study for the schools. The teachers expect the
children to have certain achievements if they are to be promoted. One of the first things, then, in measuring the outcomes of instruction of an integrative program is to test program to determine the achievement of the pupils in all areas of subject matter. The effectiveness of these results is more significant if they are compared with results from similar groups of pupils at the same grade level where the regular course of study has been used. Lee and Lee state:

Requirements of modern-unit-of-work programs demand that teacher-made tests and standardized tests supplement one another. Neither type is complete in and of itself....The standardized achievement test can furnish a much more comprehensive measure of abilities and skills than can teacher-constructed tests. On the other hand, to measure the specific understandings that were the aim of a given unit of study, and the definite informational units that were taught in that unit, is clearly the function of teacher-made tests.21

The use of both tests and some type of rating scale or observation of behavior is therefore indicated in evaluating the outcomes of a program. The tests show what the children have learned in subject areas. The rating or observation give insight into the way the child has developed over a period of time. It shows the extent to which the activities have afforded opportunities for self-expression, for the discovery of ability and interests, for learning to plan and create, and for improving the home and school environment of the child.22

21Lee and Lee, op. cit., p. 523. 22Ibid., p. 625.
The problem of the teacher of an integrative program is to develop tests that will adequately measure the outcomes of her program. Modern achievement tests are numerous and provide opportunities for checking the achievement of the pupils and for comparing them with other groups. Case studies of individual children, according to Lee and Lee, are one of the valuable methods of supplementing the tests with studies of behavior problems.\textsuperscript{23} They furnish many opportunities for recording pupil growth and the development of interests in varied activities. Beaumont and Macomber state that a pupil's ability in a certain field does not describe his growth.\textsuperscript{24} His attendance in school, his physical health, his general attitude toward the school, and his improvement or lack of improvement all are factors that need to be known as well as his grade in arithmetic.

Criteria for evaluating the outcomes of an integrative program, if based on the above readings, may be stated as follows:

1. Achievement tests should be given the pupils to determine their mastery of required subject matter and for comparison with similar groups of pupils.

2. The achievement tests should be supplemented by case histories of individual pupils.

\textsuperscript{23}Ibid., p. 627.

\textsuperscript{24}Beaumont and Macomber, op. cit., p. 300.
CHAPTER III

PLAN FOR INTEGRATING A FIFTH-GRADE CURRICULUM
THROUGH THE USE OF ART

State Recommended Course of Study
for the Fifth Grade

Before any plan was set up for integrating a fifth-grade curriculum, some attention was given to what was included in the curriculum. In the Course of Study recommended by the State Department of Education of Texas for elementary schools, the subjects of language, geography, arithmetic, spelling, art, music, and health and physical education are all included in fifth-grade subject matter.¹ A brief review of the recommended objectives and activities in each of these areas was made to determine the possibilities of using art as an integrating agent for the fifth grade.

"Home and Family Living" is the theme for grades 4, 5, and 6 in the Course of Study.² No textbook is available at this level for the subject, but supplementary materials are recommended to enrich units of work growing out of the content materials in science, social studies, health, language,

¹State Department of Education, Basic Learning Areas in the Elementary School, p. 208.
²Ibid.
and art. Life experiences in these areas should be developed according to the recommendations and such activities should be related to normal activities of boys and girls in their everyday life.

In the adopted textbook for the fifth grade, Geography of the Americas, several objectives have been set up. They include: (1) why the people live where they do—why they cannot live successfully in certain other places, (2) how the people live—how they work and how they live in their homes and communities, (3) how the different countries of the Americas help one another, and (4) the influence of such environmental factors as growing season, altitude, latitude, rainfall, fertility of soil, and vegetation.3

In the textbook, The American Health Series, good health is stressed for the home and community. Suggested activities are: (1) the safety way to health, (2) good food for health, and (3) clothing, an aid to health.4

The following are specific objectives of the language program in the course of study for the fifth grade: "Child Life Situations Which Call Forth Much Use of Language," "Language Experiences," and "Language Skills."5 Child life

3M.R. McConnell, Geography of the Americas, p. v.
situations might be organizing a safety club, using the telephone, making a museum, talking about clothes, or planning a school radio station. Language experiences are talking, telling stories, reporting, writing social letters, writing business letters, and writing announcements. Language skills are word usage, capital letters, punctuation, grammar, sentence sense, paragraph, abbreviations, alphabetizing, and pronouncing words.

The specific objectives listed for elementary arithmetic in grades 4, 5, and 6 are as follows:

1. To recognize problems met in everyday living requiring quantitative thinking for their solution.
2. To grow in ability to plan an intelligent attack on these problems.
3. To apply the necessary effort in the mastery of skills and abilities required for successfully dealing with arithmetic problems.
4. To grow continually in the mastery of skills needed in meeting problems accurately and effectively.
5. To develop a growing appreciation of the place of number relationships in everyday living and in our present-day culture.6

The specific areas to be covered in fifth-grade arithmetic are: (1) reviewing all processes and skills, using two-figure multiplier, using two-figure divisors, adding and subtracting of fractions and mixed numbers, (2) measuring in social use, and (3) adding and subtracting of decimals through two places.7

In the fifth-grade art course of study, one of the main objectives is to provide experiences that develop the appreciation of rhythm of form, line, tone, color, and texture. Clay

6 Ibid., p. 200.  
7 Ibid., pp. 218-219.
modeling and pottery, lettering and poster design, and applying art in dress and the home are some suggested activities. 8

The existing course-of-study outline suggests many possibilities for using art as an integrating agent for the core studies. The theme of the elementary school in grades 4, 5, and 6 is the development of home life. The art program that stems from this theme aims to develop understanding and appreciation of art objects in common use instead of attempting to make painters or so-called artists of the boys and girls. It was apparent from the study that this conception of art and the theme of developing home life are very closely related. This made art a very logical subject for integrating subject matter at the fifth-grade level.

Description of the Situation

One of the two fifth grades in the Robert E. Lee School served as an experimental unit in the attempt to use art as an integrating agent for the course of study during the year 1949-1950. One step in the project was a study of the needs and interests of the pupils.

Inasmuch as the theme of the year's work centered around homes, a survey was made of the homes of the children who were in the fifth grade. The school draws attendance from a mixed socio-economic area. One section of the district extends

8Ibid., pp. 218-219.
into an area of well-built and attractive homes, while others include the mill districts and lands adjacent to the railroad tracks. Some of the homes are modern and have all conveniences, but a majority are very small and do not present a very attractive appearance. Therefore, conveniences improving home life from the viewpoint of beauty, greater comfort, and cleanliness were needed among some of the pupils.

The immediate problem was to determine a way by which the school could meet best the child's artistic needs. At the same time, the school must cover the courses of study set up by the State Department of Education for the fifth year of an elementary school.

Survey of Pupil Interests

During the first week of school, a test to determine activity preferences was given the children in the fifth grade. This test did not require any creative work but merely asked the children some of the things which they liked to do. The items in the test and the responses of the forty children are given in Table 1.

This test was not for the purpose of finding out what the children could do but what they liked to do. According to the data in Table 1, the majority of them were interested in animals, liked to go places, liked to draw pictures of things around them, and liked to work with their hands. However, they were more interested in seeing television shows
<table>
<thead>
<tr>
<th>Item</th>
<th>Choice of Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listen to a radio program about the care of pets</td>
<td>Yes 6</td>
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<tr>
<td>Make life-like figures of animals for a circus</td>
<td>Yes 10</td>
</tr>
<tr>
<td>Draw pictures of the land of make-believe</td>
<td>Yes 27</td>
</tr>
<tr>
<td>Be a cowboy</td>
<td>Yes 2</td>
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<tr>
<td>Make miniature furniture for a house</td>
<td>Yes 15</td>
</tr>
<tr>
<td>Raise white rabbits to sell</td>
<td>Yes 10</td>
</tr>
<tr>
<td>Go to a birthday party</td>
<td>Yes 15</td>
</tr>
<tr>
<td>Make a scrapbook of pictures</td>
<td>Yes 30</td>
</tr>
<tr>
<td>Sit around a campfire and tell stories</td>
<td>Yes 30</td>
</tr>
<tr>
<td>Work with finger paint</td>
<td>Yes 15</td>
</tr>
<tr>
<td>Read to grandmother</td>
<td>Yes 25</td>
</tr>
<tr>
<td>Make funny pictures</td>
<td>Yes 15</td>
</tr>
<tr>
<td>Go on a camping trip</td>
<td>Yes 10</td>
</tr>
<tr>
<td>Draw plans for miniature houses</td>
<td>Yes 10</td>
</tr>
<tr>
<td>Collect Indian arrowheads</td>
<td>Yes 20</td>
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<tr>
<td>Listen to stories and poems</td>
<td>Yes 10</td>
</tr>
<tr>
<td>Look at picture books</td>
<td>Yes 25</td>
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<tr>
<td>Make pictures of incidents or things seen</td>
<td>Yes 22</td>
</tr>
<tr>
<td>Make toy boats</td>
<td>Yes 20</td>
</tr>
<tr>
<td>Take field trip to the park</td>
<td>Yes 20</td>
</tr>
<tr>
<td>Make pictures of trees and leaves</td>
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</tr>
<tr>
<td>Serve refreshments to group</td>
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<tr>
<td>Visit a dog and cat show</td>
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<td>Draw and make model airplanes</td>
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<tr>
<td>Make Christmas toys</td>
<td>Yes 20</td>
</tr>
<tr>
<td>Run errands for mother</td>
<td>Yes 20</td>
</tr>
<tr>
<td>Watch a television show</td>
<td>Yes 0</td>
</tr>
<tr>
<td>Read about Indians</td>
<td>Yes 5</td>
</tr>
<tr>
<td>Draw Indian houses</td>
<td>Yes 5</td>
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<tr>
<td>Play with dolls</td>
<td>Yes 14</td>
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<tr>
<td>Work in the yard at home</td>
<td>Yes 20</td>
</tr>
<tr>
<td>Braid rugs</td>
<td>Yes 27</td>
</tr>
<tr>
<td>Make picture frames</td>
<td>Yes 15</td>
</tr>
<tr>
<td>Write letters</td>
<td>Yes 22</td>
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<tr>
<td>Make flower pots from clay</td>
<td>Yes 3</td>
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</table>
than in reading. These data indicate that the children in the fifth grade were a normal average group.

A second test was given the pupils in the fifth grade to determine their likes and dislikes in subject matter. Table 2 gives the data from these tests.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Pupils</th>
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<tr>
<td>Arithmetic</td>
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<td>Art</td>
<td>20</td>
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<td>Spelling</td>
<td>2</td>
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<td>English</td>
<td>1</td>
</tr>
<tr>
<td>Geography</td>
<td>6</td>
</tr>
</tbody>
</table>

One-half or fifty per cent of the pupils indicated that they liked art better than the other subject matter in the fifth grade. Many reasons were advanced for this, but the two predominating ones were: "I like to draw" and "It is easier than the other subjects." Eleven of the pupils stated that they liked arithmetic better than any other subject. One little boy wrote on the question sheet, "I like to figger." Six of the pupils preferred geography and two stated that they liked spelling.

The children were invited to help in checking the test papers. They were very much interested in the results and in learning the likes and dislikes of the other pupils.
Units Used in Integrating Art with Core Subjects

One thing uppermost in the minds of the children at the beginning of the school was the changed appearance of the building. During the summer the school had been completely repainted. The walls of the room had been painted bright colors and the furniture had either been replaced or renovated and repainted. The schoolroom was attractive and colorful, and the pupils were very proud of it. The first geography lessons in the book were centered around the early settlements in America. During the lessons, one boy raised the question: "What kind of school houses did they have in the early days of America?" The subject of houses drew a great deal of discussion.

One of the girls raised her hand for permission to speak, "Why don't we build us a house for 'something to do' this year?" There was a chorus of approval and the first unit of the year had been inaugurated. "The House and Home" was the name assigned to the unit as it took form. It was followed by a unit on holidays beginning with the Hallowe'en and Thanksgiving season and ending with the Christmas tree and party. In January, while the ice and snow were on the ground, attention was called to the need for safety. The outgrowth of this was a Safety Unit which included all aspects of safety in the school, on the street, and in the home. In the spring the children watched the big new Diesel engines on the railroad
tracks near the school and became interested in counting the number of cars that this type of engine pulled in contrast with the number pulled by the steam engines. One pupil asked the question, "Where does the train go from here?" Another one asked, "Where did it come from?" The fourth unit, "Transportation," developed from this discussion.

The units and their many and varied activities are included in the study in the appendix. They are included because they may be of some benefit to other teachers. Briefly, the activities in them are reviewed here in order to show how the different subject areas were woven into the activities.

In the unit "The House and the Home," art played a predominant part. The selection of the style of architecture, the colors to be used in both exterior and interior of the house, and the putting together of the cardboard replica utilized many opportunities for the use of art. The children drew pictures of modern furniture and made small cardboard replicas. The girls took special interest in the decorations for the home. They made small textile place mats with stencil designs and the boys made wall vases and flower supports from wood. Figure 1 illustrates the work of some of the pupils.

The English activities also played a very important part in the unit. As shown in the unit, the children first made a list of the things they wanted to learn about a house.
Fig. 1—Textile Place Mats and Cabinet Shelves
Later they were asked to imagine themselves as carpenters and write the story of what a carpenter would need to build a house. These activities involved writing and spelling. In the study of lumber, library reading was necessary.

The unit involved a great deal of practice in arithmetic problems. House plans are always drawn to scale. One of the activities in the unit was the drawing of a house plan. The amount of lumber that would be needed and the cost of it were also studied. Wages of the carpenters, the interior decorators, and the painters were figured. The cost of the completed house, furniture, upkeep of a home for a year, utilities, taxes, and family grocery bill were all items considered at some time during the unit. These activities furnished many opportunities for teaching skills in multiplying, dividing, and use of fractions, which were recommended skills for this grade level.

While both groups of the fifth-grade pupils did not have history textbooks, much history material was included in the various types of subject matter. The unit on "The House and the Home" was especially rich in possibilities for the study of history. The discussion of the colonial homes and the homes of people in other lands brought in many historical details. The differences in modern homes and those of colonial days also reflect the differences in social living of the early period of American history and the present. Modern
history is concerned with social living as well as with wars and governments and the unit furnishes ample opportunity for the fifth-grade pupils to study the changes that have occurred.

There were also many opportunities to utilize the geography lessons in the unit. A study of the lumber that is required for a house brought up many interesting questions. A lumber yard just across the street from the school proved a fertile source of information to the pupils.

The unit on holidays furnished ample opportunities for the use of art as an integrating agent. Beginning with the Hallowe'en season and extending through the Christmas program, the schoolroom was a beehive of activity. The students planned and put on a Hallowe'en program in the classroom. They designed and made costumes and Hallowe'en decorations. One pupil wrote a history of the holiday. Another studied the customs of other lands to determine if other people had a similar holiday.

The Thanksgiving holidays closely followed the Hallowe'en celebration. At the beginning of November, the course of study for the month was very closely related to the theme of Thanksgiving. The most important part of the activity was a frieze depicting the Thanksgiving scene. In order to make the frieze, extensive study and investigation was needed. Small cardboard replicas were made of the home of a Puritan, a typical church, the Pilgrim and his wife, and the horse and
Fig. 2.--Thanksgiving Frieze in Fifth-Grade Room
buggy. This involved a study of the Puritan home as well as the manners and customs of the people. When the frieze as shown in Figure 2 was completed, the children had a very definite idea of the differences between the life of a Puritan child and that of a modern child. Art was the motivating factor in assembling and building the Thanksgiving scene, but geography, history, English, and spelling were all used in the process. Opportunities for use of arithmetic were not as numerous as in the home-building project, but they were utilized in many comparisons between the costs of present-day foods and those used in Puritan times.

The pupils were very proud of the many comments that had been made on their Thanksgiving exhibit. They were enthusiastic about starting a Christmas project.

The theme for the Christmas unit was "home-made" gifts and decorations. The spirit of Christmas was emphasized, and an attempt was made to take the commercial aspect out of the holiday celebration. Christmas cards were made as a part of the program, and some of the holiday decorations were made from crepe paper. Arithmetic processes were used in this part of the activities. Various characters associated with elementary literature, as illustrated in Figure 3, appeared on the Christmas tree. Little Black Sambo, the Calico Cat, and many other fictional characters were fashioned from cloth, stuffed, and decorated. Christmas carols were studied as a
Fig. 3.—Christmas toys representing storybook characters made by the children.
part of the music lessons, and customs of other lands were compared with the American customs of celebrating the Christmas season. Making the Christmas cards involved activities in reading, writing, spelling, arithmetic, and art, with the latter being the motivating agent. The children were especially proud of their room decorations, and a number of them reported that they had planned and made decorations in their own homes.

The question of safety was brought up soon after the Christmas holidays. The ice storm covered the streets with ice, and many trees were broken. Ice-laden light wires were a hazard. The safety patrol, a group of boys who had been serving as traffic directors, were leaders in directing the students during the ice storm and in taking safety precautions at the school. The discussions resulted in the formations and development of still another unit entitled "Safety."

Art activities linked the different parts of the Safety Unit together. Miniature figures of a fire station, firemen, and fire trucks were constructed out of cardboard. Safety posters were made for exhibits. A chart was made showing the time of day that most accidents happen. The right way and the wrong way to ride a bicycle in traffic were illustrated by drawings. Drawings were also made of the first fire trucks. The school activities were linked very closely to the life of the child in these various projects.
Various forms of safety were considered in the unit: traffic hazards for pedestrians and bicyclists, fire and water hazards, and playground hazards. As shown in the unit on "Safety," discussions were held about safety in other cities and states. Duties of firemen were studied, and the fire marshal was asked to visit the school. Fire insurance was studied, and arithmetic problems involving rates, premiums, and losses were utilized. The local fire department was especially cooperative in this procedure. The fire truck was sent down to the schoolhouse, and the children were all given a free ride. The fire marshal conducted one of the lesson periods, and answered all the questions as well as talking to the class about fire hazards.

Transportation was the culminating unit of the art integration program. The interest in new Diesel engines developed into a unit that covered many phases of transportation. Many opportunities were presented for integrating all subject areas of the curriculum in this project.

After the art experiences in the previous units, the children in the fifth grade were eager to begin the unit on transportation. A frieze was drawn to show the various types of transportation. Ingenuity was shown in the construction of miniature boats, trains, and airplanes. The material received from the railroads was displayed, and maps were drawn showing the location of these railroads in Texas.
Posters were made depicting the products hauled by the trains in different areas of the state. The culminating activity for the unit was the exhibition of the completed projects on transportation wherein the pupils explained what had been done and how the study had been linked to the local community.

History and geography were included in the study of transportation. Boats, beasts of burden, railroads, and airplanes were all studied in relation to the time in which they were first developed and used by different civilizations. The railroads were studied from the viewpoint of the changes they had effected in the life of the people. The part that the railroad plays in the lives of the pupils in the room was also developed: carrying the mail, bringing in supplies to the city, and shipping out the products of the community. Steamships and airplanes were also studied from the viewpoint of the changes they had made in ways of living and the influence they have on world commerce.

Many English activities were utilized in the unit on transportation. Reports were made on ways of travel in various countries. Letters were written to railroad companies asking for descriptive material of their services and the different types of trains. A debate was held on the value of different types of transportation. Stories were written about all the men who had been instrumental in developing different types of transportation.
Arithmetic problems were centered around the transportation study. Costs of shipping goods by various means of transportation were figured. The costs of producing different types of transportation vehicles were studied.
CHAPTER IV

EVALUATION OF THE ART PROGRAM IN THE FIFTH GRADE OF THE ROBERT E. LEE SCHOOL IN TERMS OF THE OUTCOMES OF INSTRUCTION AND CASE STUDIES OF INDIVIDUAL PUPILS

Stanford Achievement Scores of Group 1 and Group 2

Modern education stresses development of desirable attitudes and traits to a large degree, but mastery of fundamental subjects is still one of the main requirements of any program. Study of the outcomes of instruction, therefore, is one of the major ways of evaluating the adequacy of any program. Regardless of other outcomes, if the pupil has failed to progress in subject matter fields, the program has not fully achieved its aims. One of the main evaluations of the art program in the fifth grade of the Robert E. Lee School, Group 1, is, therefore, a comparison of the achievement scores of these pupils with the scores of the other fifth grade, Group 2, in the same school where no emphasis was placed on art.

Achievement of Groups 1 and 2

The achievement scores of the pupils in the fifth grade subject areas in the Robert E. Lee School are used as a basis of comparison and evaluation in this study. Standard achievement tests were given both groups of pupils in the first
month of school and during the last month of the session.
The data from the tests given the pupils in the fifth grade
class, Group 1, of the Robert E. Lee School during September
are presented in Table 3. The number of pupils included in
the test are twenty, since scores for both the first and
second tests were available for that number.

According to the data in Table 3, the median age for the
pupils in the fifth grade class, Group 1, was ten years. The
range in achievement scores was figured in years and months,
and the median age here ranged from a high of ten years and
two months in social studies II to a low of eight years and
eight months in word meaning and paragraph meaning. In three
subject areas, paragraph meaning, word meaning, and spelling,
the median age was below nine years. In two subject areas,
Social studies I and language, the median age was ten years
or in excess. In five subject areas, arithmetic reasoning,
arithmetic computation, literature, social studies I, and
elementary science, the median age was between eight and nine
years. The total median age was nine years and three months,
and the grade placement was 4.3. These figures show the achieve-
ment of the group of pupils whose teacher used art as an in-
tegrating agent in the curriculum. They form the basis for
evaluating the outcomes of instruction in the program.
<table>
<thead>
<tr>
<th>Pupil</th>
<th>Boys or Girl</th>
<th>8th Grade</th>
<th>Paragraph</th>
<th>Word Meaning</th>
<th>Language</th>
<th>Arithmetic Reasoning</th>
<th>Arithmetic Computation</th>
<th>Literature</th>
<th>I Social Studies</th>
<th>II Social Studies</th>
<th>Social Studies</th>
<th>Elementary Science</th>
<th>Spelling</th>
<th>Total Average</th>
<th>Grade</th>
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The second Stanford Achievement Test, Form C, was given to the fifth grade class in the Robert E. Lee School in Denton, Texas, Group 1, in May, 1956. The number of pupils are arranged according to the highest score made in the group rather than the sequences used in Table 3.

According to the data in Table 4, the median chronological age for the class was ten years. The range in achievement was from a high median age of eleven years and seven months in spelling to a low median age of eight years and three months in social studies I. In three subject areas, paragraph meaning, word meaning, and literature, the range in achievement was a median age between eight and nine years. In three subject areas, the median age ranged between ten and eleven years. The total median age in achievement was ten years and two months, and the grade placement was 5.1.

The Stanford Achievement Test, Form G, was given to the pupils at the completion of the art program used as an integrative agent. The results from this test were compared with the results from the Stanford Achievement Test, Form H, given at the beginning of the program. The comparison showed the gains made by the pupils in each area of the subject matter and made it possible to evaluate the outcomes of instruction from the integrative program. The information regarding the
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gains made by the pupils in the different subject areas during the year is given in Table 5.

**TABLE 5**  
GAINS IN SUBJECT AREAS OF THE FIFTH-GRADE PUPILS IN THE ROBERT E. LEE SCHOOL, GROUP 1, AS DETERMINED BY STANFORD ACHIEVEMENT TESTS IN SEPTEMBER, 1949, AND MAY, 1950

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<th>Subject Areas</th>
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<td>Paragraph meaning</td>
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<td>Arithmetic computation</td>
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<td>Elementary science</td>
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<tr>
<td>Spelling</td>
<td>2 &quot; 4 &quot;</td>
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<tr>
<td><strong>Total average</strong></td>
<td><strong>1 year 3 months</strong></td>
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As shown in Table 5, the pupils in the fifth grade class in the Robert E. Lee School, Group 1, made gains in mastery of subject matter in all areas except in social studies I where the median age was the same in both tests. The most decided gains were in elementary science and arithmetic reasoning. The total gain in median age for the year was one year and three months, which is satisfactory progress.

The extent to which the child's growth can be considered normal may be further determined by comparing the median ages with the norms for the different tests. The median age in achievement for the pupils in all areas in the September
test, Form II, was nine years and three months, which is nine months below the norm for this test. In the test given in May, Form G, the median age in achievement was ten years and two months, which is the norm for this level. The pupils, according to these figures, had made satisfactory grade progress and were average for the grade level.

The Stanford Achievement Test, Form E, was given the pupils in the fifth-grade class of the Robert E. Lee School, Group 2, in September, 1949. The data in achievement in the different subject areas are presented in Table 6. As shown in the table, the median age in achievement ranged from a high of ten years and six months in arithmetic reasoning to a low of eight years and three months in language. In three subject areas, language, social studies I, and social studies II, the median age in achievement was below nine years. In two subject areas, spelling and paragraph meaning, the median age in achievement was the same. Arithmetic reasoning was the only subject area in which the median age exceeded ten years. The median age in achievement in all areas was nine years and five months, which was one month below the norm for this age level. This median age in achievement was two months higher than the median age achievement of Group 1 in the test given in September. This higher median achievement gave Group 2 an advantage in beginning the year's course of study.
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<th>Word Meaning</th>
<th>Language</th>
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| Median Age | 9-9 | 9-6 | 8-3 | 10-6 | 9-3 | 9-6 | 8-7 | 8-11 | 9-11 | 9-6 | 9-9 | 9-5 | 4.4 |
The Stanford Achievement Test, Form G, was given the fifth-grade class, Group 2, in May, 1950. The data on the results of this test are presented in Table 7. As shown in the table, the median age in achievement ranged from a high of twelve years and two months in arithmetic computation to a low of eight years and four months in literature. In four subject areas, word meaning, language, arithmetic reasoning, social studies I and social studies II, the median age in achievement ranged between nine and ten years. In three subject areas, spelling, elementary science, and paragraph reading, the median age in achievement ranged between ten and eleven years. The total median age in achievement was ten years and two months.

A comparison of the data on the results from the two tests was made in the same manner as for the tests given in the fifth-grade class, Group 1, of the Robert E. Lee School in September and May. Each subject area was studied to determine the amount of gain or loss made during the year. The pupils in Group 2 had been instructed in the regular manner and no attempt had been made to use art or any other subject as an integrative agent in the curriculum. The objective of the test was to determine the amount of gain in order to compare the outcomes of instruction in the two groups. The data on the results of the Stanford
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<th>Spelling</th>
<th>Word Meaning</th>
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| Median | 10     | 10-8   | 9-11  | 9-3   | 9-9   | 12-2 | 4-6 | 9-11 | 9-7 | 10-11 | 10-2 | 9-9 | 10-2 | 5.2   |
Achievement Test given in May, 1950, to the pupils in Group 2 are presented in Table 8.

TABLE 8

GAIN IN SUBJECT AREAS OF THE FIFTH-GRADE PUPILS IN THE ROBERT E. LEE SCHOOL, DENTON, TEXAS, GROUP 2, AS DETERMINED BY STANFORD ACHIEVEMENT TESTS IN SEPTEMBER, 1949, AND MAY, 1950

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Difference in Median Age</th>
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<tbody>
<tr>
<td>Paragraph meaning</td>
<td>0 years 9 months</td>
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<tr>
<td>Word meaning</td>
<td>0 &quot; 5 &quot;</td>
</tr>
<tr>
<td>Language</td>
<td>1 &quot; 0 &quot;</td>
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<tr>
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<td>0 &quot; 9 &quot;</td>
</tr>
<tr>
<td>Arithmetic computation</td>
<td>1 &quot; 11 &quot;</td>
</tr>
<tr>
<td>Literature</td>
<td>1 &quot; 11 &quot;</td>
</tr>
<tr>
<td>Social studies I</td>
<td>1 &quot; 4 &quot;</td>
</tr>
<tr>
<td>Social studies II</td>
<td>0 &quot; 8 &quot;</td>
</tr>
<tr>
<td>Elementary science</td>
<td>1 &quot; 0 &quot;</td>
</tr>
<tr>
<td>Spelling</td>
<td>0 &quot; 8 &quot;</td>
</tr>
</tbody>
</table>

Total average 0 years 11 months

Gain is indicated in all subject areas according to the data in Table 8. The total gain for all subject areas was 11 months. The most progress indicated was in literature, while considerable gain was indicated in the areas of arithmetic reasoning, social studies I, and language.

A comparison of the gains made by the pupils in subject areas in the classroom where art was used as an integrating agent and the gains made by the pupils in the classrooms with the regular program indicates differences in grade progress, if any, made by the pupils. Data on these comparisons are presented in Table 9.
TABLE 9
COMPARISON OF GAINS MADE BY THE PUPILS IN SUBJECT MATTER
ACHIEVEMENT IN THE TWO CLASSROOMS PARTICIPATING
IN THE STUDY

<table>
<thead>
<tr>
<th>Subject Areas</th>
<th>Gains in Achievement Scores</th>
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<tr>
<td></td>
<td>Pupils Using Art as Integrating Agent Group I</td>
</tr>
<tr>
<td>Paragraph meaning</td>
<td>1 yr 1 mo</td>
</tr>
<tr>
<td>Word meaning</td>
<td>0 yr 8 mo</td>
</tr>
<tr>
<td>Language</td>
<td>0 yr 10 mo</td>
</tr>
<tr>
<td>Arithmetic reasoning</td>
<td>2 yr 3 mo</td>
</tr>
<tr>
<td>Arithmetic computation</td>
<td>1 yr 3 mo</td>
</tr>
<tr>
<td>Literature</td>
<td>0 yr 7 mo</td>
</tr>
<tr>
<td>Social studies I</td>
<td>0 yr 0 mo</td>
</tr>
<tr>
<td>Social studies II</td>
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</tr>
<tr>
<td>Elementary science</td>
<td>1 yr 5 mo</td>
</tr>
<tr>
<td>Spelling</td>
<td>2 yr 4 mo</td>
</tr>
<tr>
<td>Total average</td>
<td>1 yr 1 mo</td>
</tr>
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</table>

The differences in gains, as shown in Table 9, are indicated. The pupils in the classroom using the art integration program made more gain in subject areas of paragraph meaning, word meaning, arithmetic computation, arithmetic reasoning, social studies II, elementary science, and spelling, while those in the class using the regular program made more progress in the areas of language, literature, and social studies I. In the total median scores, there was two months difference in favor of Group I.

According to the progress made in subject matter areas, the art integration program used in the fifth grade in the
Robert E. Lee School was satisfactory, and the pupils, Group 1, made normal or better than average progress. In seven instances the age-grade equivalent of the pupils exceeded those of the fifth-grade pupils in another class in the same school where no art integration program was used. In total age-grade equivalent gains, the pupils in Group 1 gained two months over those in Group 2. The art program did not interfere with the normal grade progress of the fifth-grade pupils in the Robert E. Lee School, and it aided in learning subject areas. In addition, there were evidences that the art program had broadened and enriched the lives of the pupils in many different ways. It provided many opportunities for self-expression, thus helping children to learn more effectively and to take greater interest in all school activities. It enabled them to improve their personal appearance, their homes, and their surroundings. It developed latent ability which may be both a source of pleasure and a means of livelihood in later years. It contributed to a wider knowledge of the community and its problems. As proof of these assertions, a number of case studies made of individual pupils are presented in the following paragraphs. No particular pupils were selected for the report on teacher observation, but the selection was made to present different areas of interest. Many other interesting observations could have been presented.
Case Studies

Case A.--A was an eleven-year old girl with below average intelligence and achievement. A visit to her home revealed that she and her mother lived in a small two-room house at the rear of a large boarding house. The house was very unattractive, and the interior furnishings were inadequate. The mother and daughter were embarrassed by the teacher's visit, but the mother explained that she worked to support herself and A. She also said that A did not like to stay at home by herself.

The first month of school when monitors were assigned duties, A was given the task of caring for the pot plants in the room. She took a great deal of interest in the work and asked to help with other activities. When the class began making pictures of Mexican life on plywood as a part of the geography lesson, A worked intently on her picture. She took a great deal of interest in geography because of the picture-drawing activity. The picture was a free-hand drawing of country life in Mexico, colored with crayola. A's picture, when finished, was voted second to the best one in the room, and she was overjoyed. She asked for the picture to take home to hang in her bedroom.

In the home-building unit A participated in the making of the home decorations. She told the teacher one day that she would like to improve her own bedroom with some scarfs and spreads like the miniature ones made by the pupils in the
schools. She began work with some bleached flour sacks and made designs with textile paint. Before the school year ended, she made a bedspread, table scarf, and pillow slips for her small home. She took more pride in her personal appearance also and took advantage of every opportunity for improvement. She was not absent from school except for a short illness and took a great deal of interest in the different art projects developed during the year. Her achievement in art, it is indicated, was an incentive in the regular school work as well as a source of improvement in her own environment.

Case B. B was a thirteen year-old girl, large for her age, and much more mature than the majority of her classmates. She did not enter school until after the first of December when the cotton picking season was over. Her attitude was poor and she showed little interest in her work. She came to school irregularly and did not participate in playground activities with the other children, and her attitude seemed to be: "I'm here because I'm forced to come."

B showed an eager interest, however, in the different art projects that were being carried on in the room. She watched the other pupils but had little confidence in her own ability. Some of the pupils had been making carnation corsages out of Kleenex and ribbons. B watched the other pupils for awhile and then tried her own ability to make a corsage. She worked slowly but accurately, and when she had finished, her corsage was voted the best in the room. She
was asked to go to the front of the room and display the corsage to the other pupils. She then was sent to the sixth-grade room to show the pupils there. Some of the pupils in this room asked B to help them with their corsages.

From that time on, B showed a pronounced interest in all the activities in the class room. She developed the ability to draw free-hand sketches, and the other pupils asked her help when plans were being made for the art work in the different units. Her academic work improved greatly because she took an interest in it. At the end of the year she was promoted to the sixth grade, and a change remark indicated her attitude: "I do hope they draw pictures in there."

Case C.---C, an eleven-year old boy, was about average in intelligence and in achievement scores, but he was a year behind the average pupil in the fifth grade in normal age-grade distribution. A visit to the home of C revealed that his home environment was good. His father was a textile mill worker, and the small home was immaculately clean. There were two younger boys in the family. The mother was very appreciative of the teacher's visit.

C was not interested in his work at school. He was not a problem child and gave no trouble in this respect, but he was inattentive. He liked to sketch the things that he saw outside his window or make idle tracings on his tablet. After school had been in progress about three weeks, the unit on houses was started. The pupils began drawing, sketching,
and constructing articles made of wood and other materials. G was no longer disinterested. When he realized that drawing and painting followed the stories in English and reading, he could hardly wait until class time. He was usually the first one to suggest a new project.

The teacher recognized that the boy had ability in drawing and painting. She offered to let him use some of her own paint materials in finishing a tray he had made for his mother. He did excellent work on the project. Within two weeks he rushed into the classroom and shouted, "Guess what Mother is getting me for my birthday?" The present was a set of oil paints.

Interest in drawing and painting aroused interest in the other areas of learning. G was so pleased with the acclaim with which the other pupils greeted his work that he began to try to achieve success in academic learning as well as in drawing and sketching. He became one of the leaders in his class.

Case D. — D was eleven years old when he entered the fifth grade. His mental age was a little below average, and he was very shy and backward. He lacked self-confidence and was very slow to speak up in class. He seemed to have the attitude that the others could express themselves better than he could, and he did not recite voluntarily.
D's home was fifteen miles out in the country. He was a member of the 4-H Club, and his greatest interest was in the calf he had raised as a part of his club work.

One morning D was not at school. The next day he was still not there, but one of the children reported that he had seen a picture of D and his calf in the paper. The calf had won the first prize at the Fort Worth Stock Show. When D returned to school he met a very enthusiastic reception. D was asked to tell the class about his trip, his calf, and the money he had won.

The class wanted to see the calf. Someone suggested that D bring the picture to class. There had been a number of drawing projects under way in the class, and another pupil suggested that D draw a picture so the class would not have to wait until the next day to see the picture that had been taken at Fort Worth. D very painstakingly went to work. The drawing was very crude, but D was proud of it, and he talked more that day than at any time previously.

The next day D brought the picture of the calf with him to school and some clippings from the newspaper. He told his teacher that he would like to make a scrapbook about his class so that he could keep it. She suggested that he write the story of his calf and include this in the scrapbook. The class watched the project with much interest. D had to explain so many things to the pupils that he forgot a great deal of
his shyness. From that time on, he participated in all the school activities and became one of the best students in the group.

Case E.--E, an eleven-year old boy, was absent from school a great deal. The teacher in her visiting program made it a point to call at the home of this boy. She knew that E had a crippled brother, but she was surprised to find that he also had a sister who was too badly crippled to attend school. The mother was dead, and the crippled sister was the housekeeper in the home.

The teacher had discovered that E did not like to go to school and she undertook to learn the boy's interest. When he was questioned, E said that he liked to make things from wood. His most prized possession was a hand-carved birdhouse, and he showed this to the teacher with a great deal of pride. The teacher suggested that E build some furniture for the miniature house the class was building. "Oh yes," he said, "that would be fun." From that time he took an intense interest in all projects that required handwork. He was seldom absent after this time.

Many things grew out of E's added interest in school. He made his sister a shelf for her room and a small radio table. At the end of the year, he told his teacher that that was the first year he had ever liked to go to school.
Evaluation of the Plan for Using Art as an Integrating Agent in the Fifth Grade in Terms of the Criteria

In Chapter II definite criteria were developed for evaluating a plan to use art as an agent in integrating a core curriculum. Briefly summarized, the criteria were as follows:

1. The program should be purposeful in nature.
2. The program should be planned.
3. The activities should be based on the needs and interests of the pupils.
4. The activities should be functional.
5. Evaluation should be made of the outcomes in terms of achievement and teacher observation.

The data on the art program, as developed in the fifth grade of the Robert E. Lee School, Group I, indicate that the program was purposeful in nature. There were three expressed objectives of the unit, "The House and the Home:" (1) learn how houses are built; (2) learn where the material comes from; and (3) learn how the homes can be made attractive. The experiences were linked to the daily lives of the children through study of the types of homes being built at the present time and ways and means by which they are built. The holiday units were purposeful in that they linked all phases of subject matter to the daily lives and experiences of the pupils. The unit on "Safety" was planned to make the children more conscious of the need for safety precautions. The
expressed purpose of the unit on "Transportation" was the development of a better understanding of community problems and a knowledge of many different parts of the country. From the standpoint of purpose, the art program used as an integrating agent met the criteria satisfactorily.

The program using art as the basis of integration was planned around the regular curriculum of the fifth grade as recommended by the State Department of Education. All activities were planned around the theme of the curriculum, which was the home life of the pupils. The art program met the standards for planning such an activity.

The teacher of the fifth grade in the Robert E. Lee School, Group 1, made a number of tests to determine interests of the children in the room and their likes and dislikes. This was supplemented by teacher observation. Activities were not planned for the entertainment of the pupils, but for their value in presenting opportunities for self-expression, discovery of ability, and related qualities. Relating the art program to the life experiences of the child provided many points of contact with the different areas of subject matter. The criteria were satisfactorily met for this phase of the art program.

The activities carried on in the art program used as an integrating agent in the Robert E. Lee School, Group 1, were functional in that they used life experiences of the pupils.
They provided opportunities for the recognition and development of individual differences; they challenged pupil abilities; and they were directly related to the life experiences of the pupils. Criteria were satisfactorily met from the standpoint of a functional program.

Pupil achievement and teacher observation were recommended as two reliable ways of evaluating the program. The program of integration as used in the fifth grade, Group 1, of the Robert E. Lee School, used these two types of evaluation in measuring the outcomes of instruction. The regular achievement tests in subject areas were given the pupils and the results were compared with the regular tests given the pupils in the other fifth grade in the same school, Group 2. The results showed that the pupils in the class using the art integrative program gained as much in achievement as the pupils in the other grades and surpassed them in some areas. The teacher made case studies of a number of individual pupils, and the results from these indicated that the program had been valuable in arousing greater interest in school attendance, in developing self-expression on the part of the pupils, in discovering unknown abilities, and in improving the home environment of the pupils.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions have been reached in this study from the data that have been developed:

1. An art project offers many opportunities for integration of subject matter because some phase of art is found in almost any type of subject matter.

2. An art program to be effective as an integrative agent must be carefully planned and directed or it will degenerate into aimless activity or "busywork."

3. An art program is a very logical integrating agent to use in an elementary curriculum because the theme of this grade level is the development of better home relationships.

4. The art program, as developed in one fifth grade in the Robert E. Lee School, was accepted with enthusiasm by the pupils, and they welcomed each different unit with many suggestions and activities.

5. The art program furnished many opportunities for the pupils to become better acquainted with their home environment, city government, police department, community resources and needs, transportation, and general conditions affecting the everyday life of the pupil.
6. A comparison of the achievement scores indicates that the scores of the control group were equal to those made by the experimental group and surpassed it in some areas.

7. Case studies made of individual pupils indicate the art program operated to create more interest in the subject and in other subject areas and provided opportunities for self-expression and for the development of ability in creative design.

Recommendations

The following recommendations are offered after an analysis of the data in the study:

1. The art program used as an integrative agent should be continued in the fifth grade and an evaluation should be made annually to determine outcomes of instruction and to provide better ways of presenting the subject.

2. Further experimentation should be carried on in the other elementary grades to determine adequacy of art as an integrating agent.
APPENDIX

UNIT 1

The House and Home

I. Introduction

When school opened every child was "house conscious" because the Robert E. Lee School building had been completely redecorated. It had not only been redecorated but partly remodeled. Every child wanted to talk about what had happened to the building.

II. Objectives

A. To learn to plan, build, and furnish a miniature house.

Experiences and Activities

1. The children made a list of things they wanted to learn about the house. What is a house? What is a house plan? What is a plan called? Who makes house plans? What does he charge? Where does the lumber come from? Where is it grown? How is lumber made? What does it cost? How is it measured to be sold? How is it transported? What is furniture made of? Where is it made? What does it cost? Where do our styles
of furniture come from? Who is an interior decorator? What do they do? How much are they paid? What are curtains made of? Who makes venetian blinds?
The children's questions may be printed on a large sheet of cardboard and placed where they can be referred to whenever necessary.

2. Make plans for a notebook about the house. These may serve as an artistic as well as an informative storehouse for the individual child. Here he may keep his house plan, many accounts of his trips, his findings, pictures, poems, and songs.

3. Draw illustrations of the earlier furniture and the modern furniture for the notebook.

4. Draw illustrations of the earlier and more modern homes.

5. Discuss the value of color in a house and why colors should harmonize.
6. Imagine yourself a painter.
   Tell the reasons why lumber needs paint.

7. Display colors that go well together.

D. Learn more about planning, building, and furnishing a house.

1. Visit a house under construction.
2. Visit a lumber yard.
3. Study the different kinds of lumber and sheetrock.
4. If some child has a new home, let him show the house plan and tell what he has learned while the house was under construction.
5. Pretend that someone was living in one of the first colonial homes. Compare the conveniences of that time with those of today in lighting and cooking. Compare pictures of oil lamps with electric lights.
6. Make written reports on the homes of the first settlers in the United States.
14. Discuss the scarcity of houses during the World War II days.
15. Discuss different types of houses used in China, India, and Egypt. Draw or find pictures to illustrate this.
16. Make a display of houses from all the countries.
17. Order free material on houses and house plans from different companies.
18. Figure the wages of a carpenter, painter, and interior decorator for building a six room house.
19. Discuss the different kinds of lumber required to build a house.

C. Learn to appreciate the house as a home.

1. Write a poem about a house. Illustrate the poem.
2. Write a story telling what makes a house a home.
3. Plan a conversation between two houses that house a happy and an unhappy family.
4. Learn system of house numbering.
D. Learn cost of operating home.

1. Figure cost of buying furniture to furnish home.
2. Figure the upkeep on a home for a year.
3. Figure cost of lights for a year.
4. Estimate taxes on home.
5. Work on a family budget.
6. Find cost of one meal.

III. Culminating activities

A. Program.

1. A group of children may write a play and dramatize it.
2. Poems written by the children may be read.
3. The group may sing songs about home.

B. Construct a miniature six room house.

The house might include:

1. Three bedrooms, a living room, kitchen, and bath.
2. Painted walls, venetian blinds, and carpets.
3. A complete set of furniture for the six rooms.
4. Textile place mats with stencil designs.
5. Wall vases and flower supports from wood.

6. A family of dolls constructed from pipe stem cleaners and Kleenex.
UNIT 2

Hallowe'en

I. Introduction

It is the custom in the Robert E. Lee School to present a Hallowe'en Carnival about two weeks before Hallowe'en. Articles such as embroidered place mats, pot holders, and Hallowe'en favors are sold at the carnival.

Several children suggested that each member of the class make an article to be sold at the carnival. It was suggested that the class decorate the stage and make Hallowe'en decorations for the gala affair. Another group indicated that they would like to know the origin of Hallowe'en.

II. Objectives

A. Learn to make Hallowe'en decorations and articles for sale.

Experiences and Activities

1. The children made a list of things the class wanted to learn about Hallowe'en. What would be the most profitable articles to sell at the carnival? Why do people use cats, bats, and owls for decorations at Hallowe'en? Why are the Hallowe'en colors black and orange? What is the origin of Halloween? Is Hallowe'en always on the same date? Why is superstition connected with Hallowe'en?
The children's questions may be printed on a large sheet of cardboard and placed where they can be referred to whenever necessary.

2. Make pot holders in the shape of an owl.

3. Draw original place mat designs using Hallowe'en colors.

4. Make small dolls and dress them in Hallowe'en costumes.

5. Make lanterns and other decorations.

6. Design costumes and masks to be used at the carnival.

B. Learn about the origin of Hallowe'en.

1. Read stories about the origin of Hallowe'en.

2. Make written or oral reports on strange Hallowe'en customs.

3. Write a conversation that one might have had with a ghost on Hallowe'en night.

4. Listen to stories about Hallowe'en customs in various countries.

5. Make a Hallowe'en booklet with stories of legend or customs.
III. Culminating activities

1. Exhibit articles that were made for sale.

2. Plan a curiosity shop.

3. Present a pageant of Hallowe'en customs in other lands.

4. Make a frieze or mural.
UNIT 3

Thanksgiving

I. Introduction

It was near Thanksgiving and "open house" was being planned for the parents. The question arose, "What can be done to the room to make it more attractive to our guests?" Discussion followed, and soon the class was busy making preparations to entertain parents.

II. Objectives

A. Learn more about Thanksgiving so that the Thanksgiving theme may be used correctly while decorating our room.

Experiences and Activities

1. The children made a list of the things the class wanted to know about Thanksgiving. Who were the Pilgrims? When did they come to America and why did the Indians feast with the Pilgrims? Why do people have turkey on Thanksgiving? Why did the Pilgrims carry guns when they went to church? Do the Indians celebrate Thanksgiving today?

2. Draw a frieze on the blackboard showing the Pilgrims going to church.
3. Make Pilgrim dolls from pipe stem cleaners.
4. Write a prayer the Pilgrims may have written.
5. Make posters showing foods used at Thanksgiving.
6. Make a menu that you suppose the Pilgrims used for their Thanksgiving dinner.
7. Write a letter to a Pilgrim child telling him of foods that have been added to the Thanksgiving dinner.
8. Make a Thanksgiving border of turkeys and pumpkins.

B. Learn more about the origin of Thanksgiving:
1. Read and discuss the first Thanksgiving.
2. Discuss the colonial Indians.
3. Read and tell about Governor Bradford.
4. Show on a map the states that were settled when the first Thanksgiving was celebrated.
5. Discuss how the people made a living in colonial days.
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<th>Culminating activities</th>
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<td>1</td>
<td>Read original poems.</td>
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<td>2</td>
<td>Prepare a play about Thanksgiving.</td>
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6. Write a story describing the early colonial home.

7. Make a book for guests to sign at "open house."
UNIT 4

Christmas

I. Introduction

The discussion arose concerning the custom of giving gifts at Christmas. Following this discussion, questions were asked regarding "home-made" Christmas gifts, and several children indicated that they wanted to be thrifty and make their own gifts.

Another group inquired about Christmas customs here and in other lands.

II. Objectives

A. Learn how customs in other lands compare with the customs here.

Experiences and Activities

1. The following questions were asked by the children: Who gave the first gifts? What kind of gifts were given to the Christ Child? Do people in foreign lands give gifts at Christmas? Do their customs differ from ours? Do toys in other lands differ from ours? Have people always had Christmas trees? Are there any countries who do not have a Santa Claus?
The children's questions may be printed on the blackboard and referred to whenever it is necessary.

2. Make a Christmas booklet with original pictures, poems, and stories of legends or customs.

3. Illustrate and compare the first Christmas with Christmas today.

4. Make a Christmas poster representing the Christmas story.

5. Make a Christmas cut out scene of the three wise men.

6. Make reports on Christmas customs of other lands.

7. Compare customs of various countries with customs in our own country.

8. Listen to stories read about Christmas in various countries.

9. Make oral reports on how each country celebrates Christmas.
B. Learn more about the custom of giving and how to make inexpensive gifts.
   1. Plan and make gifts for father and mother.
   2. Design and make Christmas cards and boxes.
   3. Make a toy shop.
   4. Draw, cut, and tear fir trees.
   5. Make borders of holly.
   6. Make a frieze or mural
   7. Make poinsettias for decorations.
   8. Plan and make costumes for a program.

III. Culminating activities
   1. Present a Christmas pageant, "Christmas Night in Many Lands."
   2. Show Christmas pantomimes of each country.
UNIT 5

Safety

I. Introduction

In the Robert E. Lee School, boys from the fourth, fifth, and sixth grades are chosen for patrolmen. These boys patrol all the street crossings leading from the school; consequently, the children are "safety conscious."

Besides having patrolmen the school had fire drills often. The group would compete against its own record in the time required for clearing the building.

II. Objectives

A. Learn to practice safety and become acquainted with our public servants who help to keep us safe.

Experiences and Activities

1. The children made a list of the things they wanted to learn about safety. Who are the police? What are his duties? Why do people have laws? What are the duties of the fireman? Why is the fire truck painted red? Is there anything besides water that will extinguish a fire? Who are life guards? Do they have to be trained for their job? Should bicyclists obey traffic laws?
The children's questions may be written on the board where they can be referred to whenever needed.

2. Make a miniature fire station and firemen. Construct a fire truck.

3. Compare the modern fire trucks with those of earlier times.

4. Draw pictures of this comparison.

5. Make oral reports on the duties of the firemen.

6. Find the price of a fire truck.

7. Visit a fire station.

8. Find out how firemen are paid.

9. Pretend that you are a fireman and tell how you extinguish a fire and save a life.

10. Discuss safety in other cities and states.

11. Make written reports on the duties of the local school patrolmen.

12. Compare the duties of the school patrolmen with that of the city policeman.
B. Learn more

1. Write a conversation that one
   might have had with a mayor
   concerning safety in a city.

2. Make a chart showing the time of
day that most accidents happen.

3. Find out at what age one may
   receive license to drive a motor
   scooter, a car.

4. Extend an invitation to the city
   health officer and ask questions
   concerning the city's health
   problems.

5. Write letters to the state high-
   way department for free material.

6. Make posters to show safety on
   bicycles.

7. Give a report giving as many
   "safety tips" as possible.

8. Draw illustrations of bicycle
   riders, the right way and the
   wrong way.

    These may serve as an artistic
    as well as an informative
    storehouse.
9. Discuss pedestrians.
10. Pretend that you are a signal light and tell the errors that were committed in one day.
11. Compare fire insurance rates of early times with those of today.
12. Examine a fire insurance policy.
13. Figure the insurance rate for 1/3 year, 1/4 year, and 1/2 year.

III. Culminating activities

1. Write a play on safety.
2. Write poems about firemen or policemen.
3. Display safety posters for exhibit.
4. Ride on a real fire truck.
UNIT 6

Transportation

I. Introduction

Since the Robert E. Lee School is located near a railroad, the children are interested in watching the trains. Many questions are brought up concerning other forms of transportation.

II. Objectives

A. Learn many ways of transportation and their benefit to society.

Experiences and Activities

1. The following questions were asked by the children: Where does the train go from here? Where did it come from? What was our first kind of transportation? Did railroads come to the communities or did communities grow up around the railroads? What inventions have made railroad travel safer and faster? What conveniences are provided for passengers? What freight services are available? What keeps the trains from running into each other? How do trains
cross a very large river that has no bridge? Who made the first boats? What materials did they use? What are beasts of burden? How long have we had airplanes? How important are airplanes to life in our country? The children's questions may be written on the board where they can be referred to when needed.

2. Draw a train, showing the inside also.

3. Make a history notebook on transportation and keep all ways of travel in it. Make notes and pictures of trips, poems, and plays in it.

4. Make a display of as many types of transportation as can be found.

5. Draw airplanes as they would appear in motion.


7. Make a comparison of pioneer travel and modern means of travel.
8. Make reports on ways of travel in other countries.

9. Discuss animals used as beasts of burden.

10. Tell the class about whistles and other railroad signals.

11. Discuss an average day in the life of any pupil and show how the things he uses come to him by rail.

12. Take any business, home, or institution in your community and outline its dependence on the railroads.

13. Write letters to the railroad companies asking for any material they have to send to the class.

14. Invite someone to talk to the class about railroads and trains.

15. Chart the leading import and export products of the United States.

16. Show how imports got to your community.
17. What products of your community are exported? How?

18. Compare steamships' travel with train travel.

19. Debate as to which type of transportation is most valuable.

20. Compare the cost of different kinds of transportation.

21. Locate the highest railway, the longest tunnel, and the longest stretch of straight track in your state.

22. Write a conversation that one might have had with a conductor.

23. Discuss the life of Robert Fulton.

24. Write a story about all the men who had something to do with the invention of some means of travel.

B. Learn how one is benefited by modern transportation

1. Visit an airport.

2. Learn as many types of planes and their uses as possible.

3. Permit children who have ridden in planes to give their experiences.
1. Pretend that you are a pilot and tell your experiences.
2. Visit a depot. Ride on the train as a group if possible.
3. See if someone can get a dining car menu to take to school for study.

III. Culminating Activities

A. Program
1. Dramatize the gold spike driving ceremony.
2. Tell the story of George westinghouse, inventor of air brakes.
3. Read poems that were composed about transportation.

B. Exhibit
1. A frieze showing transportation from the ox cart to the airplane.
2. Many types of modeled airplanes made by children.
3. The water transportation from log to modern ship.

C. Figure
1. Cost of different types of transportation.
2. Round trip rates.
3. Pullman rates.
4. Cost of meals on train.
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