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## A Descriptive Study of an Individualized, Small Group, Team Teaching Program in the Fifth Grade

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A DESCRIPTIVE STUDY OF AN INDIVIDUALIZED,  
SMALL GROUP, TEAM TEACHING PROGRAM  
IN THE FIFTH GRADE

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A Thesis  
Presented to  
the Graduate Faculty  
Central Washington State College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
Cecil K. Mullins  
July 1970



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## CHAPTER I

### THE PROBLEM AND DEFINITIONS OF TERMS USED

#### I. INTRODUCTION

The focus of attention in educational thought is shifting to the individual and the development of each individual to his, or her maximum. The philosophies from which educational procedures and their methods arise are undergoing new critical thought.

#### II. STATEMENT OF PROBLEM

The purpose of this paper is to present a descriptive study concerning the individualized, small group, team teaching program in the fifth grade at Benson Hill Elementary School, Renton, Washington. It will describe, from a participating teacher's point of view, the organization and early implementation of the program.

#### Statement of Need

Many elementary schools of today are basically the same as they were twenty years ago. The curriculum is designed in such a fashion that a grade level has a prescribed span of material to be covered within a year's time. A fifth grade teacher is expected to teach the same material to all children, regardless of the child's ability or interests.

The teacher has been forced to adopt a routine which is



workable for him; not necessarily beneficial to the children.

Due to the heterogeneous nature of abilities found in a classroom the teacher attempts to account for the differences by having two or three groups for reading, two or three for mathematics, and spelling. The material covered in these groups is basically the same, as it is determined by the curriculum guide. The child is placed in a group where material covered may not be presented on his level. This same material may have nothing to do with the child's interests. Many students are presented material on a spoon-fed basis and not given the opportunity to develop meaningful understandings.

Drummond states:

A basic concept is that the classroom should be a learning laboratory. Any scheme of instruction must serve the child in achieving better individual learning experiences and more effective group interrelationships (3:56).

The present scheme of instruction does not lend itself to this basic concept. A different arrangement must be found to better meet individual and group needs. Many feel that the individualized, small group, team teaching structure is a more realistic approach.

The literature available on the practical application of programs designed to meet individual and group needs is limited. The bulk of study in this area deals with the reasoning behind considering and using either an individualized program, a small group program or a team teaching program. It does not, however point out the many phases of organizing and implementing these types of programs. Neither does it give an account of a program

that is a combination of these three methods. It appears, therefore, that a blueprint of how an actual situation of this type is organized and implemented is needed. This study will provide needed information on an individualized, small group, team teaching program.

Educators look to research for answers to questions concerning their fields. With an emphasis spreading on the new role of the teacher, the concern for individual differences, the desire to promote better social interrelationships, and new educational patterns, information on these topics becomes increasingly important. Educators who participate in programs that deal with these topics need to make available to others their ideas, methods, and evaluations. It becomes a need of the profession of education to be informed. "It is often assumed that only research which has a control group build into its design is valid. This is certainly a mistaken concept" (14:223). Research that is valuable to educators need not have statistical evidence. A study of practical application can be extremely valuable to those who are searching for ideas.

It is hoped that this descriptive study helps fill the void in today's literature concerning the organization and implementation of an individualized, small group, team teaching program. Rather than expound on the necessity of individualized, small group instruction, as does the majority of the available material, this study will be a practical guide to the organization and implementation of one particular situation. This is where it will be of benefit to education.

The author and participating teachers in this program should stand to benefit from this study. They will be involved in a unique program. This study will help the participants better analyze the program and evaluate their methods and philosophies.

#### Limitations of this Study

Population. The population for this study is limited to three class-size groups of seventy-five fifth grade students.

Geography. The location of the study is basically within two parts of the school; the actual classrooms and the instructional materials - group conference centers.

Participants. Those directly participating in the study are the pupils, teachers, principal, instructional materials coordinator, district resource personnel, and teacher's aide. The teachers involved will be termed Teacher A, Teacher B, and Teacher C, one of which is the author.

Time. The program will run for the full nine month school year, however this study will be concerned only with the organization of the program and initiating it in the first few weeks of the school year.

### III. DEFINITIONS

In this study, terms will be used that have been employed in many different ways. To avoid misunderstandings, or misconcept-

ions, terms that the investigator feels are important to the meaning of the study will be defined. Therefore, for the purpose of this study the following definitions will be used:

1. Individualized instruction - (a) the organization of instructional materials in a manner that will permit each student to progress in accord with his own abilities and interests; (b) the provision of instructional guidance and assistance to individual pupils in accord with their needs (7).

2. Individual differences - (a) the variations or deviations among individuals in regard to a single characteristic or a number of characteristics; (b) those differences which, in their totality distinguish one individual from another (7).

3. Team teaching - (a) a teaching method in which two or more teachers plan and present the learning experiences in a joint effort for the same group of students; (b) a method by which the special talents of various teachers are utilized to guide learning of the same group of students.

4. Interest grouping - a plan of grouping for projects within a classroom, or classrooms, by which the children work on group projects that are of special interest to them.

5. Centrum - the center of a unit plan of construction around which the classrooms are arranged and which provides a work area for all the classrooms radiating from it.

6. Instructional materials center - a central location where teachers and pupils may go to find materials. Included here are the library, listening center, store for audio-visual equipment and other teaching aids.

7. Trio - three persons grouped with the purpose of discussing and arriving at conclusions for a specific topic.

## CHAPTER II

### REVIEW OF LITERATURE AND RESEARCH

American education is in the process of undergoing major changes in theory and organization. At the present time most of the elementary schools are based on the self-contained, structured program. Under this program the children spend the entire day in the same room with the same teacher. The teacher is faced with preparing lessons in five or six subjects for twenty-five to thirty-five children. As a result of this, not all children are able to work on the level at which the material is presented. Many of the children struggle to do the work, and many fail. Others find the work too easy. They become frustrated. It has come to the attention of most educators that there is a definite injustice here. They are asking if there is not a better way to guide children through the educational process. Educators are asking if we can modify our program to better meet the individual child on his own ability level and give that child the opportunity to develop his potential to its maximum.

To attempt an individualized, small group program educators need to shift the emphasis from teaching to learning. The role of the teacher must be that of planning coordinator, resource person, and consultant evaluating learning growing out of the project for each group and for each individual. By concentrating on learning rather than teaching, a balance in the two kinds of

growth each child must experience can be provided: growth as an individual and as a member of society (7).

Gone, one hopes forever, is the abject notion that the art of teaching is nothing better than the process of imparting information, the philosophy of someone-who-knows-telling-those-who-don't. Gone, too, or going fast, is the age-old disposition to underrate the capacities of the average child and with it the readiness to write him off prematurely as non-academic (50:3).

The rate at which information is discovered has made it impossible to teach a fact-oriented curriculum. This explosion of information has out-dated the older, more established forms of educating.

Curricula and methods of teaching which took a hundred years or more to become established now find themselves faced with the prospect of dissolution within a decade or less. Being commonplace, their soundness has come to be so taken for granted that it is only natural that most teachers should wish to see them preserved intact as having stood the test of time. But appeals to Time Past are of no avail: conventional practice already falls short of the demands imposed by an insistent present and cannot hope to meet the yet greater demands of an imminent future (50:20).

An approach to teaching is being tried that aims at developing potential to its fullest. Thomas states that potential can be developed if the teacher: "(1) recognizes the basic needs of children; and (2) is able and willing to make the effort to help individual children grow" (58:VIII). In order for this goal of developing potential to be reached the teacher must see the child as an individual and recognize his individual needs.

The teacher provides the student with experiences which are based on his individual abilities, individual needs, and individual interests. This approach places the individual student at the center of the learning experience.

This is not to say that all work should be done on an individual basis. There are times when teachers have to teach, but there are also times when boys and girls can teach each other (58:47). They learn social responsibility from group work. They learn to be courteous. They share individual learning experiences. The skills that can be developed in group work are important not only to the individual, but to society. The group work provides in miniature form a comparable situation which students will face many times as members of a complex society.

Quite often interests and needs of one child may parallel those of several others in the classroom. If the students with like interests and needs in certain areas can be brought together there will be available to each of them a broader outlook on that subject. If individual interests and differences can be accounted for in small group situations then this method can be used. "Group assembly is important to the development of an individualized instruction program" (37:84).

Poirier (49:2603) did a study about team learning that was to ascertain the differences which take place in learning when a pupil: assumes the direction or control of his own learning activities through team leadership as compared with pupil behavior in a teacher dominated approach. The conclusions were:

1. Team learning provided a liberating influence on the pupils.
2. The growth of empathy within the groups was a meaningful development.



3. The experimental group had a more direct and receptive attitude toward school

4. Greater opportunity for educational growth was provided in the team learning approach.

5. Team membership must be frequently reshuffled to prevent any domination from developing.

A teacher can attempt to meet the individual and group needs in the classroom, but may not be successful in some cases. Many variables influence the success of the teacher in meeting these needs. The way a child views the teacher affects the outcomes, as does the way the teacher sees the child. A teacher's feeling of adequacy or inadequacy in subject areas limits the success. The teacher's approach to the subject matter influences the way children learn.

How can we account for these variables and see that the maximum effort is made to meet individual and group needs: Many educators have been utilizing the team teaching technique to bridge some of the gaps left by individual teachers in educating a group of children.

It is the goal of team teaching situations to provide a higher quality education on both the academic and social levels. Most research does not find any significant difference between team teaching and the traditional approach when academic achievement is considered. It does, however, conclude that social and problem solving skills are improved more by the team teaching approach.

There are dozens of schemes for individualizing instruction, for using small group situations, and for utilizing team teaching. These ideas are not new. They have been discussed in educational circles for many years. It is at the present time, however, that they have come to the fore-front in the quest for newer, more successful teaching developments.

## I. FORCES OF CHANGE

The author assumes that whenever there is change taking place there is a reason for that change. Education is no exception to this assumption. Education has been undergoing changes for thousands of years, and will undoubtedly continue to do so.

To identify the forces that negate change in education would require an understanding of the entire spectrum of human society; its economics, geography, history, sociology, and psychology. No attempt will be made here to do that. However, since this study deals with a product of change it is appropriate to explore a few recent forces of change in education in the United States.

World War II had a large influence on education. Research shows that during World War II over 30,000 teachers left their positions to take better paying jobs, "their places taken by substandard teachers" (56:24). The supply of new teachers after the war was not sufficient to meet the needs of expanding schools, let alone the replacement of underqualified teachers.

A result of this need for more and better teachers was criticism of the schools. "Early in the first decade following

the war the crisis was accentuated by a mounting crescendo of criticism directed against the schools. Criticism reached a high point in 1953 and continues to present" (56:24).

Woodring identifies two waves of criticism to hit education in the last twenty years. The first deals with the fear of communist infiltration into the heart of American society. It attacked the loyalty of educators and insisted that communism had dictated many school policies and had influenced textbooks with subversive contents. "This criticism created an atmosphere of fear in the schools and colleges" (65:8).

The second wave of criticism is stronger and more consistent. It started later than the communistic scare. It deals with attacks on educational philosophies and practices. Many vocal groups attack the ideals educators have set up for the educational process (65:8).

These criticisms of education, however unjust they may seem at the time, serve a definite purpose in initiating developments in education.

One service the criticism helped perform was the organization of citizens groups in support of the schools. Though supportive of the schools they were not satisfied with the status quo in education.

Rather, the emphasis was upon a re-examination and a reassessment of the practices and directions which public education had adopted and upon a search for promising new practices for the improvement of education. (56:26).

Out of the criticism and support of the citizens have come new trends in teaching methods. The methods are not based on

ideas that are necessarily new to the twentieth century. They have been refined, however, and put into widespread practice recently. Included in these new methods are utilization of individualized instruction and team teaching. These two methods are sometimes found separately. Sometimes they are used together.

In addition to World War II and public criticism of the schools as forces of change in education there have been others. One of these forces is the rapid increase in the world's population, and especially that of the United States.

In 1900 there were about 75 million people in the United States. By 1950 it had doubled to 150 million. It is predicted by the year 2000 there will be 300 million people in the United States. The percentage of population in the younger (under twenty) age bracket is increasing (26:2-3).

The schools have been forced to expand, innovate, and develop programs that will fill the needs of this rapidly growing and increasingly sophisticated society.

A factor that makes change in educational methods so necessary is the tremendous rate at which knowledge in all fields has increased. The amount of money expended on research and for library procurements illustrates the expansion of knowledge. It has become necessary to develop elaborate information-retrieval systems and intricate computers to aid man in assimilating the knowledge being uncovered (26:3).

Educators have had to look closely at their methods. It became obvious that it was no longer feasible to present a fact-oriented curriculum in the usual teacher-give and pupil-absorb

manner. "The school's function increasingly is being recognized as that of teaching students processes of inquiry through guided practices in them. They must learn how to learn" (28:8).

## II. BACKGROUND OF TEAM TEACHING

The development of team teaching from its infancy to its present place in American education spans a time period of approximately twenty years.

In the early 1950's there was a great increase in the use of the term master teacher. This usage appeared in at least three different contexts, all aimed at further recognition and expanded sphere of influence for outstanding teacher (56:32).

The first usage referred to the "master teacher" who was given an apprentice or intern for teacher education. The program was financed by the Fund for the Advancement of Education. The "master teachers" were chosen by the experience and qualities they exhibited. The interns were then available to assist the "master teacher" in the classroom and in a broad sense to team with the teacher.

The second context came about when money became available for teacher assistants or aides to free the teacher from clerical duties.

Finally the reliance for assistance shifted from non-certified personnel to other certified staff members. The use of large group lecture where more than one teacher presents information is in essence team teaching. Often a highly qualified teacher would be responsible for certain information to be passed

on to the students of another teacher. The "master teacher" term then applied to that specialized person.

"The above trends are both direct antecedents of team teaching and concurrent movements which are both discrete and merged with team teaching" (56:32-34).

In 1956 the National Association of Secondary School Principals established the Commission on Curriculum Planning and Development. This group submitted to the Fund for the Advancement of Education "A Proposal to Demonstrate How Improved Teacher Utilization Can Help to Solve the Problem of Teacher Shortage in High Schools of the United States." The most significant of these proposals became known as team teaching (9:15).

At that time in more than 100 high schools serious investigations of the team approach were begun (9:15-16). From the investigations in these high schools the rationale for team teaching gradually spread to other high schools, junior high schools, and eventually into the elementary schools in most parts of the country.

### III. RATIONALE BEHIND TEAM TEACHING

To more fully understand why team teaching has created a very lasting impression on education the rationale for such a program needs to be discussed. Certain advantages of team teaching can point out this rationale.

One advantage is the team approach offers the combined efforts of two or more teachers. This applies to planning curriculum, evaluating pupils, preparing lessons, and making

recommendations about pupils. The team members find a great deal of their time is used in discussing individual children (9:24).

Team teaching offers a definite advantage in allowing additional planning time. While one team member is conducting a large group session the freed teacher may prepare or plan more thoroughly (9:24).

The team approach gives the child an opportunity to identify more closely with a teacher of his choice. In the traditional method a child had only one chance. If he and his teacher had personality clashes, he suffered and was unhappy with school (9:24).

Small group work is encouraged by team teaching. As one teacher makes a large group presentation the other team members can work with small groups on some special common need. This also enables a one-on-one situation more often than the traditional method.

The relationship of the child to the large group, the small groups, individual children, and two or more teachers most often produces a more socially outgoing individual. Increased tolerance for others and clearer ideas of good citizenship develop through team teaching.

The team approach makes it possible to come closer to meeting the individual needs of the pupils through the group and individual work and closer teacher observation.

Utilizing the strong points of the team members brings about a more exciting program for both the teachers and the pupils. Teachers are more enthusiastic about a subject that they enjoy teaching and this enthusiasm is contagious.

## IV. IN SUPPORT OF TEAM TEACHING

The doctoral studies on team teaching done from 1965 to the present were reviewed by the author. Research done on team teaching since 1965 can be grouped into two categories: those findings that support team teaching over the traditional method, and those that find no significant difference between the two. There were no studies that found the traditional method a superior method.

Jester (38:1002) did a study to determine if differences existed between the teaching of language arts to eighth grade students by using team teaching versus the departmentalized approach. His conclusion was that team teaching was more effective in producing achievement in language arts in the eighth grade.

Burningham (9:770) had three purposes for his study. They were to (1) compare achievement scores of pupils from team teaching and self-contained backgrounds, (2) examine patterns of nongrading and individualizing instruction and (3) examine patterns of instructional activities of teachers involved in the study. Conclusion of the research showed that achievement of the team teaching group was superior in all subject areas. It was also concluded that team teaching was based more upon the attitudes of the staff than it was upon physical facilities.

Beighley's (10:1668) study was to define team teaching and to describe such a program as used in Lewiston, Idaho. The conclusions drawn showed the building to be flexible and usable, the staff felt the program had been a success, and parents were



very supportive of the program.

The three studies referred to above constitute a major portion of the documented research done in the last five years that statistically supports team teaching over the traditional methods.

#### V. NO SIGNIFICANT DIFFERENCES

Three studies found team teaching to be better in producing achievement. However of those done since 1965, twenty found there was no significant difference between the achievement scores of pupils in team teaching situations compared to those in the traditional approach. Following are three sample studies that illustrate the findings of those twenty studies.

The purpose of Schloadt's (52:3763) study was to compare the effectiveness of teaching high school health by team teaching and traditional teaching methods. His conclusion was: there is no significant difference between the two methods.

In Boren's (12:2993) study the stated problem was to provide experimental data on the issue of team teaching. The following results were recorded:

1. There were no significant differences in the achievement of the team teaching low ability groups and the traditional teaching low ability groups.
2. The achievement differences in spelling for the average ability boys in team teaching were significantly better.
3. Team taught girls showed higher achievement in social studies.

4. Significant differences favored team taught boys in reading, vocabulary, and grammar.

5. High ability girls scored better in spelling from the traditional method.

The conclusion was that, although there were some significant differences in subject areas, there was no significant differences in result of the two over-all programs.

Waters (62:2504) found in his study of team teaching and the traditional approach in teaching English in high school that achievement was the same with both methods. There was no significant difference between the two methods.

## VI. EMPHASIS ON THE INDIVIDUAL

At a time in history when there is such a tremendous population growth why do we point to individuality as the important concept? Why aren't group conformity and group instruction more important now than when there was a smaller population? Education has glanced at itself and realized that the most important commodity in this country is the individual. Upon realizing this fact a vast change has swept the philosophies of education. Emphasis has moved to the individual.

A fear of personal alienation, of loss of individuality has formed that reaches all parts of our society. West and Doll (26:5) sum up this new emphasis on the individual.

One may add to multiple social influences the fact of personal alienation which educators are beginning to recognize in its broader aspects. Originally identified with disadvantaged cultural environments and with learners of low

socioeconomic status, the concept of alienation now encompasses many psychological effects on human behavior. Personal alienation from one's world may indeed stem from cultural poverty, but it apparently originates in an inadequate self-concept, in the cultural malaise to which the economically privileged are exposed, in disintegrating patterns of family and community life, and in failure of teachers to interact emphatically and helpfully with their pupils. As seen in the schools, alienation constitutes a psychological curtain which the learner is somehow induced to draw before him, thereby shutting out desirable experience and contact with his environment. For instance, can it be that the current drive toward excellence has created such competition among able learners that, for many of them, a curtain has lowered between them and their peers and teachers? If so, much needs to be done to free learners to reduce competition, restore communication, increase interaction, and make mistakes in the only reprisal-free environment which society can easily provide.

Education is offered as the means of restoring and developing individuality.

## CHAPTER III

### PROCEDURES OF THE STUDY

The author embarked upon the task of writing a descriptive thesis with the hope that it would prove beneficial to those persons anticipating involvement in the development of either an individualized or team teaching program, or a combination of the two. The efforts presented here are the culmination of a direct involvement in an individualized, small group, team teaching program by the author.

#### Limitation of Time

This study concentrates on the aspects of developing and putting into use such a program. The phases of development range from the conception of the plan at Benson Hill Elementary School to the point where it is no longer under development, but has become routine practice. The period of time between these two limitations is approximately ten months. The definable conception occurred in January of 1969. The program was out of the developmental stage and in routine practice by the end of October, 1969.

No attempt will be made in this study to go beyond the point where development of the program stops. There will be no description or evaluation of the program as it functioned after October, 1969.

### Collection of Data

The data included in this study will be descriptive. All material contained in the description of the development and early implementation of the program was gathered through the personal involvement, evaluation, and observations of the author. There will be no statistical evidence to prove or disprove any hypothesis. Any test results included in the descriptive text were scores actually achieved in the preliminary evaluation of pupils.

### Presentation of Data

The data contained in this study will be presented in a way that should prove valuable to interested persons. By describing the sequential development and implementation of the program the various phases of planning and preparation can be examined rather closely.

### Drawing Conclusions

The anticipated audience for this paper consists of persons considering an inclusion of team teacher and individualized instruction into their school program. Therefore, conclusions drawn by a participating member of such an arrangement should prove beneficial. The conclusions in this study stem from what the author experienced in helping organize and utilize the program. The conclusions have no statistical verification. They are opinions based on actual experience.

### Making Recommendations

To be of practical value the description of the program

to be considered needs to point out areas of strength and areas to be avoided. The recommendations will be based on the outcome of meetings, individual and group work by teachers, and conclusions drawn by the author.

## CHAPTER IV

### PROGRAM DESCRIPTION

#### I. CONCEPTION OF THE PROGRAM

It was stated earlier that the purpose of this study would be to describe the organization and early implementation of the individualized, small group, team teaching program in the fifth grade at Benson Hill Elementary School. The content of this chapter will accomplish that purpose.

The roots of the program dealt with in this study spread deeply into the thoughts of district administration, as well as the school administration and the teachers under that administration. The district offices ordered a school built that would offer the best possibility for utilizing staff in developing an educational program that best meets the needs of each individual child. Benson Hill School, then, is a product of administration philosophy that aims at meeting individual needs.

The principal was given the job of staffing the school with personnel that would develop the potential of the school. The completed staff should follow fairly well the philosophy which built the school, one of individual needs for pupils. The school should have been ready to function as everyone had planned.

However, to most of the people involved in the school the idea of planning together, folding back walls, and being exposed to a critical eye of a fellow teacher was new. No one really

knew the best way to go about setting up a program of utilizing facilities and staff to best meet individual needs. Developments, therefore, were subsequently slow.

The pattern described in the above portion of this description has been, and will be, repeated many times. This is necessarily so, because it deals with two important factors: the human personality, and a method of teaching that has yet to be proven superior to the traditional method.

The development of the program at Benson Hill School was no exception. Teacher A and Teacher B had worked together for over half of the 1968-1969 school year before any definite plans could be made to organize a program for the 1969-1970 school year. During the early part of the year the two teachers had the opportunity to observe each other in the classroom, to question methods, borrow ideas, and discuss education and children. By January Teacher A and Teacher B were ready to start thinking ahead to the 1969-1970 school year and the possibility of forming a team. It was known that Teacher C would be moving into a fifth grade position in 1969-1970, so much consideration resulted in expanding the team to three teachers.

The origin of the thought behind the program under discussion is hard to pinpoint. It is obvious, however, that the program is not the product of one or two persons' efforts, but the efforts of many individuals.

In order to give a clear picture of organizing and implementing a team teaching, individualized method there are numerous topics which must be considered. All aspects of the school program



need to be discussed. It is hoped the reader will be able to benefit from the experiences of the three team teachers in the program discussed here.

### The Physical Plant

It has been said by many educators associated with programs as involved as the one being dealt with here that it takes a tremendous amount of time to plan a program for practical application. The time involved in developing the program from the conception of the idea to the actual teaching phase took a period of approximately a year. Not all of the ground work was done systematically, or even planned. Much of it just happened. The building made this possible.

The design of the school lends itself very well to teachers working together. It was built with an expressed intent to draw teachers together in a professional group where they could easily discuss the concerns of educating children.

The building has five unit structures, in which there are grades kindergarten through fifth. Rainier House houses kindergarten and first grade, Adams House the second and third grades, and Baker House the fourth and fifth grades. The fourth unit, Benson House, contains the office, instructional materials center, activity room, seminar rooms, and kitchen. This fourth unit is perhaps the most versatile and will be dealt with in more detail later. Bonneville, the fifth House is the gymnasium.

The three units that house the classrooms are essentially the same. There are eight classrooms which surround a large open room, termed the centrum. The centrum is the heart of the

unit. It is here that the teachers' desks are located, arranged with group planning in mind. The centrum also has space available for small group instruction, individual study carrels, and facilities for art projects. Each classroom is permitted easy access to the centrum.

The individual classrooms are small, designed for twenty-five pupils. They are equipped with televisions, and are linked to the school's closed circuit television system.

The eight classrooms in the unit are divided into two fairly distinct sections, with the four rooms in each section connected by folding walls. The walls are such that it makes for an easy transition from a multi-room area to a regular classroom size. Each room has a door that leads to an outside walkway.

The carpeted floors, plus a good ceiling tile make for good acoustics. Groups may be working within a classroom and not disturb each other. Furniture noise is reduced to a minimum.

The unit the author feels was most advantageous to the program of this study is the one that contains the instructional materials center, Benson House. More than just a library, the instructional materials center provides a store for audio-visual equipment available to both teacher and pupil. Listening carrels are stationed here as well as miniature screens for pupils' use in viewing filmstrips or film loops, also available in the instructional materials center. Well supplied with audio-visual materials, library books, reference books, and very ably staffed with a full time instructional materials coordinator and his

aide, this unit became an integral part of the program.

Adjacent to the instructional materials center are two small seminar rooms separated by a folding wall. Each of these rooms is appropriate for about eight to ten children. Equipped with blackboards, furniture, and carpets, these rooms find much use.

Also adjacent to the instructional materials center is a room set aside for speech therapy. It was not used but occasionally so it was also included in the list of teaching and learning stations.

The activity room in Benson House doubles as the cafeteria, however, it is appropriate for several small group sessions at once, or for one large group session.

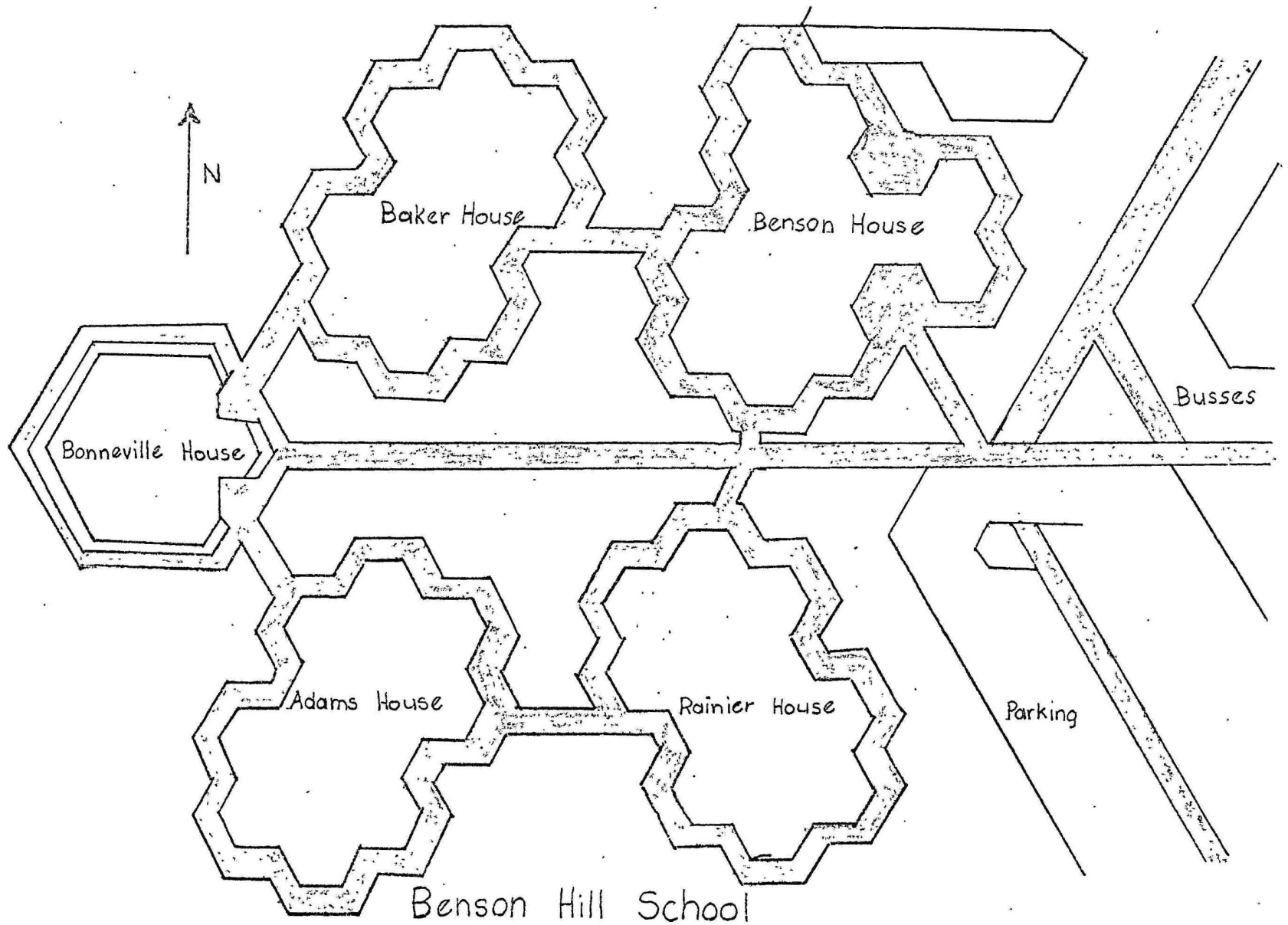


Figure 1

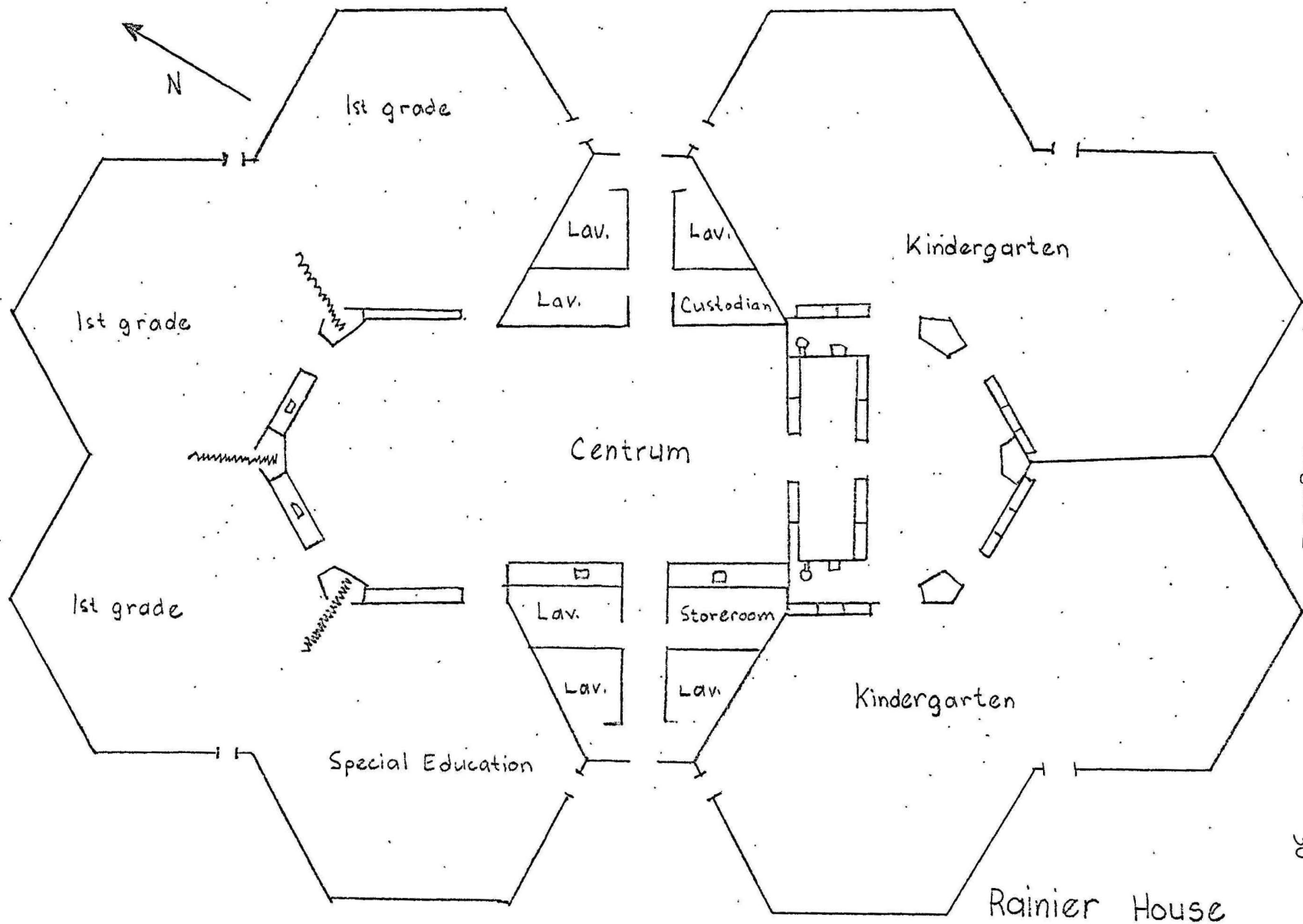


Figure 2

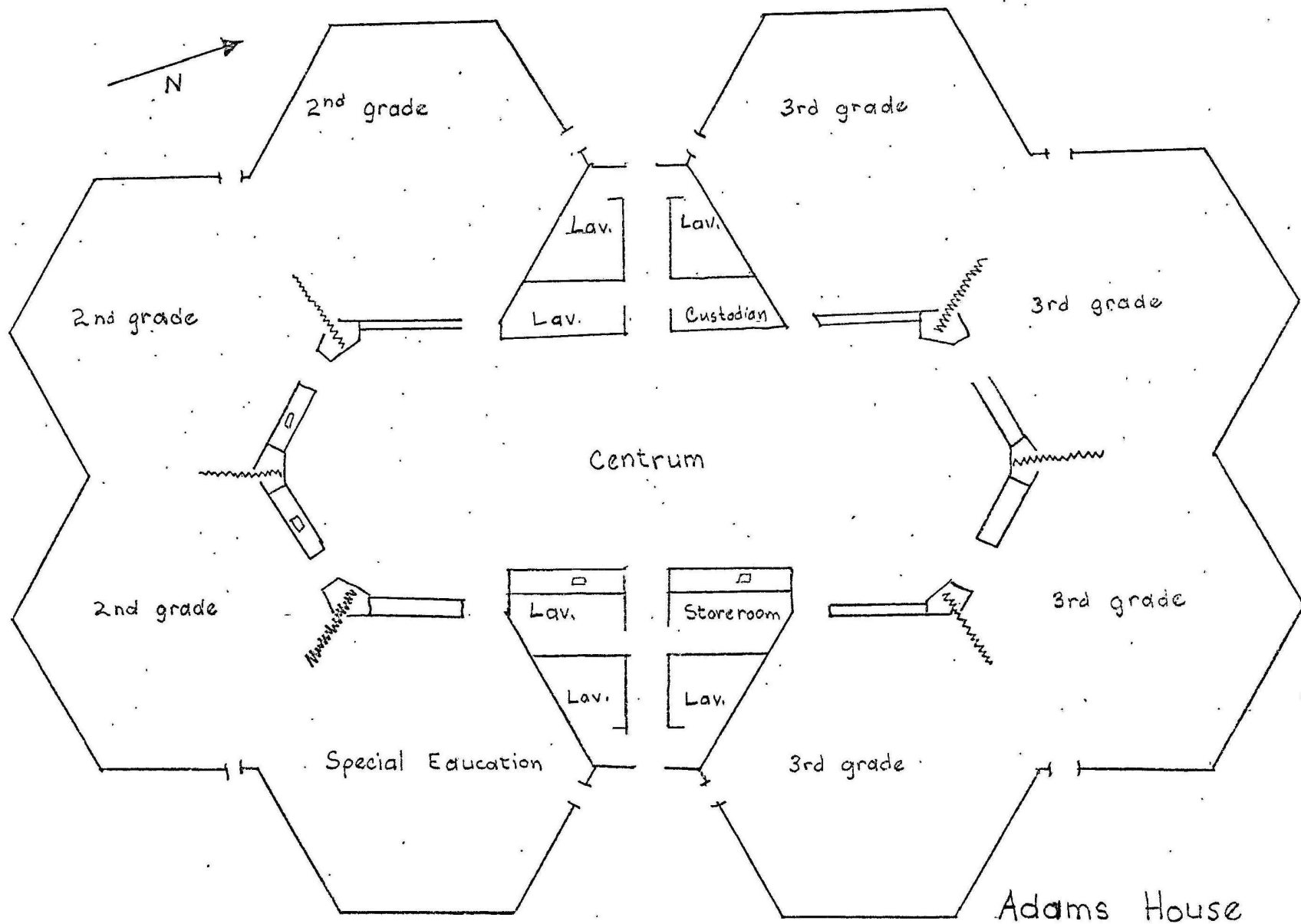


Figure 3

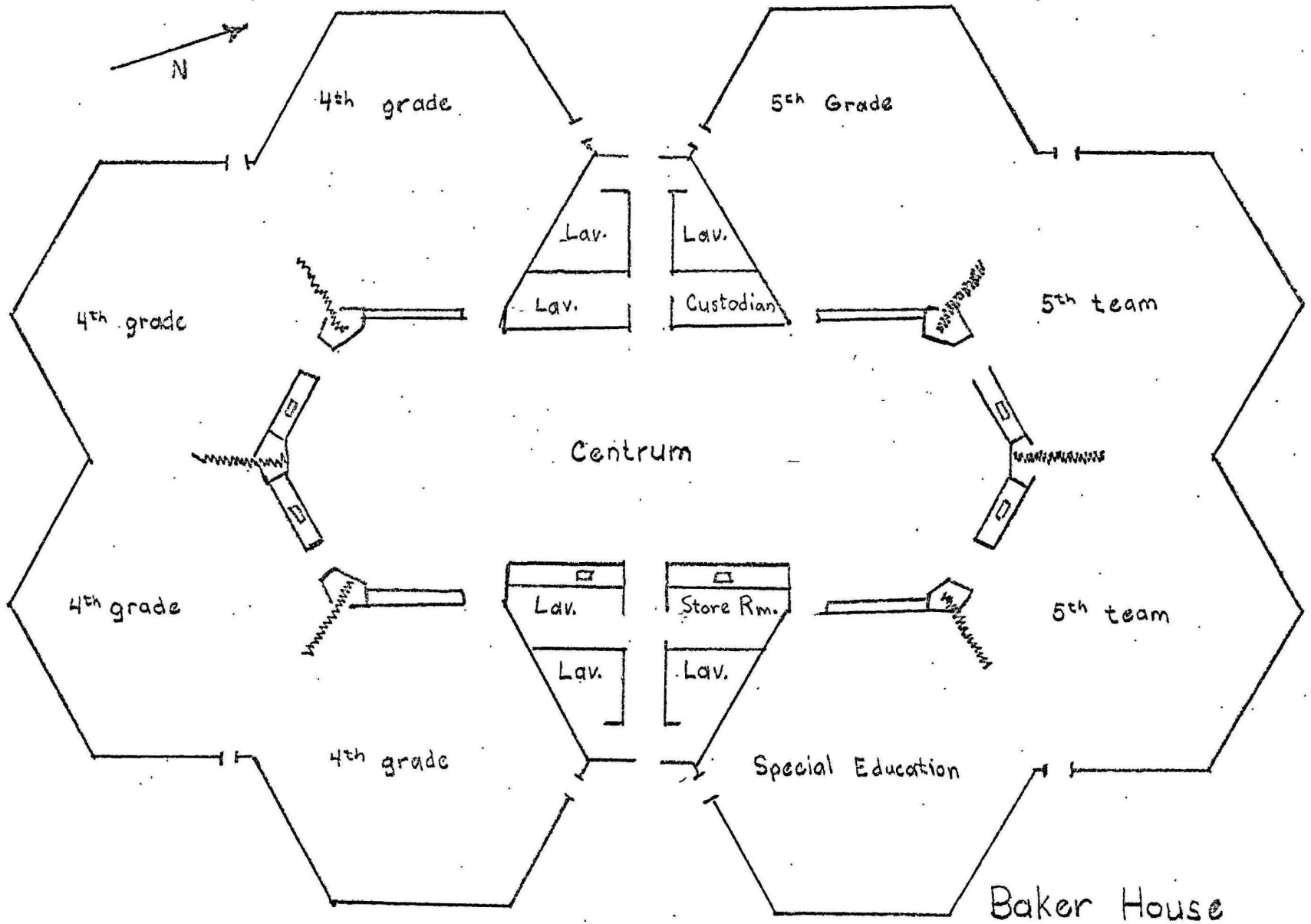
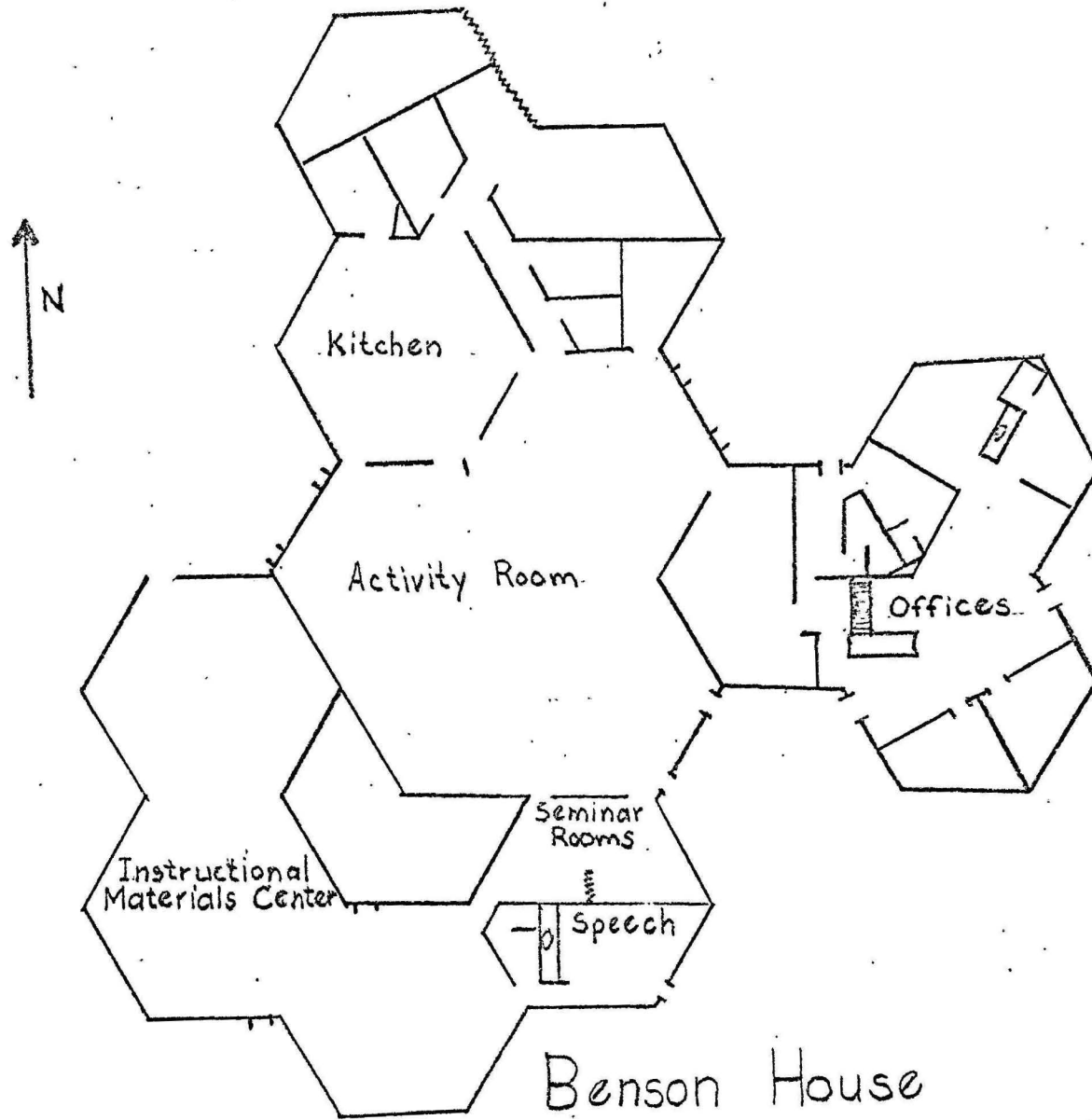


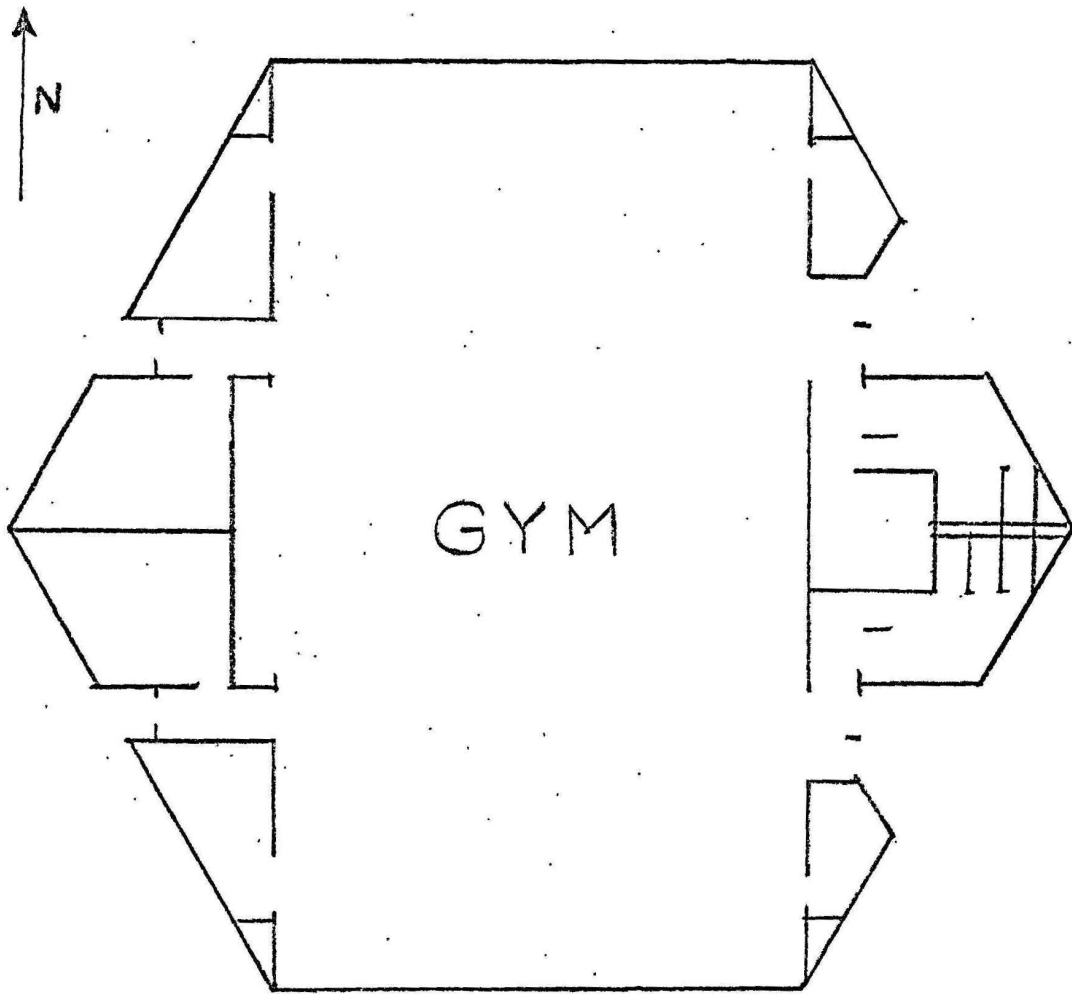
Figure 4



Benson House

Figure 5





Bonneville House

### Choosing Team Members

Through the process of evaluating personal and inter-personal methods and philosophies teachers often accept or reject certain characteristics of other teachers. If a teacher rejects too many characteristics of his colleague it is doubtful the two would be compatible as team members in a team teaching endeavor. Perhaps the idea of teaming with a person starts when one teacher observes something admirable in the methods or philosophies of another teacher. One thing is certain: a successful team teaching situation cannot be instituted by a principal dictating who shall work as team members. "For team teaching to be successful teachers must be involved in initial planning; they must have the prerogative of rejecting as well as accepting ideas" (40:25).

In forming the team under discussion in this study several things were considered. Teacher A and Teacher B had worked together for several months and each was familiar with the methods and philosophies of the other. Teacher C, on the other hand, had not worked closely with A or B in a classroom situation. The prospective team members discussed possibilities for a three teacher team and decided it would be beneficial to the program to include the three teachers.

One of the things considered was personality compatibility. It was felt that the three teachers were outgoing enough to perform under the requirements of a team structure, one of which is to be open and honest enough to express one's feelings.

A sense of humor helps to loosen the atmosphere and make

working together a privilege rather than a chore. It was felt all three teachers could smile when things got difficult and work to improve them.

One of the main considerations in forming the team was the strengths and weaknesses of the teachers in the different subject areas. It was hoped the program would find one teacher able to assume the main responsibility for one subject, while another teacher would do the same in a different area. The result would be a stronger curriculum with a specialist in each subject. Discussion of teacher strengths and weaknesses drew the conclusion that the three teachers would be able to cover the curriculum quite well.

Consideration was given to teacher traits to determine compatibility. Traits such as energy to do the best job possible, sincerity with pupils, good attitudes toward teaching and children, professionalism, determination, and creativity were important in the team members.

Desire to become involved in a difficult, time-consuming program was important. The team members had to be committed to the task of preparing and implementing the program. It could work only if each member of the team put forth his or her full efforts. If the desire to make it go was not there then the program would fail.

Obviously, not all the points mentioned here were gone over on a systematic plan and discussed. Some were feelings that had come about through previous contact in and out of the classroom. Some of the considerations are relatively intangible and are based

upon impressions one teacher receives of another. They are perhaps more important than the things that can be determined through a discussion. Therefore, it is necessary to work and become acquainted with other teachers before it can be said they would make a good team.

It is important to note that in forming a team it should not be necessary for one team member to make major concessions in his methods and philosophies. The process should be one of matching teachers who share similar feelings in these areas.

### The Team Members

Teacher A had seven years teaching experience prior to involvement in this program. She has outstanding strengths in the language arts with reading and creative writing as high points. Mathematics is also another strong point. She feels adequate in social studies, but inadequate in science.

Teacher B had four years experience before entering the team program. His strengths are in science, mathematics, and social studies. His weakness is in the language arts.

Teacher C taught nine years before joining the team. Social studies and remedial reading are strong points in her teaching. Mathematics is the subject she likes teaching the least.

## II. BASIS FOR PROGRAM

### Ideas Behind the Program

In the early stages of planning and organization, discussion dealt with understanding the individual child and the

influences which affect his learning. The program was based on four basic principles of human growth and development:

1. There are significant individual differences among learners. Physical, emotional, and academic growth vary from one person to another. Different pupils have different learning styles; some visual, some aural.

2. There are significant differences within each learner. Maturity in physical, emotional, and mental growth does not always occur simultaneously. Achievement in different subject areas may be quite inconsistent.

3. Students learn best in areas where they can experience success. Achievement and personal worth are important feelings. Learning is enhanced in an atmosphere that is void of the inhibiting fear of frequent or habitual failure.

4. Timing is important in presenting certain developmental and intellectual tasks. The success of certain learning experiences is often determined by rate of growth and level of maturity. To present impossible learning tasks can be as harmful as not challenging the individual.

#### Objectives of the Program

In determining what was to be accomplished by the team and individualized method the teachers and principal arrived at a set of objectives. These would be used as a guide in developing the program as well as a means of evaluating it periodically and at the year's end.

The objectives were:

1. Be aware of the four basic principles of human growth

and development as listed above.

2. Provide the individual child with a program that best meets his individual needs.

3. Provide an atmosphere to develop self discipline and social responsibility.

4. Provide the opportunity for each child to develop a meaningful relationship with at least one of the teachers in the team.

5. Utilize the facilities and teacher abilities to provide the best environment in which children can learn.

6. Provide experience so that future programs of this sort will benefit.

#### Characteristics of the Program

It is not realistic to expect pupils to attain greater achievement merely because of a change in organizational structure. The individualized, team teaching program should reflect certain characteristics that are compatible with continuous and individual student progress. These characteristics can be used as guidelines for developing and evaluating such school programs.

1. The team members understand and accept the reasons for the individualized approach to teaching.

2. There are clear instructional objectives organized in a realistic sequence and covering the span of the program. These statements guide the teachers in determining what each student will study next and provide teachers guidance in selecting appropriate learning materials and in evaluating students.

3. There is sufficient variety of instructional materials on different levels so that each teacher can adjust instruction to the range of abilities found in each class. The aids to instruction must be readily accessible and sufficiently differentiated to meet the particular needs of each child in the class. They must be readily available to the teaching staff.

4. There are many opportunities for individualization of instruction so that students may actually progress at individual rates. Students frequently work independently or in small groups on projects and assignments relevant to their individual abilities, needs and interests. Such independent study or small group instruction occurs in most areas of the curriculum and accounts for a large portion of each student's day.

5. There are grouping practices used that are flexible enough to allow easy movement from group to group within a class or from class to class within a school. Teachers regularly regroup students for instruction, using such criteria as diagnosed deficiencies, achievement, general ability, interest and capacity for self-direction.

6. There are evaluation devices, based on instructional objectives, that provide clear evidence of pupil attainments and thus facilitate decisions of diagnosis of learning problems and prescription of corrective teaching experiences. Teachers record student progress toward the attainment of specific objectives in all areas of the curriculum and use these records of student progress when making decisions about grouping and assigning future work.

7. There are opportunities for teachers to plan and work cooperatively and to refine the team method. Such teams build on teacher strengths and permit more effective utilization of teaching time. Team formation takes place gradually because people have to learn to work together and develop their respective individual teaching strengths.

8. The design of the school plant reflects the program. Individualized instruction, flexible grouping and team teaching require new or more flexible use of school and classroom space.

9. The parents are fully informed about the instructional program, and are supportive of it.

### III. PROGRAM PLANNING STAGES

#### Initial Planning

Once the team members had been selected some thoughts for the program had to be formulated and discussed by the team. One of the basic concepts to be settled upon had to deal with the type of approach that would be used in utilizing team teaching.

Each team member had strong feelings favoring individualized programs and using small group work. It was agreed that the method would be one of individualized and small group instruction.

The next decisions had to deal with organizing the curriculum in a manner that utilized individualized and small group methods. The ground-work was laid by deciding that ability levels and unit objectives for those abilities would be written to meet the individual needs within the subject areas. This will be discussed in greater detail in a following section of this study.



Among the first questions to be asked was how could the physical facilities be used most effectively. One of the major problems to be overcome was that of space. It was known there would be three teachers in the team. Assigned to the team would be seventy-five pupils. Available were only two classrooms, with enough furniture for sixty children. This presented two possibilities; overcrowded classes not lending themselves to the program, or flexible scheduling and grouping of pupils to relieve the pressure in the classrooms. The latter was chosen and discussion followed on how to go about scheduling and grouping. Plans were made to use certain stations for large group work, others for individual and small group work, and others for quiet study.

To more fully understand how the facilities could be used it was necessary to inventory the available teaching stations.

The results of the inventory showed the following spaces:

1. Two classrooms with folding walls
2. The centrum connected to the classrooms
3. The activity center
4. Seminar rooms
5. Speech room
6. Instructional materials center

### Instructional Materials

One of the major factors that has made individualization and flexible grouping feasible is the great growth in instructional materials. Today, with the many different kinds of books, with the variety of media such as filmstrips, filmloops, film, tape

recorders, charts, and manipulative materials, the teacher is no longer forced to stay with a single set of books which was once the only way to teach. The single textbook can no longer compete with television, movies, bright and colorful books and the variety of other stimulating things not found at home twenty years ago. The availability of materials has made possible the implementation of individualization, flexible grouping, and team teaching. A large variety of materials is vital for these programs.

The instructional materials center at Benson Hill School is very well supplied with a variety of materials:

1. Books - very adequate fiction, non-fiction, and reference sections.
2. Listening carrels - individual carrels with listening posts are used for both enjoyment and study.
3. Tape recorders - sixteen cassette and twelve table recorders are available. Teaching tapes on a variety of subjects are available.
4. Film strips and film loops - over 300 film strips and 100 film loops are categorized in the center. There is an ample supply of projectors.
5. Records - dozens of records for both study and enjoyment are supplied. There is a record player for each room.
6. Listening centers - portable centers into which can be plugged a record player or recorder and eight sets of earphones.
7. Opaque projector - one available for use by teachers and pupils.

8. Miniature screens - folding portable screens with a surface of about one foot by one foot can be used for viewing.

9. Video-tape recorder - used extensively for individual and small group presentations. Another use is for recording television shows for later use within the building.

10. Closed circuit television - used extensively for individual and small group presentations. It is also used for showing video-tape presentations or live shows from another part of the building.

11. Science laboratory - the laboratory contains packaged experiments and equipment for performing demonstrations.

12. Thermal duplicator and photo copier - available for re-production of classroom teaching tools.

13. Transparency sets - commercial and teacher-made transparencies covering most subjects are on file.

14. Overhead projectors - one for each room in the school.

In addition to the materials listed there are numerous articles the teachers and pupils find of interest and use. Most of what is not available in the Instructional Materials Center can be ordered from the district audio-visual office. A fine film collection, displays, filmstrips, records, and so on are there to be used by teachers and pupils.

### Ordering Materials

Due to the nature of the team situation for 1969-1970 it was felt certain materials were needed that were not usually found in the regular classroom or instructional materials center. The

teachers and principal held joint sessions to determine what materials would be ordered in April, 1969.

The list of materials was as follows: (1) Tote trays which would be used by pupils for storing supplies and books and for transporting them from group to group and station to station. (2) Cabinets for storing tote trays. (3) Listening centers which would be used to assist in small group work. (4) Teaching tapes designed for small group work. (5) Teaching games to be used primarily for small group activity in mathematics. (6) Individualized laboratories for reading and mathematics. (7) Folding room dividers for creating space within classrooms for small groups. These materials helped complete an already outstanding list of instructional materials and furniture available for use.

#### Summer Meetings

All three members of the team and the principal were on the campus of Central Washington State College for the summer of 1969. This was not planned as part of the training and preparation for the program, but it did prove to be extremely valuable to further organize thoughts and plans.

Several meetings were held through out the duration of the summer session. Some of the meetings were attended by persons who had previous experience with programs similar to the one in this study; either as administrators, teachers, or consultants. One of the points that these experienced people stressed was the commitment of the individual teachers to the program. Also, experience had shown them that three teachers as a team was not

desirable. This stems from one person getting the feeling he is left out of planning. It is supposedly the nature of a team of three to have one person alienated from the other two. It was a valuable point and the three teachers kept it in mind when it came to working together in the classroom.

It was decided that communications between the team members would have to be very frank and open. Teachers A and C had received special training in communications skills, and in fact were trainers in a workshop on communications at Central Washington State College for the summer. This experience, plus the nature of the meetings held in the summer increased each team member's awareness of the necessity for good communications in the team.

### Classroom Structure

Each teacher has his own ideas on how he wants his classroom to be organized. This includes the arrangement of furniture, the seating arrangement, displays and bulletin boards, location of teaching aids, rapport with pupils, and discipline. These organizational preferences could lead to some conflict within a team if they were not clearly discussed.

The program studied here allowed for these variables. In preparing for the opening of school the teachers cooperatively cared for the physical arrangements. Realizing small group work would be important, the desks were positioned in groups of four or five. The other furniture was placed where it would offer the most to the program. The physical arrangements were easily

agreed upon with flexibility in mind.

The matter of rapport is more difficult. The teachers had to reevaluate their thinking and come up with a common approach. Some teachers prefer to keep the pupil-teacher relationship very business-like. Others prefer to go to the other extreme and make it a buddy-buddy relationship. Many teachers want a combination of these two relationships as their rapport with pupils. The team teachers wanted to create a friendly atmosphere in which the pupils would feel at ease. They wanted the medium between the extremes, a relationship that could be friendly and business-like.

Discipline can be difficult to organize between team members. Some teachers prefer a strict disciplinarian approach, while others are quite lenient. The team teachers felt this matter needed close attention. Discussion concluded that discipline would be firm and appropriate to the offense. If any harsh punishment was necessary all three teachers would be involved in it. It was deemed important to present unity on the team's part in discipline.

It was anticipated certain children would attempt to play one teacher against another. This could be easily discovered through close daily planning and discussion by the team. When it was suspected something like this was occurring a conference with the student would be held.

The objective of self-discipline and social responsibility would guide much of the structure of the classroom. Responsible freedom would be encouraged and lauded. Irresponsible encroach-

ments on this freedom would result in loss of the privilege of self responsibility.

The organizational aspects of the program had to be flexible. Certain situations would call for more strictness, or leniency, on the part of the teachers. It would be possible, at a time when there were only a few groups working on projects in the classroom, to allow more movement and noise than when there was a large group activity in the room.

Flexibility would be necessary when alternate teaching stations were in use. The strictness and degree of discipline would differ when there were several groups using the various smaller teaching stations. This may appear to be inconsistent, but the pupils would become aware of what actions are acceptable in the differing circumstances.

#### Relationship to the Rest of the Staff

The best possible utilization of staff and facilities to provide the best learning environment was one of the objectives of this program. In order to reach this objective the relationship of the team to the other teachers in the unit and in other units, to the instructional materials coordinator, the principal, the counselor, and nurse needed to be investigated.

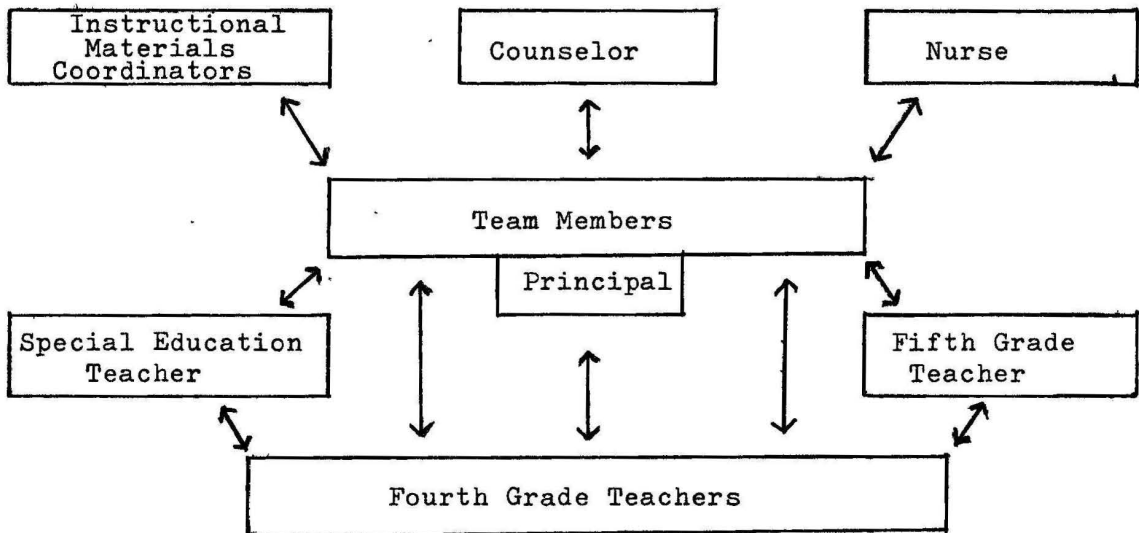
The principal, counselor, and instructional materials coordinator had already indicated their willingness to work closely with the team. A great deal of interest in the team program was shown by the other staff members. In the discussions about the relationship of the team to the rest of the staff a

diagram was drawn.

This diagram stresses the desire to keep all teachers in the unit on a common goal: that of doing the best to educate each child. It shows a two way interchange between all members of the unit, as well as those supportive personnel. The position of the principal is more closely aligned to the team. He was to become actively involved in the efforts of the team.

A great deal of interest and support were available from the other teachers in the unit. Stimulating discussions were held in which many beneficial ideas were exchanged.

Figure 7  
Team-Staff Interrelationships



### Pupil Assessment

District resource teachers had been engaged to do preliminary diagnostic evaluation of pupils during the first week of school. The results would be used to place each child at his



present functioning level in the subjects. In August, after returning from summer school, the three team members spent a week and a half making preparations for the opening of school. Among the things to be done was preliminary assessment of each pupils' functioning level, which would act as an aide to the diagnostic evaluation.

This was done by checking the results of the Lorge-Thorndyke Intelligence Test and the Iowa Test of Basic Skills. In addition to the level of ability as estimated by the previous year's teacher was studied for each subject.

The purpose for doing this investigating was to make preliminary groupings to facilitate testing by the resource teachers and to ease the movement from one activity to the next. The resource teachers had requested fairly homogeneous ability groups for the purpose of administering the tests.

A chart was then made for each child. It showed his chronological versus his mental age. It showed his intelligence quotient versus his achievement on the Iowa Test. These two comparisons gave a good picture of what the child had been like as a student. By studying the two comparisons, conclusions about the learner were drawn. He could have been an underachiever with low ability, an underachiever with average ability, or an underachiever with high ability. He could be an average achiever with low, average, or high ability. He could also be an overachiever of low, average, or high ability.

Using the conclusions drawn from these studies, the teachers

could tell fairly well which students were most capable of working in an individualized, small group approach. It was expected the high achievers in all three ability groups would be the ones who adjusted most easily to the new approach. The low achievers were expected to be slowest to respond.

The findings in these assessments allowed the teachers to tell fairly well before the program was under way how the groups would have to be run. The groups with low and average achievers would require the most teacher guidance and more small group and individual help, whereas the remainder of the pupils could accept more responsibility.

Figure 8  
Pupil Assessment

Pupil \_\_\_\_\_

Age	Mental age Lorge- Thorndyke	I.Q. Lorge- Thorndyke	Achievement Iowa Test of Basic Skills	Skills tested
10-4	9-6	V. - 92	5-7	Vocabulary
		N.V. - 104	5-6	Reading Comprehension
			5-4	Language Skills
			6-2	Work-Study Skills
			5-8	Arithmetic Skills
			5-6	Composite

Conclusion: Overachiever of low ability

Figure 9  
Pupil Assessment

Pupil \_\_\_\_\_

Age	Mental Age Lorge- Thorndyke	I.Q. Lorge- Thorndyke	Achievement Iowa Test of Basic Skills	Skills tested
10-1	11-4	V. - 121	5-2	Vocabulary
		N.V. 134	4-8	Reading Comprehension
			5-0	Language Skills
			5-8	Work-Study Skills
			4-6	Arithmetic Skills
			5-1	Composite

Conclusion: Underachiever of High Ability

#### Individual Skills Checklist

The pupil assessment was an important procedure. The teachers became acquainted with some aspects of each child even before school opened. Testing would further locate individual skill and ability levels. When the testing was completed after the first week of school some guidelines would be needed to begin proper pupil placement in skill areas. These guidelines took the form of objectives written by the teachers specifically for this program. These objectives were arranged on degree of difficulty by signifying levels using a skills checklist (see appendix).

The task the teachers would be faced with was applying the results of the testing to the skills checklist and from there prescribing for each child the sequential skills to be presented. The individual pupil skills checklist booklet consisted of twenty-

nine pages. Contained in the booklet were sequential skills for mathematics, reading, language and library, and science.

The science objectives for the booklet were arranged in units. Five levels were signified from A to E. The very basic concepts, generalizations, and facts about the unit were covered in levels A and B. Each succeeding level became increasingly more difficult and contained more sophisticated concepts, many of which required conclusions on the part of the student.

Compiling the skills and objectives in this booklet took a great deal of time. The major part of one week was spent arriving at and arranging the skills and objectives. Each teacher concentrated on developing a checklist for the subject he, or she was strongest in. Therefore, Teacher A did language and library skills, Teacher B did science skills and Teacher C was responsible for reading. The mathematics resource teacher for the district volunteered to develop a skills checklist for mathematics.

When these checklists were completed they were stenciled and put into booklet form. This was done not only for each child involved in the program, but for all children in the fourth and fifth grades if the teachers so desired. Due to the number of booklets and pages within the booklets this was a very time-consuming job. The teacher aide and school secretary proved invaluable here.

It was felt the skills checklist should receive high priority on teachers time because the basis of the program is the advancement of each individual at his own rate from his starting

level to as far as he can progress. The checklist, then, provided a path along which to guide each pupil. It acted as a reference source for the teachers as well.

There are some major drawbacks to utilizing these booklets for each child. Perhaps the most important is time. The initial evaluation and recording takes considerable time, but the continuous progress of each child and the resulting evaluations and recordings in subsequent subject areas requires far more time than a teacher can devote. There must be competent clerical assistance. "It has been estimated that an average teacher can devote an extra seven to fifteen hours a week to the instruction of children if she has a responsible assistant" (58:36).

The demands for time made upon the team teachers resulted in the skills booklets not being used as had originally been planned. The detailed planning of the teachers and the lack of adequate clerical assistance resulted in the checklists being used primarily as reference material, as well as guidelines for the teacher.

#### Organizational Planning Time

Prior to launching of a school program such as the one discussed here a great deal of planning and organizational effort must be made by all personnel directly involved. The formation of the program requires much thought and discussion many months in advance of the actual implementation. A commitment of time and energy is essential. Groups interested in embarking upon such an endeavor as an individualized, small group, team teaching situation

must count on devoting many hours to preparatory work.

In this program the process of discussing the possibilities of a team situation and arriving at the team members consumed approximately five hours. The five hours was time spent in scheduled discussions. After settling upon team membership sessions were held to evaluate the individual teacher strengths and weaknesses. This task took about two hours.

The initial planning, which considered techniques of teaching, utilizing facilities, developing objectives and ideas for the program, and evaluation consumed approximately fifteen hours.

The review and ordering of instructional materials accounted for ten hours per teacher and principal.

The summer meetings held at Central Washington State College totaled around eight hours. There were four scheduled gatherings, and various informal discussions.

The process of making pupil assessments prior to opening of school took each teacher in the area of twenty hours. This included the gathering and charting of information.

Compiling the individual skills checklist required at least twenty hours per teacher. In addition to compiling the list the recording of test results in the booklets took about five hours.

The parents' meeting held the second week of school lasted about two hours, but teacher planning of the program and actual involvement totaled about five hours.

In estimating the time used in the organizational phase

of the program a total of ninety hours per teacher can be accounted for. It is reasonable to assume a good deal more time was spent in informal discussions from which came many ideas for the program.

#### IV. THE FIRST WEEK OF SCHOOL

##### Initial Pupil Orientation

The first part of the first day of school proved to be both confusing and exciting for most of the children involved in the program. Without knowing why, they could see three teachers in two rooms with the walls open and seventy-five other children all trying to be seated at only sixty desks. An explanation was definitely in order.

The classrooms were permanently equipt with a microphone and overhead speakers so all could hear in a large group session. Each teacher in the team welcomed the children and then one of the teachers proceeded to explain why things were as they were. There were mixed reactions from the children. Some were very happy and excited about the arrangements, others were confused and unhappy. However, the confusion and unhappiness began to disappear as the day progressed.

The evaluation sessions were explained. The children were told they would spend forty minute blocks of time at several different locations, and would be meeting several new people. This would take place most of the first week.

The fact that they had three teachers struck many of the

children as unbelievable. Many thought it was a tremendous idea, but others still wanted to know, "but who is my teacher?" This matter of identification difficulty disappeared in the first two weeks of school.

The difficulties of having the equivalent of three classes of children in two rooms was discussed. It was explained that at most times during the day there would be groups of pupils at other stations around the school and everyone would have a place to sit, but no desk to call his own. The tote tray was his storage space and not the desk.

#### Station Schedule

Following the orientation period it was necessary to prepare the children for the schedule of the day. Since different children would be in different places doing different things at the same time it was important that there be a clear way for each child to know where he was going and when. In order to do this a station schedule was devised (see appendix).

The pupil assessments done earlier proved valuable here. The groups were formed mainly from the results of the assessments. Each group was to be held under ten per group if possible for some tests and not more than twenty for others.

The station schedules were passed out to each child. Each teacher was responsible for about twenty-five children and he, or she, read off the names of the pupils that would be at the various stations during the different time periods. The student marked the correct space and when it was done he had his complete



schedule for the day before him. At the announcement from the person in charge that it was time to go to the next activity the pupil had only to look at his schedule to see where he belonged.

Close supervision of some youngsters was needed in completing the schedule, as they had difficulty with directions. Most, however, did a good job and had no problems throughout the day and the entire week.

### Diagnostic Evaluation

One of the objectives of the teacher was to run as individualized a program as possible. One of the most important tasks in individualizing a program is the evaluation of pupils. The purpose for this is to locate their present learning levels and identify skills that need to be developed. The team felt that this needed to be done during the first week of school so planning individual and group programs could be started as soon as possible.

To assist in evaluation arrangements were made to have the district resource teachers available to the team group for the first week of school. Plans were made with the reading specialist, mathematics specialist, science coordinator, physical education resource teachers (three of these), and art specialist. They were to supply tests on varying levels that would give the team teachers a good picture of where each child was in skill development. When the results of the tests were computed and arrayed by the resource teachers the team teachers would then plan grouping and units for the groups and individuals.

Reading testing. The reading resource teacher supplied the tests used in her phase of the evaluation. The purpose of the testing in reading was to determine the skills that would be appropriate starting points and to indicate the skills that needed to be strengthened.

A second purpose was to try and distinguish a preferred style of learning. This ranged from those who preferred working solely on their own to those who demanded very close observation. It also indicated certain students who loved to read, but writing was just not for them.

Through observation and test results a good idea was developed about the reading ability, skills, and styles of each child.

Tests used for reading were Bellevue Phonics Test, Buck County Word Opposites Test, S.R.A. Placement Test, Fourth Reader Achievement Test by Ginn and Company, and the Developmental Reading Tests by Lyons and Carnahan.

Mathematics testing. The tests used in mathematics were designed to correlate specifically with the pupil skills checklist. The resource teacher had prepared the skills checklist and also prepared the tests for the evaluation (see appendix).

The testing ranged from the very basics of numbers to the more complex area of fraction and decimal exercises. Included in the skills and concepts tested were number sense, number sentences, regrouping, basic number facts, computation, fractions, factoring and measurements. This made for ease of pinpointing the

starting place for each individual on the line of continuous progression through mathematics skills.

Physical Education testing. Three physical education resource teachers participated in the evaluation of the children. Some of the things they looked for and wrote comments on for each child were eye-hand coordination, cross-body coordination, gracefulness, manual dexterity, and fitness. Tests used were the Indiana Motor Fitness Test and the Manual Dexterity Test.

When the evaluations were over the resource teachers divided the groups into six smaller groups, which were soon combined to form three main groups. Step by step units were provided by one of the resource teachers. The units were broken down into three levels of difficulty, which fit well into the overall scheme of the project.

Art observation. The purpose of having an art specialist spend nearly a week with the children in the program was twofold. First, it was to help identify students with special talents for art which might aid those students in other areas. It was also to help uncover problems that could be expected in handwriting and organization of material. The resource teacher wrote down observations which he felt were pertinent.

A second purpose was to provide an enjoyable time when the children could be creative. The differences in individual creativity were very obvious in much of the art work.

Science demonstrations. It was felt by the team members

that a good activity for the first week of school would be science experiments. To carry this out the science consultant for the elementary grades arranged to spend five half day sessions at the disposal of the team.

During the week each pupil had the opportunity to become directly involved in three different experiments. This provided a good motivational stimulus for later science projects, as well as make school a little more fun and interesting. It was not an evaluative experience.

Counseling. Through earlier discussions the team and counselor had agreed to work rather closely in the program. His part in this first week of school was to meet with small groups of pupils and let them discuss nearly anything of their choice. One thing, however, that was asked of them was how they saw the upcoming school year.

These initial meetings gave the pupils a chance to become acquainted with the counselor. It was found the children from the team went to talk to him voluntarily far more frequently than did the pupils not involved in this orientation. This is not to imply they had more problems, but they felt more at ease and understood the purpose of the counselor better. The sessions also gave the teachers some feedback as to how the children would like to function in the classroom.

Pupil-Teacher planning. The purpose was to develop some lines of communication directly between the teacher and the pupil.

The other results from testing, counseling, and observations were second-hand. One approach used to do this was what was termed the trio.

Each trio was made up of three individuals. They were given a topic about school to discuss for five minutes. At the end of that time one of the trio was to report to the other trios what points had been discussed and what conclusions, if any, were drawn.

Topics used were ones that concerned the pupils directly: how did they see their responsibility to themselves for the year; what was their responsibility to groups they worked with; what would make them like school most. These were a few of the topics. Some of the children were very responsive, others contributed very little.

This gave the children the correct idea that the teachers were concerned about what they wanted and were willing to try some of their ideas. It helped set the stage for individual and group work.

Pool. The pool was a room set aside for the children not involved in an activity at a particular time. If they finished an activity early they were sent to the pool. Two teachers were stationed in the pool, as there were, at times, as many as twenty or twenty-five pupils there.

Games, reading, creative writing and filling out an interest inventory were some of the things done in the pool. Quite often it was a relaxing break from other activities.

## V. PARENTS

Informing Parents

In preparing for the initiation of the program there were plans made to have an evening when the parents could come to school for information about what methods of teaching their child would be facing in the upcoming year. Kelly (40:26) states: "Team teaching fails unless the parents and students can readily identify its values." The personnel involved in this program were aware of the necessity to inform the parents. An attempt would be made to do this, and enlist their support.

The parents were advised of the meeting, which was held the second week of school. The meeting was very well attended by interested mothers and fathers. After an introduction by the principal, one of the team teachers presented the background for the program. The goals of the program and the procedures to be used were explained. It was explained that the program was to a degree an experimental one, however in no instance would the educational goals be sacrificed.

The second phase of the meeting was a question and answer session. Out of this session several concerns of the parents can be noted:

1. Why did the teachers feel this program was necessary?
2. What was the rationale behind the program?
3. Why was so much testing done at the beginning of the school year?
4. Movement from station to station; a waste of time?

5. The child not having a desk to call his own disturbed some.
6. The difficulty of the child adjusting to the situation.
7. Grading; how would it be done?
8. Discipline; how would it be handled?
9. What would happen the following year in sixth grade?
10. What about homework?
11. What could they do to assist the school?

These concerns were real to the parents. They necessitated answers, which the three team members answered as best they could.

The parents showed a concern about what could be done at home to assist the school. This was planned as a topic for the third phase of the meeting. Trios were formed. Each trio was to discuss ways the home-school relationship could be better utilized in their child's education. Some of the parents' suggestions were:

1. Scheduled homework assignments
2. Phone conferences
3. Weekly letter to parents
4. Parents coming in to assist with clerical work
5. Parents offering slides, or other hobby presentations
6. Closer home-school communication.

The fourth phase of the meeting was an informal coffee break to end the meeting. It had been a highly successful meeting. It stimulated discussion about the program, about the home-school relationship, and about individualized instruction.

#### Parental Help and Cooperation

Many of the parents had interesting jobs or hobbies that

they would gladly share with a group of children. In a number of instances parents were called upon to do this. When the parents came in and became actively involved in the classroom a feeling of mutual respect developed between the parent and the teacher.

In one instance a parent who did amateur photography brought cameras, film, and developer for the children to see and use. The children had the opportunity to take a picture and witness the developing process. The parent thoroughly enjoyed the experience and the children benefitted from it.

Another parent gave a group a lesson on rock collecting and polishing. He then helped them make jewelry using stones and other materials he furnished.

Parents who did not have special interests were not excluded. Quite often a mother was called upon to do some filing, typing, stapling, or other clerical work.

Parental help was enlisted at home as well. Some of the ways they were used included:

1. Listening to their child read.
2. Setting up a recreational reading period at home.
3. Assisting with homework.
4. Correcting a mathematics paper.
5. Showing an interest in school.

A parent's attitude toward school quite often shapes the attitudes of the child. To make the most of a program such as this it is necessary to have the support and cooperation of the parents.



## VI. GROUPING PROCEDURES

When the evaluation of individual levels was completed the next phase was to place each pupil at her performance level in the subject areas. This was limited mainly to reading, mathematics and physical education, as the evaluation in these areas was skill oriented and had results that made it possible to plot the child's beginning performance level and areas of skill deficiencies.

Initial Grouping

By studying the plotted skill needs it was found that several children were lacking in the same areas. These children were placed in a group that had been determined by a common need. Mathematics scores and resultant groupings will serve as an example.

By reviewing the charts and locating common weak points it becomes a matter of selecting group members. The following chart is a sample portion of the original. Possibilities for grouping can be seen from the sample. All seven of the sample pupils missed some in numbers and numerals, but the first area that shows a real weakness is factoring. Fundamental operations and fractions proved weak for most, however these would be considered after factoring. These seven would form one group that would work on factoring, either together or independently and with a teacher.

Figure 10

## Mathematics Placement Test Scores

Group 3

	Numbers, Numerals	Number Sentences	Factoring	Fundamental Operations	Fractions
Possible	10	10	8	10	12
Susan	-1	-1	-6	Mult. -2 Div. -3	-5
Eileen	-2	-2	-8	Mult. -0 Div. -0	-10
Bev	-4	-4	-6	Mult. -2 Div. -1	-12
Jon	-1	-1	-5	Mult. -0 Div. -3	-6
Roy	-3	-2	-8	Mult. -2 Div. -0	-8
Kellie	-3	-1	-8	Mult. -0 Div. -0	-3
Shannon	-2	-2	-8	Mult. -1 Div. -2	-11

There were many other children who were deficient in factoring, however this was not the starting point for their level of performance. They were perhaps working on number sentences, regrouping, or basic facts, whichever their scores had indicated as being a need area.

Once the groups were established it became necessary to implement a program with each group. If there were twelve groups in mathematics, which could easily be the case, then each teacher would take three or four groups. The selecting of which teacher would work with which group was either by arbitrary means or

determined by the desire of a teacher to work with number sentences, factoring, computation, or any other skills in which she felt an interest.

Once the teachers knew the groups they would start with it was a matter of preparing lessons and materials, and planning for the use of teaching stations. Obviously it would be difficult for three teachers to handle twelve groups in two small rooms. Therefore decisions were made to utilize the activity room, seminar rooms, or one of the other available alternate teaching stations.

#### Movement From Group to Group

With the initial grouping done and the program progressing, a pupil may soon become accomplished in the skill area for which he is grouped. Where does he go from there? Using the same mathematics sample as before the procedure for regrouping can be observed.

All seven children on the chart needed work in factoring. The initial grouping put them together. When this skill is learned they are to move to the next skill that needs work. The next skill area on the chart is fundamental operations. Susan, Bev, Jon, Roy, and Shannon show a need for work here. Eileen and Kellie, however, have shown they understand and can utilize these skills. Eileen is weak in fractions, and Kellie could use some review and practice, so they are sent to the group working on fractions, It may be they will still have the same teacher, or they may move to another teacher, depending on who has the fractions group.

This regrouping process occurs daily as a child or group

of children show by an evaluative means that they are ready to advance to the next step on the skills continuum. As the skills are developed and a pupil progresses, his movement is recorded in the pupil skills checklist. Ideally, one should be able to look in the skills checklist booklet for each pupil and tell immediately what skills have been accomplished, what he is working on at the present, and what the next area will be.

Quite often it was found that learning could be facilitated by moving an entire group from one skill to another. It was found that testing for grouping purposes was not always accurate and at times an entire group could be moved at the same time. It may have been found, as well, that a small group worked exceptionally well together and it would be more advantageous to keep them as a group.

Much of the grouping done was not based entirely on the facts of tests. The teacher became a very important evaluative device. The observations and thoughts about a pupil can quite often prove valuable in regrouping. Grouping can not always be done strictly by test results. It must be human. It must have thought and reason behind it. No purpose is served if a pupil is taken from a group in which he is happy and functioning well and place him in a group in which he is unhappy and refuses to work. It is the teacher's responsibility to be sensitive to these feelings.

### Interest Groups

Fully believing children learn better if they are interest-

ed in what they are to learn the team teachers made efforts to do some grouping by interest as well as need. Science and social studies proved to be areas that were flexible enough for interest grouping.

One procedure used for grouping by interest can be best illustrated with an example. The entire group would be brought together and a large group presentation would be given on the Pacific Coast States. The presentation may be by Teacher A. Teachers B and C are either working in the centrum or working with an individual child. Teacher A presents an overview of the Pacific Coast States and perhaps has a film or some slides to show. At the conclusion of the presentation some of the many interesting things about the Pacific Coast States are brought out. Teacher B or C then hands out a prepared list of high interest topics for these states. Included are some suggested activities to accompany the interest area. Time is allowed for pupils to look over the topics. They pick a topic and from there the interest groups are made up. There may be groups for mountain climbing, building airplanes, map making or a variety of other topics. The three teachers then share the responsibilities for locating and collecting materials for those topics to supplement the materials collected by the pupils.

The interest groups are only one phase of the study of the Pacific Coast States. In addition there would be large group presentations by the teachers in which the essential concepts and information would be discussed.

### Interest Activities

In an effort to develop individual interest an activities period involving all of the fourth and fifth grades was developed. The activities included photography, model making, lapidary, gun safety, cooking, French, singing, gym, astronomy, German, and various art activities.

The children chose two activities in which they were interested. One afternoon per week was spent on these activities. They went to the same activities two weeks in a row. It was noted that many pupils used their interest activities as topics for study in other areas of the curriculum.

### Physical Education Grouping

The testing during the first week of school made possible the grouping of pupils by skill need in physical education. These groups were the least flexible in the program. They did, however, prove to be successful, and were of value to all children as could be witnessed by the change in attitudes and ability toward a structured physical education program.

The principal was closely involved with the team. He chose to assist by taking the physical education groups three days per week. This proved advantageous to the teachers, since it lightened the load of pupils and assisted in making smaller group and individual help possible.

An example of the approach in developing the necessary skills will illustrate the thought behind making physical education a part of the academic program. In testing, some children were

observed having difficulty with eye-hand coordination, and cross-body coordination. It is believed by many that these difficulties manifest themselves in reading and penmanship as well. The prescription for the children having these difficulties was a set of sequential ball handling skills. These skills included throwing the ball up and catching it, bouncing the ball with one hand, alternating hands in bouncing a ball, walking and bouncing, and bouncing to musical rhythm, among others. It was hoped the increased proficiency in these skills would carry over into the classroom. There is no statistical data to support it, but the author feels this was the case.

#### Utilizing Facilities

One of the objectives of the program was to utilize the available facilities in a way that would provide the best learning environment possible. There were certain limitations to the use of facilities.

Perhaps the most obvious way the facilities were limited was the fact there were only two regular classrooms for the equivalent of three classes of pupils. This created some problems in the mornings as school started and at the end of the day, when all children were in the rooms. The large group sessions were more crowded than was conducive to a good learning environment. This limitation was offset somewhat by the utilization of other teaching stations.

There were, however, limitations on using the other teaching stations. The activity room, which was set up with

cafeteria tables was used mainly as a station for groups over fifteen. It was used by the band instructor one morning and one afternoon per week. It was also unavailable for two hours each day while it was used for lunch. The seminar rooms were available except for half an hour each day. The library was available when no classes were scheduled to use it. The speech and hearing room was available for use except for the afternoons of three days per week.

The problem created by the limitations was one of planning and scheduling. When making weekly and daily plans the teachers had to determine what stations were available and when. It was a time consuming inconvenience, however, it was unavoidable.

The common use of facilities found the two classrooms utilized by several groups under the direction of two teachers with, or without, the walls open. The remainder of the groups would be using the activity room, seminar rooms, speech room, library, or a combination of these.

Using mathematics as an example can illustrate how a combination of these facilities was used. Teacher B may have four groups for mathematics constituting twenty students. Each group works independently of the other on different mathematics skills. One group may be in the activity room working on an assignment. Another group may be doing a taped lesson, either commercial or teacher made, in the speech room. The third group may be having a period for mathematics games while the fourth group is in the seminar room receiving instructions from the



teacher. A rotation of groups from room to room is possible, thus changing the activities. This would necessitate a change of tapes, as well as assignments for the groups going to the speech room and the activity room.

There are advantages to having a flow as described above. In a fifty minute period a change is needed for most children. This method makes it possible to expose each child to at least two activities per period. The rooms were the size for small group work and fairly isolated. The teacher is in close proximity to all stations. There is a certain amount of confusion in setting up a routine with the children, but once it becomes routine, it runs smoothly.

While the four groups are working in the described stations the rest of the class is in the classroom unit. There are ways of adjusting the rooms to provide for one large area or several smaller areas. The walls could be opened or closed, depending upon the teachers' desires. There were folding portable room dividers available that set aside part of a room as an entity in itself. The centrum could be used if needed due to its closeness. These things made possible the continued use of small group work without any real interference of one group upon another.

## VII. INDIVIDUALIZING

One of the nine characteristics of the program the teachers were striving for was that there be opportunities for

individualized instruction. One of the most often asked questions in educational circles is, how do you individualize? There are many different thoughts on what individualizing instruction is and how to go about it. It can not be said that one method of individualizing is any better than the next. Also research finds no significant difference between individualized instruction and traditional means in achievement.

As mentioned in discussing pupil assessment the high achievers in all ability levels found it easiest to adjust to individual work. They began accepting more and more responsibility for their work in the small group sessions. When it came time for them to break into an individualized program it was an easy transition.

Up to this point in the study the main method of instruction has dealt with small group and regrouping. The individualized program comes much easier if there has been a background of successful small group work. The teachers felt it was important to move slowly into an individualized approach, rather than have the children jump into something for which they were not prepared. Maturity plays an important role in readiness for individualized instruction. Some children need very strict guidelines and close supervision before any valuable effort will be made.

One example of individualizing, as was used in the program, can be given in reading. Since it is important to move slowly into an individualized program the reading started as a small group project, similar to that described for mathematics. It was set

up on a skills-needs basis. It became possible to break these small groups into still smaller groups and finally into individuals. The reading program was never truly individualized, as small group work continued on a one or two day per week basis. The remainder of the week could be used for individual work.

Much of the individual reading had to do with interests as well as stressing skills. Certain pupils may have chosen to read a library book as one of their weekly projects. After completing the book they could do one of several projects. One of the most popular projects was to make a video-tape report on the book, either telling about it, or reading a section from it. When enough children had done video-tape reports the entire group would then view them on television. The idea of being seen on television by all of the group provided enough motivational stimulus to encourage very careful reading, planning, and presentation of the book.

Other projects that proved popular for individualized reading were puppet shows, plays, written reports, bulletin boards, advertisements, book covers and making stage settings.

### Contract

The contract method was used in reading instruction. The books read and the projects done were guided by the teacher. When a pupil was ready to start reading a book he was to check with the teacher to see if the book was appropriate to his level. If it was approved a conference was held and a contract was written which told the name of the book, date started, date

expected to be completed and the project which would be done as a follow-up. If the student later decided the project was inappropriate a change in the contract was possible. There was to be a second conference between the pupil and teacher that was to determine the comprehension of what was read.

The contract technique proved effective. The child has had a definite say in what he is going to do, and the teacher sees that the effort the pupil makes is one that will benefit him in the final analysis. If it is used as an entire reading program it is not justifiable, because there must be a guided lesson to practice skills already known and to develop new skills.

The contract technique is applicable to many subject areas. Science lends itself to individualizing by contract very well. An example of how it was used in science will illustrate its value. Teacher B gives an introductory presentation to the entire group on oceans. The discussion may include maps, charts, transparencies, filmstrip, film or other materials. The intent of the presentation is to provide a certain amount of general information about oceans as well as provide motivation. The children may then have a choice of sub-topics dealing with oceans on which to work. They study the sub-topics and the next day hold a conference with one of the teachers. The contract on oceans tells what sub-topic will be worked on and the projects to be done in connection with it. The pupil has the choice of what he will do in connection with oceans, as well as receive from one of the teachers background information about oceans. At the end

of his contract time, his work is evaluated by both teacher and pupil. If more time is necessary to complete his study than was originally planned an extension is given, providing he has not been wasting time.

### Job Cards

A second technique for individualizing utilized by the team was job cards in reading and mathematics. Commercial and teacher made cards were available for the children to use. The reading job cards were arranged by skill desired. Guided by the teacher a pupil could have his individualized skill progression enriched by job cards. In mathematics the cards proved a good practice technique for a variety of skills.

### Limitations of Individualizing

As a teaching method individualizing appears to have much merit. There are, however, some very important limitations. The amount of materials necessary to allow each child to pursue his interest area in the subjects is staggering. Reference books, as well as a complete non-fiction section in the library, are essential. Films, filmstrips, records, and a variety of aids are necessary.

Time required of the teacher is usually not available. The gathering of materials, planning individual activities, conferencing with pupils, preparing other lessons, and evaluating projects are all very time consuming. The assistance of a qualified person, or persons, is necessary.

Another limitation is the inability of some children to accept responsibility and develop self-discipline. The child that will do absolutely nothing when the conference is over and the contract is done requires extra time on the part of the teacher. This limitation can perhaps be cured by offering the pupil something he really wants to do and find a way for him to do it.

Individualizing has value in the opinion of the team teachers. It makes much work for the teacher, however, it is rewarding for most of the children and the teachers.

#### Motivational Factors

Kelly (40:26) states that "Any program that is expected to carry itself by increased motivation must have the facilities and equipment conducive to carrying on the program." Motivation played an important part in the program discussed in this study. Motivation applies to both the pupils and the teachers. Facilities and equipment were definite factors of motivation.

The desire on the part of the teachers to utilize the facilities to the best advantage provided a challenge. It was interesting to try new methods in utilizing these facilities. The pupils were interested, as well, in the change the various rooms and teaching stations offered them. It was possible for a small group to arrange for the use of one of the teaching stations to carry out a project on which they were working. This offered them a degree of personal responsibility, which most pupils responded to. It was a motivational factor, therefore, to plan group work and then carry it out by using the facilities in the

best possible way.

Equipment played an important role in motivation. The possibilities for using equipment were many. Once again, the teachers and pupils were both motivated by this. The teachers were anxious to use the wealth of equipment in creative ways. It encouraged a variety of approaches to presenting lessons, which made an interesting experience for both teacher and pupils.

### Pupil Teaching

Many experiences were provided that were aimed at helping the child develop self discipline and social responsibility. Much of this was done within the framework of the fifth grade classroom. One experience, however, that removed the pupils from the usual social position of the classroom was the pupil teaching program developed with the primary teachers.

The idea of providing for individual differences was not unique to the team group. It was a common goal of the entire school. It was felt this goal could be served by instituting a pupil teaching program. This program consisted of pupils from the team group assisting the primary teachers with certain activities. A kindergarten teacher may have wanted five children to read stories to small groups. For ten minutes these children would be responsible for reading to the group. The children were given an orientation prior to reading. They picked out a book ahead of time, had it approved by a teacher, and prepared for presenting the story. Perhaps the activity would be to work with numbers or letters, or creative dramatics, depending on the one

the child chose and the teacher needed. Whatever the activity, the children were told ahead of time what they were to do. In most cases actual lesson plans were made either by the pupils, teacher, or the pupil and teacher cooperatively.

The experience of working with younger children appealed to most pupils. They developed a sense of responsibility to the younger children. It proved to be an excellent experience for most. Many of the most effective pupil teachers were those that would be termed academic, or discipline problems. They developed a feeling of worth and success from the relationships with the younger children.

## VIII. EVALUATION

### Grading Procedures

District policies called for report cards to be issued at the end of each quarter. The traditional means of grading on achievement only had been deplored by all the teachers in the unit. A method of grading by achievement based on ability and performance level was devised and approved.

In addition to the regular report card a form was made up that told the estimated ability level in each subject area for the child (see appendix). It also explained that the grades on the report cards represented the performance of the pupil on his ability level. Thus, a fifth grade pupil working at his estimated third grade level in reading could receive an A or B, instead of the C or D he had always received before. Likewise a fifth



grader working poorly and not up to his sixth grade ability could receive a C or D instead of the A he had always received. Thomas (58:140) states: "Parents of slow-learning children find satisfaction in ability grading," and parents of superior students show dissatisfaction.

Experience in the team situation substantiated the thought that parents of slow learners support ability grading. They were pleased to see their child get credit for his efforts, even though his ability may be two grade levels low. The parents of superior students were anxious to discover why a drop in grades may have taken place. Once the rationale for the grading system was explained to them they were quite in favor of it. They did show concern about the results when their child entered sixth grade and the old method would be used again.

#### Pupil-Teacher Conferences

An objective of the team teaching program was to provide a chance for each child to develop a meaningful relationship with one or more of the teachers. For many this relationship came in part through the pupil-teacher conferences. The purpose for the conferences was twofold. First they were to provide a chance for the pupil and teacher to discuss any problems the child may be having. Second it was a time to look at the progress the child was making.

The first purpose, that of discussing problems, gave an

opportunity for the pupil to bring up something that had been concerning him in his school work, relationships with fellow students, or any other concern he may be having. Likewise, it gave the teacher an opportunity to point out good, as well as problem areas. In many cases the discussion dealt with a book that was being read, or a project being done.

The second purpose was to talk over the progress of the child. The records of progress in one or two subject areas may be viewed by the teacher and pupil together and a conclusion drawn about the quality of the effort and work done. This kept the child fairly well informed about how he was doing and what he could do to improve. There were few surprises when it came time to have report cards sent home.

Ideally the conferences should be held for each child once a week at least. Realistically this cannot be done. It consumes a great deal of time if it is done with any value. The individual conferences could run from five to fifteen minutes or more.

One way a brief conference can be arranged for each child is to set aside one period as a study period in which conferences will be held. This could be done for one or more subject areas. The teacher should have the pupil's progress records available so the pupil can quickly see how he is progressing. The pupil is called to conference and the records are reviewed. If there are any questions from the pupil about progress these are asked, if not the conference is terminated. This type of conference is short and to the point. It provides a means of letting the pupil

observe his individual progress and at the same time lets the teacher review the records.

The team found that by setting aside the first thirty minutes of the day as a quiet reading period the longer, more detailed conferences could be held regularly. While the pupils were reading the three teachers could call up individuals with which to conference, thus having three conferences at the same time.

### Parent Teacher Conferences

In October parent-teacher conferences were scheduled for all children. Since there were seventy five pupils in the group it was not possible for all teachers to be present at all conferences. Decisions had to be made about which teacher would be responsible for the conference of a given pupil.

In many cases the pupil may have had the same teacher for three or four areas in small group work. If it could be determined who knew the child the best then that teacher would conference with his parents. Quite often two, or all three, teachers were present, depending on the child and the circumstances.

At a conference the teacher usually was able to show the parent quite clearly what his, or her child was doing in school. This was not the sole purpose of the conference. It was used as a time to become better acquainted with the parent and perhaps uncover causes for difficulty, or solidify connections between school and home.

In addition to the regularly scheduled October conferences,

plans were made for further contact with parents determined by need. Situations arose where parents were asked to appear for a conference to discuss a specific problem that had arisen. These were usually very effective conferences since there was a clear purpose in mind and it had added emphasis. At times it was requested the pupil be present at the conference.

### IIX. TEACHER PLANNING

One of the most essential aspects of a team teaching program is that of group planning time each day. Plans must be worked out on a unit, weekly, and daily basis. Constant evaluation must take place. Discussions about children are imperative. Materials, teaching stations, and large and small group activities must all be coordinated. Good group planning sessions must, therefore, have certain characteristics. They must,

1. Be of sufficient length to allow completion of tasks.
2. Be organized with a purpose in mind.
3. Be free from constant interruption.
4. Allow for easy communication.
5. Stay mainly on the topics at hand.

The group planning of a unit occurs perhaps once a week. At this time the general plans are made for presentation of the unit. For example: it may be decided plants will be the next science unit. The teacher specializing in science will be responsible for making initial and large group presentations, and assisting the other teachers in locating materials. The teachers

would then decide which sub-unit in plants they wanted to work with. From here more specific plans can be developed by the teachers in their individual planning sessions.

During this same planning session it may be necessary to organize activities for the upcoming week. The scheduling of large group presentations, television programs, and other activities which require the attention of all three teachers would be done at the same time.

A look at the day's schedule would also be appropriate for this group planning session. This may consist of no more than a review of plans, but it is necessary before each day to check with the team members and correlate final plans.

After the group planning session is over each teacher must then go about the usual routine most teachers go through in preparing lessons.

The planning time involved is greater for team teachers than for those not involved in team efforts. The teachers in the study under discussion spent approximately an hour and a half per day on group and individual planning sessions before school. In order to allow more planning time for all teachers it was arranged with the parents and the district administration to start school at 9:30 instead of 9:00. The half hour was made up by shortening the morning and afternoon recesses and the lunch break.

#### IX. EXAMPLE OF TEAM IN ACTION

To visualize the way a team can work together in

presenting a unit can be illustrated with an example. The example to be considered was carried out in the program under discussion. The unit was a health unit dealing with the eyes. Teacher B was the lead teacher in this instance with Teachers A and C acting as support personnel. The unit was organized to utilize the large group, small group, and individual approaches.

The introductory lesson was a large group presentation in which the wonder of the human eye was discussed. Transparencies were used to visualize the integral parts of the eye and to compare the functioning of the eye to that of a camera. A plastic model of the eye was passed around to further visualize the parts. A filmstrip was viewed which gave a general overview of the eye; its parts and care. This presentation lasted approximately forty minutes, near the allowable time for a large group presentation. As Teacher B was involved in the introductory lesson, the other teachers were either doing planning or record keeping.

The following day the entire group was together for a brief review of the previous day's lesson. After about ten minutes the large group was split into three sections, based on groups in which they had previously worked. The individual teachers were then responsible for the content of the health unit for their groups. Usually this correlated very well with the other teachers, since group planning had been done. Once in the sub-groups the activities for individual and small group work included:

1. Diagram and label the parts of the eye.
2. Describe how the eye works.

3. Make a vocabulary list and define the words.
4. Construct a test about the eye.
5. Write a creative story about how the eye enables us to see.
6. Imagine you are blind; describe your world.
7. Report on a famous blind person.
8. Make a clay model showing the parts of the eye.

These activities could be done by one, two, three, or more children. They offered a choice, which did mean something to the pupils.

The fourth day the unit was under way there was a large group session where Teacher B once again handled the program. The topic for the session was care of the eyes. The school nurse was invited to talk about care of the eyes. She also showed a ten minute film to do with the topic. This consumed about forty minutes.

By the end of the fifth day the individual teachers' groups were completing their projects. It was decided the culminating activity would be Monday of the following week. Teacher B had arranged for a local slaughter house to provide enough cows' eyes so each child would have one to dissect. Arrangements had also been made with the instructional materials coordinator to have the television camera set up for use during that period. Four televisions were set up in the two rooms. Each child stayed at a desk, or table, and observed Teacher B dissecting and explaining how to dissect the eye on television. This made it possible for all pupils to observe the demonstration.

Student assistants then passed out the eyes, razor blades, and paper towels. The pupils then began dissecting. An ample supply of help was available. In addition to the team teachers, the nurse, counselor, and teacher aide were on hand.

Through this unit the pupils had an opportunity to work in large groups, small groups, and individually. Within limits they had had a choice of what to do, yet all received basic information. They had become actively involved in a stimulating experience.

This is one example of the use of team teaching. It could not have been done without the assistance of several people, which is an advantage of team work.



## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### I. SUMMARY

The study under consideration is meant to describe the organization and early implementation of the individualized, small group, team teaching program as practiced at Benson Hill Elementary School.

The program's original conception occurred nine months before it was actually put to use. In the interim between conception and implementation several distinct phases can be identified. The school building itself gave emphasis to the merit of such a plan. Designed on a unit structure, with flexible room sizes, it was meant to be used in other than traditional means.

The selection of teachers to comprise the team was a very important step. It was by mutual consent and desire that three teachers formed a team aimed at achieving the objectives to which they were committed.

Objectives played a major role in the consideration of teaching methods to be employed. The methods would need to:

- (1) be aware of the four basic principles of human growth and development,
- (2) provide the individual child with a program that best meets his individual needs,
- (3) provide an atmosphere to

develop self-discipline and social responsibility, (4) provide the child with the opportunity to develop a meaningful relationship with at least one of the teachers in the team, (5) utilize the facilities and teacher abilities to provide the best possible environment in which children could learn, (6) provide experience so that future programs of this sort would benefit.

There were several planning stages leading to the actual implementation of the program. Each stage had its purpose. Grouped together these stages required about 270 teacher hours to be completed. Consideration had to be given to planning, materials, classroom structure, and preliminary grouping, among others. These aspects took much time.

The opening week of school was used primarily for pre-instructional evaluation. District resource teachers were used to diagnose performance levels in reading, mathematics, and physical education. Resource teachers also were available for science demonstrations and art observation.

The results of the pre-instructional testing were recorded in the individual skills checklist booklet. This device was used for recording progression through skills and the prescription for future skill area needs.

Grouping was an essential aspect of the program. Grouping was determined by skill needs and mutual interests. Movement from one group to another by a child was guided by his need for work in certain areas.

Grouping procedures and the physical arrangement of the buildings made flexibility in both grouping and utilization of

facilities necessary.

Individualized learning was stressed. Contracts, job cards, pupil teaching, and interest activities were techniques used in allowing for individual needs.

The parents were important to the success of the program. They were fully informed about methods and procedures of the program at a special meeting. Parents were enlisted as supplementary personnel whenever possible.

Evaluation was an important consideration. Report cards were based on grading according to ability level, not grade level. Pupil-teacher conferences kept the pupil and the teacher in contact with each other. Likewise, parent-teacher conferences were utilized.

Planning time for the team was essential. Group and individual planning sessions were necessary to present a unified approach to the curriculum.

## II. CONCLUSIONS

From the observations of the author and his involvement in the program the following conclusions have been drawn:

1. Team teaching can be effectively used in an individualized program.
2. The subject areas can be more adequately covered by team teaching than by an individual teacher working alone.
3. Team teaching presents both teachers and principal with new roles to which they must adjust.

4. Clerical assistance is necessary to a team teaching individualized program.

5. Team teaching and individualized instruction have value in both social and academic situations.

6. Adequate, flexible facilities are necessary to the success of this type of program.

7. An abundance of materials must be available to both children and teachers.

8. Teachers involved in team teaching must be committed to the task.

9. Conferences with pupils and parents are essential.

10. There must be sufficient time for group and individual planning by teachers.

11. Diagnostic evaluation is essential for grouping on performance levels.

12. Grouping procedures must be flexible.

13. The over-achievers in all ability ranges adjusted more rapidly to the program than the under-achievers and average achievers.

### III. RECOMMENDATIONS

#### Teacher Selection

To establish a team that can work together it is recommended that the teachers under consideration have a good deal of experience working with and becoming familiar with each other.

A workable team must be selected by the teachers themselves and not dictated by one person.

### Program Planning

It is recommended the planning phases of a program of this sort be started several months in advance of initiation. It is further recommended that the planning phases include teacher assessments relating to philosophies of teaching and teacher strengths.

### Pupil Assessment

To group and individualize as described in this study it is recommended there be two phases of evaluation. The first can take place before school starts by reviewing the pupil records and the second is diagnostic evaluation to determine performance levels.

### Pupil Orientation

There should be a time of adjustment when the pupils are led from the traditional methods into the new program. This can include conferences between teachers and groups of pupils and conferences between pupils and counselor.

There should be a progression from large groups to small groups before individual work is attempted.

### Parent Involvement

Parents should be totally informed about the program. It is recommended that after the parent orientation they be given a chance to assist the school in any way they can. This could involve hobbies, typing, filing, record keeping, or any other jobs they can handle.

It is recommended that if a parent is going to make a presentation to a group of children the teacher give the parent a sheet explaining what he can expect from the children, how many there will be, and other information that will assist him. This should be done several days in advance of the presentation.

### Grouping Procedures

It is recommended that grouping procedures remain flexible. Consideration should be given to performance levels, skill needs, interests, and pupil satisfaction in the process of grouping and regrouping.

### Evaluation Process

Evaluation should include pupil-teacher conferences on a weekly basis. Assignment evaluation should be based on individual abilities. Report cards, if necessary, should be ability based.

### Teacher Planning

It is recommended that at least an hour and a half each morning be available for preparation. One possibility is to arrange for school to begin half an hour later than usual. The half hour, it was found in this program, could be made up by shortening recesses and lunch break.

## BIBLIOGRAPHY

## BIBLIOGRAPHY

1. Abrahamson, David. "The Effectiveness of Grouping for Students of High Ability," Educational Research Bulletin, 38:251-272, October, 1957.
2. Alt, Eleanor. "Promotion by Sociometric Grouping." The Grade Teacher, 74:116-117, September, 1956.
3. Ambrose, Edna and Alice Miel. Children's Social Learning. Washington, D.C.: Association for Supervision and Curriculum Development, 1958. 120 pp.
4. Anderson, Robert H. "Organizing Groups for Instruction," in Fred Tyler, et al., Individualizing Instruction, pp. 239-64. The Sixty-first Yearbook of the National Society for the Study of Education, Part I. Chicago, Illinois: The University of Chicago Press, 1962.
5. Artley, A. Sterl. "An Eclectic Approach to Reading," Elementary English, 38:320-327, May, 1961.
6. Barbe, Walter B. Educator's Guide to Personalized Reading Instruction. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961. 241 pp.
7. Barnfield, Ardeth. "Individualized Instruction Through Use of Classroom Groups," Unpublished Master's Thesis, C.W.S.C., 1964.
8. Beard, Jess R. "Time: How Utilized," Educational Leadership, 17:420-424, April, 1960.
9. Beggs, David W. Team Teaching - Bold New Venture. Indianapolis: Unified College Press, 1964.
10. Beighley, Archie F. "The Origin, Development, and Implementation of Elementary Team Teaching In Lewiston, Idaho," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX:1668A, 1968.
11. Bettelheim, Bruno. "Segregation: New Style," School Review, 66:251-72.
12. Boren, Donald J. "A Comparative Study of Team and Traditional Teaching Methodologies," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX:2993A, 1969.



13. Bradford, Ieland P. and Dorothy Mial. "when is a Group?" Educational Leadership, 21:147-51, December, 1963.
14. Burk, Caroline F. "Discussion: Promotion of Bright and Slow Children," Educational Review, 19:296-302, March 1900.
15. Burningham, George L. "A Study and Evaluation of the Team Teaching of Fourth Grade at Woodstock Elementary School," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX:770A, 1968.
16. Cain, Marietta, "Group Work: An Essential Teaching Media for Trait Development," The Balance Sheet, 41:103-4, November, 1959.
17. Chamberlain, Daniel. "An Experiment Utilizing The Team Approach as a Method of Teaching High School United States History," Dissertation Abstracts. Ann Arbor: University Microfilms, XXVIII:997A, 1967.
18. Cousins, Norma. "Not So Fast," Educational Leadership, 21:145-46, December, 1963.
19. Cremin, Lawrence A. The Transformation of the School. New York: Alfred A. Knopf, 1961. 387 pp.
20. Cummins, Evelyn Wood. "Grouping, Homogeneous or Heterogeneous?" Educational Administration and Supervision, 44:19-26, January, 1958.
21. Davis, R.C. "Grouping for Instruction: Some Perspectives," Educational Forum, 24:209-16, January, 1960.
22. Drummond, Harold D. "Today's Pattern of Instruction," Instructor, October, 1966. pp. 56.
23. Duker, Sam. "Needed Research on Individualized Reading," Elementary English, May, 1966, pp. 220-5.
24. Eash, Maurice J. "Grouping: What Have We Learned?" Educational Leadership, 18:429-34, April, 1960.
25. Flanders, Ned A. "Diagnosing and Utilizing Social Structures in Classroom Learning," The Dynamics of Instructional Groups, pp. 187-217. Fifty-ninth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1960.
26. Frymier, Jack R. Fostering Educational Change. Columbus: Merrill Publishing, 1969.
27. Good, Carter V.(ed.). Dictionary of Education. New York: McGraw-Hill Book Company, Inc., 1959.

28. Goodlad, John I. "Diagnosis and Prescription in Educational Practice," Education Digest. May, 1966. pp. 8-11.
29. Grant, Jettye Fern. "A Longitudinal Program of Individualized Instruction in Grades 4,5, and 6." Unpublished Doctoral Dissertation, University of California, Berkeley, 1964.
30. Grotberg, Edith H. "Individualized Reading - A Symbol For Change," Education. September, 1966. pp. 7-11.
31. Hamalainen, A.E. "Methods of Grouping Pupils Should Provide Normal Social Situations," Nation's Schools, 45:34-35, June, 1950.
32. Heathers, Glen. "The Dual Progress Plan," Educational Leadership, 18:89-91, November, 1960.
33. Hock, Louise E. "Classroom Grouping for Effective Learning," Educational Leadership, 19:420-424, April, 1961.
34. Holmes, Darrell and Lois Harvey. "An Evaluation of Two Methods of Teaching," Educational Research Bulletin, 35:213-22, November, 1956.
35. Irvin, William F. "An Experimental Study of Team Teaching in the Intermediate Grades," Dissertation Abstracts. Ann Arbor: University Microfilms, XXVIII-80-A, 1966.
36. Jacobs, Claire M. "A Comparison of Attitude of Team and Non-Team Teachers Toward Various Aspects of Teaching," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX: 1474A, 1968.
37. Jenson, Gale. "The Sociopsychological Structure of the Instructional Group," The Dynamics of Instructional Groups, pp. 83-114. Fifty-ninth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1960.
38. Jester, James. "A Comparative Study of the Effects of Team Teaching and Departmentalized Teaching on the Scholastic Achievement of Eighth Grade Students in Social Studies and Language Arts," Dissertation Abstracts. Ann Arbor: University Microfilms, XXXVIII:1002:, 1966.
39. Kelly, Eugene T. "Why Team Teaching Fails," Instructor. April, 1967. pp. 25-26.
40. Liotta, Casmiro. "Individualized Reading Versus Ability Group Reading in the Reading Growth of Intermediate Grade Children," Dissertation Abstracts. Ann Arbor: University Microfilms, XXVIII:1343A, 1967.

41. MacBeth, Edwin W. "How to Field a Winning Teaching Team," Grade Teacher. May, 1966. pp. 174-70.
42. Miller, Janet S. "Individualized Instruction," Elementary School Journal. April, 1966. pp. 393-395.
43. Monroe, Walter S. (ed.). Encyclopedia of Educational Research. New York: Macmillan Company, 1960. pp. 221-223.
44. Morris, Julian C. "A Descriptive Analysis and Evaluation of an Integrated Program of Individualized Instruction In Cedar City High School," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX:2937A, 1968.
45. Otto, Henry J. "Survey Data on Departmentalized Teaching in Elementary Schools," Journal of Educational Research, 42:105-12, October, 1948.
46. Parker, Cecil J. and David H. Russell. "Ways of Providing for Individual Differences," Educational Leadership, 11:168-74, December, 1953.
47. Payne, Raymond. "The Group -- Resource and Technique," Educational Leadership, 21:155-57, December, 1963.
48. Poirier, Gerard. "An Evaluation of Team Learning in a Fourth Grade," Dissertation Abstracts. Ann Arbor: University Microfilms, XXVIII:2603A, 1967.
49. Richmond, Kenneth W. The Teaching Revolution. London: Methuen and Co. Ltd., 1967.
50. Russell, David H. "Inter-Class Grouping for Reading Instruction in the Intermediate Grades," Journal of Educational Research, 39:462-70, February, 1946.
51. Schlaadt, Richard G. "An Analysis of the Effectiveness of Team Teaching Compared to Traditional Teaching of Health to High School Sophomore Students," Dissertation Abstracts. Ann Arbor, University Microfilms, XXVII:3763A, 1966.
52. Scobey, Mary-Margaret. "Developing and Using Classroom Groups," Educational Leadership, 21:152-58, December, 1963.
53. Search, Preston W. "Discussions: The Pueblo Plan of Individual Teaching," Educational Review, 8:84-85, June, 1894.
54. Shane, Harold G. "Grouping in the Elementary School," Phi Delta Kappan, 41:313-19, April, 1960.

55. Shaplin, Judson and Henry Olds. Team Teaching. New York: Harper and Row, 1964.
56. Strong, Ruth, "Effective Use of Classroom Organization in Meeting Individual Differences," in H. Allen Robinson, ed., Meeting Individual Differences In Reading. Chicago: University Press, 1964, pp. 164-70.
57. Thomas, George I. and Crescimbeni, Joseph. Individualizing Instruction in the Elementary School. New York: Random House. 1967.
58. Trump, J. Lloyd and Dorsey Baynham. Guide to Better Schools: Focus on Change. Chicago: Rand McNally and Company, 1961. 147 pp.
59. Tyler, Fred T., et al. Individualizing Instruction. Sixty-first Yearbook of the National Society for the Study of Education, Part I. Chicago: The University of Chicago Press, 1962. 337 pp.
60. Washburne, Carleton w. and Louis E. Raths. "The High School Achievement of Children Trained Under the Individual Technique," The Elementary School Journal, 28:214-24, November, 1927.
61. Waters, John C. "An Investigation of the Effects of Team Teaching in English at Central High School," Dissertation Abstracts. Ann Arbor: University Microfilms, XXIX:2504A, 1968.
62. Wilhelms, Fred T. "Let's Look Grouping Straight in the Eye," The Instructor, 69:6, 136, September, 1959.
63. Woodring, Paul. A Fourth of a Nation. New York: McGraw-Hill Book Company, Inc., 1957. 255 pp.
64. \_\_\_\_\_. "Ten Years Acts as Prelude to Reform," Better Schools. V:7-10, May, 1959.

APPENDIX

SAMPLE: Report Card Supplement, Benson Hill School, Renton, Washington.

REPORT CARD SUPPLEMENT

Name \_\_\_\_\_

School Benson Hill

In art, vocal music, physical education, and health (certain quarters only) S stands for satisfactory and U for unsatisfactory.

Listed below are the subjects and the level on which your child has been working. Grades listed on the report card correspond to the learning level and not the traditionally assigned grade level.

Explanation of Levels:

Level 1 .....Readiness  
 Level 2 .....Pre-primer  
 Level 3 .....Primer  
 Level 4 .....1st grade  
 Level 5 .....1st grade enrichment  
 Level 6 & 7 .....2nd grade  
 Level 8 .....2nd grade enrichment  
 Level 9 & 10 .....3rd grade  
 Level 11 .....3rd grade enrichment  
 Level 12 .....4th grade  
 Level 13 .....4th grade enrichment  
 Level 14 .....5th grade  
 Level 15 .....5th grade enrichment

<u>Subject</u>	1st	2nd	3rd	4th
Math	_____	_____	_____	_____
English	_____	_____	_____	_____
Spelling	_____	_____	_____	_____
Science	_____	_____	_____	_____
Reading	_____	_____	_____	_____
Social Studies	_____	_____	_____	_____

INDIVIDUAL SKILLS CHECKLIST FOR  
MATHEMATICS, READING, LANGUAGE AND LIBRARY, AND SCIENCE

MATHEMATICS

	Level A	Level B	Level C	Level D
NUMERATION	<p>Sets: Identify numbers</p> <p>Ordering</p> <p>Characteristics</p> <p>Ordinal relationship</p>	<p>No. of members</p> <p>Equivalence</p> <p>Union of Sets</p> <p>Vocabulary</p>	<p>Count to 10</p> <p>Identify numerals to 10</p> <p>Greater than, Less than</p> <p>Write numbers to 10</p>	<p>Count to 100</p> <p>Identify cardinal numbers to 100</p> <p>Before, after, between</p> <p>Count by 2's, 5's, 10's</p>
PLACE VALUE		<p>Identify place value of 10's to 100's</p>	<p>Expand notation (200)</p> <p>&lt; &gt; (limit 200)</p>	<p>Place value of 1's, 10's, 100's</p> <p>Write No. before after, between</p> <p>Regroups</p> <p>Add, subtract by multiples of 10</p>

Indicate completion or acquisition of a skill by entering "2" in the check column, except use "1" when student understands underlying theory and is able to adapt skill to new and/or novel situations. Criteria for determining completion or acquisition of a skill - 85% accuracy.



	Level E	Level F	Level G	Level H
Numeration Cont.	<p>Reads &amp; writes numerals-1000</p> <p>Skip counts by 3's &amp; 4's</p> <p>Converts decimals to fractions</p>	<p>Counts-reads writes to 1,000,000</p> <p>Odd-even</p> <p>Rounds no. to 10's, 100's</p> <p>Mixed decimals</p>	<p>Rounds no. to nearest 1,000</p> <p>Writes 5,6,&amp; more place no</p> <p>Locate prime no. to 100's</p>	<p>Test no-prime composite</p> <p>Prime factors</p> <p>Writes base 5</p> <p>Converts to base 5</p>
Place Value Cont.	<p>Place value to 1,000,000</p> <p>Expand notation</p> <p>Multiples of 10</p> <p>Place value chart for mixed decimals</p>	<p>Place value chart 4 place</p> <p>Write 10 as power</p> <p>Reads &amp; writes decimal # to millionth</p>	<p>Place value chart 5 place</p> <p>Chart with positive exponents</p>	<p>Other bases</p> <p>Compare with base 10</p>

	Level A	Level B	Level C	Level D
ADDITION	<p>Equivalent non equivalent</p> <p>Manipulates objects to illustrate addition</p>	<p>Objects in two sets-combined</p> <p>Identifies +, - =</p> <p>Mastery +, - from 0 to 100</p> <p>Commutive Prin.</p>	<p>One step story problems</p> <p>Ass. prin. sums to 12</p> <p>Sums 2 or 3 no carrying</p> <p>Works column add</p>	<p>Sums thru 20</p> <p>Missing addend</p> <p>Adds carrying 100's</p> <p>Carrying 10's and 100's</p>
SUBTRACTION	<p>Combined with Addition</p>		<p>Subt prob. sums to 20</p> <p>2 digit no borrowing</p> <p>Missing addend uses <math>&gt;</math> <math>&lt;</math> or =</p>	<p>Mastery facts to 20</p> <p>No borrowing 3 or more digits</p> <p>borrowing 10's place</p> <p>Borrowing 10's or 100's</p>

	Level E	Level F	Level G	Level H
Addition Cont.	<p>Column add, more than 2</p> <p>Commutitive prop</p> <p>Carry 4 or more place no</p> <p>2 step story prob.</p>	<p>add 4 or more place numerals more than 2 addends</p> <p>Add decimal no (2 or more)</p>	<p>Add negative numbers</p> <p>Add negative &amp; positive no</p> <p>Adds other bases</p>	<p>Add negative positive no without using no. line</p> <p>Add with decimal parts to 1,000 place</p>
Subtraction Cont.	<p>Borrow 4 or more place #</p> <p>Decimals to hundredths</p> <p>Multiple step word prob.</p>	<p>With decimals to millionth</p>	<p>Neg. no. from pos. no.</p> <p>Exponential numbers</p>	<p>other bases</p>

	Level A	Level B	Level C	Level D
MULTIPLICATION				Group sets Repeated add. 0-1 as factors Written factors 2,3,4, & 5 Vocabulary
DIVISION				Divide set into subsets Vocabulary Divide thru $50 \div 5$ Divides by 1's

	Level E	Level F	Level G	Level H
multiplication cont.	<p>Timed test prod 9x9</p> <p>Commutitive</p> <p>Associative single digit factor</p> <p>Distributive</p> <p>1 digit factor</p>	<p>uses propert- ies</p> <p>2 digit # x 2 digit #</p> <p>3 or more digit</p> <p>2 step word prob.</p>	<p>Mult. in exponential form</p> <p>Mixed decimals</p>	<p>Neg. X pos.</p> <p>Neg. X Neg.</p>
Division Cont.	<p>Missing factor</p> <p>Distributive Prin.</p> <p>Ladder division</p> <p>Remainder</p> <p>Checks by inverse op.</p> <p>1 &amp; 2 step probs.</p>	<p>Repeated subt.</p> <p>2 digit divisor</p> <p>Estimate answers</p> <p>write remainder as fraction</p> <p>Decimal by whole no.</p> <p>2 step word probs.</p>	<p>Div. with positive and neg.</p> <p>Neg. ÷ Neg.</p> <p>Finds square r root or no.</p>	<p>Divides nos. in exponent- ial form</p>

	Level A	Level B	Level C	Level D
COMBINATION			<p>Mixed add, sub. prob. no carry</p> <p>Sums &amp; Diff. in money and time</p> <p>1 and 2 step story probs.</p> <p>Insert + &amp; -</p>	<p>Vertical or Horizontal, money time with carry and borrowing</p> <p>X &amp; ÷ thru 5X10</p> <p>1 and 2 step story probs.</p> <p>Operational signs</p>
FRACTIONS	Identifies $\frac{1}{2}$ of objects	Divides objs. in half	<p>Uses <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math></p> <p>Divide sets <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math></p> <p>Divide sets 2, 3, 4, equal parts</p> <p>Identifies <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math> of objs.</p>	<p>Uses <math>\frac{1}{6}</math>, <math>\frac{1}{8}</math>, <math>\frac{2}{3}</math>, <math>\frac{3}{4}</math></p> <p>Adds fractions with same denominator</p> <p>Equivalent fractions using pictures</p>

	Level E	Level F	Level G	Level H
Combination Cont.	<p>N as a variable</p> <p>X &amp; + thru 9x9, 81÷9</p> <p>Find average</p> <p>Fraction prob to 1/8</p>	<p>Mixed exercises</p> <p>Story probs. using all processes, fractions, money, time measures</p>	<p>Add-Sub. pos. &amp; neg.</p> <p>+, -, x, decimals</p> <p>All processes all fractions</p> <p>% whole no.</p>	<p>Multiple step word probs.</p> <p>Tax rate</p> <p>Bank probs.</p>
Fractions Cont.	<p>Fractional parts of whole nos.</p> <p>&lt;, &gt; or =</p> <p>Vocabulary</p> <p>Rename to lowest terms</p>	<p>Improper to mixed numerals</p> <p>G.C.F. to reduce to lowest terms</p> <p>L.C.M.</p> <p>Add. Subt. unlike</p> <p>Decimal equiv.</p>	<p>Mult. of fract. including mixed no.</p> <p>Divide simple fractions</p> <p>Mult. step word probs.</p>	<p>Value of no. raised to fractional power</p>

	Level A	Level B	Level C	Level D
MONEY		<p>Recognizes penny, nickle dime</p> <p>word cent used</p> <p>Recognized quarter</p> <p>finds values of pennies, nickles to 12¢</p>	<p>Matches value of coins</p> <p>Identifies coins needed to buy obj. limit 99¢</p>	<p>Identifies 1/2 dollar, dollar</p> <p>Uses \$ sign</p> <p>Adds-Subt. sums to 1.00</p> <p>Writes money values</p> <p>One step prob.</p>
TIME		<p>Reads numerals on clock</p> <p>Writes numerals on clock face</p> <p>Before and after the hour</p>	<p>Counts 60 minutes</p>	<p>Matching clock faces</p> <p>Matches to printed time</p> <p>Draws hands on clock to show printed time</p> <p>Writes time from clock face</p>



	Level E	Level F	Level G	Level H
Money Cont.	<p>Identifies change with purchase to \$10</p> <p>Add subt. using decimal notation</p> <p>Counts change</p>	<p>Mult. &amp; Div. money value using \$ and decimal pt.</p> <p>Mult. step money probs.</p>		
Time Cont.	<p>Days in week Days in month</p> <p>Reads any time</p> <p>Add, subt. hrs. and <math>\frac{1}{2}</math> hrs.</p> <p>Bus, train, plane schedule</p>	<p>Equivalent values</p> <p>24 hr. clock</p> <p>Time zones</p> <p>Probs. involving time change</p>	<p>Names small and large units of time</p> <p>Solve word probs.</p> <p>Time line</p>	

	Level A	Level B	Level C	Level D
MEASUREMENT		Use of ruler yardstick  Ruler divide  3 rulers = 1 yard  Identifies dozen	Measure to nearest inch  Probs. in 12" in one'  Cups per pint, pints per quart reverse	3' = 1 yard  36" = 1 yard  Liquid measure  Measure length  Nearest 1/4
GEOMETRY	Identifies circle, square triangle, rec- tangle	Identifies circle, square triangle, rec- tangle  Reproduce above from memory	Names solids  Reads names of simple figures	Curves, lines segments, corners  Label points  Name line seg- ments

	Level E	Level F	Level G	Level H
Measurement Cont.	Conversion of measures  Speedometer probs.  Probs. in temperature  Measure - centimeter  Compare inch- centimeter	Conversion metric english system  Uses meter stick	Weighs grams, kilograms  Conversion  Converts metric to English	
Geometry Cont.	Right angle  Name angles  Parallel lines  Use compass  Intersecting lines Measuring line segments  Perpendicular	Perimeter of polygons  Area of simple plane figure  Conversion  Volume Circle parts Bisect line segment	Parallelogram rhombus  Perimeter  Measure angles draw angles Value of "P"  Circumference  Area of circle	Surface area prisms, pyramids cones, etc  Volume  Use of pathagorean therorem

	Level A	Level B	Level C	Level D
GRAPHS & MAPS		Bargraph more than, less than Numerical differences	Read & construct graphs from tabular data Line graph Bar graph Picture graph	Locating points Games, post office, mapping Tic tac to 4 quadrants Reading graphic data

	Level E	Level F	Level G	Level H
Graphs and Maps Cont.	Locating and joining points to make pictures	Mapping simple functions $X + 2 = Y$ $X - 2 = Y$ $X \times 2 = Y$ $X \div 2 = Y$	Relations Use of fractions with mapping scale	Problem solving using mapping Intersecting lines to solve probs. of time, dist. and speed

READING

READINESS

Knows names of letters  
Knows names of numbers  
Can match letters  
Can match capital and small letters

VOCABULARY

Word Recognition

Recognizes pre-primer words, list 1  
Recognizes Dolch words, list 2  
Uses word form clues (configuration)  
    Capital and small letters  
    Word length  
    Double letters  
    Ascenders and descenders

Notes visual similarity of rhyming words

all  
it  
en  
an  
ell  
ake  
at  
in  
et  
ill  
ay  
or

Can read possessives and word endings  
Can read contractions  
Can read words with simple prefixes  
and suffixes

un  
dis  
ful  
be  
ty

Recognizes and reads vocabulary  
peculiar to specific content areas  
    Arithmetic  
    English  
    Social Studies  
    Science  
    Other

WORD MEANINGS

can supply synonyms, homonyms,  
antonyms, and heteronyms appropriate  
to age usage

Understands use of the following:

    Picture dictionary  
    Pictionary  
    Golden Dictionary  
    Junior Dictionary  
    Standard dictionary

Can determine meaning from context  
Understands meaning of words with  
no physical referent

Understands meaning of words with  
colloquial speech

Understands figurative and colorful  
expressions

Knows meanings of prefixes, list 4  
(C,D,E,F,G appropriate to age usage)

### WORD ATTACK SKILLS

#### Phonetic analysis

Knows sounds of consonants without  
teacher help

b  
d  
f  
h  
j  
k  
l  
m  
n  
p  
q  
r  
s  
t  
v  
w  
x  
y  
z

Applies these sounds to  
    Initial position in words  
    Final position in words  
    Medial position in words  
Utilizes consonant blends and diagraphs  
without teacher help  
sh  
st  
bl

pl  
tr  
fr  
wh  
th  
ch  
fl  
cl  
gl  
sp  
sm  
sn  
sw  
tw

Applies the above to:

    Initial position in words  
    Final position in words  
    Medial position in words

Utilizes word families without teacher help  
ou as in out  
ow as in show  
ow as in cow  
er as in her  
ur as in fur  
ir as in bird  
oi as in oil  
oy as in boy  
oo as in balloon  
oo as in brook  
aw as in straw  
ew as in new  
igh as in night  
ind as in find  
ind as in wind  
eck as in neck  
ick as in sick  
ack as in back

uck as in duck  
ike as in like  
ing as in sing

Knows names of vowels

Utilizes short vowel sounds without teacher help

a as in bad  
o as in rod  
i as in hid  
u as in put  
e as in pet

Utilizes long vowel sounds without  
teacher help

ai as in train  
ay as in ry  
ee as in seed  
ea as in eat  
ea as in break  
oa as in road  
ue as in uel  
a-e as in ride  
i-e as in cake  
oe as in rope  
u-e as in tune

Understands and utilizes function of "y"  
as a consonant at beginning of word  
(yard) and vowel (bicycle) elsewhere

Knows and utilizes two sounds of c and g

C followed by i,e,or y c sound  
C followed by a,o, or u makes k sound  
G followed by i,e,or u makes j  
G followed by a,o,or u makes a guh sound  
ginger, gym or game, gun

Knows initial consonant sound includes all  
consonants up to first vowel

Knows and utilizes three letter initial blends  
str  
sch  
thr  
spr  
spl  
chr

Knows phonics rules:

In attacking a vowel sound, try first  
the short sound

A single vowel in the middle of a word  
is usually short

A vowel in a word, or syllable, ending  
in e is usually long.

Two vowels together, the first is  
long, the second silent.

Vowels are influenced when followed by  
r, w, and l

Star  
Saw  
All

### Structural Analysis

Recognizes root or base words, mines,  
mined, miner

Recognizes word endings en as in waken  
Discriminates between, and is aware of  
different "ed" sounds

ed as in wanted  
ed as in moved (d sound)  
ed as in liked (t sound)

Knows hidden structure of contractions

I've = I have

Recognizes s and ing as endings



Knows syllable rules:

- Each syllable must contain a vowel
- A single vowel can be a syllable
- Suffixes and prefixes are syllables with meanings of their own
- The root word is not divided
- If first vowel is followed by two consonants, first syllable usually ends with first consonant, pen-cil
- If first vowel is followed by a single consonant, the consonant usually begins second syllable, a-maze
- If a word ends in le preceded by a consonant, that consonant ends the syllable.
- The letter x always goes with the preceding vowel to end the syllable. chick-en

Knows accent clues:

- The first syllable is usually accented, unless it is a prefix
- Beginning syllables de, re, be, in are usually unaccented.
- Endings that form syllables are usually unaccented.
- ck following a single vowel is accented jack' et.

Knows meaning of suffixes and prefixes, list 3  
Can read words containing the above easily and fluently

Can use dictionary as word attack aid  
Can classify words by first, second, third and fourth letters  
Can recognize abbreviated parts of speech, n = noun

- Knows how to find preferred pronunciation
- Can interpret diacritical markings
- Can interpret phonetic re-spelling
- Can use cross references
- Knows irregular verbs. deer, dear
- Aware of change of accent can affect pronunciation, pre'sent, present'
- Aware some adverbs derive from adjectives, ly ending as a clue or help
- Can use glossary

#### COMPREHENSION

- Can remember key points on what has been read aloud
- Can interpret pictures
- Can find main idea in a paragraph
- Can find main idea in a story
- Can keep events in proper sequence
- Can draw conclusions
- Can predict outcomes
- Can associate text with pictures
- Can follow printed directions
- Can find proof
- Can summarize
- Is able to see relationships
- Can read for a definite purpose
  - For pleasure
  - To obtain answers for questions
  - To obtain general idea of content
- Can interpret descriptive words and phrases
- Can identify mood of the story
- Can generalize about story ideas
- Can identify topic sentence
- Can identify author's purpose
- Can identify character traits
- Can take notes
  - From reading
  - From lecture

Can locate information by:

Use of table of contents

Use of page number

Use of card catalogue

Use of index

Use of maps and charts

political

topographical

physical

Can interpret general mood of story

Choral reading and poetry

Observes rhythm

Modulates and projects voice appropriate  
to mood

SILENT READING

Reads without vocalization

No lip movement

No whispering

No head movements

## Communication

### Readiness

Can recognize similar and different objects forms  
Can recognize right and left hand and foot  
Can listen and follow simple directions  
Can distinguish differences in size, color space, and pattern.

Can demonstrate understanding of the following word concepts:

Top  
Bottom  
Line  
Space  
After  
Up  
Down  
Over  
Under  
Together  
Around  
Circle  
Straight  
Across  
Before  
Above  
Right  
Left  
Touch  
Below

### Use of manuscript or cursive form.

Can head paper:

Name

Date

Subject

Title (stories)

Can make letters legible

Is able to leave prescribed margins.

### Use of capitalization.

Can form capitals a to z in manuscript and cursive writing

Can capitalize first word in a sentence.

Can page correctly

Can capitalize special names

Own name

Parent's name

Proper nouns

Can capitalize greeting of letter

Can capitalize

Mr.

Mrs.

Miss

Dr.

I

Can capitalize first word of each line of verse as needed.

Can capitalize titles of books.

Can capitalize titles of stories.

Can capitalize titles of pictures.

### Use of punctuation

Can use period at end of sentence.

Can use question mark at end of questioning sentence.

Can use exclamation mark with exclamatory sentences

Can use periods after abbreviations, Mrs., Mr., etc.

### Activities

Can copy from blackboard

Charts

Letters or notes

Announcements

List or agenda

Poem, rhyme, joke

Can trace kinaesthetically

In the air

Against textured surfaces

Over previously written material

### Evaluation

Can use model to locate errors

Letters

Spacing

Margins

Can self-evaluate

Is able to correct errors

### Posture

Sits with back bent slightly forward with  
hips against back of chair

Holds head erect with eye about 15 inches  
from the paper.

Holds pencil between thumb, first and  
second fingers

Holds pencil so that point extends one  
inch from fingers

SCIENCE

PLANTS

Level A	Level B	Level C	Level D	Level E
<p>Recognizes that plants are living things</p>	<p>Explain that plants need water, sun, and carbon dioxide</p>	<p>Recognize that flowers perform function of reproduction</p>	<p>Distinguish between purpose of widespread roots and deep root system</p>	<p>Explain need for and process of pollination</p>
<p>Recognizes that plants are the only foodmakers</p>	<p>to make food with help of chlorophyll</p>	<p>Identify the collected plant specimens</p>	<p>Explain why vegetation in one area may be different from that of another area</p>	<p>Describe man's need for plants</p>
<p>Can explain that the leaves are the food factories of the plant</p>	<p>Explain that the process of photosynthesis gives off oxygen</p>	<p>Describe the protective devices of different plants</p>	<p>Diagram and explain parts of a flower</p>	<p>Describe some plants that don't make their own food</p>
<p>Can explain that the roots take in water and minerals</p>	<p>Explain the jobs of the root system-anchor and water, minerals</p>	<p>Distinguish between plants and animals</p>	<p></p>	<p>Describe some plants that do make their own food</p>
<p>Recognize that new plants grow from seeds</p>	<p>parts of flower and plant, explain their function</p>	<p></p>	<p></p>	<p>Demonstrate grafting</p>
<p>Collect specimens of plants</p>	<p>Tell several ways seeds are scattered</p>	<p></p>	<p></p>	<p>Tell how man has changed some plants (hybrids)</p>
<p></p>	<p>Purposes of the stem - carry water, support- &amp; the leaves</p>	<p></p>	<p></p>	<p>Describe a world without green plants</p>
<p></p>	<p></p>	<p></p>	<p></p>	<p>Describe reproduction of some plants that don't produce seeds</p>

OCEANS

Level A	Level B	Level C	Level D	Level E
<p>Give some reasons the oceans are of importance to us</p> <p>Tell what an ocean is</p> <p>Tell about at least one animal and one plant that lives in the ocean</p> <p>Explain the differences between fresh water and ocean water</p> <p>Describe how the ocean is used for transportation</p>	<p>Explain ways man has studied the ocean depths</p> <p>Describe some of the dangers of deep sea diving</p> <p>Tell what the Grand Banks are and why they are important</p>	<p>Tell what the trade winds are</p> <p>Explain why a hurricane is so dangerous</p> <p>Describe a coral reef</p>	<p>Tell what the Gulf Stream is the why it is important</p> <p>Tell how many oceans there are</p> <p>Explain the tides</p> <p>Describe the importance of plankton</p>	<p>Speculate as to man's future use of the oceans</p> <p>Explain the oceans effects on the world's weather</p> <p>Describe the oceans floor (land forms, etc.)</p> <p>Identify some important minerals man gets from the ocean</p>

EARTH

Level A	Level B	Level C	Level D	Level E
<p>Define geologist as a scientist who studies the earth</p>	<p>Explain that earthquakes are movements in the earth's crust</p>	<p>Support the statement that "in the beginning the earth was a molten mass"</p>	<p>Describe the ice ages</p>	<p>Develop a theory as to why the ice ages occurred</p>
<p>Describe the earth as a large, semi-round ball</p>	<p>Identify fossils as records of earth's past</p>	<p>Describe the formation of caves and caverns</p>	<p>Explain the formation of coal</p>	<p>Hypothesize as to the results of a gigantic hole opening up in the earth's crust</p>
<p>Describe earth with ice caps and possible reason</p>	<p>Explain the formation of soil</p>	<p>Describe the formation delta</p>	<p>Discuss the types of erosion</p>	<p>Tell why the earth is a good place to live</p>
<p>Distinguish among the crust and the mantle and the core</p>	<p>Explain the formation of mountains, valleys, etc.</p>	<p>Describe the three classifications of rocks</p>		<p>Support or oppose theory that the moon was at one time a part of the earth</p>
<p>Explain that volcanoes are breaks in the crust through which molten rock passes</p>	<p>Describe the making of the Grand Canyon</p>			<p>React to the statement that the earth is gradually leveling out because of erosion</p>

SEASONS AND CHANGES

Level A	Level B	Level C	Level D	Level E
<p>Identify the four seasons</p> <p>Describe the characteristics of seasons in Renton</p> <p>Explain that earth revolves around sun</p> <p>Explain earth rotates on its axis</p> <p>Recognize changes in plants and animals in different seasons</p>	<p>Explain that there is a 23 -- 1/2 degree tilt of axis</p> <p>Recognize that not all places on earth have distinct seasons</p> <p>Describe migration patterns of some birds</p> <p>Describe ways people are effected by season changes</p>	<p>Recognize purpose of camafloge</p> <p>Develop theory as to why the seasons change</p> <p>Distinguish between weather and climate</p> <p>Describe hibernation</p>	<p>Chart the seasonal cycle of deciduous trees</p> <p>Explain the differences between seasons in mid-latitudes and tropics</p> <p>Explain the reason for seasons in n. and s. hemisphere being reversed</p> <p>Explain the illustrate why the length of daylight varies with seasons</p> <p>Describe the seasonal climates of mid-latitude city</p>	<p>Chart and describe the seasonal migrations of some fish and the monarch butterfly</p> <p>Develop a theory as to the result on seasons if the earth did not have a 23 1/2 degree tilt</p> <p>Hypothesis as to the result on seasons if earth had a 35 degree tilt</p> <p>Describe the seasonal climate and characteristics of a polar city</p> <p>Describe the seasonal climate and characteristics of a polar city</p>



ELECTRICITY

Level A	Level B	Level C	Level D	Level E
Explain how electricity is useful to man	Tell what an electrical circuit is	Explain that electrons in atoms move to cause a current	Describe the path of electric current from the dam to the home	Make an electroscope to demonstrate static electricity
Tell why electricity can be dangerous	Tell what a generator is	Explain that the current must make a circuit before we have electricity	Explain static electricity	Explain an electrical current
Give examples of electricity you can see	Explain the use of a dam in making electricity	Describe the term "alternating current"	Describe how a generator works	Speculate as to future sources of electricity
Make a galvanometer to show electric current (In "Looking Ahead in Science)	Make and explain a turbine  Diagram a power plant using coal, In Looking Ahead in Science	Diagram and explain a step up and step down transformer		

## SPACE

Level A	Level B	Level C	Level D	Level E
Identify our earth as a planet	Make a folder showing the Apollo flights and pictures of the moon	Recognize some problems of space travel	Make a diagram using proper scale to show the distance between planets and the sun	Make a theory about results of the sun dieing out over a period of 1 year
Explain that the earth is one of nine planets in our solar system	Tell why earth has life and the moon does not	Explain that our solar system is aprt of a larger system, the milky way	Define what constellations are and diagram several	Create a theory on the development of the solar system
Identify the sun as the center of our solar system	Tell why the sun in important to us	Explain thag a galaxy is a large system of stars	Create a theory on the development of the moon	Explain why space travel is of benefit to man
Distinguish between a star and a planet	Compare sizes of planets and sun or charts	Give some characteristics of several planets	Tell how time is used to measure distances in space	Demonstrate the parallax effect
Make a model of the solar system	Explain why the solar system stays together (gravity and centrifugal force)	Explain what and where the asteroid belt is		
Make a rocket model and diagram each major part	Tell what comets are			

## MATH TEST

Name \_\_\_\_\_

Numbers and Numerals

9 ones, 8 hundreds, no tens = \_\_\_\_\_

43 tens = \_\_\_\_\_

7 tens + 15 = \_\_\_\_\_

 $(2 \times 10,000) + (5 \times 100) + (7 \times 10) + (9 \times 1) =$  \_\_\_\_\_

3 thousands + 12 hundreds + 5 tens = \_\_\_\_\_

Four thousands + six = \_\_\_\_\_

4100 = \_\_\_\_\_ thousands, 11 hundreds

909 = 8 hundreds, 9 tens, \_\_\_\_\_ ones

7200 = 6 thousands, \_\_\_\_\_ hundreds

100 less than 10,000 = \_\_\_\_\_

Number sentences $90 + 40 = 90 + \underline{\hspace{2cm}} + 30$  $(\underline{\hspace{2cm}} + 2) - 2 = 11$  $(\underline{\hspace{2cm}} \times 3) \div 3 = 8$  $(4 \times 10) + (4 \times 5) = 4 \times \underline{\hspace{2cm}}$  $\underline{\hspace{2cm}} = 6 - 1 + 2$  $10 \div (6 - 4) = \underline{\hspace{2cm}}$  $14 - 8 = 3 + \underline{\hspace{2cm}}$  $144 \div 12 = 12 \times \underline{\hspace{2cm}}$  $12 \div 8 = 18 \div \underline{\hspace{2cm}}$  $7 \times 4 = 2 \times \underline{\hspace{2cm}}$

Factoring

All the factors of:

12

21

23

Prime factors

8

36

17

Lowest common multiply

2, 3

6, 6

Fundamental operations

$$\begin{array}{r}
 669 \\
 575 \\
 +995 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 7348 \\
 8889 \\
 +7696 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 720 \\
 -558 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 231612 \\
 -8290 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 295 \\
 \times 8 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 364 \\
 \times 15 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 687 \\
 \times 704 \\
 \hline
 \end{array}
 \quad
 5 \overline{)5460}
 \quad
 9 \overline{)8708}
 \quad
 32 \overline{)9920}$$

Fractions - reduce to lowest term

$$16/24 \quad \underline{\hspace{2cm}} \quad 25/35 \quad \underline{\hspace{2cm}} \quad 30/16 \quad \underline{\hspace{2cm}}$$

$$\text{Add} \\ \frac{3}{5} + \frac{1}{5} = \underline{\hspace{2cm}}$$

$$\text{Subtract} \\ \frac{4}{5} - \frac{1}{5} = \underline{\hspace{2cm}}$$

$$\frac{1}{2} + \frac{1}{4} = \underline{\hspace{2cm}}$$

$$4 - 2 \frac{1}{3} = \underline{\hspace{2cm}}$$

$$\frac{4}{5} + \frac{2}{3} = \underline{\hspace{2cm}}$$

$$\frac{7}{8} - \frac{1}{4} = \underline{\hspace{2cm}}$$



## MATH TEST

Number Sense

\_\_\_\_\_ is between 4 and 6

\_\_\_\_\_ is between 21 and 23

239 is between 230 and \_\_\_\_\_

The number before 700 is \_\_\_\_\_

Circle the odd numbers 7, 8, 9, 10, 15, 16, 20

Number Sentences

Write            or = in each

$6 + 8 \quad 3 \times 3$

$12 + 4 \quad 3 \times 1$

$9 \times 4 \quad 30 + 2$

$24 + 3 \quad 12 - 5$

$14 + 7 \quad 2 \times 0$

Regrouping

$94 = \text{_____ tens } \text{_____ ones}$

$503 = \text{_____ hundreds, } \text{_____ tens, } \text{_____ ones}$

$4105 = \text{_____ th. } \text{_____ hundreds } \text{_____ tens } \text{_____ ones}$

$27 = \text{_____ tens, } \text{_____ ones}$

$909 = 8 \text{ hundreds, } 9 \text{ tens, } \text{_____ ones}$

Basic Facts

$9 + 7 = \text{_____}$

$13 - 4 + \text{_____}$

$6 + 8 = \text{_____}$

$16 - \text{_____} = 7$

$8 + \text{_____} = 20$

$11 - 8 = 5 - \text{_____}$

Computation

$$\begin{array}{r} 18 \\ 14 \\ +47 \\ \hline \end{array} \quad \begin{array}{r} 234 \\ 374 \\ +189 \\ \hline \end{array} \quad \begin{array}{r} 231 \\ -162 \\ \hline \end{array} \quad \begin{array}{r} 203 \\ -487 \\ \hline \end{array}$$

$$\begin{array}{r} 72 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 327 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 760 \\ \times 5 \\ \hline \end{array} \quad 6 \ 72$$

$$4 \overline{)112}$$

$$7 \overline{)185}$$

Fractions

What part is shaded?

\_\_\_\_\_

Ring the part shown by the fraction

OO	OO	XXXX	XXXXXX
OO	OO	XXXX	XXXXXX
OO	OO	XXXX	
OO	1/3	XXXX	2/3
1/2		1/4	

Story Problems

If there are 4 tires on a car, there are \_\_\_\_\_ tires on 8 cars

Which costs more, 3 apples at 6 cents each, or 2 oranges at 8 cents each?

\_\_\_\_\_

Helen had 6 dimes. Debbie had 10 nickels. Which girl had more money?

\_\_\_\_\_ How much more? \_\_\_\_\_